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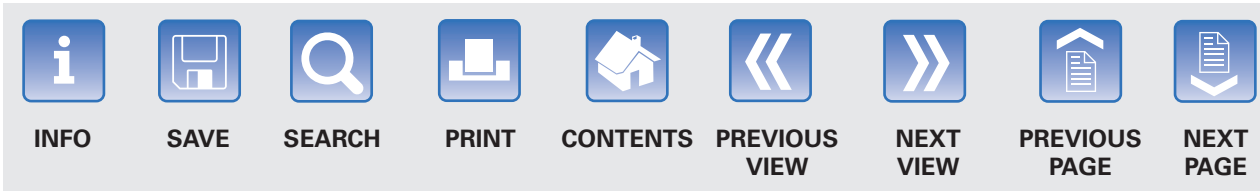

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EDF GROUP

2011 REFERENCE DOCUMENT

ANNUAL FINANCIAL REPORT

This document is a free translation into English for convenience purposes only of the French reference document filed with the *Autorité des marchés financiers* on 10 April 2012.

French *société anonyme*
with a share capital of €924,433,331
Registered head office: 22-30, avenue de Wagram
75382 Paris Cedex 08
552 081 317 RCS Paris

EDF Group Reference document 2011 Annual financial report

This reference document was filed with the *Autorité des marchés financiers* (the "AMF") on 10 April 2012 in accordance with Article 212-13 of the AMF General Regulations. It may be used for purposes of a financial transaction if supplemented with an offering memorandum (*note d'opération*) that received a visa from the AMF. This document has been prepared by the issuer and its signatories are responsible for its content.

Pursuant to Article 28 of the European Commission Regulation (EC) No. 809/2004, the following information is incorporated by reference into this reference document:

- consolidated financial statements of the EDF group for the fiscal year ended 31 December 2010, prepared in accordance with international accounting standards, as well as the accompanying Statutory Auditors' reports, set forth respectively in Chapter 20, sections 20.1 (pages 258 to 371) and 20.2 (pages 372 and 373) of the EDF group's 2010 reference document;

- consolidated financial statements of the EDF group for the fiscal year ended 31 December 2009, prepared in accordance with international accounting standards, as well as the accompanying Statutory Auditors' reports, set forth respectively in Chapter 20, sections 20.1 (pages 240 to 368) and 20.2 (pages 369 and 370) of the EDF group's 2009 reference document;

- the review of the financial position and results of the EDF group for the fiscal year ended 31 December 2010, presented in Chapter 9 (pages 155 to 198) of the EDF group's 2010 reference document.

Copies of this reference document are available free of charge at EDF (22-30, avenue de Wagram, 75382 Paris Cedex 08) and on the EDF website (http://www.edf.com) as well as on the AMF website (http://www.amf-france.org).

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Table of contents

1 **Person responsible** 7

1.1 Person responsible for the reference document 8

1.2 Certification from the person responsible for the reference document containing the annual financial report 8

2 **Auditors** 11

2.1 Statutory Auditors 12

2.2 Deputy Auditors 12

3 **Selected financial information** 15

4 **Risk factors** 19

4.1 Risk factors 20

4.2 Risk management and control in the EDF group 36

4.3 Dependency factors 45

5 **Information about the issuer** 49

5.1 History and development of the Company 50

5.2 Investments 51

6 **Business overview** 53

6.1 Strategy 55

6.2 Presentation of the EDF group's business in France 59

6.3 Presentation of the EDF group's international business 106

6.4 Other activites and cross-divisional functions 134

6.5 Legislative and regulatory environment 151

7 **Organisational charts** 167

8 **Property, plant and equipment** 173

8.1 Service sector real estate assets 174

8.2 Employer participation in the construction effort 174

8.3 Subsidised home ownership loans 174

9 **Operating and financial review** 177

9.1 Key figures 178

9.2 Economic environment and significant events of 2011 180

9.3 Analysis of the business and the consolidated income statements for 2011 and 2010 191

9.4 Cash flows and net financial indebtedness 199

9.5 Management and control of market risks 203

10 **Cash flows and capital** 215

11 **Research and development, patents and licenses** 217

11.1 R&D organisation and key figures 218

11.2 R&D priorities 219

11.3 International and partnerships 220

11.4 Intellectual property policy 221

12 **Information on trends** 223

12.1 Subsequent events 224

12.2 Development of electricity prices in France in January and February 2012 225

13 **Financial outlook** 227

14 **Administrative, management and supervisory bodies and Executive Management** 229

14.1 Board of Directors 230

14.2 Executive Committee 239

14.3 Absence of family ties, convictions and conflicts of interest among members of the administrative bodies and Executive Management 241

15 **Compensation and benefits** 243

15.1 Compensation of corporate officers 244

15.2 Provisions for pensions, retirement and other benefits 246

15.3 Stock options – Bonus shares 246

16 **Functioning of administrative and management bodies** 249

16.1 Corporate Governance Code 250

16.2 Functioning of the Board of Directors 250

16.3 Bodies created by Executive Management 255

16.4 Ethical approach 255

16.5 Stock Exchange Ethics Code 256

16.6 Report prepared by the Chairman of the Board of Directors in accordance with article L.225-37 of the French Commercial Code 256

17 Employees – Human Resources 259

17.1 Skill development 260

17.2 Equal opportunity 264

17.3 Health and safety – Quality of working life 265

17.4 Subcontracting 267

17.5 Global compensation policy 267

17.6 Social welfare policy 269

17.7 Shareholding by directors and trading of EDF securities by corporate officers and executives 272

18 Major Shareholders 275

18.1 Breakdown of share capital and voting rights 276

18.2 Agreements which could lead to a change of control 276

19 Related party transactions 279

20 Financial information on assets, the financial statements and results of the Company 283

20.1 Historical financial information 285

20.2 Statutory Auditors' Report on the consolidated financial statements 382

20.3 Fees paid by the group to Statutory Auditors 384

20.4 Dividend policy 385

20.5 Legal proceedings and arbitration 386

20.6 Significant change in the Company's financial or trading position 392

21 Additional information 395

21.1 General information regarding the Company's capital 396

21.2 Bylaw provisions 401

22 Material contracts 407

23 Third party information, statement by experts and declaration of interests 409

24 Documents available to the public 411

25 Information on holdings 413

Glossary 415

Appendix 423

A 2011 Report by the Chairman of the EDF Board of Directors on corporate governance, internal control and risk management procedures 425

B Statutory Auditors' Report, prepared in accordance with Article L.225-235 of the French Commercial Code *("Code de commerce")*, on the Report prepared by the Chairman of the Board of Directors of Électricité de France S.A. 445

C Statutory Auditors' Report on Regulated Agreements and Commitments 449

D EDF SA's financial statements and Statutory Auditors' Report on the financial statements 455

E Concordance table Annual financial report 511

F Draft resolutions to be submitted to the Combined Shareholders' Meeting of 24 May 2012 515

In this reference document, unless otherwise stated, references to "**Company**" and "**EDF**" refer to EDF SA, the parent company, and references to "**EDF group**" and "**Group**" refer to EDF and its subsidiaries and affiliates.

In addition to the information contained in this reference document, investors should carefully consider the risk factors described in section 4.1 ("**Risk factors**"). These risks, or one of these risks, could negatively impact the Group's activities, its financial position or its financial results. Furthermore, other risks, which have not yet been identified or considered as material by the Group, could have the same negative impact and investors could consequently lose all or part of their investment in the Company.

This reference document also contains information relating to the markets in which the EDF group is present. This information has been taken from surveys carried out by external sources. Considering the very rapid changes that characterise the energy sector in France and globally, it is possible that this information could prove to be erroneous or no longer up to date on the filing date of this reference document or thereafter. The Group's activities could consequently evolve in a manner different from those described in this reference document and the declarations or information appearing in this reference document could prove to be erroneous.

Forward-looking statements in this reference document, notably in section 6.1 ("**Strategy**") could also be impacted by risks, uncertainties or other factors that may cause the future income, performances and achievements of the Group to differ significantly from the objectives expressed and suggested. These factors may include changes in the economic and commercial environment, in regulations, as well as the factors set forth in section 4.1 ("**Risk factors**").

Pursuant to European and French legislation, the entities responsible for the transmission and distribution of electricity within the EDF group may not communicate certain information they gather within the framework of their activities to the other entities of the Group, including its Management. Similarly, certain data specific to generation and marketing activities may not be communicated to the entities responsible for transmission and distribution. This reference document has been prepared by the EDF group in compliance with these rules.

A glossary for the major technical terms is provided at the end of this reference document, before the Appendices.

1.

Person responsible

1.1 Person responsible for the reference document 8

1.2 Certification from the person responsible for the reference document containing the annual financial report 8

1. Person responsible

Person responsible for the reference document

1.1 Person responsible for the reference document

Henri Proglio, Chairman and Chief Executive Officer of EDF.

1.2 Certification from the person responsible for the reference document containing the annual financial report

Having taken all reasonable care to ensure that such is the case, I certify that, to the best of my knowledge, the information contained in this reference document accurately reflects the facts and contains no omission likely to affect its meaning.

I certify that, to the best of my knowledge, the financial statements are prepared in accordance with accounting standards and that they give a true and fair view of the assets and liabilities, financial position and the income of the Company and of all the companies included in the consolidation, and that the management report *("Rapport de gestion")* presents a true and fair view of the business trends, income and financial position of the Company and of all the companies included in the consolidation and a description of the main risks and uncertainties they face.

I have obtained a letter from the Statutory Auditors certifying that they have verified the financial and accounting information provided in this reference document and that they have read the document in entirety. This letter contains no comments.

The consolidated financial statements for the year ended 31 December 2011 presented in the reference document have been reviewed by the Statutory Auditors; their report and comments are set forth on pages 382 and 383 of this document which contain comments in respect of the valuation of long term provision relating to nuclear generation.

Henri PROGLIO

Chairman and Chief Executive Officer of EDF

2.

Auditors

2.1 Statutory Auditors 12

2.2 Deputy Auditors 12

2.1 Statutory Auditors

Deloitte et Associés,
185, avenue Charles-de-Gaulle, 92200 Neuilly-sur-Seine, represented by Mr. Alain Pons and Mr. Patrick Suissa.

KPMG SA,
Immeuble Le Palatin, 3, cours du Triangle, 92939 Paris-La Défense Cedex, represented by Mr. Bernard Cattenoz and Mr. Jacques-François Lethu.

The Statutory Auditors were initially appointed by decision of the Shareholders' Meeting of 6 June 2005 for a period of six fiscal years expiring at the end of the Shareholders' Meeting ruling on the financial statements covering the fiscal year closing 31 December 2010.

Their terms of office were renewed by decision of the Combined Shareholders' Meeting of 24 May 2011 for a new period of six fiscal years expiring at the end of the Shareholders' Meeting ruling on the financial statements covering the fiscal year closing 31 December 2016.

The aforementioned Auditors consequently certified the financial statements reproduced in this reference document.

2.2 Deputy Auditors

BEAS,
195, avenue Charles-de-Gaulle, 92200 Neuilly-sur-Seine

KPMG Audit IS
Immeuble Le Palatin, 3, cours du Triangle, 92939 Paris-La Défense Cedex.

The term of office of the company BEAS, initially appointed as Alternate Auditors by decision of the Shareholders' Meeting of 6 June 2005 for a period of six fiscal years expiring at the end of the Shareholders' Meeting ruling on the financial statements covering the fiscal year closing 31 December 2010, was renewed by decision of the Combined Shareholders' Meeting of 24 May 2011 for a new period of six fiscal years expiring at the end of the Shareholders' Meeting ruling on the financial statements covering the fiscal year closing 31 December 2016.

The company KPMG Audit IS was appointed as Alternate Auditors by decision of the Combined Shareholders' Meeting of 24 May 2011, replacing SCP Jean-Claude André, for a period of six fiscal years expiring at the end of the Shareholders' Meeting ruling on the financial statements covering the fiscal year closing 31 December 2016.

3.

Selected financial information

3. Selected financial information

Preamble

Pursuant to European regulation No. 1606/2002/EC of 19 July 2002 on the adoption of international accounting standards, the Group's consolidated financial statements for the year ended 31 December 2011 are prepared under the international accounting standards published by the IASB and approved by the European Union for application as of 31 December 2011. These international standards are the IAS (International Accounting Standards), IFRS (International Financial Reporting Standards), and their interpretations (SIC and IFRIC).

Key financial information

The selected financial information presented below is taken from the EDF group's consolidated financial statements as of 31 December 2011, which has been audited by EDF's Statutory Auditors.

The selected financial information below must be read in conjunction with (i) the consolidated financial statements included in section 20.1 ("Historical Financial Information") of this *Document de Référence*, and (ii) the operating and financial review contained in Chapter 9 of this *Document de Référence*.

Extracts from the consolidated income statements

(in millions of Euros)	2011	2010 [1]	2010 [2]
Sales	65,307	65,320	65,165
Operating profit before depreciation and amortization (EBITDA)	14,824	16,623	16,623
Operating profit (EBIT)	8,286	6,240	6,240
Income before taxes of consolidated companies [3]	4,506	1,814	1,814
EDF NET INCOME	**3,010**	**1,020**	**1,020**

(1) Figures fulfilled in 2011 for the 2010 final year have been restated for the impact of the change in presentation of EDF Luminus' optimization activities (see note 2).

(2) Data published in 2010 for the 2010 fiscal year.

(3) Income before taxes of consolidated companies corresponds to the EDF group's net income before income taxes; share in income of companies accounted for under the equity method, net income from discontinued operations, and minority interests.

Extracts from the consolidated balance sheets

(in millions of Euros)	31/12/2011	31/12/2010
Non-current assets	163,026	158,744
Current assets	67,980	63,670
Assets classified as held for sale	701	18,145
TOTAL ASSETS	**231,707**	**240,559**
Equity (Group share)	30,570	31,317
Non controlling interest	4,337	5,586
Non-current provisions	51,560	49,465
Other non-current liabilities	93,925	91,666
Current liabilities	50,909	49,651
Liabilities related to assets classified as held for sale	406	12,874
TOTAL EQUITY AND LIABILITIES	**231,707**	**240,559**

Extracts from the consolidated cash flow statements

(in millions of Euros)	2011	2010
Net cash flow from operating activities	8,497	11,110
Net cash flow used in investing activities	(6,791)	(14,927)
Net cash flow from financing activities	(1,591)	1,948
Cash flow from discontinued operations	-	357
NET INCREASE/(DECREASE) IN CASH AND CASH EQUIVALENTS	**115**	**(1,512)**

Information concerning net indebtedness

The definition of net indebtedness was revised in 2010 to take into account the Group's lending to RTE Réseau de Transport d'Électricité, an entity consolidated by the equity method as of 31 December 2010.

(in millions of Euros)	31/12/2011	31/12/2010
Loans and other financial liabilities	50,034	47,777
Derivatives used to hedge liabilities	(834)	49
Cash and cash equivalents	(5,743)	(4,829)
Liquid assets	(9,024)	(9,285)
Loan to RTE	(1,400)	(1,914)
Net indebtedness from assets held for sale	252	2,591
NET INDEBTEDNESS	**33,285**	**34,389**

4.

Risk factors

4.1 Risk factors 20
- 4.1.1 Risks associated with the European energy markets 20
- 4.1.2 Risks associated with the Group's activities 21
- 4.1.3 Specific risks related to the Group's nuclear activities 27
- 4.1.4 Risks related to the Group's structure and changes within the Group 32
- 4.1.5 Risks associated with EDF's capital structure and the listing of its shares 35

4.2 Risk management and control in the EDF group 36
- 4.2.1 General system set up to manage and control the Group's risks 36
  - 4.2.1.1 Risk management and control principles 36
  - 4.2.1.2 Management and control of risks associated with energy markets 37
  - 4.2.1.3 Management and control of risks associated with financial markets 37
  - 4.2.1.4 Management and control of counterparty risk 38
- 4.2.2 Management of industrial and environmental risks 39
  - 4.2.2.1 Management of nuclear safety risk 39
  - 4.2.2.2 Management of hydropower safety risk 41
  - 4.2.2.3 Management of risks associated with the Group's transmission and distribution facilities 41
  - 4.2.2.4 Management of risks associated with industrial accidents or the Group's environmental and health impacts 42
- 4.2.3 Insurance 42
  - 4.2.3.1 Insurance organisation and policy 42
  - 4.2.3.2 Civil liability insurance (not including civil liability for nuclear power) 43
  - 4.2.3.3 Civil liability insurance for corporate officers and directors 43
  - 4.2.3.4 Damage insurance (not including nuclear assets) 43
  - 4.2.3.5 Specific insurance for nuclear facility operations 44
- 4.2.4 Crisis management 44
- 4.2.5 Ethics and oversight 45

4.3 Dependency factors 45

4.1 Risk factors

The Group operates in an environment that is experiencing profound change, which generates various risks, some of which are beyond its control and which are in addition to the risks inherent in its business operations. Below the Group describes the material risks to which it considers itself exposed. One or more of these risks could have an adverse effect on the Group's activities and/or its results. Moreover, other risks, of which it is currently unaware, or which it currently believes are not material, may also have an adverse effect.

In particular, the Group faces legal risks in all of its activities and in its various markets. Legal risks associated with *inter alia* the regulatory framework, operating activities, partnerships and contracts concluded with customers and suppliers are described below and mentioned in section 4.3 ("Dependency factors"). Key litigation, proceedings and arbitrations in which the Group is involved are described in section 20.5 ("Legal proceedings and arbitration").

The risks described below are risks associated with the European energy markets and the Group's activities, risks specifically related to the Group's nuclear activities, risks related to the structure of the Group and changes thereto and, lastly, risks associated with EDF's capital structure and the listing of its shares.

4.1.1 Risks associated with the European energy markets

The Group faces stiff competition in the European energy markets and, in particular, in the French electricity market, which is its main market.

In France, since 1 July 2007, the electricity market has been totally open to competition. All EDF customers may now choose their electricity supplier and can therefore choose any of EDF's competitors (see section 6.2.1.2 ("Sales and marketing")). EDF has implemented measures to meet the competition, but the changing competitive landscape (new regulations, emergence of new players, mergers between existing players, etc.) could cause EDF to lose market share. This loss of market share could, at constant consumption and price levels, have a negative impact on the Group's sales. Lastly, to achieve its objectives, EDF could be forced to increase its marketing expenditures or reduce its margins (especially in the event of price competition), which would have a negative effect on its profitability.

Elsewhere in Europe, the Group faces differing contexts, depending on the competitive situation (more or less totally open markets, position of competitors, regulations, etc.). Therefore, in some countries, or in certain regions within a country, the Group must pursue a defensive strategy to protect its market share, as it does in France. On the other hand, in other countries, the Group must pursue an offensive strategy to gain market share. The type of competition, the expansion of such competition and its effect on the Group's activities and its results vary from one country to another. These factors depend on the degree of deregulation in the country in question and on various other factors over which the Group has no control.

Within this context, despite the fact that the Group considers that the European electricity market offers opportunities, the Group may not be able to defend its market share or gain expected market shares, or it may see its margins decrease, which would have a negative effect on its activities, its strategy and its financial results.

The legal framework governing the liberalisation of the energy sector is recent. This framework may change in the future and become more restrictive.

The Group's activities in France and abroad are subject to numerous regulations (see section 6.5 ("Legislative and regulatory environment")). Moreover, laws may vary from one country to another, including in the European Union where directives only establish a general framework.

This legal framework organising the liberalisation of the energy sector is relatively recent and does not necessarily provide comprehensive solutions to the difficulties created by market liberalisation. The legal framework is therefore subject to change, and such changes could be unfavourable to the Group. Such future changes to the legal framework, whether in France or abroad, could lead to additional costs, be inconsistent with the Group's growth model or change the competitive context in which the Group operates.

For example, in the United Kingdom, the legal framework governing electricity producers' access to the main UK transportation and transmission network was amended in August 2010. The UK regulator (Ofgem) is currently reviewing a draft revision of tariffs for access to electricity networks that may lead to higher costs for existing generating units and also impact the profitability of all new power plants. This review has been termed Project TransmiT and Ofgem's recommendations are expected by spring 2012.

Risks associated with the importance of the Group's position in the French electricity market.

Although it has seen a decrease in its market share due to market liberalisation, EDF should remain the largest operator in the French electricity market over the next few years, particularly with respect to power generation and supply.

The transmission and distribution businesses operated by RTE and Électricité Réseau Distribution France (ERDF), respectively, are required to be operated in a manner that ensures they are independent from generation and marketing activities in order to ensure non-discriminatory access to all users(see section 6.2.2 ("Regulated activities in France")).

Although EDF complies and will continue to strictly comply with the applicable competition and non-discrimination rules, competitors have initiated and may initiate litigation for non-compliance with these rules, which could be decided against the Group's interests.

In addition, the competent authorities or certain governments could, in order to maintain or enhance competition in certain energy markets, make decisions contrary to the Group's economic or financial interests or

to its model as an integrated and balanced operator (see in particular, section 6.5.1.1, ("European legislation") and section 20.5.1 ("Legal proceedings concerning EDF")), which could have a negative impact on the Group's model, activities and financial results.

In France, for example, a provision of the NOME (New Organisation of Electricity Markets) law of 7 December 2010, provides for a transition period, until the end of 2025, of regulated access to electricity generated by existing nuclear capacity ("*accès régulé à l'électricité nucléaire historique*" or "ARENH") for operators supplying end users and network managers to cover their losses in mainland France (see section 6.5 ("Legislative and regulatory environment")). The impact of this measure may be significant for the businesses and results of EDF.

Other European countries may also claim that the liberalisation of the French market is insufficient and implement measures intended to slow the Group's expansion in their own countries.

Laws and regulations that require transmission and distribution activities to be managed independently limit control over these activities.

In accordance with current laws and regulations, EDF manages its transmission and distribution networks independently from its generation and supply activities and has transferred its distribution and transmission activities to wholly-owned subsidiaries. EDF has been and may be affected by the loss of control over certain strategic and operational decisions, which may have an impact on the outlook for and profitability of its transmission and distribution activities in France (see section 6.5 ("Legislative and regulatory environment")). At the same time, EDF will continue to bear certain risks associated with its operations, potential liability to third parties and factors that may affect the profitability of its assets.

The Group may face similar risks in countries where it owns or manages transmission or distribution networks and where it is subject to similar regulatory restrictions.

4.1.2 Risks associated with the Group's activities

The Group operates facilities that may cause significant harm to the natural or human environment or for which accidents, natural disasters or external attacks may have serious consequences.

The risks specific to nuclear facilities are described separately below in section 4.1.3 ("Specific risks related to the Group's nuclear activities").

Although the Group is not the owner of hydropower facilities, but only a concession holder, as the operator thereof, it is responsible for the safety of the facilities. The main risks associated with hydropower facilities and their operations are the risk of dams or associated hydropower facilities bursting, risks associated with operating the facilities during floods, the risk associated with flow or level variations due to the operation of the facilities and risks related to natural disasters, external attacks or malicious acts of any kind. During the construction and operation of hydroelectric facilities, the Group takes necessary accident prevention and safety measures (see section 6.2.1.1.4.2 ("Hydropower safety")) in conjunction with the public authorities. Nonetheless, the Group cannot guarantee that such events will never occur or that the measures taken will be fully effective in all cases, in particular, in dealing with external events (floods, natural disasters, negligence or malicious acts).

Persons working in or near electricity transmission and distribution facilities may, in the event of an accident, error or negligence, be exposed to the risk of electrocution. In this field, the Group also implements accident prevention and safety measures. However, the Group cannot guarantee that these measures will prove sufficient in all cases.

Questions concerning the risks to human health from exposure to electromagnetic fields (EMF), in particular, from power lines operated by the Group, have been raised both in France and abroad. Based on studies completed over the past 20 years, numerous international health organisations (including the World Health Organisation (WHO), the International Agency for Research on Cancer (IARC), the American Academy of Sciences, the American National Institute of Environmental Health Sciences (NIEHS) and the UK Health Protection Agency) consider, based on currently available scientific information, that the existence of health risks due to exposure to EMFs has not been proven. Various reports published in 2009 (Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR)) and 2010 (AFFSET and OPECST) do not change these conclusions. Since 2002, the IARC has classified low-frequency electromagnetic fields at level 2B (possible carcinogen) on its scale of scientific evidence. In addition, in a report published in June 2007, the World Health Organisation considers that health risks, if any, are low. In 2010, RTE, in conjunction with the French Mayor's Association, launched an information and measurement campaign on the subject of very low-frequency (50Hz) electromagnetic fields for the mayors of 18,000 municipalities located near high and very high voltage power lines. This joint campaign reinforces existing communication on EMFs and aims to respond openly to the questions most frequently asked on the subject. Medical knowledge about health risks related to exposure to EMFs may evolve, public sensitivity about such risks could increase or the precautionary principle could be applied very broadly. At both the EU and French level, new regulations aimed at understanding the risks associated with EMFs are being drafted. For example, in France, the Grenelle 2 law of 12 July 2010, and its implementing decree of 1 December 2011, provide that as of 1 January 2012 managers of public electricity transmission networks must regularly monitor electromagnetic fields generated by power lines. The results of these actions must be submitted annually to the French Environmental and Occupational Health and Safety Agency (*Agence française de sécurité sanitaire de l'environnement et du travail*), which will publish them (see section 6.5.4.1 ("Basic regulations applicable to the environment, health, hygiene and safety")). All of the foregoing could expose the EDF group to risks of increased litigation or lead to the adoption of more stringent and costly safety measures for the operation or construction of transmission or distribution networks.

Lastly, and more generally, the Group operates or has operated facilities which, as currently operated, could be or could have been the source of industrial accidents or environmental and public health impacts (such as inadequately controlled emissions, leakages in electricity supply lines insulated with pressurised oil, a failure of decontamination facilities, pathogenic micro-organisms, asbestos, polychlorobiphenyls ("PCBs"), SF_6 gas emissions, etc.). In particular, large quantities of hazardous materials (in particular, explosive or flammable materials, such as gas and fuel oil) are stored in certain facilities. These facilities may be located in industrial areas where other activities subject to similar risks are operated, which means that the Group's own facilities may be impacted by accidents occurring at neighbouring facilities owned by other operators and not under the Group's control.

In accordance with ISO 14001 (see section 4.2.2.4 ("Management of risks associated with industrial accidents or the Group's environmental and health impacts")), the Group implements appropriate measures to prevent and, if necessary, repair any industrial accidents or environmental damage caused by the facilities that it operates. These measures are intended, in particular, to protect the Group both against the risk of an accident (such as explosion, fire, etc.) occurring in its own facilities and against the impact of such an accident occurring in a neighbouring facility owned by a third party. However, in general, the Group cannot guarantee that the measures taken to control these risks will prove fully effective if any of the events listed above were to occur. An accident of the type described above could have serious consequences for persons, property and business continuity, and the Group could be found liable. Insurance policies for civil liability and damages taken out by the Group could prove to be significantly inadequate, and the Group cannot guarantee that it will always be able to maintain a level of cover at least equal to current cover levels and at the same cost. The frequency and magnitude of natural disasters seen over the past few years, in particular the nuclear accident that occurred in Japan in March 2011, could have a significant impact on the capacities of the insurance and reinsurance market and on the costs of civil liability and damages insurance cover for the Group. Such accidents could also lead to the shutdown of the facility affected and, potentially, of similar facilities that may be considered to present the same risks.

Lastly, facilities or assets operated by the Group may be targeted by external attacks or malicious acts of any kind. Safety measures were incorporated into the design of the facilities and sites, and protective measures have been taken by EDF. Moreover, safety measures to counter all forms of attacks have been implemented in conjunction with the public authorities. Nonetheless, like any safety measures intended to counter an external threat, the Group cannot guarantee that these will prove fully effective in all cases. An attack or malicious act committed on these facilities could have consequences such as damage to persons and property, the Group's liability being sought on the basis of measures that are judged inadequate and interruptions to operations. In addition, the Group cannot guarantee that European and national legislation regarding the protection of sensitive sites and critical infrastructure will not become more restrictive, which could generate additional investments or costs for the Group.

Any one of these events may have material, negative consequences on the Group's image, activities, results and financial position.

A significant share of the Group's revenue is generated from activities subject to regulated rates, and changes in such rates may have an impact on the Group's results.

In France, a significant share of EDF group's revenue depends on regulated rates that are set by the public and/or regulatory authorities (integrated regulated sale rates and TURPE, see section 6.2.2.4 ("Tariffs for using the public electricity transmission and distribution networks (TURPE)")). This method of setting rates with the participation of regulatory authorities also applies in other countries where the Group operates.

The public and regulatory authorities may decide to limit or block rate increases, yet require quality of service to remain unchanged. These authorities may also change the conditions of access for such regulated rates. For example, the NOME law of 7 December 2010 grants suppliers in competition with EDF access to ARENH at an initial price set at €40/MWh on 1 July 2011, then €42/MWh on 1 January 2012, by the Ministers in charge of the economy and energy portfolios, but the mechanisms governing these price changes are still subject to uncertainties. The NOME law also provides that medium and large businesses will cease benefiting from the regulated rates as from 1 January 2016, but individuals and professional businesses will continue to qualify. Individuals and professional business customers will be allowed to change between market-based offers and regulated rates for an indefinite time, but medium and large businesses will be entitled to do so only until 31 December 2015 (see Section 6.2.1.2.1.3.1 ("The contracts to the regulated tariffs of sale")).

The Group cannot guarantee that the statutes and regulations concerning such reversibility rights will not be extended beyond what is currently anticipated, or that other rate systems will not be adopted. The Group also cannot guarantee that the regulated or purchase rates will always be set at a level which would allow it to maintain its short-, medium- or long-term investment capacity or its property interests, while ensuring a fair return on the capital invested by the Group in its generation, transmission and supply assets.

EDF has certain obligations, in particular public service obligations, that are remunerated by mechanisms that may not provide complete compensation for additional costs incurred in connection with such obligations, or that are subject to change.

The public service contract entered into by the French government and EDF on 24 October 2005 specifies the objectives and terms for performing the public service obligations that EDF is appointed to perform under Article 2 of law nº 2000-108 of 10 February 2000, and also sets out the mechanisms under which EDF is compensated for the performance of these obligations (see section 6.4.3.5 ("Public service in France")).

EDF cannot be sure that the compensation mechanisms provided in the laws and regulations applicable to it regarding remuneration for these public service obligations and the adoption of regulated rates will fully compensate additional costs incurred to perform such obligations and/or adopt such rates. Furthermore, EDF cannot guarantee that these compensation mechanisms will never be subject to change or that existing mechanisms will fully cover potential additional costs that may be incurred in relation with new duties imposed on EDF in connection with its public service obligations.

The occurrence of any of these events may have a negative impact on EDF's activities and financial results.

The Group's activities require numerous administrative permits that may be difficult to obtain or that may be obtained only subject to conditions that may become significantly more stringent.

The operation and expansion of the Group's industrial activities – generation, transmission and distribution – require numerous administrative permits, at both local and national levels, in France and abroad. The procedures for obtaining and renewing these permits can be drawn-out and complex. These permits are not obtained systematically and the requirements for obtaining them may change and are not always predictable. Accordingly, the EDF group may incur significant expenses in complying with the requirements for obtaining or renewing these permits (for example, costs of preparing permit applications, investments associated with installing equipment required before a permit will be issued, setoffs of environmental impacts of structures to be built). This may handicap the Group's industrial activities. Delays, overly high costs or the suspension of its industrial activities due to the inability to obtain, retain, or renew permits may have a negative impact on the Group's activities and profitability. In addition, the Group may also have invested resources without obtaining necessary permits and authorisations and therefore have to cancel or withdraw from a project, which may have a negative impact on its business, expansion or financial results.

At times, the Group operates its generation, transmission, distribution or supply businesses pursuant to public service concession arrangements and it is not always the owner of the assets it operates.

The Group does not always own the assets that it uses for its activities and, in such case, frequently operates them pursuant to a public service concession arrangement.

In France, for example, ERDF does not own all distribution network assets but operates them under concession agreements negotiated with local authorities (see section 6.2.2.2.4 ("Concessions")) which grants the company exclusive right to perform assignment related to developing the going concern of the electricity distribution public network, as well as deliver to the regulated tariffs. Under the law, only ERDF can be appointed by local authorities to operate their distribution networks, except for networks operated by local distribution companies (LDC). Therefore, at this time, when a concession agreement is renewed, ERDF does not compete with other operators. However, the Group cannot guarantee that such provisions will not be amended by law in the future (see section 6.5.3 ("Public electricity distribution concessions"). Furthermore, the Group may not obtain the renewal of these contracts under the same economic terms (see section 6.2.2.2.4 ("Concessions")).

In France, RTE is both the owner and operator of the public transmission system pursuant to the standard concession terms of reference signed by the Minister of Industry (Decree no. 2006-1731 of 23 December 2006) (see section 6.2.2.1 ("Transmission – RTE Réseau de Transport et d'Électricité") and section 6.5.2.2 ("French legislation: Energy Code")).

Hydropower generation facilities of 4.5 MW or more are also operated under concessions awarded by the French government. When they expire, these concessions are now renewed by a competitive tender procedure (see section 6.2.1.1.4.4 ("Current and future hydropower generation issues")). In addition, the Water law adopted on 30 December 2006 eliminated the preferential right of the incumbent concession holder at the time of renewal, and Decree no. 2008-1009 of 26 September 2008, provides the conditions under which concessions may be renewed. If an expired concession is not renewed, under current laws, the incumbent concession holder will not receive any compensation. However, the 2006 Supplementary Finance law provides for either reimbursement of non-amortised expenditures incurred for modernisation works or works for increasing generation capacity if such works are performed during the second half of the concession's term.

In addition, in April 2010, the French government announced the scope of the hydropower concessions that will be renewed by 2015, thus confirming the decision to advance the expiry of certain concessions in order to group them by valley. Because some of these renewal deadlines have already been exceeded, in 2011, the Rhônes Alpes Environmental, Land Planning and Housing Department (DREAL) updated the anticipated schedule for the first two concessions (Lac Mort and Drac). A complete update by the General Energy and Climate Department (DGEC) of the schedule for invitations to tender concerning hydropower concessions is expected in 2012 (see section 6.2.1.1.4.4 ("Current and future hydropower generation issues")). If the French government shortens the term of a concession, it may compensate the incumbent concession holder the shortfall due to the early termination of the concession, in accordance with the concession's terms of reference. When renewed, hydropower concessions are subject to an annual fee indexed to the revenue from sales of electricity produced by the concession hydropower facilities, which is paid to the French government and allocated in part to the departments through which the watercourses used flow. The Grenelle 2 law of 12 July 2010 provides that the fee shall not exceed a limit set on a case-by-case basis by the concession grantor as part of each competitive tender.

The EDF group cannot guarantee that each of the concessions that it currently operates will be renewed, or that any concession will be renewed under the same financial terms as the initial concession.

Furthermore, the Group cannot guarantee that the compensation paid by the government in the event of early termination of a concession's operations will fully compensate the Group's consequent loss of revenue, or that future regulations regarding the limitation of fees will not change in a way that could negatively affect the Group. These factors could have a negative impact on its activities and financial results.

Outside France, the Group also operates under electricity distribution or generation concessions in other countries where it does business, particularly in Italy. Depending on the conditions in each country, the transmission, distribution or generation concessions may not be continued or may be renewed in its favour with changes to the financial conditions of the concession terms of reference, which would have a negative impact on the Group's activities and financial results.

The Group must comply with increasingly restrictive environmental and public health regulations, which generate costs and are sources of potential liability.

The Group's activities are subject to environmental protection and public health regulations, which are increasingly numerous and restrictive. These regulations relate to the Group's energy generation, transmission and distribution industrial activities, as well as to energy supply and energy-related services, which must, for example, incorporate the concept of demand management in their offers (for a description of environmental, health and safety regulations applicable to the Group, as well as future regulations likely to have an impact on its activities, see section 6.5.4.1 ("Basic regulation applicable to the environment, health, hygiene and safety regulations"). Failure to comply with these regulations could expose the Group to significant litigation. The Group could be found liable, even if it is not at fault or has not breached applicable regulations. Furthermore, the Group may be compelled to compensate breaches, damage or injuries caused by entities that were not part of the EDF group at the time they were committed, if the Group thereafter takes over their facilities.

Furthermore, these regulations may be significantly reinforced by the national or European authorities (see section 6.5.6 ("Main regulation projects likely to affect EDF group businesses")), which would have a negative impact on the Group's activities and financial results.

Current regulations, and future changes to such regulations, have resulted and are likely to continue to result in an increasing level of operating costs and investments in order to comply with such regulations. The Group may even be required to close facilities that cannot be made compliant with new regulations. In addition, other regulations, which may be more restrictive or which may apply to new areas which are not currently foreseeable, may be adopted by the competent authorities and have a similar effect.

In addition, stakeholders' external perception of the Group's sustainable development policy may change, resulting in a deterioration of the Group's non-financial rating and image.

Changes to regulations concerning energy savings certificates (ESC) could impose additional obligations on EDF and generate costs in relation thereto.

The energy savings certificates (ESC) measure, which was created by Programme law nº 2005-781 of 13 July 2005 setting energy policy guidelines (POPE Act) and its implementing decrees, as amended by the Grenelle 2 law of 12 July 2010, and which is now codified as Articles L. 221-1 *et seq.* of the French Energy Code, imposes energy savings obligations on energy suppliers.

In accordance with the conditions and procedures specified in the regulations, three-year energy savings objectives were established and allocated among persons subject to the obligation to achieve energy savings (the "obligors") on the basis of their sales volumes. This objective was 54 cumulative discounted TWh for the first period between 1 July 2006 and 30 June 2009. The second period covers 1 January 2011 to 31 December 2013 and the objective is 345 cumulative discounted TWh. Subject to financial penalties, payment of which discharges liability, by the end of the relevant period, obligors must produce energy savings certificates corresponding to their obligation, which are obtained in exchange for directly or indirectly carrying out energy savings actions, or which may be purchased from other so-called "eligible" economic entities through the national certificates register.

Increased competition and a decrease in the principal mineral deposits associated with more stringent regulatory requirements have slowed the rate at which ESCs are produced and made them more expensive. This trend has been accentuated by the economic crisis, which has reduced households' investment capacity and hurt the construction sector.

Against this background, the proposal Energy Efficiency Directive adopted in June 2011 and the French political decisions that may be taken as a result thereof if the measure is extended for a third period after 2014 may lead to considerably more stringent obligations. These provisions could significantly increase EDF's sales costs and require a considerable increase in regulated sale rates, because such rates are set by the public authorities. Therefore EDF cannot guarantee that increased sales costs will be completely reflected in the rates.

The expansion of an integrated European electricity market may be slowed by a lack of cross-border transmission system interconnections.

The development of an integrated European electricity market is inhibited by a lack of cross-border interconnections. This situation limits exchange capacity between operators in different countries, in particular the capacity to rapidly adapt supply to demand ("blackout risk"), and allows price differences in different countries to persist, which would be significantly reduced in an efficient integrated European market. It also impedes the emergence of efficient operators with a European scope as it limits the possibilities for synergies between companies within a same group located on different sides of a border. Although there are currently several projects to develop interconnections (investments are determined by transmission network managers independently from producers), their construction has nonetheless been slowed down, mainly by environmental, regulatory and local acceptability considerations.

Furthermore, the lack of adequate interconnections between countries where the Group is based or the failure to develop such interconnections at an adequate pace may limit the industrial synergies that the Group strives to achieve between its various entities or may cause network interruptions in countries in which the Group is established, which could have a negative impact on its results, business and outlook.

Repeated or widespread blackouts in France or in an area served by a Group subsidiary, particularly if they are attributable to the Group, may have consequences for the Group's activities, results and image.

The Group may be the source of repeated or widespread blackouts or be blamed for one, even if the causal event occurred in another network or was attributable to another operator.

The causes of blackouts vary: local or regional imbalances between electricity generation and consumption, accidental interruptions to the power supply, cascading power failures (more difficult to stop in a market with cross-border exchanges), interconnection problems at borders and difficulty in coordinating operators in a liberalised market.

The initial impact of such power failures would be repair costs incurred to re-establish power or restore the network. Power failures may also generate capital expenditures if it were decided, for example, to install additional generation or network capacity. This could also cause a decline in the Group's sales. Lastly, power failures may have a negative impact on the Group's image with its customers, particularly if the blackouts are attributable to the Group.

Natural disasters, significant weather changes and any major event on a scale that is difficult to predict may have a significant negative impact on the Group's industrial and commercial activities.

EDF and its subsidiaries have developed crisis management plans to deal with natural disasters or major events. These crisis management plans are assessed and tested on a regular basis (see section 4.2.4 ("Crisis management")).

As was the case with storms Klaus (2009) and Xynthia (2010) in France, natural disasters (floods, landslides, earthquakes, etc.), other significant weather changes (droughts, etc.), or any other event on a scale that is difficult to predict (large-scale epidemics, etc.) may affect the Group's activities. Based on its experience with this type of events, the EDF group implements measures aimed at limiting the consequences should such events reoccur.

The measures may generate costs in addition to the costs of repairing the damage caused by the natural disaster and the loss of earnings from the interruption to supply.

In August 2011, ERDF entered into a five-year contract covering ERDF's aerial distribution network against the consequences of major "storms" risks. In the event of a loss, this policy, which provides cover in the amount of €150 million, provides compensation calculated using a parametric index based on wind speed (see section 4.2.3.4.3 ("Storm coverage")). Neither RTE's aerial distribution networks nor the Isolated Energy Systems are covered for property damage. Damage to these networks could have a negative impact on the Group's financial position in the absence of insurance cover or of inadequate cover. In addition, renewing or taking out specific cover may be difficult or more costly due to the impact, frequency and magnitude of natural disasters experienced in recent years by the alternative risk transfer markets.

To deal with a wide-spread health epidemic, EDF has created a plan intended to ensure the continuity of electricity supply, depending on the intensity of the crisis, while guaranteeing the safety of facilities and reducing the health risks to which employees are exposed.

Lastly, following the Fukushima accident in 2011, EDF supplemented its national crisis teams with a National Rapid Action Force (FARN) capable of delivering, in less than 24 hours, teams with "operational/maintenance" and "logistical" expertise to a nuclear power generating centre in difficulty.

Despite the establishment of a crisis management structure in place that enables it to react promptly to such events (see section 4.2.4 ("Crisis management")), the Group cannot guarantee that the occurrence of a natural disaster, a weather event or any other event on a scale that by its nature is difficult to predict will not have significant negative consequences on its activities, income and financial position.

Risks associated with weather conditions and seasonal variations in the business.

Electricity consumption is seasonal and depends to a great extent on weather conditions. Accordingly, in France, electricity consumption is generally higher during winter months. Furthermore, available power may also depend on weather conditions. Thus, low water levels or heat waves may limit nuclear power generation due to the requirement that rivers downstream of facilities not exceed maximum temperatures. Similarly, power generated by wind power or solar plants depends on wind conditions or hours of sunshine at the sites where such facilities are installed.

Therefore, the Group's results reflect the seasonal character of the demand for electricity and may be adversely affected by exceptional weather conditions or wind or sunshine conditions that are less favourable than anticipated. In such case, the Group may have to compensate the reduced availability of economical power generation means by using other means with higher production costs, or by having to access the wholesale markets at high prices.

The Group's activities are sensitive to economic cycles and general economic conditions.

The Group's activities are sensitive to economic cycles and general economic conditions in the geographical areas in which the Group does

business. An economic slowdown in these areas would result in a drop in energy consumption, investments and industrial production by the Group's customers and, consequently, would have a negative effect on the demand for electricity and other services offered by the Group.

The Group cannot guarantee that the effects of an economic downturn, such as that experienced since October 2008, in the geographical areas in which it does business, will not have a significant adverse impact on its activities, operating income, financial position or outlook.

Technological choices made by the Group may be outperformed by more efficient technologies.

The Group's business activities rely on a certain number of technological choices, which may be outperformed by other technologies that prove more efficient, more profitable, safer or more pertinent in light of possible future standardisation and standards than the technologies used by the Group. The use of such technologies by the Group's competitors could reduce or eliminate the competitive advantage that the Group has obtained from certain of its technologies, and thus have a negative impact on its activities, financial results and outlook.

The Group is exposed to risks associated with the wholesale energy and CO_2 emission allowances markets.

In conducting its production, marketing and distribution activities, the Group does business in deregulated energy markets, primarily in Europe. Therefore, the Group is exposed to price fluctuations in the wholesale energy markets (electricity, gas, coal, petroleum products) and the CO_2 emissions allowances markets. These fluctuations are particularly significant in the current context of major tensions and volatility in the energy markets.

The Group manages its exposure to these risks primarily through purchases and sales on wholesale markets. With the exception of petroleum products markets, these are recent markets that are still under development. Therefore, a lack of liquidity may limit the Group's ability to hedge its exposure to risks in the energy market. Moreover, certain of these markets continue to be partially partitioned by country due to, in particular, the lack of interconnections. Furthermore, these markets may experience significant price increases or decreases that are difficult to foresee, as well as liquidity crises.

Energy market risks are managed in accordance with the "Energy market risks" policy adopted by the Group (see section 4.2.1.2 ("Management and control of risks associated with energy markets")). The Group hedges its positions on these markets through derivatives, such as futures, forwards, swaps and options traded on organised markets or over the counter. However, the Group cannot guarantee that it is totally protected, in particular against liquidity risks and significant price fluctuations, which could have a negative impact on its financial results.

The Group is exposed to variations in the price and availability of materials and services (other than fuels) that it purchases in connection with its business operations.

In the event of significant and sustained increases in the prices of raw materials, the Group may experience higher procurement costs for certain critical products or services. Such increases may also lead certain suppliers to reduce supply due to reduced profit margins. In addition, there is increased demand for certain materials or services, which may have an impact on their availability, in particular materials used for gas-fired combined cycle power stations, wind turbines and services and materials in the nuclear sector.

The Group is exposed to risks in the financial markets.

As a result of its activities, the EDF group is exposed to risks associated with the financial markets:

- Liquidity risk: the Group must at all times have sufficient financial resources to finance its day-to-day business activities, the investments necessary for its expansion and the annual appropriations to the dedicated portfolio of assets covering long-term nuclear commitments, as well as to deal with any exceptional events that may arise. Furthermore, in accordance with the practice in the organised energy and financial markets, some Group entities have set up a margin call system for certain over-the-counter transactions in order to limit counterparty risk. This system may require the Group to mobilise cash in case of the high current volatility on financial and energy markets (see section 4.2.1.3.3 ("Liquidity risk")).
- Currency risk: due to the diversity of its activities and the geographical distribution thereof, the Group is exposed to the risks of fluctuations in foreign exchange rates, which may impact currency translation adjustments, balance sheet items and the Group's financial expenses, equity and financial results (see section 4.2.1.3.4 ("Currency risk")).
- Equity risk: the Group is exposed to equity risk on securities held primarily as dedicated assets constituted to cover the cost of long-term commitments in relation with the nuclear business or as part of externally managed pension funds and, to a lesser extent, in connection with its cash assets and investments held directly by the Group (see section 4.2.1.3.5 ("Equity risk")).
- Interest rate risk: the Group's exposure to changes in interest rates involves two types of risks: (i) the risk of changes in the value of fixed-rate financial assets and liabilities and (ii) the risk of changes in cash flows associated with variable-rate financial assets and liabilities. Interest rate risk is also associated with debt securities held in connection with the management of dedicated assets constituted to cover the Group's long-term commitments in relation with the nuclear business and its commitments with respect to pensions and other specific employee benefits (see section 4.2.1.3.6 ("Interest rate risk")).

The manner in which these risks are organised and the management principles applied thereto are described in section 4.2.1.3 ("Management and control of risks associated with financial market "), and the measures taken to control these risks are explained in section 9.5.1 ("Management and control of financial risks"). However, the Group cannot guarantee that it is totally protected, in particular in the event of significant fluctuations in foreign exchange rates, interest rates and the equities markets.

A default by the Group's counterparties (partners, subcontractors, service providers, suppliers or customers) may have an impact on its activities and results.

Like all economic operators, the Group is exposed to a possible default by certain counterparties (partners, subcontractors, service providers, suppliers or customers), in particular in the event they experience occasional financial difficulties or if bankruptcy proceedings are initiated against them. A default by these counterparties may impact the cost of projects carried out by the Group, the quality of work performed, completion deadlines or the procurement of certain critical products or services, and exposes the Group to reputational risk, business continuity risk for certain projects or the loss of contracts, as well as significant additional costs, in particular if EDF is required to find satisfactory alternatives or take over the relevant activates and/or pay contractual penalties, which would have a negative impact on its activities and financial results.

The monitoring and oversight procedures applied within the Group in connection with its exposure to the counterparty risk inherent in its contractual relationships are described in section 4.2.1.4 ("Management and control of counterparty risk").

The Group could be held liable for the occurrence of occupational illnesses or accidents.

Although the Group takes the steps necessary to comply with the health and safety laws and regulations in the various countries in which it operates, and considers that it has taken the measures required to ensure the health and safety of its employees and of its subcontractors' employees, the risk of occupational illnesses or accidents cannot be excluded. The occurrence of such events may lead to lawsuits against the Group and may result in the payment of damages, which could be significant.

For a description of the measures taken by the Group with regards to ionizing radiation, see section 6.2.1.1.3.3 ("Environment, safety and radiation protection").

Regarding asbestos, the Group has taken measures to treat materials, as well as information and protection measures, as described in section 17.3 ("Health and safety – Quality of life at work"). For a description of ongoing legal proceedings, see section 20.5 ("Legal proceedings and arbitration").

4.1.3 Specific risks related to the Group's nuclear activities

The EDF group is the world's leading nuclear operator(1). Nuclear-generated electricity accounts for approximately 91.6% of the power it generates in France. Since 2009, EDF has operated nuclear assets in the United Kingdom and the United Sates (through CENG). The share of nuclear energy in the EDF group's electricity mix is thus a major competitive advantage. The Group also plays an active role in construction projects for new nuclear plants in France, the United Kingdom, China and potentially in other countries. Any event that has a negative effect on the nuclear business is likely to have greater consequences for the Group's image, activities, productivity, financial position and results than for its competitors that generate proportionally less electricity using this source of energy.

Due to its nuclear activities, the Group is exposed to substantial liability risks and potentially significant additional operating costs.

Although the Group has adopted risk control strategies and procedures for its nuclear activities that are consistent with high standards, such activities, by their nature, still present potential risks. Therefore, the Group may face significant liability as a result of *inter alia* incidents and accidents, security breaches, malicious or terrorist acts, aircraft crashes, natural disasters (such as floods or earthquakes), equipment malfunctions or problems in the course of storing, handling, transporting, processing or packaging nuclear substances and materials. Such events could lead to significantly tougher operating requirements for nuclear plants, or the partial or total closure of the operation of the Group's power generation plants, and may have serious consequences, especially in the event of radioactive contamination or irradiation of persons working for the Group, the general population and the environment, as well as a material, negative impact on the Group's activities, strategy, outlook and financial position.

A nuclear operator is responsible for the nuclear safety of its facilities. The liability scheme that applies to European nuclear facility operators, and the insurance applicable thereto, are described in section 6.5.4.2.2 ("Specific regulations applicable to basic nuclear facilities") and section 4.2.3.5 ("Special insurance for nuclear facility operations"). This scheme is based on the principle of the operator's strict liability. Accordingly, if an event occurs that causes damage, the Group would be automatically liable up to a monetary maximum set by the law applicable in the country where the event occurs, regardless of the source of the event that caused the damage and any safety measures that may have been taken.

The Group cannot guarantee that in countries where it operates nuclear facilities the maximum liability set by law will not be increased or cancelled. For example, the protocols amending the Paris Convention and the Brussels Convention, which are currently being ratified (see section 6.5.4.2.2 "Specific regulations applicable to nuclear facilities"), provide for these maximum amounts to be increased. The entry into force of these amending protocols or any other reform that seeks to increase the maximum liability of nuclear plant operators could have a significant impact on the cost of insurance, which the company is not currently in a position to estimate. Furthermore, the Group cannot guarantee that insurance covering this liability will always be available or that it will always be able to maintain such insurance.

Property damage to EDF's nuclear facilities is covered by insurance programmes (see section 4.2.3.5.2 ("Damage insurance for nuclear facilities")). Despite this coverage, any event that would cause significant

(1) Source : Nuclear Power Reactors in the World, International Atomic Energy Agency, 2010 edition.

damages to a Group's nuclear facility could have a negative impact on the Group's business, financial results and financial position.

Lastly, the Group cannot guarantee that the insurers that cover both its liability as a nuclear plant operator and property damage to its facilities will always have available capacity or that the costs of cover will not significantly increase, particularly in light of the impacts on the insurance market of events such as the nuclear accident in Japan that occurred on 11 March 2011.

A serious nuclear accident anywhere in the world may have significant consequences for the Group.

Despite the precautions taken in their design and operation, a serious accident at a nuclear facility cannot be excluded, such as the nuclear accident in Japan, following the earthquake and tsunami that devastated the north of the country on 11 March 2011. This type of accident may turn public opinion against nuclear power and lead the competent authorities to substantially tighten power plant operating requirements or to refuse authorisation for proposed extensions of the operating life of power plants, leading to a temporary or permanent suspension of the operation of one or more nuclear facilities, or leading the authorities to consider a moratorium on the use of nuclear power to generate electricity and, therefore, also to suspend or cancel all ongoing nuclear power plant development projects. Such decisions were taken in Germany (suspension of nuclear power generation) and Italy (suspension of nuclear power plant construction projects) following the Fukushima accident. Such decisions could be taken even if no accident occurs.

If such an accident were to occur near one or more of the Group's facilities, it could also contaminate the environment and thus jeopardise their operation.

Such events would have a material, negative impact on the business model, strategy, activities, results, financial position and outlook of the Group.

The Group's nuclear business is subject to particularly detailed and restrictive regulations that may become more stringent.

The Group's nuclear business is subject to detailed and restrictive regulations, with a system in place, in particular in France, that monitors and periodically re-examines operating authorisations, primarily on the basis of nuclear safety, environmental and public health protection and national safety considerations (terrorist threats in particular). These regulations may be significantly tightened by national and European authorities (for a description of the "Nuclear Package" and the French law on transparency and safety in the nuclear field, see section 6.5.4.2.2 ("Specific regulations applicable to basic nuclear facilities")). Furthermore, the regulations may be tightened due to *inter alia* decisions that may be taken following the Fukushima accident or possible non-compliance with current or future regulations, which could result in the temporary or permanent shutdown of one or more of the Group's plants.

Such events may result in a significant increase in the costs of the Group's nuclear power plants, which may have a negative impact on its financial position.

For its nuclear business, the Group depends on a limited number of contractors.

Although the Group has adopted a policy to diversify the suppliers and service providers for its nuclear business, it is currently dependent on a limited number of contractors and persons who have the necessary qualifications and experience. This limits competition in the markets in which EDF is a buyer and exposes the Group to the risk of a default of one or more of these suppliers or service providers with specific expertise, which could have a negative impact on the Group's results and financial position (see section 4.3 ("Dependency factors")).

The Group is exposed to changes in the conditions for procuring uranium and conversion and enrichment services.

The Group's operating costs include nuclear fuel purchases.

For its nuclear power plants in France and the United Kingdom, EDF purchases uranium and conversion and enrichment services through long-term contracts containing hedging mechanisms that mitigate and smooth price fluctuation over time. Its main supplier is the AREVA group, but EDF pursues a diversification policy by also buying supplies from other industrial companies (see section 4.3 ("Dependency factors") and section 6.2.1.1.3.4 ("The nuclear fuel cycle and related issues")). Prices and availability of uranium and conversion and enrichment services are subject to fluctuations due to factors that are mainly political and economic, which the Group cannot control (in particular, increased demand due to worldwide growth of the nuclear energy sector or shortages associated with, for example, an operating accident in a uranium mine or an internal or external event leading to political instability in a uranium producing country).

In the United States, CENG purchases uranium and conversion, enrichment and assembly services from several suppliers. The current contracts with these suppliers ensure a supply of fuel and conversion, enrichment and assembly services for several years for the Calvert Cliffs, Nine Mile Point and Ginna plants.

However, the Group cannot guarantee that its contracts, in France and abroad, will completely protect it from sudden or significant price increases. The Group cannot guarantee that when these long-term contracts expire, it will be able to renew them, in particular at an equivalent price. This could have a negative impact on the Group's financial results.

Risks related to the transportation of nuclear fuel.

The transportation of new or spent nuclear fuel is a very particular operation that requires specific and restrictive safety and security measures. These constraints could become more stringent, generating additional difficulties and costs for the Group. Furthermore, several factors that are beyond the Group's control (such as opposition by local residents or anti-nuclear associations, for example, in the form of manoeuvres to prevent nuclear material from being shipped) may slow these operations. Operations may also be interrupted, in particular, in the event of an accident. In such case, the Group may be required to slow or halt some or all power generation at the relevant sites, due to non-delivery of new fuel assemblies or the saturation of onsite storage facilities, which may have a negative impact on the Group's financial results.

The nuclear power plants operated by the Group may require significant and/or costly repairs or modifications.

The group of nuclear facilities that the Group currently operates in France is highly standardised (see section 6.2.1.1.3.1 ("EDF's nuclear fleet")). This enables the Group to achieve economies of scale in equipment purchases and engineering, to apply improvements made to its newest power plants to all plants and, in the event of a malfunction in a facility, to anticipate the measures to be taken in other plants. However, such standardisation carries the risk of a malfunction that is common to several power plants or series of power plants (see section 6.2.1.1.3.2 ("Operation and performance of the nuclear fleet")). The Group cannot guarantee that it will never again be required to make other significant or costly repairs or modifications to all or some of its plants, or that events will not occur that may have an impact on the operation of its plants or their output or cause a temporary or permanent shutdown of all or some of its plants. In particular, following the additional safety inspections carried out after the Fukushima accident, the French Nuclear Safety Agency (ASN) will take decisions in 2012 that may require EDF to carry out significant works prior to the next safety re-evaluations and ten-year inspections. This may bring forward relatively significant expenditures and result in extended shutdowns.

The Group also operates nuclear power plants elsewhere in Europe, in particular the United Kingdom, as well as in the United States, and it may also be required to make costly repairs or modifications to these units or it could be faced with events that may impact their performance, generation or availability. Like in France, following the Fukushima accident, the safety authorities in the United Kingdom and the United States may take decisions that require additional works.

Despite the maintenance work carried out by the Group on its power plants, it is possible that certain plants may not operate at full capacity, in particular due to the age of certain equipment.

All such events may have a negative impact on the Group's financial results and activities.

The Group may not be authorised to operate its nuclear power plants over a period at least equal to the period used, in particular, to calculate depreciation and provisions.

In connection with the studies associated with the third ten-year inspections of the 900 MW units, in early July 2009 the ASN publicly stated that it had not detected any generic problem calling into question EDF's ability to ensure the safety of its 900 MW reactors for up to 40 years. As required by the regulations, the ASN's opinion will be subsequently supplemented by an opinion on each reactor following each of the third ten-year inspections. In 2010, a first reactor (Tricastin 1) obtained a favourable recommendation from the ASN for operation for an additional ten years until the fourth ten-year inspection. On 4 July 2011, the ASN issued a favourable recommendation on the operation of Fessenheim 1 for an additional ten years, although the recommendation was conditioned on the forthcoming conclusions of additional safety inspections and the performance of certain works. However, the Group cannot guarantee that it will obtain the necessary authorisations at the relevant times, or that such authorisations will not be subject to conditions that entail significant expenditures or investments for the Group.

Nonetheless, the Group assumes an operating life of 40 years for the purpose of calculating the accounting treatment associated with the operating life of its nuclear plants in France (depreciation of fixed assets, provisions, etc.). If the safety authorities decide to close some units or power plants before this 40-year period, the Group would be required to accelerate replacement of the corresponding generation capacity and to make additional investments or electricity purchases on the market. It would also be necessary to review the depreciation and provisioning plan and reassess the residual operating life of the relevant plants. This may have a significant adverse impact on the Group's financial results and its financial position.

In the United Kingdom, the current projected operating life of EDF Energy's power plants ranges between 30 and 40 years, depending on the power plant (see section 6.3.1.2.3 ("Nuclear generation business unit")). However, in light of the safety rules applicable in the United Kingdom, the Group cannot guarantee that EDF Energy will obtain the necessary authorisations at the relevant times to operate its existing nuclear power plants until the end of their currently projected operating life, or that these authorisations will not be obtained subject to conditions that entail significant expenditures or investments for the Group. Nonetheless, EDF Energy assumes the currently projected operating lives for the purpose of calculating the accounting treatment (depreciation, provisions, etc.) associated with the operating life of its nuclear plants in the United Kingdom (see section 6.3.1.2.3 ("Nuclear generation business unit")).

In the United States, the Nuclear Regulatory Commission ("NRC") granted an operating life of 60 years[1] to all CENG nuclear plants (which were commissioned between 1970 and 1988 (see section 6.3.3.3.2.1("Constellation Energy Nuclear Group (CENG)" – "CENG Operations (nuclear power generation and operations)")). CENG is the joint venture created by EDF and Constellation Energy Group (CEG), to which were transferred the nuclear assets previously held by CEG.

(1) Except for Nine Mile Point 2, which has an operating life of 58 years.

However, the Group cannot guarantee that these power plants will be actually operated for such period, particularly in the event of an incident affecting the safety or availability of the facilities.

If the safety authorities require the closure of certain power plants before the end of their accounting operating lives, the Group would be required to accelerate replacement of the corresponding generation capacity and to make additional investments or electricity purchases on the market. It would also be necessary to review the depreciation plan and reassess the residual operating life of the relevant plants. This may have a significant adverse impact on the Group's financial results and financial position.

The Group may not obtain the authorisations necessary to extend the operating life of its power plants beyond the currently projected durations.

To postpone construction of replacement units and the investments related thereto, and to continue to receive cash flows from its existing plants, the Group aims to extend the operating life of its nuclear plants in France beyond 40 years. As of 2009, EDF provided the ASN with the safety improvements it proposed in order to operate its plants beyond 40 years. In the course of 2012, the ASN will have a panel of experts it appoints review the proposed safety improvements for operation beyond 40 years. This review will take account of the technical instructions that the ASN is scheduled to publish in the first half of 2012, following its review of the additional safety inspections (see section 6.2.1.1.3.5 ("Preparing the future of nuclear fleet in France")).

In the united Kingdom, EDF Energy is also attempting to extend the operating life of its nuclear plants beyond the initial period, and has already announced and taken into account the extension of the operating life of certain power plants (see section 6.3.1.2.3 ("Nuclear generation business unit")).

The Group cannot guarantee that it will obtain such extensions, especially in the current context. Furthermore, these extensions may be obtained under certain conditions, the financial impact of which, particularly in terms of investment, might affect the Group's strategy to extend the operating life of its plants or the Group's capacity to pursue its global investment strategy.

A decision by the French public authorities to halt one or more nuclear power generation segments could have significant negative consequences for the Group.

The public authorities may decide the early termination of one or more segments for other than industrial considerations. A decision to halt all nuclear power generation by a specific date cannot be completely excluded. Lastly, it may be decided that any new nuclear construction project, in which the Group has already invested considerable sums, should be halted. Such events would have significant negative consequences on the outlook, financial position, results and image of the Group.

Construction of EPRs may encounter problems or not be completed.

The Group has launched construction of the European Pressurised Water Reactor (EPR) in Flamanville (see section 6.2.1.1.3.5 ("Preparing the future of nuclear fleet in France")) in order to renew its nuclear power generation facilities in France and to serve as a model for the construction of new facilities abroad.

The Group may not obtain the authorisations required for the construction, commissioning and operation of the EPR, or authorisations may be challenged by court rulings. In particular with respect to the Flamanville EPR, which is a "prototype" reactor, technical or other difficulties may occur during development and construction, or during early stages of the operation of the EPR. These difficulties could slow or prevent the construction and commissioning of EPRs or affect their performance. In addition, total constructions costs could be higher than EDF estimates. After an initial reassessment that was announced at the end of June 2010, in July 2011, EDF stated that the commissioning of the Flamanville EPR was now scheduled for 2016 and that its cost would be around €6 billion.

The EPR programme is an essential component of the Group's strategy. Any event that delays or blocks this programme or affects the construction of the "prototype" EPR or subsequent units would thus have a material adverse impact on the Group's activity and financial position.

The Group is responsible for most spent fuel and radioactive waste from its nuclear power plants, especially long life medium- and high-level waste from spent fuel.

The nuclear fuel cycle is described in section 6.2.1.1.3.4 ("The nuclear fuel cycle and related issues"). In France, as an operator and waste producer, EDF is legally responsible for spent fuel from the time it leaves the power plant and for radioactive waste processing and long-term management operations. EDF assumes this responsibility in accordance with guidelines laid down by the public authorities and under their supervision.

The Group's liability may be alleged, in particular as a nuclear power operator or producer within the meaning of applicable legislation on waste, in the event of an accident or any damage to third parties or the environment from spent fuel or waste, even if they are handled, transported, kept, warehoused or stored by contractors other than the Group (especially, in France, the AREVA group and ANDRA), in particular in the event of a breach by such contractors. If the Group were held liable for damage to third parties, the specific strict liability scheme applicable to nuclear plant operators would apply, up to the maximum amounts specified by this scheme (see section 6.5.4.2.2 ("Specific regulations applicable to basic nuclear facilities")).

In France, the long-term management of radioactive waste has been the subject of various initiatives under the programme laws of 30 December 1991 and 28 June 2006 on sustainable management of radioactive materials and waste (see section 6.2.1.1.3.4 ("The nuclear fuel cycle and related issues")). The Group cannot guarantee that all long-life high- and

medium-level waste will constitute "final radioactive waste" within the meaning of Article 6 of the law of 28 June 2006, and that therefore such waste may be directly stored in deep geological layers. Furthermore, the Group cannot guarantee the timeframe in which the public authorities will authorise such storage, or predict certain technical instructions related to such authorisations, which creates uncertainties about the future of such waste and the resulting liability and costs for EDF.

In the United Kingdom, EDF Energy Nuclear Generation Limited has entered into agreements with the authorities concerning the management of certain radioactive waste from the nuclear power plants it operates (see section 6.3.1.2.3 ("Nuclear generation business unit"– "Costs related to radioactive waste management and plant decommissioning – Restructuring agreements of British Energy Group")). Under the terms of these agreements, the liability and certain costs associated with the management of certain radioactive waste are transferred to the British government. However, EDF Energy Nuclear Generation Limited remains financially, technically and legally liable for the management, storage and processing of waste that does not come within the scope of the aforementioned agreements.

In the United States, in accordance with the Nuclear Waste Policy Act (NWPA), CENG is a party to the contracts entered into with the Department of Energy (DOE). In such capacity, since November 2009, CENG has paid the contributions stipulated by the NWPA to fund the cost of construction by the DOE of a federal storage site for final disposal of spent fuel (CEG paid these contributions until November 2009). Because the DOE has stated that it could not take possession of spent fuel before 2020 (instead of 1998 as originally planned), CEG has had to take additional actions, and incur the costs thereof, to provide onsite fuel storage, thereby allowing the operation of its plants until the federal storage site becomes available. The sums that the DOE will reimburse until the end of the transaction with EDF will be received by CEG. CENG will receive subsequent reimbursements (see section 6.3.3.3.2.1 ("Existing Nuclear business unit: Constellation Energy Nuclear Group (CENG))" – "Nuclear fuel").

The Group cannot guarantee that it will have at its disposal, in due course and under acceptable financial conditions, long-term storage and treatment solutions for the radioactive waste generated by the operation of power plants located in the relevant countries, which could have a negative impact on the Group's financial results and financial position.

See the draft directive of 3 November 2010 on the management of spent fuel and radioactive waste in section 6.5.4.2.2 ("Specific regulations applicable to basic nuclear facilities").

Provisions booked by the Group for spent fuel processing operations and long-term radioactive waste management may prove insufficient.

In France, EDF has booked provisions for spent nuclear fuel management operations (transportation, processing, conditioning for recycling) (see note 30 to the consolidated financial statements for the financial year ended 31 December 2011) based on the price and volume conditions in the master agreement signed with AREVA in December 2008 and broken down in an agreement signed on 12 July 2010, which covers the period from 2008 to 2012. The amount of provisions currently constituted to cover the period after 2012 may prove insufficient if the terms under which this agreement is renewed for such future period prove more onerous than those currently applicable.

EDF has booked provisions for long-term waste management based on an assumption of geological storage, and on a reasonable interpretation of the work conducted in 2006 by a working group comprising ANDRA, the public authorities and nuclear waste producers (see note 30 to the consolidated financial statements for the financial year ended 31 December 2011 and section 6.2.1.1.3.4 ("The nuclear fuel cycle and related issues")). Although the programme law of 28 June 2006 on sustainable management of radioactive materials and waste confirms, without excluding other areas for additional research, that "final radioactive waste" will be stored in deep geological layers, the Group cannot guarantee that all long-life high- and medium-level waste will be considered as such or within what timeframe this type of storage, if it is selected, can be used. Consequently, the final cost of long-term waste management of the Group may exceed the provisions booked in its financial statements.

In the United States, CENG has also booked provisions to cover its long-term nuclear waste management commitments.

The Group cannot guarantee that the amount of these provisions will be sufficient. Determining the amount of these provisions is sensitive to assumptions made in terms of costs, inflation rate, long-term discount rate and payment schedules. Given these sensitivity factors, changes in certain parameters may require significant adjustments of the provisions booked. In such case, the insufficiency of the provisions for long-term nuclear commitments may have a significant negative impact on the Group's financial results and financial position.

Decommissioning existing nuclear facilities may present currently unforeseen difficulties or be much more costly than currently anticipated.

Given the number of nuclear plants operated by the Group, decommissioning them presents a significant technical and financial challenge. Although the Group has assessed the challenges, in particular the technical challenges, involved in decommissioning (particularly decommissioning the first-generation power plants in France), and has identified the solutions to be developed, it has never decommissioned nuclear power plants similar to those currently in service.

In France and the United States, the Group has booked provisions to cover the anticipated costs of decommissioning and offloading last cores. Determining the amount of these provisions is sensitive to assumptions made in terms of costs, inflation rate, long-term discount rate and payment schedules. Given these sensitivity factors, changes in certain parameters may require significant adjustments of the provisions booked and, therefore, the Group cannot guarantee that the provisions booked will equal the costs actually incurred at the relevant time, which may have a negative impact on the Group's financial results and financial position.

In the United Kingdom, under the agreements to restructure EDF Energy Nuclear Generation Limited, the costs of decommissioning EDF Energy Nuclear Generation Limited's existing nuclear power plants will be paid by the Nuclear Liabilities Fund. If this fund proves insufficient, these costs will be borne by the UK Government (see section 6.3.1.2.3 ("Nuclear power generation division – Costs associates with radioactive waste management and plant decommissioning – Restructuring agreements of British Energy Group")).

Dedicated assets allocated by the Group to cover the costs of its long-term nuclear business commitments (such as radioactive waste and decommissioning) may prove insufficient and require additional expenditures.

In France, as of 31 December 2011, the market value of EDF's portfolio of dedicated assets was €15.7 billion, compared to €15.8 billion on 31 December 2010 (see section 6.2.1.1.3.7 ("Assets available to cover long-term nuclear business commitments (excluding the operating cycle)")). These assets have been built up gradually in compliance with the deadlines and requirements laid down by the law of 28 June 2006 on sustainable management of radioactive materials and waste and by the NOME law of 7 December 2010. Provided various criteria are met, including a requirement regarding the level of coverage provided by provisions booked as of 29 June 2011, the NOME law[(1)] grants a five-year extension (from 29 June 2011 to 29 June 2016) of the deadline by which the portfolio of dedicated assets must cover all long-term nuclear business commitments, as required by stipulated by the law of 28 June 2006 (see section 6.5.4.2.2 ("Specific regulations applicable to basic nuclear facilities" and note 48 to the to the consolidated financial statements for the financial year ended 31 December 2011)).

These dedicated assets may prove to be insufficient at the time actual payment is required if true costs are different or if the schedule for decommissioning and storage costs is modified, which could have a significant negative impact on EDF's financial position. Moreover, stricter regulations at the national level (in particular those that impact the base for determining the dedicated assets to be constituted by EDF) or European level may lead to more stringent requirements regarding the constitution of dedicated assets and have an effect on EDF's financial position.

Lastly, although these assets are constituted and managed in accordance with strict prudential rules (see section 6.2.1.1.3.7 ("Assets constituted to cover long-term nuclear power-related commitments (excluding the operating cycle)")), the Group cannot guarantee that price fluctuations in the financial markets will not have a significant negative impact on the value of these assets (see section 9.5.1.6 ("Management of financial risk incurred by EDF's dedicated asset portfolio") for a sensitivity analysis), which could require EDF to disburse additional amounts to restore the value of these assets.

In the United States, in accordance with NRC regulations and requirements imposed by the relevant states, CENG has established funds strictly dedicated to covering the costs of power plant decommissioning. The strategy adopted in establishing these funds is based on the estimated costs necessary for decommissioning and the disbursement schedule associated therewith. CENG's estimate of the revenue generated by these funds is based on various factors, including the asset allocation strategy for the investments, the historical rate of return and market conditions. At this time, it is anticipated that decommissioning activities will continue until 2083. Any changes that affect decommissioning costs or schedules, or any changes that affect the revenues generated by the funds may impact the ability of the funds to cover the decommissioning costs of power plants, which could lead CENG to incur additional expenditures.

Such events could have a negative impact on the Group's financial position.

4.1.4 Risks related to the Group's structure and changes within the Group

The Group's development strategy may not be implemented in accordance with the objectives set by the Group.

The Group intends to continue its expansion in the electricity, gas and energy services industries, both in France and abroad, in line with its industrial development plan, in accordance with its business model for each geographical area and in light of any relevant experience (upstream/downstream balance, marketing strategy, development of renewable energy sources or other production methods, such as nuclear, hydropower, coal, gas combined-cycle power plants, etc.). The Group thus implements programmes that focus on expansion, reorganisation, increasing profitability (see the discussion below of the risk factor entitled "The Group implements programmes to improve its operating and financial performance and to increase its financial flexibility") and disposals.

In the field of nuclear power generation, the Group may not achieve the expansion it anticipates, or it may be unable to carry out projects it has initiated abroad or it may be unable to carry out such projects under satisfactory economic, financial and legal conditions.

Through partnerships or equity investments, the EDF group is committed to international projects for the construction and operation of nuclear power plants (in particular, in China and the United Kingdom). During the development phase, these projects require obtaining administrative authorisations, licences, permits and, in certain cases, setting up additional partnerships. These are major projects involving significant investment, and their funding conditions are subject to confirmation. Given the current economic climate, obtaining such funding may be delayed. Furthermore, the regulatory framework in some countries is in the process of being updated, which could have an impact on EDF's commitments and liability. Even when it has negotiated protective contractual arrangements, the Group cannot guarantee that any or all of these projects will be carried out in accordance with the anticipated schedules, under satisfactory economic, financial, regulatory or legal conditions or that they will, in the long term, generate the profitability anticipated at the outset, which could have a significant negative impact on the Group and its financial position.

Furthermore, the expansion of the Group's gas business is an important issue, both in terms of the use of gas in power generation and the development of dual gas/electricity offers. The outlook for global supply and demand for gas is changing (the boom in unconventional sources

(1) Article 20, as amended, of law nº 2006-739 of 28 June 2006, today in the article L.594-1 at L594-10 Environmental Code

of gas, particularly in the United States, rising demand in emerging countries, etc.). The competitive environment for the gas sector is evolving in France and in Europe with the emergence of new operators and the mergers of energy companies. The dependence of European countries on imports of natural gas is already high and continues to increase, due mainly to the depletion of local resources and increasingly distant sources of supply. To implement its gas strategy, the Group must not only have access to competitive sources of supply, but also to logistical infrastructure (such as storage, gas pipelines and LNG terminals) that allow it to transport its gas to locations near points of consumption, have the requisite flexibility and generate synergies between the various entities of the Group, including those which it does not control. The Group cannot guarantee that that it will always have access to gas supply sources (through long-term contracts or the acquisition of gas fields, for example) or to gas infrastructure, or that it will be able to generate the synergies anticipated. All of these factors may slow the expansion of the Group's gas strategy, which would have a negative impact on its activities, financial results and outlook.

Lastly, the Group also intends to develop and strengthen its offer of integrated services, including eco-efficiency energy services as part of a sustainable development approach. The energy services market is very competitive, and the energy efficiency market has strong development potential. The Group cannot guarantee that its service offer will be successful or that it will always be able to implement its development policy in this area, which may have a negative impact on its financial results and outlook.

More generally, the Group may face unexpected changes in its regulatory, economic and competitive context, which may render its decisions inappropriate, or it may encounter difficulties in implementing or changing its strategy, which may have a negative impact on the Group's financial results and outlook.

Risks associated with acquisitions and disposals.

As part of its development strategy, the Group has carried out and may carry out transactions involving the acquisition of assets or equity interests, as well as mergers or the creation of joint ventures and, more generally, all types of external growth transactions.

External growth transactions involve *inter alia* the following risks: (i) the assumptions used by the Group in valuing the acquisition may not prove accurate, particularly concerning market prices, cost savings, profits, synergies and profitability; (ii) difficulties concerning the quality and performance of assets acquired or the underassessment of the liabilities of acquired companies may be encountered; (iii) difficulties integrating the businesses or companies acquired may occur; (iv) the Group may not be able to retain certain key employees, customers or suppliers of the acquired companies; (v) the Group may be required or wish to terminate certain pre-existing contractual relationships on costly and/or unfavourable financial terms; (vi) the Group may increase its debt to finance these acquisitions, limiting its financial flexibility and the opportunity to obtain additional loans in the future; and (vii) the Group may be required to make commitments to the antitrust authorities, which may be implemented on terms that are less favourable than anticipated for the Group.

Consequently, the benefits expected from future or completed acquisitions may be lower or may not be obtained as quickly as expected, which could have a negative impact on the Group's financial results, financial position and outlook.

The Group has also carried out and may carry out transactions involving the disposal of assets or equity investments. In the connection with such disposals, the Group may provide guarantees concerning the assets sold and, consequently, may have to pay compensation or make price adjustments to the purchaser, which could have a negative impact on the Group's financial results, financial position and outlook.

The Group may also decide to not carry out external growth transactions and disposals it has planned, or to carry them out for a price other than the desired price, due inter alia to contractual, financial or regulatory limitations, or political intervention. This may have a negative impact on the Group's financial results, financial position and outlook.

The various reorganisations required by market liberalisation could have operational and financial consequences for EDF.

Liberalisation of the market has resulted *inter alia* in a transfer mainly of distribution and transport activities to subsidiaries and the reorganisation of the joint entities through which EDF and primarily GDF Suez (formerly Gaz de France) previously managed sales, billing, customer services and their distribution networks. The various reorganisations may impact the functioning of marketing and distribution activities and relationships with local authorities. Furthermore, they may generate substantial costs to adapt support structures and functions, in particular information systems.

Risks associated with information systems.

The Group operates multiple and highly complex information systems (servers, networks, applications, databases, etc.), which are essential for the conduct of its commercial and industrial business, and which must adapt to a rapidly changing environment. A failure of one of these systems could have significant adverse consequences for the Group. In particular, the EDF group's activities may be adversely affected if the information systems in place, to be put in place or to be adapted following full liberalisation of the market are not sufficiently reliable or productive.

Lastly, in general, the Group cannot guarantee that the policy of reinforcing information backup systems will not meet with technical deployment difficulties and/or delays in implementation, which could, in the event of a serious incident, have a significant adverse impact on the Group's business, financial results and financial position.

EDF is controlled by the French government, which is its majority shareholder.

Pursuant to the Article L.111-67 of Energy Code, the French government is EDF's principal shareholder and must retain ownership of at least 70% of its share capital. Under French law, a majority shareholder controls most corporate decisions, including resolutions that must be adopted by general meetings (in particular, the appointment and dismissal of members of the Board of Directors, the distribution of dividends and amendments to the articles of association). In addition, the legal restriction on dilution of the French government's stake may limit EDF's capacity to access capital markets or carry out external growth transactions.

A non-negligible share of the Group's workforce is employed by organisations common to EDF and GDF Suez. Therefore, the Group depends in part on management mechanisms set up in these joint structures.

A significant number of persons who work for the Group are employed by organisations common to EDF and GDF Suez (almost all by the joint department of ERDF and GrDF, the two distribution subsidiaries of the EDF and GDF Suez groups). Therefore, certain decisions made within these joint organisations can have an impact on EDF, in particular on costs and on the manner in which its resources are managed. Furthermore, EDF and GDF Suez may have divergent interests or views concerning these joint structures, which may have a negative impact on the Group's labour relations, financial results and financial position (see section 6.2.2.2.5 ("Relations between ERDF and GrDF within the common service")).

The Group may not hold majority control or may share control of some of its subsidiaries and affiliates.

Certain Group activities are or, in the future, may be exercised within other entities in which the Group shares control, or in which the Group is a minority shareholder. In such situations, the Group may face deadlocks when partners disagree, or decisions contrary to its interests could be made, which could limit the Group's ability to implement the strategies it has defined, and thus have an adverse effect on its activities, financial results, financial position and outlook.

The Group could be forced to initiate a tender offer against listed companies in which it holds or may come to hold an equity interest.

The Group holds or may acquire interests in listed companies subject to laws that may, under certain conditions, compel any person exceeding certain thresholds of capital ownership to initiate a tender offer against all outstanding shares. Therefore, the Group could be forced to initiate such an offer under unfavourable conditions, especially with respect to price, which may have a negative impact on its financial position.

Risks related to the international scope of the Group's activities.

Certain Group investments and commitments are exposed to risks and uncertainties associated with doing business in countries that may experience, or have recently experienced, periods of political or economic instability. Several countries in which the Group operates have regulations that are less advanced and less protective, practice or may initiate controls or restrictions on repatriation of profits and capital invested, levy or may levy taxes and fees affecting the Group's activities and impose or may impose restrictive rules on the business of international groups. In these countries, the electricity sector is also subject to sometimes rapidly changing regulations which may be influenced by political, social and other considerations, which may affect the operations or financial position of Group subsidiaries in a way that is contrary to its interests. The occurrence of any of these events may have a negative impact on the Group's activities, financial results and financial position.

Lastly, the Group has developed or built a portfolio of "Independent Power Plants" (IPP) in different parts of the world, including Brazil, Vietnam, Laos and China, in which it plays one or more roles (engineering, project owner, project manager, investor and/or operator). In these different capacities, the Group may incur liability or its financial performance may be affected, especially if the return on capital employed for the IPP is lower than expected, if long-term electricity contracts or "pass-through" clauses, if applicable, are challenged, or in the event of major changes to electricity market rules in the relevant country.

The Group must continually adapt its expertise in a rapidly changing environment and renew a significant share of its workforce, while ensuring experience and skills are transferred to new employees.

The challenges associated with achieving the Group's strategic objectives in a rapidly changing environment (in particular, the full liberalisation of markets, the international development of nuclear and "clean coal" power, the development of renewable energies, etc.) require continuously adapting and planning its expertise requirements, especially in functional and geographic areas.

In France, a large number of EDF employees reaches retirement age each year, despite the impact of the reform of the special pension scheme for Electricity and Gas Industry employees on average retirement age. For example, in the nuclear power generation and network maintenance sectors, approximately 40% to 45% of the workforce will be eligible for retirement within the next ten years. Although this situation represents an opportunity to adapt employees' expertise to the Group's new challenges, the renewal of this workforce requires planning the transfer of knowledge and involves competing in the market to recruit the most competent people (see section 17 of this reference document).

The EDF group considers skills development to be a major challenge and, therefore, takes all necessary measures to recruit, retain, redeploy or renew such skills in a timely manner and under satisfactory conditions.

However, it cannot guarantee that measures adopted will always prove sufficient, which may have an impact on its activities and financial results.

The Group may be required to meet significant commitments related to pensions and other employee benefits.

The pension plans applicable in the various countries in which the Group operates involve long-term commitments to pay benefits to the Group's employees (see note 32 to the consolidated financial statements for the financial year ended 31 December 2011). In France, in addition to these pension commitments, the Group also owes obligations for post-employment benefits and long-term benefits for employees currently in service.

To cover these commitments, the Group has set up outsourced funds or pension funds, as appropriate. At the end of 2011, such assets only partially covered these commitments, although, for the Group, the maturity dates of these obligations are relatively smoothed over time.

The amounts of these commitments, the provisions booked, the outsourced funds or pension funds set up and the additional contributions required to make up insufficient funding are calculated based on (i) certain actuarial assumptions, including a discount rate subject to adjustment depending on market conditions; (ii) the rules governing retirement benefits paid out by the general retirement scheme; and (iii) amounts owed by the Group. These assumptions and rules may be adjusted in the future, which could increase the Group's current commitments for pensions and other employee benefits and, therefore, require a corresponding increase in provisions.

Furthermore, if the value of outsourced funds or pension funds proves insufficient to meet the corresponding commitments, in particular in the United Kingdom and the United States, primarily due to calculation assumptions or developments in the financial markets, the Group may be obliged to make additional contributions to the relevant funds, which may have a negative impact on its financial position and financial results.

Labour disputes could have a negative impact on the Group's business.

The Group cannot exclude that labour disputes or unrest, such as strikes, walkouts, claims or other labour disturbances, will not disrupt its business. The Group has not taken out any insurance to cover losses due to business disruptions caused by labour movements. Consequently, its financial position and operating results may be adversely affected by labour unrest.

The Group has set up programmes to improve its operating and financial performance and increase its financial flexibility. The objectives set for these programmes may not be achieved.

The Group has set up and may set up programmes to improve its operating and financial performance and increase financial flexibility. In 2011, building on prior programmes, the EDF group initiated a new "Group Synergies and Transformation" programme, which focuses on three areas for improving performance: purchases, by pooling purchases at the Group level; the development of synergies within the Group; and, lastly, continuation of the measures initiated in 2008 pursuant to the prior programme entitled "Operational Excellence". The Group has identified areas offering potential gains of over €2.5 billion by 2015: margins, operating costs and investments. The Group cannot guarantee that the programmes to improve performance that it implements will have the expected results or that those results will be achieved on schedule.

Risks associated with amendments to the IFRS standards applicable to the Group.

The EDF group's consolidated financial statements for the financial year ended 31 December 2011 have been prepared in accordance with the international accounting standards published by the International Accounting Standards Board (IASB), as approved by the European Union on 31 December 2011 (see note 1 to the consolidated financial statements for the financial year ended 31 December 2011).

This accounting standards framework is evolving and new standards and interpretations are currently in the process of being drafted and/or approved by the competent international bodies. The Group is studying the potential impact of these standards and interpretations, but cannot foresee their development or potential impact on its consolidated financial statements.

4.1.5 Risks associated with EDF's capital structure and the listing of its shares

Significant volatility in share price.

Stock markets have experienced significant fluctuations in recent years, which have not always been related to the performance of the specific companies whose shares are traded. Such fluctuations may significantly affect the EDF share price.

The EDF share price may also be significantly affected by a number of factors that affect the EDF group, its competitors, general economic conditions and/or the energy industry in particular, which may be due, for example, to political decisions concerning energy policy.

Fluctuation in foreign exchange rates.

EDF shares are listed only in euros and any future payments of dividends will be made in euros. The equivalent amount in foreign currencies of the share price or of any dividends paid to an EDF shareholder could be adversely affected by a fall in the value of the euro.

Risks associated with sales of EDF shares by the French government.

As of 31 December 2011, the French government held 84.44% of EDF's share capital. If the French government decides to further reduce its equity stake in EDF, such sales by the French government, or the perception that such sales are imminent, could adversely affect EDF's share price.

4.2 Risk management and control in the EDF group

4.2.1 General system set up to manage and control the Group's risks

For many years, the EDF group has pursued a policy to manage its operational, financial and organisational risks (see "Report of the Chairman of the EDF Board of Directors on corporate governance and internal control and risk management procedures", in Appendix A to this reference document).

In 2003, given the changing context, the Group decided to implement an overall process to manage and control its risks, reinforcing existing measures, in particular by creating the Corporate Risk Management Division (*Direction Contrôle des Risques Groupe* or "DCRG").

The objectives of the management and control policy are to:
- contribute to securing the Group's strategic and financial progress by identifying and ranking risks in all fields in order to ensure firm control thereof and by increasing awareness and mobilising all Group entities to identify, evaluate and handle risks in order that all managers are aware of the risks inherent in their activities and take the actions necessary to control such risks;
- provide officers and directors and the Group's governance bodies with a consolidated, regularly updated view of major risks and their level of control;
- meet stakeholders increasing demand for information regarding management of the company's risks.

4.2.1.1 Risk management and control principles

In general, the operational and functional entities are responsible for managing risks within the scope of their activity, under the responsibility of the Group's Executive Management.

The Group's risk control policy is applied either directly to EDF and its controlled subsidiaries or through the governing bodies of regulated subsidiaries (RTE and ERDF) or jointly-controlled subsidiaries.

This policy is based on a system of risk control that is completely independent of the risk management functions. This system ensures a standard approach with respect to the identification, assessment and control of risks.

Under those principles, every six months, EDF prepares a consolidated mapping of its major risks for the entities under its operational control or under joint control (except for Dalkia International), based on reports they provide. The consolidated mapping is approved every six months by EDF's Executive Committee and presented to the Board of Directors' Audit Committee (see section 16.3 ("Bodies created by Executive Management")).

The overall risk mapping process provides support for numerous other processes implemented by the Group, such as the creation of an audit programme, the policy concerning insurance and its implementation (see section 4.2.3 ("Insurance")), the crisis management policy and the analysis of risks concerning matters examined by the Group's decision-making bodies (the Executive Committee, the Executive Committee's commitments committee, the upstream-downstream trading committee, etc.). The risk management process contributes *inter alia* to securing the investment and long-term commitments process by ensuring that matters presented to the Executive Committee's commitments committee comply with risk analysis methodology principles.

RTE

With respect to RTE, risk management and control are organised at the two relevant management levels:
- at the national level, every six months, RTE's Executive Committee approves the mapping of its major risks, which is then submitted to the economic oversight and audit committee of the RTE Supervisory Board. The Executive Committee tasks a national manager with monitoring each of the risks identified. RTE's Risk Audit department performs the national audits ordered by the Chairman of the Management Board, to whom it reports its findings and recommendations;
- at the local level, each of RTE's units and functional entities is responsible for analysing the risks associated with its activities, controlling such risks by implementing appropriate actions and through audits to verify the relevance of its analyses and reporting thereon at a national level.

ERDF

ERDF identifies and manages its risks in accordance with the Group's methodology. Risk control is implemented pursuant to the Group's control principles and is carried out by a unit that is independent of ERDF's operational entities, and which verifies, with reasonable certainty, control of its activities:
- a mapping of the major risks within ERDF's scope is updated semi-annually. After approval by ERDF's Board of Directors, it is submitted to ERDF's economic oversight and audit committee and to the Supervisory Board. A member of the ERDF executive committee is designated for each significant risk identified, and a national coordinator is tasked with implementing action plans covering related risks. An annual programme of national audits ordered by ERDF's Executive Committee, that is devised based on the risk analysis and overseen by ERDF's Audit, Internal Control and Risk department, supplements the control system;
- each regional operational division and each functional business division is responsible for analysing the risks relating to its activities. For this purpose, it conducts an upstream risk analysis using the cross-disciplinary methodology applied within ERDF. Reports on internal control plans are submitted and consolidated at the national level.

The progress of the audit programme and the effectiveness of the improvement initiatives taken are also submitted for approval to the Management Board, and are presented semi-annually to the economic oversight and audit committee, and then to the Supervisory Board. An internal control report is approved and then presented each year to the same governance bodies respectively.

4.2.1.2 Management and control of risks associated with energy markets

Risk factors associated with wholesale energy markets and CO_2 emissions allowances are described in section 4.1.2 above ("Risks associated with the Group's activities").

4.2.1.2.1 System set up to manage risks associated with energy markets

As a result of the liberalisation of the end-user market, the development of wholesale markets and international expansion, the EDF group is exposed to fluctuations in market prices for energy, which may significantly impact its financial statements.

Therefore, the EDF group has implemented an "Energy Markets Risks" policy concerning electricity, gas, coal, petroleum products and CO_2 emission allowances, which is applicable to EDF and entities under its operational control (see section 9.5.2 ("Management and control of energy market risks")).

Regarding Edison and Constellation Energy Nuclear Group (CENG), which are jointly controlled entities, their "Energy Markets Risks" policies are reviewed by the governance bodies of these entities.

The objectives of the Group's "Energy Markets Risks" policy are to:
- establish a general framework in which the various Group entities carry out their operational activities (power generation, optimisation and distribution), and their interaction with EDF Trading;
- consolidate the exposure of the various entities and subsidiaries controlled by the Group on the structured energy-related markets;
- implement a coordinated hedging policy at Group level.

The operational management principles applicable to energy market risks are based on clarifying responsibilities for managing energy market risks, making a clear distinction between matters that are under the responsibility of power generation assets management, on the one hand, and trading on the other hand.

Power generation and supply asset managers are responsible for implementing a risk management strategy that minimises the impact of energy market risks on their financial results. Nevertheless, they remain exposed to risks that cannot be hedged on the markets, in light of various factors such as a lack of liquidity or market depth, or uncertainty about volumes, which may have a significant impact on the Group's financial results.

Within the Group, positions on the energy markets are taken primarily by EDF Trading, which is the Group's trading entity. In such capacity, EDF Trading operates subject to a strict governance and control regulatory scheme (see section 6.5.5 ("Regulations applicable to wholesale energy markets")).

The operational management principles applicable to energy market risks include management indicators and limits and position sensitivity scenarios that ensure control of these risks (see section 9.5.2 ("Management and control of energy market risks")).

4.2.1.2.2 Risk control organisation

The process for controlling energy market risks for entities that are operationally controlled by the Group is based on:
- a governance and market risk exposure measurement system, clearly separating management and risk control responsibilities;
- explicit authority given to each entity, which defines *inter alia* hedging strategies and sets limits for related risks. This practice allows the Executive Committee to define each year a consolidated risk profile based for this scope that is consistent with financial objectives and to direct operational management of energy market risks for a given market horizon (typically three years);
- a specific control process in light of their significant interactions with decisions taken within the power generation and supply businesses. This process involves the Group's Management and is based on a system of risk indicators and measurements that includes alert procedures in the event risk limits are exceeded.

In the case of jointly controlled entities, the control process is reviewed by the governance bodies of those entities.

The consolidated exposure to energy market risks of entities under EDF's operational control is submitted to the company's Executive Committee on a monthly basis. The control processes are regularly reassessed and audited.

4.2.1.3 Management and control of risks associated with financial markets

Risk factors associated with financial markets are described in section 4.1.2 above ("Risks associates with the Group's activities").

4.2.1.3.1 System set up to manage risks associated with financial markets

EDF has set up a system for managing financial risk (see section 9.5.1 ("Management and control of financial market risk")), which defines the policy and principles for managing the Group's financial risks (liquidity, currency, and interest rate risk) and which are applicable to EDF and operationally controlled subsidiaries only. The Group is exposed to equity risk through securities held for the purpose of managing its cash assets, dedicated assets to cover long-term nuclear commitments managed in an ad hoc manner, outsourced employee benefits funds and direct equity investments. These principles include management indicators and limits for controlling these risks, and have as an objective reducing the volatility of the Group's financial expenses.

All changes to the financial risk management system must be submitted to EDF's Audit Committee and Board of Directors for approval.

EDF also applies stress tests to analyse the sensitivity of positions to extreme conditions, which monitor its exposure to "atypical" market swing risks. EDF also uses stop-loss markers, which determine the threshold at which a position must be closed.

4.2.1.3.2 Risk control organisation

The Financial Risks Control Department (*Département Contrôle des Risques Financiers* or "DCRF") is responsible for controlling the Group's financial risks by ensuring correct application of financial management

principles. This structure is also tasked with carrying out a second level check (methodology and organisation) of EDF and entities under its operational control, as well as an operational check of the financing activities of the parent company of the Group. The DCRF reports to the Group Risk Management Department in order to ensure the independence of the structure that controls these risks from the risk management activities that are subject to its control.

With respect to EDF's financial markets front office activities, the DCRF forwards daily risk indicator monitoring reports to the finance and treasury director, the head of the front office and the DCRF manager. They are immediately given notice to act in the event limits are breached. The DCRF reports weekly to the operational coordination committee of the Finance and Investment Department (*Direction Financements et Investissements* or "DFI") of the corporate finance division. The corporate finance division's markets committee periodically verifies compliance with the limits and decides on any specific changes to the limits that may be required.

In addition, regular internal audits ensure that controls are properly in place. The internal control mechanism covers two levels of control:
- internal control exercised at the DFI level: an internal control coordinator who reports directly to the Finance And Investment Director is responsible for developing an annual internal control plan. This plan includes various tasks that ensure implementation of control procedures and compliance with working parameters by the front office;
- the control exercised by the Group Audit Department, which plans yearly audits of activities connected with financial markets and financial risk control.

In addition, if necessary, EDF may hire external firms to audit the financial risk control process.

4.2.1.3.3 Liquidity risk

The objective of liquidity management is to look for resources at the best price and ensure that they may be obtained at any given time. These factors are described in section 9.5.1.1 ("Liquidity position and liquidity risk management").

EDF has set up regular monitoring of the Group's liquidity risk, which is incorporated in the business management cycle, and includes stress tests. The Operational Coordination Committee also reviews liquidity needs on a weekly basis.

During the financial crisis, EDF strengthened the monitoring and control of liquidity risk associated with margin calls on the financial and energy markets. Specific risk indicators have been in place since 2009 to monitor liquidity needs associated with margin calls on the energy and financial markets. In addition, a steering committee monitors liquidity needs associated with energy market activities and decides, if necessary, on appropriate corrective measures to be implemented.

4.2.1.3.4 Currency risk

To limit its exposure to currency risk, the Group has adopted the following management principles:
- Local currency financing: to the extent possible given the local financial markets' capacities, each entity funds its operations in its operating currency. When financing is contracted in other currencies, derivative instruments may be used to limit currency risk.
- Asset-liability matching: the net assets of subsidiaries located outside the euro zone expose the Group to currency risk. On the consolidated balance sheet, currency risk on assets held in foreign currency is managed either by matching such assets with acquisition debt in the same currency or by hedging contracts involving the use of financial derivatives. Hedging of net assets in foreign currencies complies with a risk/return ratio. If no hedging instruments are available, or if hedging costs are prohibitive, the risk on open foreign currency positions is monitored by sensitivity calculations.
- Hedging of operating cash flows denominated in foreign currencies: in general, the operating cash flows of EDF and its subsidiaries are denominated in their local currency, with the exception of cash flows related to fuel purchases which are primarily denominated in US dollars and, to a lesser extent, certain cash flows related to equipment purchases. EDF and its main subsidiaries concerned by currency risk (EDF Energy, EDF Trading, Edison, and EDF Énergies Nouvelles) hedge firm or highly probable commitments related to these future operating cash flows.

The measurement of currency risk is described in section 9.5.1.3 ("Management of currency risk").

4.2.1.3.5 Equity risk

The management of this risk is explained in sections 9.5.1.5 ("Management of equity risk") and 9.5.1.6 ("Management of financial risk on EDF's dedicated asset portfolio").

4.2.1.3.6 Interest rate risk

To limit its exposure to interest rate risk, in connection with its general policies, the Group lays down principles for the purpose of limiting the risk of changes in the value of assets invested or of an increase in its financial expenses.

These principles are described in section 9.5.1.4 ("Management of interest rate risk").

4.2.1.4 Management and control of counterparty risk

Risk factors related to counterparty risk are described in section 4.1.2 above ("Risks associated with the Group's activities").

The EDF group is exposed to counterparty risk, which is defined as all losses that the Group would sustain on its operating activities and on the markets if any of its counterparties were to default and consequently fail to perform its contractual obligations.

Accordingly, a "management of Group counterparty risk" policy, approved by the Board of Directors, is applied at EDF and at its controlled subsidiaries. This policy organises the management and monitoring of counterparty risk, and lays out reporting procedures and channels.

Three major principles are at the heart of this system: (i) the organisation's responsiveness; (ii) the independence of the risk control functions from the activities which generate risks; and (iii) the entities' responsibility for the management of their exposures. The policy also sets a limit for the Group which is applied to each counterparty. In addition to this limit applied to each counterparty at the Group level, an additional limit for each counterparty was established in 2007, which is applicable to each EDF entity or subsidiary under the Group's operational control. Counterparty limits and their use are monitored regularly by these entities, and the Group is organised so as to report and update the Group's consolidated exposure to counterparty risk and ensure active monitoring of its major counterparties (see section 9.5.1.7 ("Management of counterparty/credit risk")).

In particular, the Group's entities that have significant activity on the energy or financial markets (EDF, EDF Energy, EDF Trading, Edison) have established a methodology to assign limits to each counterparty based on various criteria (agency ratings, indebtedness, free cash flow, assets, equity), taking into account the maturity and nature of the transactions. In addition, in accordance with energy and financial markets practices, a margin call system has been adopted by certain Group entities to minimise counterparty risk.

RTE and ERDF subsidiaries, which also make purchases on the energy markets to cover network losses, also regularly monitor their counterparties and assign limits to each counterparty based on defined criteria.

4.2.2 Management of industrial and environmental risks

4.2.2.1 Management of nuclear safety risk

The risk factors associated with nuclear safety are described in section 4.1.3 above ("Specific risks related to the Group's nuclear activities").

Like other operators, the Group assumes responsibility for the nuclear safety of its facilities. Nuclear safety includes all technical, organisational and human measures that are intended to anticipate accident risks and limit the effects of an accident, and which are taken at every stage of the life of a nuclear power plant, from design to operation, until decommissioning.

The methods implemented in connection with the nuclear safety system have allowed continuous performance improvement in the protection of employees against the effects of ionising radiation. The entire nuclear safety approach is continuously monitored, both internally and externally (see below and section 6.2.1.1.3.3 ("Environment, safety and radiation protection")), and the appropriateness of the organisation and measures in place are continuously re-examined, based inter alia on progress in knowledge and experience. Accordingly, the Group has always actively participated in the analysis of past accidents. Thus, the Group has been able to learn lessons from the accidents at Three Mile Island (1979) and Chernobyl (1986), which led to significant material and organisational improvements in the safety of nuclear facilities. This review is currently ongoing, incorporating feedback from the events which took place in Japan in March 2011. EDF quickly proposed several possibilities for improving safety based on the initial lessons learned from that accident, concerning (i) a reassessment of earthquake and flood scenarios; (ii) dealing with the simultaneous loss of electrical power sources and the cold source; and (iii) dealing with the fusion of the core.

In France

The construction of the Group's nuclear power plants led to the adoption of safety procedures that take into account, as from the design stage, risks that may arise during plant operation, whether associated with the operation of the facilities or internal and external attacks or natural disasters. These procedures rely mainly on the application of strict operating rules and on the Group's integrated skills (nuclear engineering, research & development), which allow planning ahead for resolution of possible failures, continuous assessment of equipment, regular re-evaluation of safety margins, technological monitoring and the implementation of new high-performance techniques.

Maintaining and improving safety also relies on the concept of in-depth defence, which provides for systematically handling the risk of technical, organisational and human failures by placing successive and independent lines of defence for facilities, processes and the organisation.

The operating quality and safety of the Group's French nuclear plants depend on multiple internal inspections, which are carried out *inter alia* by the Inspector General for nuclear safety and radiation protection, who reports directly to EDF's Chief Executive Officer, as well as external inspections, which are carried out *inter alia* by the ASN, an independent administrative authority. Nuclear power plants must comply with terms of reference, the objectives of which are established and controlled by the ASN. The crisis management system to be implemented in the event of an accident is regularly tested through accident simulation exercises. Each year, approximately 100 simulations are organised for all French nuclear plants. Approximately ten simulations are carried out at a national level. The liability scheme applicable to European operators and the associated insurance are described in section 6.5.4.2.2 ("Specific regulations applicable to basic nuclear facilities").

Following the Fukushima accident in March 2011, in September 2011, EDF submitted reports on the additional safety inspections of its facilities, as requested of all operators of nuclear facilities by the ASN (see section 6.2.1.1.3.5 ("Preparing for the future of nuclear fleet in France")). These reports reassess plants in operation or under construction and verify the safety margins in the event of extreme situations that may exceed the assumptions used at the time the nuclear facilities were designed or during successive safety reassessments. In early January 2012, the ASN submitted its report on the additional safety inspections to the Prime Minister and published it. The ASN deemed that the safety level of facilities inspected was sufficient and that no plant required an immediate shutdown. However, to continue their operation, safety margins in the event of extreme situations must be improved as soon as possible and, therefore, the ASN will require a new set of measures to improve safety in order to prevent risks associated with natural disasters, other industrial activities, supervision of subcontractors and dealing with

non-conformities. EDF will prepare an action plan, which will most likely be carried out over several years, and which will cover the additional studies and changes decided. This plan will be finalised when the ASN finalises its instructions. Moreover, immediately following its initial analyses of the Fukushima accident, EDF decided to supplement its accident management organisation with a national team capable of quickly providing material and humane assistance to a site experiencing major difficulties. This team, called the National Rapid Action Force (FARN), is in the process of being set up and is scheduled to become operational in 2012. The FARN will back up the existing crisis management organisation (see section 6.2.1.1.3.3 ("Environment, safety and radiation protection").

In the United Kingdom

The safety and reliability of EDF Energy's nuclear power stations is based on an approach that integrates the concept of in-depth defence, as from the design stage, through the technical characteristics of facilities and safety systems.

Maintaining and improving the safety of facilities in operation relies on the implementation of initiatives based on regular assessment of the risks that may affect plants, including extreme events. The main objective is to prevent the occurrence of any event that may cause radiation emissions that are potentially harmful to the public, the employees of EDF Energy or the environment.

Safety is also an integral part of the operating conditions imposed by the site licenses issued pursuant to the Nuclear Installations Act and enforced by the Office for Nuclear Regulation (ONR) and the Agency of the Health and Safety Executive (HSE). An ONR inspector is assigned to each power plant to monitor compliance with the conditions set by the site license, with the power to direct a shutdown, where appropriate. The approach to plant safety is based on standards and strict operating procedures, on professional expertise and a process of organising and planning tasks to meet exacting standards and to ensure compliance with quality assurance standards in force for each activity.

Pursuant to the Nuclear Installations Act, the Ionising Radiation Regulations of 1999, and the Radiation Emergency Preparedness and Public Information Regulation (REPPIR), safe operation of power plants is required by accident prevention and control of crisis situations, while addressing the need to protect onsite personnel and the general public. It is therefore crucial, in accordance with licensing requirements, to be able to demonstrate to outside parties and the public that the organisation set up to address any crisis situation has been thoroughly prepared, including through the training of personnel and conducting regular crisis drills. Local authorities and/or other external stakeholders must be consulted whenever these measures concern them.

Following the events in Japan at the Fukushima nuclear plant, the UK Secretary of State asked the nuclear safety authority to prepare a report into the implications for the UK. The Chief Nuclear Safety Inspector, Dr Weightman published his final report on 11 October 2011. The EU also called for a programme of stress tests across the member countries, with each nuclear operator being required to submit details of safety assessments to its nuclear regulator, for onward submission to the EU in 2012. The Weightman report concluded that there is no reason to curtail the operation of UK operating sites, although operators should continue to follow the founding principle of continuous improvement. The UK practice of periodic safety reviews of licensed sites provides a robust means of ensuring continuous improvement in line with advances in technologies and standards. This report concluded also that there no fundamental weaknesses in the UK nuclear licensing regime or the safety assessment principles that underpin it, and confirms also no reason to change present siting strategies for new nuclear power stations in UK. The regulator is satisfied with the responses and plans initiated by the government and nuclear industry in response to the interim report.

EDF Energy's responses to the ONR on the UK Government requested Weightman Report into learning for the UK from Fukushima and on the EU programme of stress tests, have been combined into a Comprehensive Safety Assessment, which is being coordinated by a team of experienced professionals from the company's nuclear businesses, with independent expert verification. This Assessment has confirmed the safe design of EDF Energy's nuclear fleet and has confirmed that plants are very robust and would operate safely as they are designed to do under the most extreme scenarios, even those implausible in the UK. Nonetheless, EDF Energy has identified further ways to enhance the current very safe position. This includes investment in additional back-up equipment such as electrical supplies for cooling systems, equipment related to fuel pond cooling, emergency command and control facilities and additional refresher training in accident management for key technical staff.

In the United States

In the United States, the operating quality and safety of nuclear plants are monitored by the Nuclear Regulatory Commission (NRC). In addition, the Institute of Nuclear Power Operations (INPO), which brings together all US nuclear operators, performs evaluations and analyses with the aim of achieving operational excellence.

CENG, a company jointly controlled by EDF and CEG, has established a reporting system on operating quality and safety which is ongoing, as well as ad hoc in the event of an incident. CENG's management team reports to both parent companies, through the Board of Directors and the standing nuclear safety and operations committee, on the main results and key issues regarding operating safety and quality, and recommends corresponding improvement actions. In the event of a major incident, the CENG Chief Nuclear Officer directly informs the Board of Directors. CENG's communications manager also informs the EDF and CEG communications managers.

The NRC has undertaken an experience analysis to gain an in-depth understanding of the Fukushima accident. Beforehand, it confirmed that the reactors in operation in the United States were safe and ruled out any shutdowns because there were no additional confirmed risks. In fact, US operators had added defence systems after the attacks of 11 September 2001, which provide them with significant résistance to external aggression, as well as after the Individual Plant Examinations for External Events

(IPEEE) that were carried out in the 1990s and which reinforced facilities, in particular with respect to seismic risks.

In early October 2011, based on a report of an ad hoc group of experts, the NRC set eight short-term priorities: reassessment of seismic and flood risks; mitigation of the risk of loss of electrical power; making additional mobile equipment available at sites; increasing reliability of venting lines of boiling water reactors; improving the instruments used in the spent fuel storage pools; reinforcing means of communication and crisis organisation; and improving procedures for managing serious accidents. In addition to these short-term actions, the NRC has focused on the need to reinforce the backup capacities of spent fuel storage pools, the venting capacities of pressurised water reactors and the filtering capacities of the venting lines of boiling water and pressurised water reactors, controlling hydrogen risk and analysing the total loss of the cold source.

On the basis of these guidelines and in close consultation with operators, in the third quarter of 2011, CENG adopted and began to implement a three-year action plan. In December 2011, the NRC began consultations with the US industry to draft and then publish, before March 2012, new regulatory requirements based on the Fukushima accident. The NRC has officially announced 2016 as the date for complete implementation of the lessons learned form the Fukushima accident.

4.2.2.2 Management of hydropower safety risk

Risk factors relating to hydropower safety are described in section 4.1.2 above ("Risks associated with the Group's activities").

The Group operates hydroelectric facilities under concession agreements or administrative licenses. As operator, it is responsible for their safety.

There are three strategic activities in connection with the management of hydropower safety: monitoring dams and related facilities, managing structures during floods and managing flow or level variations (see section 6.2.1.1.4.2 ("Hydropower safety")). In order to further improve the management of these risks, in 1995, EDF initiated quality assurance procedures for these three activities in France and in the French overseas departments, which resulted in each of the Hydropower Operating Divisions obtaining ISO 9001 certification at the end of 2003. These certifications are the basis of a continuous progress program in hydropower safety management, and have recently been renewed by the certification authorities.

In addition, the detection, analysis of any incidents, implementation of corrective and preventive actions, feedback and the experience sharing are the basis of the process for improving the safety level of the facilities. Continuing a process begun in 2005 to identify failure risks by type of equipment, and after a period in which certain problems caused facilities to be unavailable over the medium term (the Tuilières dam in Dordogne, etc.), EDF decided in 2006 to launch a €560 million program of technical upgrades and stepped-up maintenance of facilities in order to renovate certain sites and to maintain, on a long-term basis, a high level of hydropower safety and preserve the technical performance of its facilities in the future. The total budget for this hydropower facilities renovation programme, known in French as *"Sûreté et Performance de l'Hydraulique"* (Hydropower Safety and Performance), or "SuPerHydro", which was originally scheduled to last five years (2007-2011), was reassessed in 2011 to take into account the scope of the work and was increased to €900 million for 2007-2015 (see section 6.2.1.1.4.3 ("Performance of the hydropower generation fleet")). During the works, this programme will entail temporary scheduled downtimes that exceed those for previous stages (and which will reduce total availability by several points).

Public information and outreach campaigns on the hazards of hydroelectric installations, initiated about ten years ago, are repeated each year. The breach of a dam or related facility may have serious consequences for persons and property located downstream. Facilities monitoring and maintenance, which are the principal measures to prevent the major risk of a dam breach, are carried out under the control of the French regional environment, land use and housing authorities (*Directions Régionales de l'Environnement, de l'Aménagement et du Logement* or "DREAL"). The 68 largest dams are covered by a special action plan implemented under the authority of the French prefecture, pursuant to the laws on major risks.

EDF has taken out general civil liability insurance policies to cover these risks (see section 4.2.3.2 ("Civil liability insurance (not including civil liability for nuclear power)")).

4.2.2.3 Management of risks associated with the Group's transmission and distribution facilities

The risk factors associated with the Group's transmission and distribution facilities are described in section 4.1.2 above ("Risks associated with the Group's activities").

Investments made in transmission and distribution installations take into account the safety of persons and property.

In addition, in France:

- With respect to third parties, the information campaign "Under aerial power lines, beware - keep your distance" has been thoroughly updated, new partnerships have been established, including with the *Caisse centrale de la mutualité sociale agricole* and the French Aerostat Federation. Communications have also been directed to non-profit associations and trade unions (fishermen, construction contractors, farm co-op funds, etc.) to remind the public of the hazards of using tools near aerial power lines. In addition, training for construction and public works professionals to reduce damage to installations has been expanded, with more than 50,000 such professionals and 15,000 municipal workers having been trained over the past four years.
- With respect to network operators and their contractors, work is done by personnel qualified under the UTE C 18-510 standard. Such personnel are trained to control electrical risk, and undergo periodic tests of their knowledge and checks by their superiors, particularly during site inspections. To maintain their certifications, personnel qualified to work in live voltage situations must also complete a minimum number of live voltage assignments, which varies by type of live voltage work.

4.2.2.4 Management of risks associated with industrial accidents or the Group's environmental and health impacts

If not adequately managed, the Group's activities could cause industrial accidents or significant environmental and public health impacts.

Such risks of harm to the environment, the health of local residents or employees of the Group or its subcontractors are governed by increasingly stringent environmental and public health regulations. The corresponding risk factors are described in section 4.1.2 above ("Risks associated with the Group's activities").

The Group's environmental policy incorporates developments on major environmental issues, such as fighting climate change, adverse effects on biodiversity, etc.

Operational implementation of this policy relies on the deployment of an "Environmental Management System" in all of the Group's entities that have a direct or indirect influence on environmental impacts. The implementation of this Environmental Management System ensures improved management of the Group's knowledge of and compliance with regulations and anticipation of regulatory developments. This system has been ISO 14001 certified since April 2002 (see section 6.4.3 ("Sustainable development policy and public service")). With respect to industrial accidents, the ISO 14001 standard requires taking a controlled set of systematic and planned actions, in particular, for prevention of major risks, emergency situation tests and safety management. In this regard, the Group has taken out a general civil liability insurance programme (see section 4.2.3.2 ("Civil liability insurance (not including civil liability for nuclear power)")).

Each year, an authorised organisation external to the EDF group carries out follow-up audits of the entities within the scope of the certification. In 2011, the renewal audit confirmed ISO 14001 certification, for a period of three years, of the Environmental Management System implemented by the Group.

4.2.3 Insurance

4.2.3.1 Insurance organisation and policy

The Group's Insurance Division is tasked with developing the EDF group's insurance policy and organising its implementation throughout the Group in order to continuously optimise management policy and the total cost of its insurable risks[(1)].

Its duties are to:
- continuously analyse cover for the EDF group's risks in conjunction with the Group Risk Control Department: analysis by business, entity and project;
- establish rules for the Group's entire scope that enable covering all risks that can and must be covered, as well as optimising the total cost thereof and reducing volatility;
- promoting and applying these rules to all Group entities, using appropriate means and in compliance with governance rules; and
- developing and managing the tools necessary to perform the above tasks, including within the subsidiaries that report to the Insurance Division: EDF Assurances and the Group's captive insurance companies.

The most important entities and controlled subsidiaries sign an annual work programme concerning insurance, which has the following purposes:
- ensuring that all risks are insured;
- reviewing cover strategies and amounts declared (risk quantification);
- scheduling prevention inspections and overseeing implementation of the resulting recommendations;
- analysing losses and claims handling;
- setting a total insurance premium budget by entity;
- sharing information regarding tools used and the total risk transfer cost.

This work, which is performed by the network of insurance managers of the Group's entities and subsidiaries, has improved the quality of information about insurable risks as programmes are renewed and prevention inspections are carried out (expert appraisal of maximum possible losses and insured values at numerous sites). In connection with prevention actions, the Insurance Division establishes the programmes and oversees site inspections. These inspections are carried out in partnership with the operational management of EDF and its controlled subsidiaries in France and abroad and the principal insurers. The purpose of these inspections is to identify and assess potential risks associated with the Group's activities, in order to ensure that these risks are appropriately covered at all times.

The Group's insurance policy is reviewed and approved annually by the Executive Committee and is also submitted annually to EDF's Audit Committee. Its purpose is to specify the risks that the Group decides to transfer to the market and to set out the general optimisation principles applicable to such transfers.

In addition, in 2011, the Group Chief Financial Officer created a Strategic Insurance Policy Committee, which serves as a forum for discussing and setting policy regarding cover for major risks. The committee also provides an opportunity for the operational and financial teams to reflect on changes to and procedures for implementing the Group's insurance policy.

Information exchanges between the Group Risk Management Division (see section 4.2.1 ("General system set up to manage and control the Group's risks")) and the Group's Insurance Division have been made systematic to ensure that both divisions have a view of the Group's risks that is consolidated and as comprehensive as possible. As a result of this shared view, EDF is in a position to look for cover appropriate for its insurable risks in accordance with the principles established by the Group's policy in this area.

To limit the impact of certain events on its financial position, the EDF group has taken out insurance to cover its principal risks of property damage, civil liability and personal injury. Its nuclear power risks are covered by a special civil liability scheme that is described below.

(1) Risks transferable to the insurance and alternative markets.

EDF has set up Group insurance programmes that broadly cover its controlled subsidiaries and regulated networks subsidiaries (RTE and ERDF) in order to harmonise risk cover and rationalise its management, as well as to control the corresponding insurance costs.

EDF is a member of the Oil Insurance Limited (OIL) mutual insurance fund, which covers the risk of damage (other than to aerial networks) to the Group's own property or property managed under concession (by EDF and its consolidated subsidiaries). The scope covered includes *inter alia* nuclear power plants (excluding nuclear accidents), fossil fuel-fired power plants, hydropower facilities and network substations. OIL is dedicated to the needs of businesses in the energy sector and provides its members with limited cover for property damage. In addition to this basic coverage, EDF has taken out additional insurance to cover itself and many of its French and international subsidiaries. EDF is also a member of the European Liability Insurance for the Nuclear Industry (ELINI) and the European Mutual Association for Nuclear Insurance (EMANI), which are mutual insurance funds for European nuclear power operators that manage cover in this area.

Total insurance premiums for EDF and Group programmes managed by EDF Assurances, for all types of cover, amounted to €100.45 million[(1)] in 2011, compared to €91.2 million in 2010 Outside insurance of persons, of which €60.24 million was paid by EDF and €9.4 million was for aerial cover for ERDF networks. EDF considers that the policies purchased under the Group's insurance management policy are in line with the current offer on the insurance market for operators of similar size and with similar operations around the world, particularly with regard to limits and excess amounts. The type as well as the price and amounts of insurance cover taken out may be changed at any time depending on market conditions, the pace of deployment of insurance programmes and the EDF Board of Directors' assessment of risks and adequacy of cover.

In accordance with market practices, insurance policies include exclusions, policy limits and/or sub-limits.

4.2.3.2 Civil liability insurance (not including civil liability for nuclear power)

EDF has taken out general civil liability insurance covering EDF, RTE, ERDF and EDF's controlled subsidiaries against the financial consequences of civil liability (excluding nuclear damage) that they may incur in doing business as a result of damage caused to third parties. In particular, this programme covers the risks of civil liability associated with the operation of structures (hydroelectric dams, fossil fuel-fired power plants, substations and other network facilities), risks associated with development of the Group's renewable energy activities (wind, solar, etc.), as well as risks associated with environmental damage (emissions of solid, liquid or gaseous substances).

This cover is purchased to the extent of available capacity under acceptable financial terms on the insurance and reinsurance markets. Maximum cover is €1 billion. For this programme, the share of risk retained by the Group ("retention"), including the share of Wagram Insurance Company Ltd., an Irish insurance company wholly-owned by EDF, does not exceed €5 million per claim. Subsidiaries generally opt for lower excess amounts that are more appropriate to their financial capacity.

4.2.3.3 Civil liability insurance for corporate officers and directors

EDF has taken out civil liability insurance covering corporate officers and directors of EDF, RTE, ERDF and controlled subsidiaries of EDF against the financial consequences of their civil liability incurred in performing their management functions.

4.2.3.4 Damage insurance (not including nuclear assets)

4.2.3.4.1 Contractual damage programme

The scope of this programme includes EDF, ERDF, EDF Energy and many other subsidiaries. Wagram Insurance Company Ltd., together with other insurers and reinsurers, provide extensions of cover (additional cover for property damage up to a maximum of €1 billion) in addition to the covers provided by OIL.

For this contractual damage programme, the Group's retention per claim, including the excess amount (which varies by subsidiary), and the share of the risk retained by Wagram Insurance Company Ltd., does not exceed €25 million.

Counter to EDF, this programme provides cover for operating losses in the event of property damage for most subsidiaries. The actions and measures taken to prevent industrial and environmental risks and limit their impact are described in section 4.2.2 ("Management of industrial and environmental risks").

This programme has been gradually extended to most subsidiaries controlled by EDF. RTE has taken out specific contractual damage insurance for its own property, excluding electrical lines (substations and technical buildings and facilities).

4.2.3.4.2 Cover for construction risks

EDF has taken out insurance policies covering specific construction risks (contractors' all-risk/construction all-risk policies). These policies are not included in any Group programme but are purchased on an ad hoc basis for major construction projects, such as the Flamanville EPR, the construction of combined cycle power plants, dams, combustion turbines, etc.

These covers are specifically monitored and are renegotiated if unforeseen events occur during the construction projects (such as Paimpol Bréhat and Flamanville 3).

4.2.3.4.3 Storm coverage

On 8 August 2011, ERDF took out a policy with Natixis/Swiss-Re covering ERDF's aerial transmission network against the consequences of exceptional events, such as storms, until 30 June 2016 (i.e. five storm seasons).

(1) This amount includes the network cover taken out by ERDF.

This "cat-bond" provides maximum cover of €150 million, and in the event of a disaster will pay parametric-based compensation tied to a wind-speed index.

Possible terms for setting up insurance cover for damage to the aerial distribution networks of Isolated Energy Systems are under study.

4.2.3.5 Specific insurance for nuclear facility operations

4.2.3.5.1 Civil liability

EDF's current insurance policies are in compliance with law nº 68-943 of 31 October 1968, as amended by law nº 90-488 of 16 June 1990, which codified the civil liability obligations imposed on nuclear facility operators by the Paris Convention (see section 6.5.4.2.2 ("Specific regulations applicable to basic nuclear facilities")). To guarantee availability of the funds to meet such obligations, EDF took out insurance policies with Allianz and the European Liability Insurance for the Nuclear Industry (ELINI). Cover provided by these policies is equal to the limits of liability set by law in the event of an accident, whether at a nuclear facility or during transport. For onsite accidents, total cover is €91.5 million per nuclear accident. This limit is available on a maximum of two occasions per site within a three-year period. In accordance with the law, the insurance policies purchased by EDF from Allianz and ELINI to cover the risk of nuclear civil liability do not include an excess amount. However, Oceane Re, a Group reinsurance company, shares this risk through reinsurance agreements entered into with Allianz and ELINI.

A specific insurance policy covers nuclear civil liability incurred in connection with accidents during transport. The limit of cover depends on the laws of the country or countries crossed during transport. For accidents during transport in France, total cover is €23 million.

EDF Energy operates nuclear plants in the United Kingdom. In the UK, the liability scheme applicable to operators of nuclear facilities is similar to that in France. EDF Energy is insured with Nuclear Risk Insurers Limited (NRI), the British nuclear insurance pool, for £140 million. This amount is the current limit of civil liability applicable to nuclear plant operators in the United Kingdom.

As from the time law nº 2006-686 of 13 June 2006 on transparency and safety in the nuclear field (see section 6.5.4.2.2 ("Specific regulations applicable to basic nuclear facilities")) comes into force, EDF will be required to adjust its insurance cover to meet the new guaranteed maximum compensation of €700 million for liability of nuclear facilities operators. Accordingly, in compliance with this new law, EDF will seek possible cover solutions (nuclear insurance pools, mutual insurance, etc.) and attempt to pool them between EDF and EDF Energy. Consequently, EDF and British Energy are founding members of Blue Re, a European mutual reinsurance company created on 17 June 2011 that specialises in covering these risks.

Law nº 2006-686 of 13 June 2006 will not be applicable until the protocols amending the Paris and Brussels Conventions on civil liability in the nuclear energy field come into force, when at least two-thirds of the member States have ratified them (on the progress of ratifications, see section 6.5.4.2.2 ("Specific regulations applicable to basic nuclear facilities")).

For more information on the laws governing nuclear power plant operators' civil liability, see section 6.5.4.2.2 below ("Specific regulations applicable to basic nuclear facilities").

4.2.3.5.2 Damage insurance for nuclear facilities

In addition to the cover obtained through EDF's membership in the OIL mutual insurance fund, property damage (including following a nuclear accident) to EDF's nuclear facilities in France and to EDF Energy's nuclear facilities in the United Kingdom, as well as nuclear decontamination costs, are covered by a joint insurance programme underwritten by the NRI British pool, insurers, some of which are reinsured by the French nuclear pool (Assuratome), and the European Mutual Association for Nuclear Insurance (EMANI), which has total capacity of €1,750 million over and above an amount of US$320 million.

4.2.4 Crisis management

The EDF group has a crisis management policy that is designed to enable it to manage situations in which its assets, business, personnel or image is threatened by a foreseen or unforeseen event.

For this purpose, the EDF group ensures that it all times has the means available to respond to a crisis. A warning system is in place to immediately inform the company's executive management of any event that could potentially justify a decision to treat the situation as a Group crisis.

The crisis structure is based on crisis plans that are developed by the relevant divisions or entities, which are specific by type of crisis (an imbalance between generation and consumption, incidents affecting information systems, malicious acts, a public health crisis, technical incident at a power generation facility, labour unrest, etc.), but are nevertheless consistent with the framework established by the Group's crisis structure.

In each entity, crisis management training is provided and structures are tested through crisis drills. A crisis drills programme is established each year at Group level (an average of two to three crisis drills per year involving the Group's crisis unit), in addition to the crisis drills organised by the divisions or entities (for example, 15 drills per year and per nuclear site).

Furthermore, following the Fukushima accident, EDF supplemented its national crisis teams with a National Rapid Action Force (FARN) capable of delivering, in less than 24 hours, teams with "operational/maintenance" and "logistical" expertise to a nuclear power generating centre in difficulty (see section 6.2.1.1.3.3 ("Environment, safety and radiation protection").

4.2.5 Ethics and oversight

The fact that the Group does business in many countries requires that it pay particular attention to compliance with the values and principles associated with the human and social rights derived from international laws and treaties. In addition, EDF believes that maximising its economic performance is inextricably linked to its environmental, social and ethical performance and, therefore, is particularly vigilant in ensuring that ethical and societal issues are considered in the conduct of its business.

Group Ethics Code

With this in mind, EDF has established an ethics policy, which was submitted to the Board of Directors in March 2003 and which is coordinated by an ethics officer. This policy is based on the Ethics Guide, an internal code of conduct.

Based on the Group's five key values (respect for individuals, respect for the environment, maximising performance, solidarity and integrity) and the international commitments on which the ethics policy is based (the Universal Declaration of Human Rights, the ILO conventions, the OECD Guidelines) or to which the Group is a signatory (United Nations Global Compact, the EDF International Agreement on Corporate Social Responsibility, which was signed in 2005 and renewed in 2009), the Ethics Guide sets out the standards for EDF's actions vis-à-vis its stakeholders, as well as the standards expected of employees in their professional conduct (standards for collective action as well as individual guidelines).

This document was updated in late 2007 and is distributed to all EDF branches and divisions. A copy of the Ethics Guide is given to each employee personally by his/her manager and is followed up by educational actions to ensure employees adopt it, both individually and as a group. Ethics coordinators are appointed to ensure the Guide is distributed and to monitor compliance with the Group's values in the field, thus reinforcing the existing ethics structure. The Group's values and the Ethics Guide are available on the EDF website.

More recently, on 19 October 2011, a new Group Ethics Code was approved by the Group's Management Committee after a period of work with each EDF subsidiary. This Ethics Code is in the process of being translated into the language of each relevant country, taking account of cultural differences between countries, in particular via a stage in which it is tested with groups of employees in each of the Group's entities. Thereafter, it will be distributed and deployed in the whole Group.

In addition, EDF's Board of Directors has set up an ethics committee which ensures inter alia that ethical considerations are taken into account in the Board's work and in the management of the company (see section 16.2.3.4 ("Ethics Committee")). The ethics officer reports annually on his/her activities to the Ethics Committee.

Whistleblower system

At the same time, a whistleblower system was established in 2004 to allow employees to contact the ethics officer with any questions, reports or complaints of an ethical nature.

Combating fraud – Competition rules

Preventing and combating fraud, including corruption, is a major concern of the EDF group. On 14 September 2010, the CEO signed a decision concerning combating fraud within the EDF group, which goes along with a Good Practices Guide. With respect to the detection of fraudulent practices and corruption, the Good Practices Guide, which builds on the Group's internal control guide, provides guidelines to the internal control manager, acting in conjunction with the ethics officer, for raising managers' awareness as to actions to be taken to prevent and control fraud, as well as on how to handle possible cases of fraud.

Lastly, EDF has strengthened its policy of education, training and monitoring compliance with competition rules. Starting in 2011, a training programme on competition rules has been offered to as many line managers as possible in France and abroad, in all subsidiaries. This programme consists of distributing internal publications and media and building channels in order to effectively spread a culture of competition within the Group and foster accountability among line managers for compliance with these rules. Control processes will be developed to supplement this mechanism.

4.3 Dependency factors

The EDF group does not consider itself to be dependent on a single customer.

With regard to suppliers, EDF and ERDF used 21,853 suppliers in 2011 (compared to 20,772 in 2010 and 20,008 in 2009). The top five EDF and ERDF suppliers accounted for 27.1% of total EDF[1] and ERDF purchases and the top ten suppliers accounted for 30.9%.

Certain suppliers and subcontractors that provide products or services that the Group purchases in conjunction with its operations cannot be replaced. The issue of EDF's dependency vis-à-vis its suppliers arises primarily in the nuclear sector and, to a lesser extent, in IT and telecommunications.

The EDF group has developed expertise as an architect-builder of its power generation plants and as a nuclear fuel cycle integrator, which gives EDF technical expertise that is independent of that of its suppliers.

Lastly, the EDF group has a very important commercial relationship with the AREVA group, which is involved in each phase of the nuclear fuel cycle. The AREVA group is also active in the construction, equipping and maintenance of nuclear power generation plants. In France, the AREVA group is EDF's main supplier in the nuclear sector. Accordingly, EDF considers that there is a situation of interdependence with the AREVA group.

Nuclear fuel cycle

The relationship between EDF and the AREVA group with respect to the fuel cycle is governed by multi-year contracts. The commercial terms of these contracts may be less favourable when the contracts are renewed than the terms currently in effect.

For the front end of the nuclear fuel cycle (see section 6.2.1.1.3.4 ("The nuclear fuel cycle and related issues" – "Front end")), EDF still relies to a

(1) Not including the purchase of fuel.

large but decreasing extent on the AREVA group, which accounted for approximately 40% of EDF's upstream purchases in 2011, compared with 44% in 2010:

- For its natural uranium needs, the Company follows a policy of diversifying the origins and suppliers of supply sources. The AREVA group continues to be an important supplier to EDF in this area.
- In terms of the nuclear conversion process, most of EDF's needs are met by the AREVA group's Comurhex factory, which competes with other global suppliers.
- In the field of enrichment, EDF relies to a great extent on AREVA, but it also has a diversified portfolio of suppliers. Starting in 2013, the Georges Besse II plant of the AREVA group will progressively provide enrichment services pursuant to a long-term contract entered into between EDF and AREVA in 2008 (see section 6.2.1.1.3.4 ("The nuclear fuel cycle and related issues")).
- With respect to enriched reprocessed uranium, EDF relies on the AREVA group for certain types of services and on foreign suppliers (Tenex and Urenco) for other types of services, including enrichment.
- EDF uses two suppliers to manufacture fuel assemblies: AREVA and Westinghouse.

All spent fuel management operations for France's power plants are carried out in the AREVA group's plant at La Hague. These operations, as well as the recycling of processing by-products, are carried out in accordance with the EDF-AREVA master agreement of 19 December 2008. Pursuant to this master agreement, on 12 July 2010, a processing-recycling agreement and a protocol for waste recovery and treatment and the permanent shutdown and decommissioning of the Hague plant (RCD–MAD/DEM protocol) were signed with AREVA. For the 2008-2012 period, the processing-recycling agreement sets the prices and quantities of the services that EDF has appointed AREVA to perform. The RCD-MAD/DEM protocol establishes EDF's contribution to the costs of decommissioning the facilities at La Hague, and sets the full and final amount that EDF is to pay AREVA. The last payment was made in 2011 (see note 49.2.3 to the consolidated financial statements for the financial year ended 31 December 2011).

With respect to the back-end nuclear fuel cycle, see section 6.2.1.1.3.4 ("The nuclear fuel cycle and related issues" – "The back-end cycle in France").

Power plant development and maintenance

The AREVA group is EDF's main supplier of power plant construction and maintenance services. In particular, the AREVA group supplies nuclear boilers, the corresponding safety studies and spare parts. In 2011, EDF signed two major contracts with AREVA, one for the production of 32 of the 44 steam generators for the 1300 MW segments, and the other for the renovation of the control-command systems for the 1300 MW reactors. Nevertheless, a diversification program has been underway for several years, in particular, with Westinghouse and Mitsubishi, for the replacement of certain major components (12 of the 44 steam generators for the 1300 MW segments will be provided by Westinghouse) and for maintenance services.

To prepare for the renewal of its power generation facilities, EDF has decided to use the EPR technology developed with the AREVA group, and has initiated construction of the Flamanville EPR power plant. In connection with this project, in 2007, EDF signed a contract with AREVA for the supply of the EPR boiler.

EDF also has a relationship with the Alstom group for the maintenance of certain components of nuclear and fossil fuel-fired power plants. In addition, Alstom is supplying the engine room for the Flamanville 3 EPR. Goods and services that Alstom supplies to EDF are particularly important for the maintenance of the nuclear power plants' turbo-generators and of certain major components of fossil fuel-fired generation facilities. EDF does not consider that it is dependent on the Alstom group, which competes for most of the business given to it. In particular, in 2008 this competition led to Alstom and Toshiba being jointly awarded the major contract for the renovation of the generators of the nuclear power fleet.

5.

Information about the issuer

5.1 History and development of the Company 50
- 5.1.1 Company name and registered office 50
- 5.1.2 Trade and Companies Registry, APE code 50
- 5.1.3 Date of incorporation and term of the Company 50
- 5.1.4 Legal form and applicable legislation 50
- 5.1.5 History 50

5.2 Investments 51

5.1 History and development of the Company

In this reference document, references to the articles of association refer to the Company's articles of association as approved by Decree no. 2004-1224 of 17 November 2004, issued pursuant to Act no. 2004-803 of 9 August 2004 on public electricity and gas service and electricity and gas companies (the "Act of 9 August 2004"), as subsequently amended on several occasions.

5.1.1 Company name and registered office

The name of the Company is: "Électricité de France". The Company may also be legally designated by the acronym "EDF".

The Company's registered office is located at 22-30, avenue de Wagram in the 8th arrondissement of Paris.

5.1.2 Trade and Companies Registry, APE code

The Company is registered with the Paris Trade and Companies Registry under number 552 081 317.

Its APE code is 401 E.

5.1.3 Date of incorporation and term of the Company

EDF was incorporated pursuant to Act no. 46-628 of 8 April 1946 as a French public industrial and commercial establishment. It was converted into a French *société anonyme* (limited company) by the Act of 9 August 2004 and the Decree of 17 November 2004.

The Company was incorporated for a term of 99 years as from 20 November 2004, unless the Company is dissolved before such date or unless its term is extended.

5.1.4 Legal form and applicable legislation

Since 20 November 2004, EDF has been a French *société anonyme* with a Board of Directors. It is governed by the laws and regulations applicable to commercial companies, in particular the French Commercial Code, except in the event of specific exceptions stipulated in the French Energy Code, Act no. 83-675 of 26 July 1983 and its articles of association.

5.1.5 History

The main stages in the Group's development are described below.

EDF was created in 1946. Before 1946, the electricity sector had developed around numerous local companies across France. At the end of the 1930s, there were approximately 200 generation companies, approximately 100 transmission companies and 1,150 distribution companies.

This multitude of private companies, plus some 250 local utilities, were responsible for about 20,000 distribution concessions. From this highly fragmented segment, a certain number of large groups emerged in the fields of generation and distribution.

In 1946, the electricity and gas sectors were nationalised. The Act of 8 April 1946 created EDF as a French public industrial and commercial establishment and created a special status for the personnel of the electric and gas industries. The law nevertheless left in existence a certain number of non-nationalised distributors and local distribution companies.

Between 1946 and 2000, the Group's industrial base was developed. Initially, there was a fleet of fossil fuel-fired generation facilities using coal and then fuel oil, as well as hydropower facilities, in particular with the construction of the dams at Tignes in 1952 and Serre-Ponçon in 1960. In 1963, following the French government's decision to guarantee France's energy independence through nuclear power, EDF commissioned the first commercial-scale nuclear generation unit at Chinon (70 MW), the first of a series of six generation units of the Uranium Natural Graphite Gas (UNGG) family, the construction of which continued until 1972. The oil crises of 1973 and 1979 led to accelerated replacement of fossil fuel-fired power with nuclear power. In 1969, the UNGG family was abandoned in favour of the Pressurised Water Reactor (PWR) family, which was used for new power plants: 34 generation units totalling 900 MW, which were built until 1988; then, 20 generation units totalling 1,300 MW, which were built until 1994; then, four N4 generation units totalling 1,450 MW, which were commissioned in 2000 and 2002.

Beginning in the 1990s, EDF embarked on significant expansion abroad. In 1992, the Group acquired an interest in Edenor, a distribution and supply company in Argentina. It subsequently raised its stake in Edenor to 90%. In May 1996, EDF acquired a stake in the Brazilian electricity company Light, a distribution and supply company located in the state of Rio de Janeiro. As of 31 December 2004, EDF held 94.8% of the share capital of Light. In December 1998, EDF acquired 100% of London Electricity (which was renamed EDF Energy on 30 June 2003). This policy was pursued in 2000 with the acquisition of 20% of EnBW (a stake that was successively raised to 45.01% by 2005) and the acquisition of equity interests in the Italian company Edison by the IEB consortium (63.8%), in which EDF holds a stake of 18.03%, and in 2002, when London Electricity acquired 100% of the share capital of EPN Distribution Plc. and Seeboard Plc., two distribution companies located in the east and the southeast of England.

In France, the major development in recent years has been the liberalisation of the market pursuant to European regulations. In February 1999, sites where electricity consumption exceeded 100 GWh per year, i.e. 20% of the market, became entitled to choose their supplier. The eligibility threshold was then progressively lowered. In May 2000, 30% of the market was thus opened to competition, then 37% in February 2003. In July 2004, all of the market for non-household customers, equivalent to 69% of the entire market, was liberalised. Since July 2007, the market has been liberalised, including for residential customers.

At the same time, the structures necessary for a competitive market to function effectively were set up. The French Electricity Regulation Commission, which became the Energy Regulation Commission (*Commission de Régulation de l'Énergie* or "CRE") was created in May 2000. That same year, in order to guarantee non-discriminatory access to all operators in the market, EDF created Réseau de Transport d'Électricité (which became a wholly-owned subsidiary of EDF in 2005 under the name RTE EDF Transport, and which has been renamed RTE Réseau de Transport d'Électricité), an independent internal entity responsible for managing the high voltage and very high voltage public electricity transmission network. In 2000, the Group formed the trading company, EDF Trading, with the trading specialist Louis Dreyfus. It became a wholly-owned subsidiary of EDF in 2003. In 2001, Euronext and various industrial and financial operators in the electricity market, including EDF, created Powernext, the French electricity exchange. In 2001, as a condition for authorising EDF's acquisition of a stake in EnBW, the European Commission required EDF to set up a system of power

supply capacity auctions (Virtual Power Plants or "VPP") to facilitate access to the market for competitors. In 2003, the EDF group sold its stake in Compagnie Nationale du Rhône to Suez (now GDF Suez).

On 20 November 2004, pursuant to the Act of 9 August 2004, EDF became a *société anonyme* with a Board of Directors.

On 12 May 2005, EDF and A2A S.A. (formerly AEM S.p.A) entered into agreements for a joint takeover of Edison. A takeover bid was initiated on 4 October 2005, and the joint takeover was completed on 26 October 2005, the closing date of the bid.

Since 2005, the EDF group has pursued a strategy of refocusing on Europe and sold its controlling interest in its subsidiaries Edenor and Light and its assets in Mexico.

EDF filed for an initial public offering in the second half of 2005. Pursuant to this transaction, the Company offered 196,371,090 newly issued shares and the French government sold over 34.5 million shares it held to employees and former employees of EDF and of certain EDF subsidiaries. Subsequently, on 3 December 2007, the French government sold an additional 45 million of its shares.

In late November 2006, EDF Énergies Nouvelles, a subsidiary in which the EDF group holds a 50% stake, filed for an initial public offering. Pursuant to this transaction, 18,946,854 new EDF Énergies Nouvelles shares were issued, of which 4,798,464 were reserved to the EDF group.

Since 1 January 2008, EDF's distribution business has been conducted by Électricité Réseau Distribution France (ERDF), a wholly-owned subsidiary of EDF to which the distribution business was contributed pursuant to the Act of 7 December 2006 on the energy sector.

Since 2008, the EDF group has become a major player in the [revival of nuclear power internationally], by creating a joint venture with the Chinese utility CGNPC, acquiring British Energy, one of the largest energy companies in the United Kingdom, in January 2009, and acquiring nearly half of the nuclear assets of US-based Constellation Energy in November 2009. EDF also acquired a 51% stake in the Belgian power company EDF Luminus in late 2009, and subsequently raised its stake in SPE to 63.5% in June 2010.

On 29 October 2010, EDF finalised the sale of its British distribution networks to the Cheung Kong Group of Hong Kong and, on 17 February 2011, it completed the sale of its 45.01% interest in EnBW to the German state of Baden-Württemberg.

In 2011, after ten years of a strategic partnership in which it held a 50% stake in EDF Energies Nouvelles, EDF confirmed its positioning as a key player in the field of power generation using renewable energies by increasing its stake in the company to 100% pursuant to a simplified alternative cash or exchange tender offer for EDF Energies Nouvelles shares, followed by a squeeze-out of minority shareholders.

5.2 Investments

For a description of the Company's principal investments during 2010-2011, see section 9.4.1.2 ("Net cash flows generated by investments") of this reference document. For a description of the Group's investment policy for future financial years, see section 6.1.4 below ("Investment policy").

6.

Business overview

6.1 Strategy **55**
- 6.1.1 Context 55
- 6.1.2 Strategic vision 56
- 6.1.3 Strategic areas to 2020 56
- 6.1.4 Investment policy 58
  - 6.1.4.1 Investments in 2011 58
  - 6.1.4.2 Investments in 2012 58
  - 6.1.4.3 Investments to 2015 58

6.2 Presentation of the EDF group's business in France **59**
- 6.2.1 Deregulated activities in France 59
  - 6.2.1.1 Electricity generation 59
  - 6.2.1.2 Sales and marketing 84
  - 6.2.1.3 Upstream/downstream optimisation – trading 92
- 6.2.2 Regulated activities in France 93
  - 6.2.2.1 Transmission – Réseau de Transport d'Électricité (RTE) 93
  - 6.2.2.2 Distribution – Électricité Réseau Distribution France (ERDF) 98
  - 6.2.2.3 Island Energy Systems 103
  - 6.2.2.4 Tariffs for Using the Public Electricity transmission and distribution networks (TURPE) 105

6.3 Presentation of the EDF group's international business **106**
- 6.3.1 United Kingdom 107
  - 6.3.1.1 Presentation of business and strategy of the EDF group in the United Kingdom 107
  - 6.3.1.2 EDF Energy 108
  - 6.3.1.3 London 2012 Olympic and Paralympic Games 116
- 6.3.2 Italy 116
  - 6.3.2.1 Edison 117
  - 6.3.2.2 Energy efficiency in Italy 120
  - 6.3.2.3 Renewable energy in Italy 120
- 6.3.3 Other International 121
  - 6.3.3.1 Continental Europe 121
  - 6.3.3.2 Spain 125
  - 6.3.3.3 North America 126
  - 6.3.3.4 Asia-Pacific 131
  - 6.3.3.5 Latin America, Africa and the Middle East 132

6. Business overview

6.4 Other activities and cross-divisional functions **134**
6.4.1 Other activities **134**
6.4.1.1 Optimisation of Group trading 134
6.4.1.2 New energies 135
6.4.1.3 Dalkia 140
6.4.1.4 Électricité de Strasbourg 140
6.4.1.5 Tiru 140
6.4.1.6 Other equity interests 141
6.4.2 Gas Activities **141**
6.4.2.1 Context of the European natural gas market 141
6.4.2.2 The EDF group strategy for the natural gas market 141
6.4.2.3 Natural gas end-market 141
6.4.2.4 Securing natural gas supplies 142
6.4.3 Sustainable development policy and public service **145**
6.4.3.1 EDF's commitment to sustainable development 145
6.4.3.2 Environmental policy 146
6.4.3.3 Social policy 149
6.4.3.4 Dialogue with stakeholders: sustainable development panel, environmental, societal, scientific, and medical councils 150
6.4.3.5 Public service in France 150

6.5 Legislative and regulatory environment **151**
6.5.1 Electricity market legislation **151**
6.5.1.1 European legislation 151
6.5.1.2 French legislation: Energy Code 152
6.5.2 Gas market legislation **155**
6.5.2.1 Community legislation 155
6.5.2.2 French legislation: Energy Code 155
6.5.3 Public electricity distribution concessions **156**
6.5.4 Regulations applicable to the environment, nuclear facilities, health, hygiene and safety **156**
6.5.4.1 Basic regulations applicable to the environment, health, hygiene and safety 156
6.5.4.2 Regulations applicable to EDF group facilities and activities 158
6.5.5 Regulations applicable to the wholesale energy market **163**
6.5.6 Main regulation projects likely to affect EDF group businesses **163**
6.5.6.1 Future community regulation 163
6.5.6.2 Future national regulation 165

The EDF group is an integrated energy company with a presence in a wide range of electricity-related businesses: nuclear, renewable and fossil-fuel fired energy production, transmission, distribution, marketing as well as energy management and efficiency services, along with energy trading.

It is France's leading electricity operator and has a strong position in Europe (United Kingdom, Italy, countries in Central and Eastern Europe), making it one of the world's leading electrical providers as well as a recognized player in the gas industry.

	Net generation capacity[1]		Gross generation capacity[2]	
GW	**2011**	**2010**	**2011**	**2010**
Nuclear	74.8	74.3	77.5	77.1
Fossil-fuel fired	34.4	34.8	50.4	49.9
Hydropower and other renewables	25.4	24.8	30.9	30.9
TOTAL	**134.6**	**133.9**	**158.8**	**157.9**

(1) Net capacity: generation capacity attributed to the Group pursuant to consolidation rules.
(2) Gross capacity: total physical capacity of the unit in which the Group has a stake.

With a worldwide net installed capacity of 134.6 GWe[1] as of 31 December 2011 (124.2 GWe in Europe) and global energy generation of 628.2 TWh, the Group has one of the largest generating capacities of all the major worldwide energy corporations with the lowest level of CO_2 emissions per KWh generated[2] due to the proportion of nuclear, hydroelectric power and other renewable energies in its generation mix.

The EDF group supplies electricity, gas and associated services to more than 37.7 million customer accounts[3] worldwide (including nearly 27.9 million in France).

The Group's businesses reflect its adoption of a model aimed at finding the best balance between French and international activities, competitive and regulated operations and based on an upstream-downstream integration. In 2011, the Group's consolidated sales revenues was 65.3 billion Euros, earnings before interest, tax, depreciation and amortization came to 14.8 billion Euros, and net income excluding non-recurring items stood at 3.5 billion Euros.

The table below shows the Group's market share on its three main markets in 2011 and 2010:

	Electricity (generation)		Gas (sales)	
	2011	**2010**	**2011**	**2010**
France	80%	85%[1]	4%	4%[2]
United Kingdom	n/a[4]	16%[3]	n/a[4]	4%[3]
Italy	12%[5]	15%[5]	20%[5]	19%[5]

(1) Calculated on the basis of "Electrical power in France" published by RTE in 2010 and 2011.
(2) Calculated on the basis of data from the Ministry in charge of Energy (France).
(3) Calculated on the basis of figures from the Department of Energy and Climate Change (UK).
(4) Figures not available at the time this reference document is filed.
(5) Edison figures from Edison annual report and website.

6.1 Strategy

6.1.1 Context

The pressing context of financial and economic crisis is affecting all economic partners in OECD countries, including energy companies. The energy sector must additionally deal with uncertainty in terms of very volatile gas and oil prices as well as CO_2 on the European carbon market. The energy sector is also faced with developments in environmental and regulatory policies in Europe. However, these factors must not overshadow underlying trends and long-term challenges, which are still present in any case, and must help guide the decisions made by energy companies which must take a longer term view of their actions.

The major global changes taking place are characterised by:
- Long-term worldwide energy growth (+40% in 2035[4] compared to 2009), particularly in emerging countries with increasing demographics, is even more pronounced for electricity (+80% in 2035[5]); to date, 1.3 billion people do not have access to electricity, which is a considerable barrier to progress;
- The increasing cost of access to primary energy and resources;

(1) Source: EDF. Figures calculated according to the rules of accounting consolidation.
(2) Source: PricewaterhouseCoopers: "European Carbon Factor", November 2011.
(3) Source: EDF. One customer may have two accounts: one for electricity and one for gas.
(4) Source: "New policies scenario" reference scenario, AIE WEO 2011.
(5) Source AIE.

- The need to respect environmental policies aimed at "decarbonising" energy production so as to restrict the effects of climate change. The electricity sector has an important role to play in respecting this objective;
- The rise of a plural, multipolar world: new emerging powers (China, Brazil, India, Russia) signify the end of developed countries' exclusivity over the most powerful technologies;
- A raft of energy solutions meeting the needs of an increasingly urbanised world (50% of the population today lives in an urban setting, the urbanisation rate should reach 70% by 2050): urban systems, local energy, networks and smart meters;
- Increased awareness and responsibility for safety in respect of major industrial risks, such as accidents on oil rigs or in nuclear power plants: Fukushima was a watershed moment in 2011, profoundly changing the energy policies of some major economies in the developed world.

The worldwide energy challenge is thus to meet this growth in need, despite the increasing cost of access to resources and primary energy, coupled with climate restrictions. However, it does represent an advantage for electricity, seen as a "vector for energy" when the whole range of primary resources (nuclear, renewable, fossil-fuel) can be used to create an energy mix adapted to each country, to product affordable energy that respects the environment and climate.

With this in mind, low CO_2 emission technologies should be given priority upstream, while downstream, the demand for energy must be managed via more efficient usage.

6.1.2 Strategic vision

When facing all these developments and the geopolitical evolutions currently in progress, EDF – already the world's leading electricity producer – is aiming to set global standards as the leading electricity company, which involves:

- in every country where it conducts business, seeking the best production mix, adapted to the technical, economic, and environmental conditions, in close partnership with the various public authorities concerned and all stakeholders;
- thanks to its industrial mastery on the entire electrical chain (generation, grids, etc.), ensuring quality of service in terms of the volumes delivered to customers. Specifically being the leader in terms of nuclear safety, so as to pass on the benefits to all its existing and forthcoming facilities in France, Europe and internationally;
- extending and increasing high-performance uses of electricity. Energy efficiency requirements (demand management), smart grids and electrical mobility are all ideas that contribute to the concept of the sustainable city;
- adopting a worldwide scope, so as to seek growth where it can be found, by diversifying generation types and countries. This encourages feedback from areas where EDF is already established, and implementation of the best available technologies in all the countries in question;
- innovating on all the links in the integrated chain of generation, transmission, distribution, marketing, services and trading, to pave the way for tomorrow's solutions.

For an energy as vital as electricity, all these missions represent a public service process, Group heritage, and a sustainable asset for the future, adapted to each local situation.

6.1.3 Strategic areas to 2020

6.1.3.1 Strengthening the Group's competitive advantage on its existing bases

EDF's industrial expertise: at the core of EDF's business

The Group has recognised industrial expertise in terms of generation, transmission, distribution, and downstream processes (marketing, efficiency and energy management services) as an integrated player in the design, building and operation of resources, with an exemplary record in terms of the safety of its industrial tools, performance and customer satisfaction.

Specifically, in terms of generation, the Group intends to roll out its capabilities across all subsidiaries: from nuclear energy to major hydroelectric facilities, not forgetting other renewable energies, gas-fired and coal-fired thermal power plants.

Safe nuclear energy relies on the responsibility of an operator that, like EDF, integrates its skills of operation, building and design within a framework of continuous improvement, and on a Safety Authority that is independent and competent.

In connection with stress tests undertaken in 2011 on a European level so as to learn from the Fukushima accident, EDF is set to strengthen protection of its nuclear power plants to face flooding/earthquakes, and to set up a rapid response task force to combat extreme events (e.g. the loss of electricity supplies and cold sources) (see Section 6.2.1.1.3.5 ("Preparing the future of the nuclear power fleet in France")).

At this time when many countries use nuclear energy to meet their energy requirements in an affordable, decarbonised way, it is important to implement international discipline to move towards nuclear energy that is even safer and more demanding under the guidance of the International Atomic Energy Agency (IAEA) and the World Association of Nuclear Operators (WANO).

EDF is a worldwide reference, able to offer its skill bases and support those operators or countries who wish to use and develop safer nuclear energy.

France: the cornerstone of the Group's industrial legitimacy throughout the world

In France, EDF will continue with its actions implemented since 2010. In this respect, the Group has set down three priorities for its domestic market:

- Operating performance relating to the generation fleet (including feedback and lessons learned from Fukushima), grids and support provided to its customers;
- Strengthening of industrial tools via investment, specifically the Flamanville EPR.
- Skills renewal, thanks to the Group's ability to provide employees with opportunities to develop their mobility and to attract new talent.

United Kingdom: strengthening our position

EDF's ambition is to further anchor its base in the United Kingdom, preparing for a significant stage in the renewal of its generation fleet. The political decisions to support low-carbon energies, with the recent publication of the draft bill implementing a floor price for CO_2, strengthen the Group in its nuclear development projects. At the same time, the Group intends to extend the lifespan of its existing fleet, according to the utmost safety conditions.

Italy

A final agreement for the takeover of Edison by EDF was entered into on 15 February 2012 (see Section 6.3.2.1.2 ("Governance and agreements between EDF and A2A")).

Provided certain conditions are satisfied, this agreement will allow the EDF group to diversify its generation mix, to strengthen its position, with full control over Edison in Italy, one of the key energy markets in Europe, benefiting from a significant geostrategic position in terms of gas supply.

As regards gas, EDF can count on the skills of Edison (specifically for Exploration & Production) and its complementary positions to those taken by the Group in terms of gas infrastructures (specifically the Rovigo LNG terminal). In electricity, Edison will become a platform for group development in all countries around the Mediterranean basin, particularly in terms of thermal and hydroelectric power generation.

Lastly, after the Italian referendum on 12-13 June 2011 which rejected nuclear energy, EDF abandoned its project to build EPR units with ENEL in Italy.

Other European countries

Already present in Benelux and Central Europe, the Group wants to encourage the creation of operational synergies and to develop its activities in European countries where electricity growth is significant, particularly Poland.

6.1.3.2 Responding to the diversity of its customers throughout the world

EDF wants to strengthen its international presence and highlight the diversity of its expertise, a major asset for the Group, so as to respond to the variety of requests made by its customers:

- On an international level, outside China and the United States, EDF intends to strengthen its facilities in high-growth countries such as Poland, Brazil or Turkey, and in different parts of the world where projects – in most cases in partnership with local partners – are destined to create value. It requires leadership towards prudent but determined development, so as to broaden the Group's geographic coverage;
- In terms of generation, the Group aims to have a net installed capacity by 2020 of over 160 GW (gross capacity of 200 GW), made up of 50% nuclear, 25% coal- or gas-fired, and 25% hydroelectric and other renewable energies (wind power, biomass, solar power, etc.):
  - nuclear power, which provides competitive electricity without creating CO_2, is fully entitled to be part of the worldwide energy mix. Countries such as Russia, Brazil, India, the United States, China, South Africa and several countries within the European Union, for example the United Kingdom, Poland, Finland or the Czech Republic, have confirmed that nuclear power will play a significant role in their electricity generation;
  - as regards hydroelectric power, the Nam-Theun II experiment in Laos showcases EDF's ability. Other Asian countries, along with those in South America, are interested;
  - in fossil-fuel thermal power plants, EDF intends to provide its knowledge of the most modern and environmentally friendly technologies, along with its project management expertise;
  - as for other renewable energy sources, the complete takeover leading to a 100% stake in the capital of EDF Énergies Nouvelles acquired during 2011 is wholly consistent with this ambition.
- Furthermore, the Group would like to showcase its experience in the planning, design or operation of grids with countries that wish to strengthen or modernise their infrastructures and move towards smarter grids. Partnerships between ERDF and Chinese and Russian grid operators are the first examples of this;
- In the downstream segment, which comprises optimisation, trading and marketing of offers adapted to customers, EDF intends to develop the value of the customer portfolio and widen the scope of its skills outside France. EDF is committed to building its customer loyalty thanks to the excellence of its customer relationship and the support of their actions and investments in energy efficiency. EDF also provides specific treatment for customers facing energy insecurity;
- Lastly, EDF considers gas as an *essential* component of a modern, low CO_2 emission generation fleet. Gas is also a structural element in its electricity operator business, specifically enabling the supply of the Group's combined-cycle gas turbines, or the extension of offers to end-customers. Investment projects in the Dunkirk LNG terminal, decided in May 2011 and in new gas storage facilities, participation in the South Stream international gas pipeline project, and the final agreement between EDF and Delmi for the complete takeover of Edison are at the core of this process (see Sections 6.4.2.4.2 ("Imports and flexibility: gas pipelines, LNG chain and storage"), 6.3.3.1.2 ("Russia") and 6.3.2 ("Italy")).

Selectivity and pragmatism (expectations of countries, knowledge of players and partnerships, opportunities) will be key factors in terms of the choices to be made.

EDF would like to provide sustainable industrial solutions via varied contractual methods: contracting assistance, third-party management or IPP (Independent Power Producer) investments. Rights of control in the shareholders' agreements will enable the Group to take full responsibility for its industrial and technological choices.

6.1.3.3 Controlling the future, thanks to combining the unique expertise of EDF and anticipating long-term needs

EDF wants to strengthen its innovation and R&D efforts so as to pave the way for the future in a context where the world is facing major challenges linked to global warming, supply security and the continuously increasing demand for world electricity. 2,000 engineers and technicians are thus working towards the development of the Group's ability to anticipate future needs in all its business lines: the safety and performance of production tools and grids, alongside efficient usage (see Section 11.2 ("R&D Priorities")).

The Group will specifically emphasise:

- low CO_2 emission generation activities. For instance, in addition to nuclear and hydroelectric power, technologies such as new generation

photovoltaics, concentrated solar power, off-shore wind farming, or tidal turbine farming, represent potential in the future;
- CO_2 capture and storage, an essential challenge for the sustainable use of coal (as a fuel) throughout the world;
- investment linked to the lifespan of materials, specifically the replacement of some major equipment items with a view to improving both operational performance and safety levels. An important theme in R&D is the study of how materials age, a key area to calculate the operational lifespan of power plants.

EDF will also focus its R&D efforts on sales and grids, and on monitoring significant changes. The development of smart electrical systems, such as the Linky communicative meter, tested successfully by ERDF in Lyon and Tours, and the services EDF can offer its customers downstream of the meter (such as improvements in managing consumption) are an important part of this system. Research undertaken by EDF will also focus on the development of reasonably priced low-energy buildings, smart buildings, and innovative uses of electricity, for transmission, comfort or industry. Thanks to the opportunities uncovered by smart electrical systems, EDF will be able to effectively position electricity in the transition to a low carbon society, specifically built around sustainable cities.

The quality and motivation of EDF's teams, their skills, their corporate involvement and their public service mission are also an essential asset for the future of the company. Because the Group will have to deal with a substantial wave of retirements in the coming years, guaranteeing the wealth of this human capital within the company is a subject which is continuously addressed.

Attracting new talent and further increasing training efforts will be central to the Group's concerns in order to succeed in the mission it has set itself (see Section 17.1.2 ("Training and mobility policy")).

6.1.4 Investment policy

6.1.4.1 Investments in 2011

The Group continued its programme of gross operational investments, for an income of 11.1 billion Euros in 2011, compared to 10.3 billion Euros in 2010(1). Capital investments focused on both the regulated (29%) and deregulated (71%) segments. In the deregulated segment, investment is distributed almost evenly between investments to develop new capabilities (new nuclear power plants, combined-cycle gas turbines) for 3.9 billion Euros (49% of the total) and maintenance investment standing at 4 billion Euros (51% of the total) of which some 2.5 billion Euros are dedicated to nuclear power plant maintenance. In France, operating investments rose 10% to 7.4 billion Euros. Substantial operational investments were made in the United Kingdom of almost 1.2 billion Euros in terms of renewable energies and new nuclear power plant development.

In the rest of Europe, operational investments reached some 0.8 billion Euros and 1.8 billion Euros in other business (EDF Énergies Nouvelles, EDF Trading and Dalkia).

At the beginning of 2011, the EDF group recorded 4.5 billion Euros in disposals in Germany as a result of the sale of its stake in the German group EnBW in Baden-Wurtemburg. This 4.5 billion Euros came in addition to the advance of 169 million Euros paid on 16 December 2010.

In 2011, EDF also made 2 billion Euros of external growth investments, specifically for an alternative simplified purchase or exchange offer on EDF Énergies Nouvelles followed by a compulsory withdrawal for a total of 1.5 billion Euros.

6.1.4.2 Investments in 2012

In 2012, the Group's operational investments should once again be up compared to the 11.1 billion Euros invested in 2011.

The external growth investments in 2012 will specifically concern the takeover of Edison, which should entail a maximum investment of around €1 billion assuming that all minority shareholders are taken over (see Section 6.3.2.1.2 ("Governance and agreements between EDF and A2A")).

6.1.4.3 Investments to 2015

By 2015, the Group aims to develop its business model to increase profitability. To do so, the increase in investments, though these will not exceed 15 billion Euros in 2015, goes hand-in-hand with increased demands in terms of profitability. Value creation should be at some 300 basis points above the weighted average cost of capital, which represents a substantial increase compared to the 100-150 basis points required previously.

The Group will consistently increase its investments in the nuclear fleet by 2015, with a view to reinforcing safety and allowing efficient operation of the fleet, by increasing output. Maintenance will be given priority, with an increase to the major component replacement programme (3.4 to 3.6 billion Euros by 2015) aimed at extending the operational lifespan of power plants to greater than 40 years in the best possible conditions of safety and operation. For instance, this was reflected in 2011 in the signing of an agreement with AREVA to overhaul safety control monitoring systems for 1,300 MW reactors and the ordering of 44 steam generators. Lastly, the Group will capitalise on the lessons learned from the Fukushima accident and plans to invest an overall amount of around 10 billion Euros, in line with the recommendations of the ASN (French Nuclear Safety Authority) according to a schedule that will be laid down by mid-2012.

(1) Adjusted 2010 scope, that is to say based on a comparable scope for 2011: excluding EnBW, grids and the Eggborough power plant in the United Kingdom, with RTE accounted for under the equity method.

At the same time, in order to access an electricity generation fleet in which 75% of generation does not emit CO_2, the EDF group will invest so as to diversify its energy mix. Several long-term investments were already decided upon in 2011. In France, the coal-fired power plant in Bouchain will be turned into a 510 MW gas-fired power plant based on the turbine developed jointly with GE Energy. EDF also decided to launch the Dunkirk LNG terminal, which is due to be commissioned in the second half-year 2015, for a group share stake of 650 million Euros. Lastly, in Europe, 1.8 billion Euros will be invested in Poland for the building of a supercritical coal-fired power plant of 900 MW, which is part of the Group's objective to strengthen its positions in Central Europe.

6.2 Presentation of the EDF group's business in France

6.2.1 Deregulated activities in France

EDF's deregulated activities in France (activities open to competition), include electricity generation and the sale of electricity and natural gas. EDF is implementing an integrated model for the joint operational management of its portfolio of assets upstream (generation and procurement of energy and fuels) and downstream (wholesale and retail) to guarantee supply to its customers through the best possible management of operational and market risks and with a view to maximising gross margin.

6.2.1.1 Electricity generation

EDF groups together its main electricity generation activities in France within its Generation and Engineering Division which has all of the skills and performance levers necessary to operate the largest European electricity generation fleet and to manage its development and continuity.

As of 31 December 2011, the Generation and Engineering Division had 36,569 employees(1). It is organised around three main businesses: nuclear, hydroelectric and fossil-fuel thermal power. In addition, its engineering department provides technical and industrial skills to the entire Group in these three fields (see Section 6.3 ("Presentation of EDF group's international business")).

6.2.1.1.1 General presentation of EDF's generation fleet

6.2.1.1.1.1 Composition and specifications of the installed fleet

With a total installed capacity of 97.4 GW in mainland France(2) as of 31 December 2011, EDF has the largest generation fleet in Europe, accounting for just over 10% of the total installed capacity of the main countries of Europe (the 35 countries having members of ENTSO-E, the *European Network Transmission System Operators for Electricity* – which includes, in particular, Germany, Italy and Spain).

In 2011, EDF's generation fleet represented 459.7 TWh.

As of 31 December 2011, the capacity of EDF's generation fleet in mainland France was as follows:

- 58 nuclear units based on pressurised water reactors ("PWR") (a unit is defined as a generation unit including a reactor, steam generators, a turbine, a generator and the related equipment): these units are spread out over 19 sites and have varying electrical power capacities: 34 units have a power capacity of 900 MW each, 20 units have a power capacity of 1,300 MW each, and 4 units have a power capacity of 1,450 MW each; while the average age of units is 26 years(3) (between 10 and 34 years), the average age of the 900 MW units is around 30 years, while for 1,300 MW units it is 23 years, and for 1,450 units it is 11 years;
- 36 functioning fossil-fuel thermal units, with those in service having an average age of approximately 30 years; in addition, 6 units under guaranteed multi-year shutdown;(4);
- 435 hydropower plants with an average age of 68 years(5)

There were also:

- the wind power generation capacities of EDF Énergies Nouvelles in France (see Section 6.4.1.2.2 ("EDF Énergies Nouvelles")) and the incineration plants of the TIRU group (see Section 6.4.1.5 ("TIRU"));
- 82 hydropower plants falling within the operational boundaries of the Generation and Engineering Division, though held by Group subsidiaries: SHEMA (100%), FHYM (69.4%), and CERGA, held on a 50/50 basis with EnBW. These plants represent a total of 120 MW of installed capacity in 2011 and 570 GWh of energy production(6).

6.2.1.1.1.2 Evolution of the installed capacity and generation over the last three years

The table below shows the evolution of the fleet's installed capacity in mainland France over the last three years:

	At 31/12/2009		At 31/12/2010		At 31/12/2011	
Installed Capacity(1)	**MW**	**%**	**MW**	**%**	**MW**	**%**
Nuclear	63,130	65	63,130	65	63,130	65
Hydropower(2)	20,027	21	20,022	21	20,007	20
Thermal(3)	13,642	14	14,012	14	14,275	15
TOTAL	**96,811(4)**	**100**	**97,176(4)**	**100**	**97,424(4)**	**100**

(1) Expressed in MW of maximum power connected to the grid.
(2) Excluding Corsica and the French overseas departments, 400 MW in 2011.
(3) Excluding Corsica and the French overseas departments, 1,482 MW in 2011, and including 2,075 MW of units under guaranteed multi-year shutdown.
(4) This value also includes 12 MW of wind generation capacity.

(1) An increase of 1,396 employees compared to 2010.
(2) For Corsica and French Overseas Departments, see Section 6.2.2.3 ("Island Energy Systems").
(3) Arithmetic mean calculated from industrial commissioning.
(4) The generation facilities under "guaranteed multi-year shutdown" are awaiting a decision of reactivation or operational withdrawal.
(5) Arithmetic mean.
(6) Energy production and capacity are indicated on a proportional basis according to stake.

The table below shows the evolution of the generation from EDF's installed capacity in mainland France over the last three years:

	At 31/12/2009		At 31/12/2010		At 31/12/2011	
Output	**TWh**	**%**	**TWh**	**%**	**TWh**	**%**
Nuclear	389.8	88.4	407.9	88.0	421.1	91.6
Hydropower (1) (3)	35.1	8.0	38.8	8.4	26.8	5.8
Thermal (2)	16.0	3.6	16.9	3.6	11.8	2.6
TOTAL (4)	**440.9**	**100**	**463.6**	**100**	**459.7**	**100**

(1) Excluding Corsica and the French Overseas departments, 1.1 TWh in 2011.

(2) Excluding Corsica and the French Overseas departments, 4.5 TWh in 2011.

(3) Net production: the electricity consumption needed for the operation of pumped storage plants amounted to 6.9 TWh in 2011, resulting in a gross hydropower generation (net of pumped storage consumption) of 33.7 TWh.

(4) These values correspond to the sum of the specific values, corrected to one decimal place.

6.2.1.1.2 Strengths of the generation facilities' fleet

With a total installed capacity of 97.4 GW as of 31 December 2011, in mainland France EDF has the largest fleet of generation facilities in Europe. This fleet has significant assets:

- a competitive generation mix with low variable generation costs(1) and limited exposure to hydrocarbon market fluctuations due to nuclear and hydropower facilities;
- a variety of generation means enabling adequate coverage of EDF's downstream portfolio needs (end users, Virtual Power Plant or VPP, sales to alternative suppliers, sales on the wholesale markets, etc.). Use of the fleet's various components is managed by giving priority, at any given time, to the generation type offering the lowest variable costs. Run-of-river hydropower plants are used for base generation. Nuclear plants, because of their low variable generation costs, are used for baseload and mid-merit generation. Adjustable hydropower generation (coming from dams) and fossil-fired plants are used for mid-merit and peak generation;
- a significant standardised fleet of nuclear facilities, for which EDF provides full control over their entire life cycle. Moreover, EDF is working towards extending the operating life of its power plants and improving their technical performances;
- a fleet generating at over 95% without CO_2 emissions due to the predominance of nuclear and hydropower generation facilities, in an increasingly restrictive environmental regulatory context; and
- a geographical position at the junction of electricity exchanges between the continental platform and the electric peninsulas (Italy, Spain, the United Kingdom).

6.2.1.1.3 Nuclear generation

The electricity generated by EDF from its fleet of nuclear power plants represents, as of 31 December 2011, 91.6% of its total electricity generation. The specifications of this fleet are given below.

6.2.1.1.3.1 EDF's nuclear fleet

EDF's PWR model is divided into three series of available electrical power:

- 900 MW series consisting of 34 units of approximately 900 MW (i.e., a total power capacity of 30,770 MW); and
- 1,300 MW series consisting of 20 units of approximately 1,300 MW (i.e., a total power capacity of 26,370 MW); and
- the N4 series, the newest, consisting of 4 units of approximately 1,450 MW (i.e., a total power capacity of 5,990 MW);

Totalling 58 units in service spread over 19 sites owned by EDF, with a total installed capacity of 63,130 MW as of 31 December 2011.

(1) Variable generation costs correspond to all costs that vary directly with the level of energy generated. For electricity generation, variable costs are essentially made up of fuel.

The commissioning dates for these units are as follows:

Units	Year of industrial commissioning	Next ten-year inspection	Units	Year of industrial commissioning	Next ten-year inspection
Fessenheim 1	1978	VD4	Gravelines 6	1985	VD3
Fessenheim 2	1978	VD4**	Cruas 3	1985	VD3
Bugey 2	1979	VD4*	Cruas 4	1985	VD3
Bugey 3	1979	VD3	Chinon B3	1987	VD3
Bugey 4	1979	VD4*	Chinon B4	1988	VD3
Bugey 5	1980	VD4*	Paluel 1	1985	VD3
Dampierre 1	1980	VD4*	Paluel 2	1985	VD3
Gravelines 1	1980	VD4**	Paluel 3	1986	VD3
Gravelines 2	1980	VD3	Paluel 4	1986	VD3
Tricastin 1	1980	VD4	St Alban 1	1986	VD3
Tricastin 2	1980	VD4*	Flamanville 1	1986	VD3
Dampierre 2	1981	VD3	St Alban 2	1987	VD3
Dampierre 3	1981	VD3	Flamanville 2	1987	VD3
Dampierre 4	1981	VD3	Cattenom 1	1987	VD3
Tricastin 3	1981	VD3	Cattenom 2	1988	VD3
Tricastin 4	1981	VD3	Nogent 1	1988	VD3
Gravelines 3	1981	VD3	Belleville 1	1988	VD3
Gravelines 4	1981	VD3	Belleville 2	1989	VD3
Blayais 1	1981	VD3	Nogent 2	1989	VD3
Blayais 2	1983	VD3	Penly 1	1990	VD3*
Blayais 3	1983	VD3	Cattenom 3	1991	VD3*
Blayais 4	1983	VD3	Golfech 1	1991	VD2
St Laurent 1	1983	VD3	Cattenom 4	1992	VD2
St Laurent 2	1983	VD3	Penly 2	1992	VD2
Chinon B1	1984	VD3	Golfech 2	1994	VD2
Cruas 1	1984	VD3	Chooz B1	2000	VD2
Chinon B2	1984	VD3	Chooz B2	2000	VD2
Cruas 2	1984	VD3	Civaux 1	2002	VD2*
Gravelines 5	1985	VD3	Civaux 2	2002	VD1

** Subject to operating approval from the ASN. The operating permit for additional years is given by the ASN during the generation cycle following each ten-year inspection. It is expected to fall in 2012 ten-year inspections made in 2011.*

*** VD3 in progress at 31 December 2011.*

The first unit of the 900 MW series was commissioned at Fessenheim in 1978. The most recent unit was commissioned at Civaux in 2002. EDF's nuclear fleet is one of the youngest in the world, with an average age of approximately 26 years for an estimated technical operating life in excess of 40 years (accounting lifetime of nuclear units).

The EDF power plants based on first-generation technology have been gradually shut down and are being decommissioned (see Section 6.2.1.1.3.6 ("Decommissioning of nuclear power plants")).

Generation allocation contracts

EDF has developed an industrial cooperation with European operators in the nuclear industry, in the form of generation allocation contracts related to units of EDF's French nuclear fleet. Thus, EDF's fleet includes 11 generation units (currently up to 1.4 GW, evolving to 1.6 GW with the start-up of Flamanville 3) with the following European electricity companies:

- Fessenheim 1-2: EnBW (17.5%) and the consortium of Swiss electricity companies, CNP (15%);
- Cattenom 1-2: EnBW (5%);
- E.On acquired access on 1 January 2010 to the equivalent of historic drawing rights which EnBW had in relation to EDF's nuclear generation. However, the change in capital ownership of EnBW did not affect the generation allocation contracts signed with EDF. Therefore, EnBW remains the holder of the generation allocation contracts entered into with EDF.
- Bugey 2-3: Électricité de Laufenbourg(1) in Switzerland (17.5%);
- Tricastin 1 to 4: Electrabel (12.5%);
- Flamanville 3 under construction: Enel (12.5%) (See Section 6.2.1.1.3.5 ("Preparing for the future of the nuclear fleet in France")) for the industrial partnership agreement signed with Enel on 30 November 2007).

(1) Axpo group.

The purpose of these generation allocation contracts, for each unit concerned, is to make available to each partner the proportion of energy generated which is actually due to them in return for payment of their share of the construction costs, annual operating costs (including the upstream and downstream fuel costs), local taxes and taxes specific to nuclear energy, and the costs relating to decommissioning. In these operations, the partners shared the industrial risks with EDF during the development of the power plants (involving three initial series units) and assume the performance risks associated with the current operation of the power plants. They have, however, no operational role.

Furthermore, EDF signed a second type of generation allocation contract (totalling a little over 2 GW) enabling its partners to receive a share of the electricity generation from a given power plant fleet based on the average actual performance of that fleet. These contracts mainly concern the following power plants:

- Chooz B1-B2 (initial series unit N4): Electrabel (21.67%) and the Belgian company EDF Luminus (3.3%);
- Cattenom 3-4: Électricité de Laufenbourg in Switzerland (7.8%) and the consortium of Swiss electricity companies CNP (21.8%).

6.2.1.1.3.2 Operation and performance of the nuclear fleet

The nuclear generation variable cost, mainly made up of the fuel costs, is low since it represents less than 30% of operating costs(1). Therefore, the main competitive levers of the nuclear fleet are the amount of generated energy and the optimisation of fixed operating costs. The levers relating to the fuel cycle are further discussed in section 6.2.1.1.3.4 ("The nuclear fuel cycle and related issues"). Based on a constant scope in terms of capacity, EDF aims to increase its nuclear energy generation and reduce non-fuel operating costs.

Operation methods of the nuclear fleet

Generation cycle and planned shutdowns

In order to reconcile the issues concerning the strong variations in seasonal consumption in France, the availability of maintenance resources, and the efficient use of reactor fuel, EDF has now adopted normative operating cycles of 12 and 18 months for its fleet. At the end of 2011, they were spread as follows:

- 28 units of the 900 MW series have an operating cycle of 12 months;
- 6 units of the 900 MW series, 20 units of the 1,300 MW series, and since 2010, 4 units of the N4 series (1,450 MW) have an operating cycle of some 18 months.

After each 12 and 18 month operating cycle, shutdown periods are programmed in order to replace a fraction of the fuel loaded in the reactor's core and to perform scheduled maintenance.

Two types of programmed shutdowns are alternated at the end of each generation cycle:

- an ordinary shutdown for refuelling only (*Arrêt pour Simple Rechargement*, or "ASR"), during which unloading spent fuel and refuelling fresh fuel is the main operation performed, although light maintenance or periodic testing may also take place. This shutdown period is around 35 days;
- a partial inspection (PI) for refuelling and maintenance, for which the period is around 60 days.

Every ten years, the power plant is shut down for a period of around 100 days in order to perform a ten-year inspection. This length varies according to the works and maintenance programme and the series in question. The programme for a ten-year inspection comprises:

- the unloading of spent fuel and loading of fresh fuel, as is the case at each shutdown;
- hydropower tests of the primary and secondary circuits, a liner test, and inspection works on the reactor vessel;
- adjustment work, associated with ten-year safety reassessments;
- other specific maintenance operations including major component renovation.

Operation of EDF's nuclear fleet

Owing to their low variable cost, nuclear generation means are first and foremost used as base-load generation means, after the run-of-river hydropower, the other renewable energies and the energy bought under the purchase obligations from the decentralised electricity producers. The variations in consumption of EDF's final customers during one year (summer-winter, day-night) and the current restrictions in fluidity of the wholesale markets due to limited interconnections, lead to nuclear power also being used for mid-merit generation. High variations in seasonal consumption in France and variations in levels of consumption during the winter months (a drop in temperature of 1°C in winter entails a rise in electricity consumption in France which can reach 2,300 MW(2)) require that nuclear fleet shutdowns be concentrated between April and October. The 2003 heat wave highlighted the consequences of very high temperature increases in rivers, in particular regarding the operating conditions of "riverside" units. The frequency of unit shutdowns was thus reviewed to reduce the number of shutdowns in "seaside" units during July and August and thus to encourage these units to continue to operate at maximum generation, since their cooling capabilities are not linked to climatic conditions.

Generation and technical performance

The nuclear fleet's generation amounted to 421 TWh in 2011, a volume up 13.2 TWh (i.e., 3.2%) in comparison to that of 2010.

Nuclear generation expressed in annual energy corresponds to a load factor, "Kp" for the French nuclear fleet (defined as the generated energy compared to the maximum theoretical energy, the latter notion corresponding to the constant operation of the installed capacity throughout the year). This factor is obtained by multiplying two coefficients (Kp = Kd* Ku):

(1) Operating costs are cash costs and are defined as follows: fuel costs (including back-end expenses in the fuel cycle), operating expenses (external services and purchases, employees) and maintenance costs (expenses and investments). They do not include investments related to construction, decommissioning expenses, or depreciation and provisions.

(2) Source: RTE.

- the availability factor, "Kd" (the available energy[1] as a percent of the maximum energy that could be generated if the installed capacity were operated year-round);
- a utilisation factor, "Ku" (energy generated compared to energy available). Ku reflects environmental and social constraints, supply of system services, and optimisation implemented by EDF (fuel and modulation).

In 2011, Kp was up, at 76.1%, compared to 2010 (73.8%). This is the consequence of a Kd of 80.7%, up 2.2 points compared to 2010, and a Ku of 94.3%, up 0.3 points compared to 2010.

Compared to 2010, the change in output of 13.2 TWh is mainly a result of:
- the substantial reduction in exceptional outages, below 3.5% compared to 2010, thanks to the completion of the steam generator leaching programme in 2011, and the smaller number of outages on main transformers and generators;
- achieving the best rate of unplanned unavailability in the history of the EDF fleet (2.2%), confirming the relevance of the actions undertaken in terms of managing technical threats via increasing the reliability of materials and organisations;
- this was achieved despite a total of 9 ten-year inspections in 2011, compared with 5 in 2010, the impact of which corresponds to additional planned unavailability in the region of 1.5 points.

Good results were obtained in 2011 thanks to a proactive maintenance strategy implemented since 2007, specifically with the preventative replacement of major components (steam generators, main transformers and alternator stators).

The projects undertaken, in terms of organisation, work methods, renovation and major component replacement alike, should allow a Kd of close to 85% to be achieved by 2015 (as regards the status of regulations at the end of 2011 on nuclear fleet operation). Treatment of recommendations made by the French Nuclear Safety Authority (ASN) following its orders to conduct additional safety assessments, a direct result of the Fukushima accident, will seemingly have a significant impact on the volume and scheduling of operations to be performed, and allow this objective to be specified.

Generation 2020: The EDF operational fleet project

So as to improve the availability, further increase the level of safety and make way for the extension to the fleet's operating period (see 6.2.1.1.3.5 ("Preparing for the future of the nuclear fleet in France")), EDF will carry out a substantial volume of works in the coming years on each of its 58 units. This is the aim of the *"Grand Carénage"* or large-scale streamlining programme, scheduled for the Generation 2020 operational fleet project.

The objective of the generation 2020 project is twofold: before and after 2015.

To strengthen the reliability of materials, manpower and organisations by 2015

During this period, EDF aims to perpetuate its technical and industrial asset base, via both technical and organisational actions. The renovation or replacement programmes for large power plant components such as generators, transformers and steam generators are set to continue. By the end of 2011:
- the steam generators of the 15 units concerned had been chemically cleaned using the clogging phenomenon;
- generator stators were renovated on 27 units, out of a total of 48 units showing insulation risks;
- preventative replacement of the "shielded" poles of the main transformers is ongoing. At the end of 2011, two units were completely renovated. This programme, which will be industrialised from 2012 with the replacement of poles for an average of 4 units per year, will allow renovation of the remaining N4 series and make secure the units of the 1,300 MW series by the end of 2012;
- between 1990 and the end of 2011, steam generators were replaced in 21 units.

The third round (VD3) of ten-year inspections on 900 MW units is thus an opportunity to start renewal of major components, and both of the Fessenheim reactors had their steam generators, condensers, and generators changed after their VD3 inspections, at a cost of some 300 million Euros per reactor.

Furthermore, all feedback from the Fukushima accident will be integrated so as to further improve the safety levels of facilities, as has always been the case after each major event in the history of the nuclear industry.

Regarding the organisational aspect of everyday maintenance, EDF's aim is to continue deployment of the *AP 913* (see glossary) procedure, which worked well in the United States and gives very good results in terms of equipment reliability. In fact, this procedure to increase the reliability of materials and to draft condition reports for materials means that the rate of unplanned unavailability can be greatly reduced. In the United States, the unplanned unavailability rate has dropped sharply: some operators have found that the average fleet unavailability figure has dropped an average of 1% over the 5 years following rollout of the procedure. In the French fleet, a proportion of the improvement in the unplanned unavailability factor can be attributed to the procedure, even though it has only just been implemented.

Strengthening the operational running of production and of unit outages through continually systematising the running of operations and by rolling out a new information system (SDIN) will also be pursued. Unit outage management is strengthened by implementing an Operational Centre for Continuous Management of Units Outages (COPAT) for each outage, with a target of reducing the average time for outage periods via continuous management of the critical activities of the outage and a reactive response to technical alerts.

(1) The available energy is equal to the maximum theoretical energy less losses for technical reasons inherent to power plants, such as planned shutdowns, unplanned outages due to failure or safety requirements, and regulatory tests.

Beyond 2015: Further improve the safety level and renovate facilities

The GENERATION 2020 project will continue beyond 2015, specifically during the third ten-year inspections of the 1,300 MW units and the fourth ten-year inspections of the 900 MW units. This project will provide an opportunity to implement safety improvements and to integrate feedback from the Fukushima accident, as well as any changes associated with the aim of extending the operational life of facilities to 60 years.

6.2.1.1.3.3 Environment, safety and radiation protection

Environmental safety

EDF bases its environmental procedure on an ISO 14001-certified management system (see Section 6.4.3.1.2 ("Managing sustainable development") below). Started in 2002 over a number of sites, ISO 14001 certification was widened to include all nuclear production units in 2004. After the renewals of 2005 and 2008, ISO 14001 certification was once again renewed in 2011 for all nuclear production units.

In this respect, EDF is making great efforts to reduce the incidence of liquid and gas emissions into the environment by its nuclear power plants. From 1990 to 2002, while already much lower than the regulatory limits, EDF reduced its radioactive liquid emissions by a factor of 30 (excluding tritium and carbon-14). Since then, liquid emissions have again been halved, and now stand at a very low level.

In terms of the waste management plan, very low-level waste has been removed to the Morvilliers disposal facility since 2004. As regards low- and intermediate-level waste, EDF is continuing to take steps to limit its storage on all nuclear sites. However, the unavailability of the centraco plant, which deals specifically with incineration, following the accident of 12 September 2011 in one of the facility's furnaces, led EDF to take remedial measures. Low-level waste that is usually incinerated is for the most part disposed of directly at the Aube disposal facility, while the remainder continues to be stored at centraco and on power plant sites.

For a description of radioactive waste processing downstream of the fuel cycle as well as decommissioning, see sections 6.2.1.1.3.4 ("The nuclear fuel cycle and related issues") and 6.2.1.1.3.6 ("Decommissioning of nuclear power plants").

Under the authority of the ASN, a national network measuring environmental radioactivity has been established, with the aims of synthesising the results of environmental radioactivity measurements and ensuring the quality of these measurements. The regulatory measurements of environmental radioactivity around nuclear power plants have been available to the public since January 2010 on the website www.mesure-radioactivite.fr.

An ever-present nuclear safety procedure

EDF, in its capacity as a nuclear operator, assumes responsibility for nuclear safety and reaffirms nuclear safety as its top priority within a context of rapid evolution (market competition, environmental issues, etc.).

The implementation of the French nuclear electricity programme led EDF to establish a safety procedure that:

- takes into account, from the design stage, the risks that might arise during the operation of the power plants, whether relating to the actual operation of the installations or to internal or external attacks;
- is based both on the application of strict rules of operation, and on the prudent and inquiring attitude of the technical teams by means of establishing a true safety culture;
- is based on the cumulative experience of a standardised fleet of 58 reactors (i.e., more than 1,500 reactor years of operation, the arithmetic sum of years of operation of EDF's PWR plants);
- incorporates a continuous improvement process that is notably embodied by ongoing efforts to decrease the number of automatic reactor trips;
- benefits from integrated nuclear engineering and R&D within the Group in order to anticipate the correction of failures, maintain the installations in good working order, develop materials/equipment on an ongoing basis, reassess safety margins, monitor technology advances as well as implementing more effective new technologies and managing work at sites being decommissioned;
- relies strongly on the development of skills; with this objective in mind, each nuclear generation site is equipped with a global simulator used for training and preparation to cope with any type of situation.

Nuclear safety is subject to numerous controls, both internal and external. The external control of the safety of nuclear facilities in France is carried out by the ASN.

At the national level:

- regulatory inspections carried out on sites by ASN, randomly or on a scheduled basis (approximately 450 inspections per year);
- a safety re-examination process conducted on a 10-year basis has also been in place since 1990. It aims to strengthen management of compliance with safety standards for operation of nuclear plants and to reassess these standards based on feedback and new knowledge. The safety standards reassessed in this way are then set until the next re-examination. The objectives are established by the ASN (which monitors compliance) while EDF proposes solutions to meet them, implementing them after obtaining ASN approval. A safety re-examination was undertaken in the context of the second and third 10-year inspections of the 900 MW plants, second 10-year inspections of the 1,300 MW plants and first 10-year inspections for the N4 series plants. The third ten-year inspections were carried out in the 9 units of the 900 MW series at the end of 2011 (two inspections were ongoing as of 31 December 2011) (see Section 6.2.1.1.3.5 ("Preparing for the future of the nuclear fleet in France")). At the end of 2011, the second ten-year inspections were carried out for 16 units of the 1,300 MW series (out of a total of 20) and the first ten-year inspections for 3 units of the N4 series (out of a total of 4). The ten-year safety review is an important step in extending the operating life of power plants (see Section 6.5.4.2.2 ("Specific regulations applicable to basic nuclear facilities")).

At the international level, regular inspections are held making it possible to share the experience gained worldwide:
- the OSART (Operational Safety Review Team) of the IAEA (International Atomic Energy Agency) performs reviews at the request of the French State with the objective of formulating recommendations and promoting good working practices; and
- the international Peer Review inspections carried out by WANO (World Association of Nuclear Operators) are organised at the request of EDF and deal with the assessment of safety performance and also help promote best international working practices.

EDF has also implemented internal control procedures. For example, every three to four years, EDF performs overall safety assessments for each nuclear power plant, which take place over a three-week period and involve approximately 30 inspectors. In addition, the General Inspector for nuclear safety and radiation protection, reporting to and appointed by EDF's Chairman and Chief Executive Officer, performs audits to assess the overall safety of the nuclear fleet on an annual basis and to provide the company's management with suggestions for improvements.

Efforts made by EDF, notably in order to improve human performance, have enabled a reduction over the last few years of the annual average number of Automatic Reactor Trips (ART)[1]. 2011 shows substantial improvements in comparison to 2010 (40 ART): 30 ART over the year, giving the most reliable figure in the fleet's history, with 38 units experiencing no ARTs.

EDF is subject to the law of 13 June 2006 relating to nuclear transparency and safety (see Section 6.5 ("Legislative and regulatory environment")). This law guarantees access to information concerning health and the environment for all individuals, and formalises transparency on nuclear safety.

After the nuclear accident at the Fukushima nuclear power plant in Japan, resulting from the earthquake and tsunami of 11 March 2011, the French Government announced a review of the safety of each of the nuclear power plants in the country that were in existence or under construction. Under the aegis of the French Nuclear Safety Authority ("ASN"), EDF thus carried out Additional Safety Assessments ("ASA") which take into account extreme situations beyond those considered during the design and subsequent safety reviews of facilities, and submitted the 19 reports corresponding to the reactors in operation and under construction on 15 September 2011. After analysis of these Additional Safety Assessments, the ASN gave its findings on 3 January 2012. In them, it states that it considers that the facilities examined, including the 19 nuclear power plants operated by EDF, have a sufficient level of safety (see 6.2.1.1.3.5. ("Preparing for the future of the nuclear fleet in France")).

Warning system

In the event of an accident, a crisis plan is in place to limit impacts on the environment and on people, and to ensure that the facility is safe. This crisis plan is based on two closely coordinated plans, designed for implementation at national and local level: these are the Internal Emergency Plan (*Plan d'Urgence Interne*, or "PUI"), prepared by EDF and the Special Intervention Plan (*Plan Particulier d'Intervention*, or "PPI"), prepared by French prefectures in collaboration with the French State and EDF. In order to provide greater effectiveness and thus, improved protection of people, these plans account for the risk of malicious actions.

The relevance of the system for warning, informing and protecting people is regularly assessed through accident simulation exercises, which make it possible not only to ensure the correct operation of the crisis plan, but also to improve upon it, in particular, by clarifying roles and validating all of the required physical and human resources. Each year, approximately 100 exercises are organised for the entire French nuclear fleet, i.e., approximately one drill every three days. Approximately 10 of these exercises are held on a national level, under the management of the ASN and involve EDF and the public authorities, in particular the prefectures. In 2011, 12 national exercises were organised.

Following the initial analyses performed after the Fukushima accident, EDF decided to enhance its management strategy in terms of accidental situations thanks to a national system able to quickly provide material and human aid to a site in great difficulty. This system, known as the Rapid Response Nuclear Task Force or FARN, is currently being developed with the aim of starting implementation during 2012.

The FARN's missions are as follows:
- to act within 24 hours to support or take over from teams that have taken emergency action on the site in question, on which access infrastructures may be partially destroyed;
- to act autonomously for several days (involving logistical capabilities for support particularly in terms of feeding and sleeping) on a partially destroyed site (non-seismic tertiary buildings, for instance), in which the environment may be radioactive or even affected by chemical pollution on some sites;
- to deploy heavy protection or intervention equipment within a timeframe of a few days;
- to ensure a continuous connection with the company's General Management, the site's management and teams and the local authorities so as to be in a position to manage and coordinate actions;
- to prepare for actions to be carried out in the long-term, beyond the first few days of autonomy, in the event of a long-term crisis.

The FARN is intended to support the crisis planning already in place should an accident situation arise.

Major events concerning safety

Events are classified on a scale of 1 to 7 on the INES scale (*International Nuclear Event Scale*), with 7 being the most serious. Those of no consequence for nuclear safety are classified as "deviations" or level 0 events.

Since the establishment of a scale of this kind in France in 1987, no level 3 event (serious incident–very low external emission, and exposure of the public representing a fraction of the regulatory limits) or above has occurred regarding the French nuclear fleet.

(1) Automatic and instantaneous shutdown of the plant by starting up protective measures to ensure its safety.

From 2002 to 2011, for its entire fleet, EDF recorded a yearly total of at most one level 2 event (incident with a significant failure in safety regulations). On 16 February 2011, a significant safety event was declared at level 2. This was a generic bearing bushing fault on the back-up generators, declared at level 1 (anomaly within the approved rules of operation occurring due to equipment failure, human error or shortcomings in the procedures) in the 900 MW units in Blayais, Bugey, Chinon, Cruas, Dampierre, Gravelines and Saint-Laurent and at level 2 in the Tricastin power plant. The third back-up generator that could be used to take over from the generators in units 3 and 4 at Tricastin if required is subject to a bearing replacement. Each year, EDF handles an average of one level 1 event per reactor. The average number of level 1 event in 2011 was 0.9 per reactor (or 52 events) and the average number of non-classified events (level 0) was 9.65 per reactor (or 560 events). Overall safety results over the past five years are stable and there is a significant improvement of key indicators for operation safety.

Radiation protection

The mobilisation of people within the field has allowed a continuous improvement of performance on the protection of employees against the effects of ionising radiation. Thus, the average annual collective dose of all workers, both employees of EDF and outside companies involved in power plants, has been halved in less than 10 years. In 2011, the average collective dose was 0.71 man-Sieverts (mSv) per reactor (or a collective annual dose of 41.62 man-Sieverts), which is a comparable level to the average values recorded by operators for reactors using the same technology, i.e. pressurized water. Dosimetry is thus slightly higher than that observed in 2009 (0.69 man-Sieverts) and 2010 (0.62 man-Sieverts). However, this must be put into context, given the substantial volume of maintenance and types of maintenance work undertaken in 2011. EDF is proactively continuing in its ALARA approach (As Low As Reasonably Achievable), so as to manage collective dosimetry in terms of the Grand Carénage streamlining programme, and the associated volume of works.

EDF is fully committed to continuing to lower the number of individual doses of exposure to radiation below the regulatory limit. Accordingly, in 2011, the number of workers, whether EDF employees or contractors, having received a cumulative dose over 12 rolling months of between 16 and 20 mSv (annual regulatory limit for the whole body) was no more than 2 (10 in 2009, 3 in 2010); none of these doses was over 18 mSv.

In the coming years, given the levels already achieved, efforts will have to be focused on power plants with the poorest dosimetric results, in particular by cleaning their circuits.

6.2.1.1.3.4 The nuclear fuel cycle and related issues

The average annual reference volume for nuclear fuel used by reactors in the EDF fleet in France is around 1,200 tons of fuel (tons of heavy metal: natural uranium, re-enriched uranium, plutonium), including around 1,050 tons of UO_2 fuel (natural uranium that is fluorinated then enriched), 100 tons of MOX fuel (fuel made from re-enriched plutonium) and 50 tons of ERU fuel (enriched reprocessed uranium).

The nuclear fuel cycle encompasses all industrial operations in France and abroad which enable the supply of the fuel to generate energy in a reactor, then to unload and process it. The cycle can be broken down into three stages:

- front-end (upstream): the purchase of concentrates from uranium ore, the fluorination (or conversion), enrichment and production of fuel;
- the core of the cycle corresponding to the use of fuel in the reactor: receipt, loading, operation and unloading (the fuel spends 4 to 5 years in the reactor);
- back-end for the fleet in France: storage in pool, processing of spent fuel, conditioning of radioactive waste and recycling of recoverable material, temporary storage of conditioned waste before long-term management, as provided for by law of 28 June 2006 concerning the long-term management of radioactive material and waste.

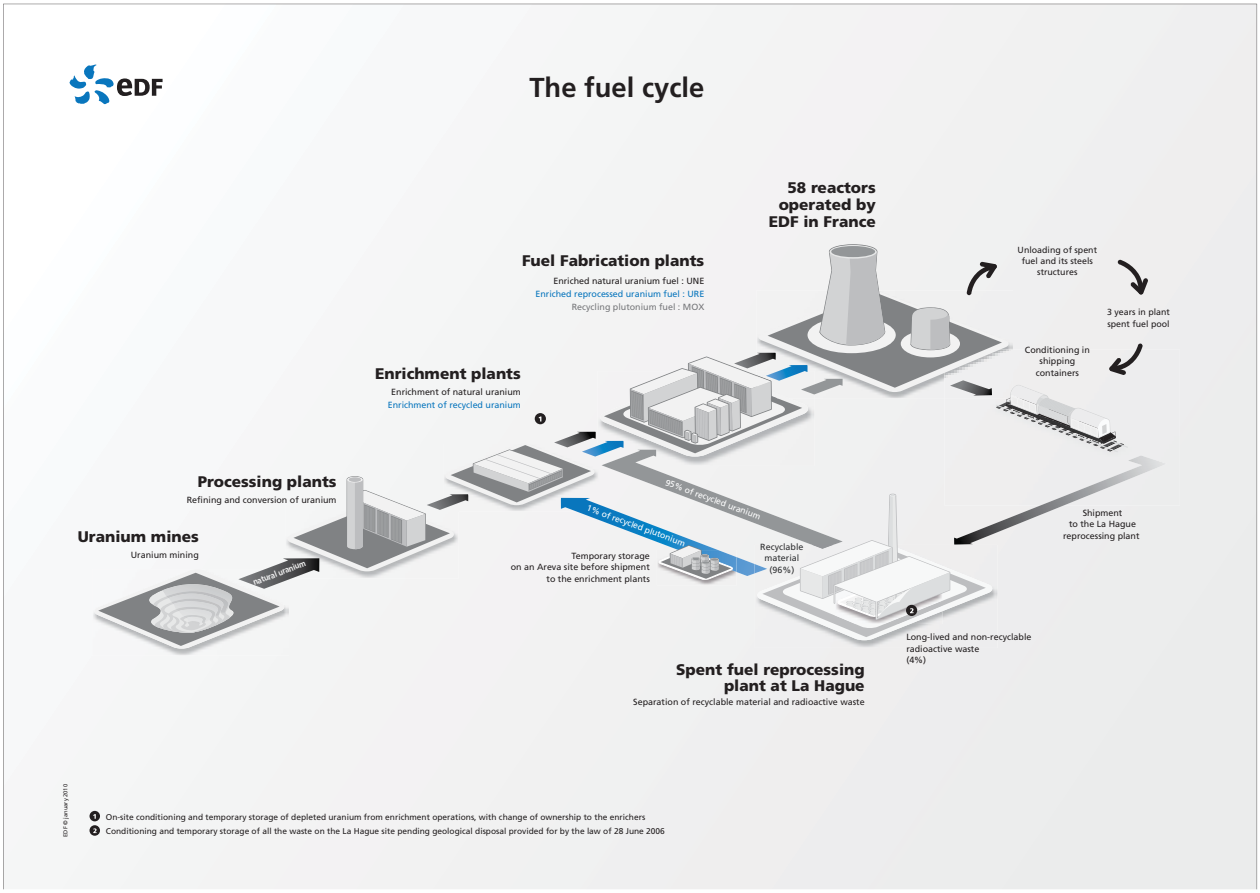
EDF ensures the coherence of all of the operations in the fuel cycle. Generally speaking, front-end and back-end operations are carried out by subcontractors and/or suppliers, generally on the basis of multi-year contracts. EDF carries out the operations for the core of the cycle and acquires most of the raw materials as uranium concentrates (U_3O_8), the transformations into more processed products is carried out by industrial operators through services contracts (fluorination, enrichment and manufacture). EDF is the owner in most cases and is responsible for the fuel and materials it uses throughout all the subsequent stages.

The nuclear fuel cycle as it exists in France is described in the report of the High Committee for Transparency and Information on Nuclear safety ("HCTISN") dated 12 July 2010. In it are indicated the flows and stocks of nuclear materials and radioactive waste produced at the various stages of the cycle, as well as the storage and transport conditions for depleted uranium and uranium derived from processing spent fuel. The challenges associated with uranium supply and France's policy to secure this supply are also set down in it.

Front-end

As part of the Group's integration, the supply of uranium and associated services (conversion, enrichment) for EDF and its subsidiary EDF Energy has been pooled since 31 March 2010.

The diagram below shows the various stages of nuclear fuel cycle in France:



In order to ensure the continuity and security of the supply for its reactors in France and in the United Kingdom, EDF retains overall control of the operations at each stage in the cycle, and manages a portfolio of contracts for the long term.

Through stock build-up at each front-end stage of the fuel cycle (natural uranium, converted uranium, enriched or not, stored fresh fuel assemblies), EDF seeks to avoid resorting to the short-term market in case of production fluctuations in the mines or the cycle plants. These inventories provide guarantees in terms of security of supply and price and in high-variation front-end materials and services markets.

Natural uranium supply

Most of EDF's uranium supplies are guaranteed in the long-term by contracts for periods of 7 to 15 years already signed, or by reciprocal commitments that will ultimately be confirmed by definitive contracts (options guaranteeing access to volumes subject to conditions of price negotiation, for the end of the period of cover). The primary objective of this long-term supply policy is to guarantee the long-term security of EDF's supplies and it also contributes to partial hedging of the price risk.

For its natural uranium needs, EDF has implemented a policy of diversification of its supply sources since 2004 in terms of the origins and suppliers. This policy helps to strengthen the supplies coming from high-potential areas, such a as Australia, Canada and Kazakhstan. The AREVA group remains an important supplier. As part of the continuity of decisions made by the Nuclear Policy Council on 21 February 2011, EDF and AREVA agreed in February 2012 to the principles of a partnership dealing specifically with the supply of uranium that contributes to securing EDF's supply in the long-term (see Section 12.1 ("Subsequent events")).

Indexation formulas for portfolio contracts of natural uranium supply include fixed prices (basic prices whether inflated or not) and variable prices (indexed according to market price indexes) and are sometimes limited by floor and ceiling prices. Consequently, the effects of variations in the rise in market prices of natural uranium on supply costs are limited and smoothed out while enabling a benefit from potential decreases in price.

Conversion (or fluorination)

The financial weight of the conversion stage represents a small proportion of the fuel costs.

A significant part of EDF's needs are covered by the Comurhex plant of the AREVA group, as well as other international producers, such as Cameco in Canada and the United Kingdom, Converdyn in the United States and Tenex in Russia.

The contracts that EDF signed in 2007 and 2008 strengthen the cover of EDF's needs in conversion services for approximately the next ten years.

Enriching natural uranium into Uranium-235

A significant proportion of the enrichment services procured by EDF until 2010 came from the Georges Besse I plant of Eurodif (AREVA group), which uses so-called gaseous diffusion technology. The AREVA group decided to replace the existing plant with a new facility (Georges Besse II), inaugurated in December 2010, using ultracentrifugation technology that requires less electricity. EDF will supply electricity to the Georges Besse I plant for its operational requirements at a minimum technical level until the end of October 2012.

In 2008 EDF and AREVA entered into a long-term agreement which defines the terms and conditions by virtue of which EDF will take some of the future production from Georges Besse II starting in 2013.

Simultaneously, in order to improve the competitiveness of its supply as rapidly as possible through use of a greater proportion of the ultracentrifugation enrichment services, EDF secured significant coverage of its needs from 2006 onwards, from other enrichers on the market: Urenco (United Kingdom, Germany, the Netherlands, United States), Tenex (Russia) and USEC (United States).

The service coverage of enrichment needs for EDF's fleet in France and the United Kingdom both installed and under construction has thus been reinforced until the post-2020 period on the basis of predominantly fixed-price contracts, decreasing in real terms.

Enriched reprocessed uranium – ERU

This reprocessing makes it possible to recycle uranium from processing spent fuel, which represents approximately 95% of the spent fuel mass. The reloads provided by this reprocessing are carried out at the units of the Cruas power plant.

Reprocessed uranium that is not currently in use is stored in a stable form to be used at a later stage, depending on market trends for natural uranium.

Fuel assembly manufacturing

Contracts with two fuel assembly manufacturers, AREVA NP and Westinghouse, were renewed in early 2007 to cover all requirements from 2008 to 2012, and include provisions relating to product developments.

Most of EDF's needs are covered by the contract signed with AREVA NP in March 2007. It includes the manufacture of MOX and ERU assemblies.

Managing fuel in the reactor core

EDF has implemented a strategy aimed at gradually increasing the performance of nuclear fuel for its different series, which has increased fuel energy efficiency and optimised operating cycles in order to increase the availability of the nuclear power plants, while ensuring shutdown criteria that are consistent with the seasonal variation of demand.

As such, EDF chose production cycles of 12 to 18 months for its fleet (cf. Section 6.2.1.1.3.2 ("Operation and technical performance of the nuclear fleet")).

The back-end in France

EDF is responsible not only for what becomes of its spent fuel and how it is processed, but also its associated waste. AREVA is responsible for processing and ANDRA is responsible for long-term management operations for the storage of ultimate waste, in accordance with the law of 28 June 2006 concerning the long-term management of final waste storage.

EDF's currently adopted strategy with regards to the fuel cycle, in agreement with the French State, is to process spent fuel and to recycle the plutonium separated in the form of MOX fuel. From 1,200 tons of fuel reactors annually discharged, the quantities handled are determined by the amount of recycled plutonium in reactors allowed to load MOX fuel. Since 2010, recycling capacity has allowed the processing of almost 1,050 tons of spent fuel per year.

Processing spent fuel from EDF's nuclear power stations

Spent fuel awaiting processing is temporarily stored underwater in the cooling pools, under conditions that are recognised as being safe over periods of several decades. At the end of a period of approximately 15 years after spent UO_2 fuel has been unloaded from the reactor, it is processed at AREVA's The Hague site in order to separate the products that can be recycled from the waste. The waste is subsequently conditioned and temporarily stored at this site in specific premises.

The relationship between EDF and AREVA concerning the transmission, processing and recycling of spent fuel was formalised for the 2008-2040 period by a framework agreement signed on 19 December 2008. The contractual implementation of this framework agreement led to the signing on 12 July 2010 of a processing-recycling agreement and the protocol for waste recovery and treatment and the permanent shutdown and decommissioning of the plant at The Hague (RCD–MAD/DEM protocol[1]).

The processing-recycling agreement covers:

- the transportation of spent nuclear fuel from EDF's power plants to The Hague reprocessing plant, and its storage;
- the separation of the fuel materials that can be recycled (uranium, plutonium) from high-level waste, and their conditioning;
- the conditioning of radioactive waste extracted from spent fuel; and
- the intermediate storage of the conditioned waste pending discharge to a long-term storage facility;
- recycling of plutonium in the form of MOX fuel;
- the oxidation and storage of reprocessed uranium (see "Enriched reprocessed uranium – ERU" above)

For the 2008-2012 period, this agreement sets the prices and quantities of services delegated to AREVA by EDF. In this context, it provides for an increase of the annual quantities of processed spent fuel and MOX fuel to approximately 1,050 tons and 120 tons, respectively, between 2010 and 2012.

(1) Recovery and conditioning of waste – Permanent shutdown/decommissioning.

The RCD-MAD/DEM protocol defines EDF's contribution to the costs of decommissioning the facilities at The Hague, for which it sets the full and final amount to be paid to AREVA by EDF. The final payment was made in 2011.

Storing conditioned ultimate waste

Radioactive waste, depending on its nature, level of radioactivity and the lifespan of its constituent of its radionuclide components has been classified into different categories: from high-level waste (HLW), to intermediate-and low-level waste (ILW and LLW), to very low-level waste (VLLW). It is called "long life" when its remains active for more than 30 years and "short life" otherwise.

Long-lived high-level waste

The processing of spent fuel enables the vitrification of long-lived, high-level waste which provides very high-quality packaging with a reduced volume, stored in The Hague in specific facilities. All of the long-life, high-level waste produced in this way, corresponding to the operation of the early natural uranium gas graphite plants (UNGG) and to 40 years of operation of the current PWR facilities, will represent a volume of approximately 6,700 cubic metres.

On the basis of the works and research carried out in the context of the law of 30 December 1991, the law of 28 June 2006 defines a long-term management programme for long-life, high-level waste, retaining geological storage as a benchmark solution in its national plan for radioactive materials and waste management: *"(…) following temporary storage, final radioactive waste that cannot be stored at surface level or at a shallow depth for nuclear safety or radiation protection reasons, is to be stored in deep geological layers."* The law indicates notably that: *"In order to ensure (…) the management of long-life high- or intermediate-level radioactive waste, research and studies relating to this waste are being carried out (…) and notably reversible storage in deep geological layers (…) in order to choose a site and design a storage facility so that the request for its authorisation (…) may be examined in 2015 and, subject to this authorisation being granted, the facility may be commissioned in 2025"* (for more information regarding the law of 28 June 2006, see Section 6.5.4.2.2 ("Specific regulation applicable to basic nuclear facilities")).

The geological storage project is now entering its industrial phase and must confront new challenges in order to produce a facility that is industrially and economically sound, compliant with the safety requirements published by the French Nuclear Safety Authority (ASN), and executed consistently from design to completion within an ongoing objective of technical and economic optimisation. To meet this challenge, the best design principles should be settled on for the project going forward and the best organisation decided to ensure the success of the industrial design and construction phases.

Following the discussions held in 2010, the nuclear operators (CEA, AREVA and EDF) submitted an industrial storage design file to ANDRA and the public authorities in November 2010. A project review organised in April 2011 by the French Department for Energy and Climate (DGEC) enabled comparison of the various design options outlined in ANDRA and operator files and recommendations to be given with a view to drafting specifications for preliminary studies that will be carried out in 2012. An economic assessment will be performed based on these.

Furthermore, the DGEC requested the drafting of a partnership agreement between ANDRA and operators to enable the planned industrial facility for geological storage to benefit from operators' skills and experience.

Long-lived, intermediate-level waste

The structures of the assemblies (shells and nozzles, clad pieces, etc.), separated during the processing of spent fuel, constitute long-lived intermediate-level waste, with a lower activity level than long-lived high-level waste. They are currently compacted and conditioned in stainless steel containers. The total volume of long-lived MLW, including the waste resulting from the operation of the NUGG fleet and that resulting from 40 years as a benchmark operator of the PWR fleet, will be about 37,000 cubic metres. Unlike long-lived high level waste, it does not generate heat and thus is suitable for faster storage than long-lived high-level waste because it does not require a long cooling off period before storage.

As with long-lived HLW, long-lived MLW is temporarily stored in dedicated installations in The Hague pending decisions on the storage of nuclear waste in deep geological layers which will be made under the law of 28 June 2006.

Long-lived low-level waste

Long-lived, low-level waste belonging to EDF comes from the decommissioning of the old NUGG reactors (graphite, processing waste) (see section 6.2.1.1.3.6 ("Decommissioning of nuclear power plants")). Given its lifespan, this waste cannot be stored in existing surface facilities (see below), but due to its lower level than that of long-lived high- and intermediate-level waste, the law of 28 June 2006 provides for special subsurface storage. The search for a site launched by ANDRA in 2008 yielded no results. In order to allow time for consultation, the French State decided in 2010 to lift the deadlines on the long-lived LLW storage project and asked ANDRA to continue discussions with the regions from which municipalities had come forward as candidates in 2008.

In October 2011, the HCTISN made public its report on the reasons for the failure of the site search process. To date, the French State has not yet provided any guidelines as to next steps for this process.

Within the scope of the National Plan for the Sustainable Management of Radioactive Materials and Waste (PNGMDR) 2010-2012, and in partnership with ANDRA, nuclear operators studied alternative management scenarios that integrate graphite processing and storage solutions.

Short-lived intermediate- and low-level waste and very-low-level waste

Short-lived intermediate- and low-level waste comes from nuclear installations (gloves, filters, resins, etc.). It is stored on the surface at the Soulaines Storage Facility, managed by ANDRA, which is designed for low and intermediate-level waste.

Very low-level waste is waste in which the radioactivity is very close to natural radioactivity. It mainly arises from the decommissioning of nuclear installations, primarily from rubble (concrete, scrap, lagging, piping, etc.). This waste is stored on the surface at the Morvilliers storage facility managed by ANDRA.

In order to minimise volumes, some waste is treated beforehand by fusion or incineration at the centraco plant owned by SOCODEI, a subsidiary of EDF. On this site, an industrial accident occurred on 12 September 2011 in a metallic waste fusion furnace, causing the death of one employee and injuring four others. The accident was brought under control without any chemical or radioactive discharges. The ASN classified this accident at level 1 on their international nuclear event scale (INES) and decided to subject to prior authorisation the restart of the fusion furnaces and incinerators that were shut down just after the accident. Discussions between SOCODEI and the ASN are continuing but have not yet ascertained an estimated restart date. The unavailability of the furnaces led EDF to take remedial measures (see Section 6.2.1.1.3.3 ("Environment, safety and radiation protection")). Several investigations are ongoing following this accident.

Acceptance of future charges relating to the management of spent fuel and long term management of radioactive waste

Each year, EDF makes provisions for the back-end of the nuclear fuel cycle in France (see Notes 30 and 48 to the Consolidated Financial Statements for the year ending 31 December 2011) that cover the management of spent fuel (including fuel in the reactor but not yet irradiated) and the long-term management of radioactive waste.

To assess the future management costs of long lived, intermediate-and high-level waste resulting from the processing of burnt fuel, EDF assumed the use of deep geological storage of waste, pursuant to the law of 28 June 2006, which established the storage of waste in deep geological layers as a benchmark solution.

For long-lived, low-level waste from the decommissioning of shutdown NUGG power plants, EDF establishes provisions using the forecast wastes production schedules and cost assumptions relating to the means of storage defined by ANDRA.

The cost of removing and storing short-lived intermediate- and low-level waste and very-low-level waste is determined on the basis of contracts entered into with ANDRA and the various carriers for the operation of existing storage facilities. The costs of disposal and storage of waste from the decommissioning of power plants are provided for, with the charges relating to operating waste being included in annual expenses.

EDF's provisions as of 31 December 2011 were established in accordance with the prescriptions of the law of 28 June 2006 and implementation texts published in 2007. The geological storage costs should be updated after preliminary studies at the end of 2012.

6.2.1.1.3.5 Preparing for the future of the nuclear fleet in France

To date, EDF considers nuclear energy as a sustainable, economically effective response to future energy needs, in a time of struggle against climate change and when oil resources are dwindling. Proven worldwide oil reserves are estimated at 48 years, based on current consumption levels; uranium reserves based on current consumption levels would last for at least a century (AIE – *World Energy Outlook 2011*).

The development of new-generation nuclear reactors (called 4th generation, see Section 11.2.1 ("Consolidate and develop a carbon-free energy mix") will enable the level of consumption of natural uranium to be reduced significantly and the level of these energy reserves to be increased to several thousand years. Furthermore, electricity generation from nuclear energy has the advantage of emitting very little greenhouse gases.

The energy policy guidelines programme law of 13 July 2005 (the "POPE" law) (see section 6.5 ("Legislative and regulatory environment")) and reports published on the multi-year investment programmes published since then, provided for the rapid launch of an EPR in France, confirming the retention of nuclear power as an energy option. For EDF, preparation for the future of the nuclear fleet rests on five strategic areas:

- guidelines issued following the additional safety assessments ("ASA") made after the Fukushima accident;
- extending the operating life of the nuclear power plants beyond 40 years;
- the building of a first EPR unit in Flamanville;
- increasing the generation capacity of the existing fleet by studying ways to increase the capacity of certain units, primarily by raising their energy yield;
- optimising the EPR by capitalising on Group feedback and the development of a 1,000 MW reactor.

Additional Safety Assessments ("ASA")

Additional safety assessments made on French nuclear power plants, and called stress tests by the European Council, follow on from the Fukushima accident in Japan and fulfil two roles: the request of the French Prime Minister made to the ASN to successfully conclude this mission along with that of the European Council after its meeting on 24-25 March 2011.

The consistency of both procedures is ensured by the common reference to specifications put forward by the Western European Nuclear Regulator Association (WENRA), and by the subsequent organisation of "peer reviews" between safety authorities.

The assessment consists of reassessing the defences of the existing power plants and those under construction, in light of the events in Japan, taking into account those topics previously set down in the specifications drafted by the authorities.

On 15 September 2011, EDF submitted its 19 additional safety assessment reports to the ASN for its existing and forthcoming nuclear sites. This in-depth reassessment of the design of power plants after Fukushima was performed at the request of the French government in line with the specifications published by the ASN on 5 May 2011.

These reports consist of reassessing the existing and forthcoming power plants, and thus ensuring safety margins exist for facilities in terms of: seismic and flooding risks, the simultaneous loss of the cooling source and electrical power supply, the consequences of serious accidents and the rules applied in the subcontracting field.

Drafted for the site as a whole, these assessments consist of taking into account extreme situations beyond those considered during the design and subsequent safety reviews of nuclear facilities.

These analyses firstly show a satisfactory level of security for EDF's entire nuclear fleet. EDF put forward additional measures to the ASN, pushing hypotheses further, in a bid to further increase the safety levels at power plants. EDF's nuclear fleet is based on the principles of continuous improvement. Both existing and new facilities thus continuously benefit from feedback from all power plants, and can learn lessons from accidents occurring throughout the world.

The ASN's permanent groups of experts were asked to give their opinion on operators' reports which they examined on 8, 9 and 10 November 2011, based on the analysis of the French Institute of Radiation Protection and Nuclear Safety. They highlighted the importance and quality of these reports which are very in keeping with the spirit of the specifications requested, allowing analysis of the robustness of facilities and suggesting improvements. Furthermore, the ASN underlined that the ASA do not show any significant failures in defining the level of external attacks considered (earthquake, flooding, etc.)

It also acknowledged and approved the procedure put forward by EDF, more specifically the "hard core" concept and the FARN system (see Section 6.2.1.1.3.3 ("Environment, safety, and radiation protection")). The "hard core" will be made up of a restricted number of the plant's structures, systems and components that can withstand attacks that go beyond provisions and that can deal with situations studied in connection in with ASAs (attacks above the levels considered in the safety standards, loss of cooling functions or long-term electricity sources affecting several facilities on the same site). The permanent groups considered that in the future, in addition to those procedures carried out up to now, operators must implement material and organisational provisions relating to this "hard core" which will be defined in 2012.

The ASN published its opinion on ASAs on 3 January 2012, based on the analyses by the French Institute of Radiation Protection and Nuclear Safety and the Permanent Groups of Experts. In it, it states *"that after the priority additional safety assessments on nuclear facilities, the ASN considers that the facilities examined show a sufficient level of safety, and that it will not thus request the immediate shutdown of any of them."* At the same time, the ASN considers that continuing to operate these facilities requires an increase in their robustness as soon as possible, to an extent beyond that set down in the existing safety margins, to cope with extreme situations.

After the publication of the ASN technical instructions, expected in the first half-year 2012, EDF will finalise an action plan that will most likely take place over several years, dealing with additional studies and changes decided upon.

Operating life of EDF's PWR fleet

The 2006 TSN law (*Transparence et Sécurité Nucléaire* or "Nuclear Safety and Transparency") does not set a limit on service life, but requires a safety review of the facility every ten years in light of best international practices ("safety standards").

As part of the studies related to the third 10-year inspections of the 900 MW series, in early July 2009 the ASN publicly stated that it had not identified a generic problem that called into question EDF's ability to control the safety of its 900 MW reactors for up to 40 years.

As required by regulations, the ASN's opinion will be supplemented by an opinion on each reactor following every third 10-year inspection. After the 10-year inspection of each reactor, the ASN issues an authorisation for its restart. The following year, under the TSN law, and based on a safety review submitted by the operator, the ASN sends the ministers in charge of nuclear safety its opinion on extending the operation of the relevant reactor for another 10 years. The Tricastin 1 unit is the first to have reached the end of this process, resulting in a positive opinion issued by the ASN on 4 November 2010 regarding the unit's suitability to continue operating for an additional ten years after its third 10-year inspection. In line with the instructions of the ASN, EDF will complete the works undertaken to reinforce the dykes by the end of 2014 and thus provide appropriate protection for the nuclear power plant against the risk of flooding in the event of a maximum thousand-year flood. The Fessenheim 1 unit is the second to have reached the end of this process: it completed its third 10-year inspection in March 2010, after which the ASN gave a positive opinion on 4 July 2011 regarding the unit's suitability to continue operating for an additional ten years; this opinion was given on the condition that the base of the reactor be strengthened before mid-2013 and that technical back-up provisions be implemented to remove residual power in the long-term following a loss of cooling source. Furthermore, the ASN's stance may be further amended after additional safety assessments (see additional safety assessments above). The Bugey 2 unit also completed its third 10-year inspection in 2010, after which the ASN authorised its restart. Lastly, the Bugey 4 and 5, Dampierre 1 and Tricastin 2 units also completed their third 10-year inspections in 2011.

Beyond this, EDF's objective is to raise the operating life of its fleet to at least 60 years, consistent with the trend seen internationally for plants with similar technology. To this end, EDF has implemented industrial and R&D action plans. Solutions to the obsolescence of certain components (in particular, for the reactor vessel and containment facilities, which are considered to be non-replaceable) to ensure they can operate for 60 years, and for the renewal of certain major components are being studied (see 6.2.1.1.3.2. "Operation and technical performance of the nuclear fleet")).

A first meeting with the ASN was held in September 2010 to present the safety upgrades planned by EDF in order to extend its plants' operating life to 60 years. The ASN had these improvements examined on 18-19 January 2012 by the Permanent Group of Experts, composed of experts commissioned by the ASN. These improvement proposals have been reviewed and assessed, on the basis of elements such as the Fukushima accident and the conclusions of the safety margins assessment review.

25 nuclear units are expected to have their fourth 10-year inspections between 2019 and 2024. Shutting down these units would require major investments in new nuclear units.

While respecting the main priority, that of safety, an extension to the operating lifespan of the current nuclear fleet would enable:
- the most to be made of the industrial asset base it represents;
- the deferral of financial flows associated with decisions concerning investment in these new plants beyond 2025; and
- spreading the time period for the commissioning of new plants, which is beneficial from an industrial point of view.

As part of the Strategic Committee on Nuclear Power meeting on 25 July 2011, EDF and AREVA signed a technical and business agreement regarding, inter alia, the improvement of maintenance and operation of the existing nuclear fleet, so as to increase the operating performance of the reactors, and prepare for an extension to their operational lifespan to over 40 years.

Decisions to start the work to extend operating lifespan will be taken by the Group at the relevant time according to factors that remain very uncertain (economic valuation conditions, publication of the "ASN" technical requirements specifically including the lessons learned from the Fukushima accident, expected in the first half-year 2012, and more generally, any developments of the safety reference system). Given the investments directly following the implementation of the ASN's recommendations presented in its opinion on ASAs on 3 January 2012, the figure for capital works in the coming 15 years should be in the region of €$_{2010}$55 billion (see section 12.1 ("Subsequent events")). This figure represents all investments in the coming 15 years on the operational fleet which all meet the three objectives of safety, performance and extending the operating life.

The European Pressurised Water Reactor ("EPR") and other reactors

The EPR

EDF has opted for EPR technology to prepare for the future of electricity generation from a nuclear source. This reactor is the result of the joint experience of operating the two biggest European nuclear fleets – the French and German fleets – and its safety standard has been examined by the German and French safety authorities.

As part of the renewal of European generation facilities, EDF wishes to maintain the technological advantage it acquired in the 1970s and 1980s, with the development of a standardised and industrially controlled nuclear fleet.

The Flamanville 3 project enables EDF to be ready in industrial terms for the construction of new reactors in France and abroad, in coherence with its strategy for the international development of nuclear energy (see section 6.1 ("Strategy")):
- by managing a reactor model that has been technically proven and that complies with the requirements of the ASN;
- by providing an operational industrial organisation, established during the construction of the first model;
- by acquiring sufficient experience building a first unit with EPR technology before launching new units (by capitalising on feedback).

As part of the Strategic Committee on Nuclear Power meeting on 25 July 2011, EDF and AREVA signed a technical and business agreement regarding, *inter alia*, the continued optimisation of EPR, based on feedback from ongoing sites in Olkiluoto, Flamanville and Taishan 1 and 2.

Other reactors

The EPR programme with projects underway in France and China, and planned for the United Kingdom, is currently the benchmark programme of the Group.

In addition to optimising EPR, it seems essential to strengthen the offer, in connection with following the guidelines laid down by the Nuclear Policy Council brought together by the French President on 21 February 2011, integrating the feedback from the Fukushima accident. Specifically, EDF and AREVA are full stakeholders in the France – China partnership, via negotiation with the Chinese authorities, under the leadership of the Executive Director of CEA, covering all civil nuclear activities and including safety. These negotiations could enable participation in the development of the Chinese market, giving rise to a partnership that, in addition to the supply of products and services relating to the existing or planned nuclear fleet and the building of new EPR reactors, comprises the joint development of a mid-sized third generation reactor (1,000 MW) based on the successful experience of French and Chinese industrial players in the construction and operation of jointly-designed reactors.

EDF is thus continuing to develop its range of reactor and services offers for international markets.

The EPR industrial project

The EPR is a reactor of about 1,600 MW developed from the early 1990s by AREVA NP in partnership with EDF and German electricity companies, who participated in financing its development and contributed the technical expertise acquired through the operation of their nuclear fleets.

Like other reactors in use in France, the EPR is a pressurized water reactor. It has already been studied by the safety authorities, and benefits from technological and operational advances that have been incorporated into the most recent French and German reactors.

The EPR industrial project responds to ambitious goals for safety, environmental protection, technical and economic performance, and optimised organisation of project management for this nuclear unit.

Safety. The development of the new EPR reactor model is an opportunity for EDF to reinforce the safety of its nuclear fleet by further reducing the likelihood of a serious accident and further limiting any potential consequences. These safety goals were adopted since the reactor's design phase.

Environmental protection. Through its participation in the EPR project, EDF continues to maintain its commitment to environmental protection by significantly improving its performance in comparison with its installed fleet, through continual progress using feedback obtained from its experience.

Environmental, technical and economic objectives. With regard to current units, the EPR project's principal objectives are to reduce the volume of radioactive waste and emissions; in the area of radiation protection, to halve the collective annual dose compared with the current average level for units in operation in France; to achieve an availability of 91% through design principles from German reactors which allow generation during maintenance operations; and to achieve, from the design stage, a technical operating life of 60 years.

Furthermore, the EPR should enable some reductions to be made in operating expenses per kW and per kWh as a result of its technical performance and the effect of its size noted to-date with the PWR 900 and the PWR 1,300 series.

Architect-assembler engineering. In building EPR units in France, EDF intends to maintain direct control of the design and operation of its power plants, the organisation of development projects, the schedule and costs of construction, its relations with the ASN, and the direct integration of operating feedback.

This control cannot be separated from the role of architect-assembler which corresponds to the position adopted by EDF during the development, renovation or decommissioning of its generation assets, and is based on its internal engineering capabilities.

The EDF group's integrated engineering skills are an important asset for the management over the long term of the performance and safety of its nuclear, hydropower and fossil-fuel thermal generation assets.

Progress made on the Flamanville 3 project

Launch phase. In October 2004, EDF's Board of Directors decided to undertake the process of building an EPR nuclear generation unit in France located in Flamanville.

A public debate was organized by the French Commission for Public Consultations (CNDP) concerning the construction of an EPR reactor initial series unit.

The building authorisation decree for the Flamanville 3 nuclear facility was delivered on 11 April 2007 and was published the same day in the *Journal Officiel*. The main building permit was obtained on 24 April 2007.

Several appeals were made by associations against some administrative authorisations, one of which is ongoing at the Administrative Court in Caen (see Section 20.5.1 ("Legal proceedings concerning EDF")).

Studies. Completion studies are ongoing to produce the working documents and ensure the smooth running of the construction on-site.

Interaction with the Nuclear Safety Authority. In October 2010, EDF submitted to the Nuclear Safety Authority (ASN) a first working version of the Flamanville 3 commissioning file to allow them to begin studying it ahead of completion. The final version of this document must be sent one year in advance of fuel being loaded into a reactor, that is to say in 2014.

Supply and work contracts. At the end of 2011, EDF had awarded 188 contracts, representing more than 98% of the total budget. The six largest contracts (boiler, civil engineering, control systems, piping, offshore works and discharge tunnel, generator-condenser-water station) represent approximately 70% of the project budget. All of the main contracts, with the exception of the boiler contract signed with AREVA, were awarded following international invitations to tender.

Equipment manufacturing. The manufacture of the equipment required for construction is now well advanced. The first major components were delivered on-site in 2010, while major components for the turbine section were delivered in 2011, and most of the equipment for the nuclear section will be available in 2012.

Work on site. After a preparatory phase which began in summer 2006, the construction of the EPR reactor Flamanville 3 has been underway since December 2007 (first concrete poured). In 2011, important steps in the construction were completed:

- completion of construction on civil engineering structures on many buildings (pumping station, diesel buildings 1-2, chemical waste processing building, etc.);
- receipt and installation of the main materials in the engine room;
- electromechanical assembly at the assigned sites on the nuclear island;
- performance of initial commissioning trials on the turbine portion.

The progress in terms of civil engineering at the end of 2011 is 88%, and that of electromechanical assemblies is over 20%.

Commissioning schedule and budget: In July 2011, EDF provided new targets in terms of the estimated completion schedule and provisional budget for the Flamanville 3 project: the first marketable generation target is set for 2016, with estimated construction costs of around 6 billion Euros(2008). Flamanville 3 is the first nuclear power plant to be built in France for 15 years. Its target construction time is 100 months.

Industrial partnership with Enel. On 30 November 2007, EDF and Enel signed an industrial partnership agreement for nuclear power generation, with the following terms: Enel has invested in Flamanville 3 to the amount of 12.5% of the construction and operation costs as well as decommissioning costs and long-term management of nuclear waste. Enel receives in return 12.5% of the electricity generated by Flamanville 3, over the time of its operation, delivered in France on the RTE transmission network. EDF is the operator of the Flamanville 3 facility, assuming full nuclear responsibility and will ultimately make all of the decisions. Lastly, Enel can assign its engineers to teams managing the project as it is being built or while it is in operation, in order to acquire skills in nuclear power generation.

Enel has options to invest in the next five EPR units that EDF may build in France, under the same terms and conditions as those for the Flamanville power plant.

In order to exercise these options, Enel must give EDF a right to participate, under the same terms and conditions as those for Flamanville 3, in the construction of EPRs which Enel may develop in Europe, or in other investment projects of the same type.

Result of the Additional Safety Assessment

The additional safety assessment was also conducted on the EPR under construction in Flamanville, and on the planned EPR in Penly, bearing in mind that this reactor draws its robustness from its initial design. The response times to be implemented are compatible with the schedule.

Regarding the EPR, the analysis by the ASN's Permanent Group of Experts on 8, 9 and 10 November 2011 show that the design of the power plant currently under construction in Flamanville already affords increased protection in terms of serious accidents of the type witnessed in Fukushima. In this context, the Permanent Group consider that EDF must identify, from the planned equipment, that equipment intended for the "hard core" relating to preventing and limiting the consequences of a serious accident. This analysis was confirmed by the ASN report on the Additional Safety Assessments.

Penly 3

On 30 January 2009, the French President confirmed the construction on the Penly (Seine-Maritime) site of a second EPR-type nuclear reactor, which will be built by EDF. On 1 April 2009, the Board of EDF agreed to initiate the process leading to the construction of the EPR nuclear unit.

EDF referred to the National Commission of Public Debate (Commission Nationale du Débat Public) on 29 May 2009 and the Specific Commission (*Commission Particulière*) in charge of this debate was established on 2 September the same year. The public debate was held from 24 March until 24 July 2010. The National Commission of Public Debate submitted its summary and report on 24 September 2010. This report shows that the debate took place in a satisfactory manner.

At its meeting of 26 October 2010, EDF's Board of Directors decided to continue preparations for the Penly 3 project up to the final investment decision. EDF will hold the responsibility of nuclear operator, and will also act as architect-assembler.

The request for authorisation to create the Penly 3 nuclear facility was lodged on 2 December 2010 and following requests for additional information from the ASN, an update to the preliminary safety report was submitted on 15 July 2011. The Environmental Authority of the General Council for the Environment and Sustainable Development gave its opinion on the file for the creation of a facility, which must be the subject of a public inquiry. On the fringe of the procedure, the High Committee for Transparency and Information on Nuclear Safety issued an opinion in respect of the public inquiry files regarding basic nuclear facilities. Quoting the Penly 3 project, the High Committee considers it essential that the conditions of time, resources and completeness of the available information should be collected together, so as to allow the partners concerned in these public inquiries to participate fully in them. EDF will send the additional information awaited by the ASN regarding safety before the public inquiry begins. As such, its start date has been postponed.

6.2.1.1.3.6 Decommissioning of nuclear power plants

EDF takes full financial and technical responsibility for the decommissioning of its nuclear power plants. For EDF, the issue is to demonstrate, through the decommissioning process, its control of the entire life cycle of the means of nuclear power generation.

The decommissioning of nuclear power plants involves three levels, according to a classification defined by the International Atomic Energy Agency (IAEA) in 1980:

- Level 1: shutdown of the plant, fuel unloading, draining of circuits (99.9% of radioactivity is eliminated), followed by final shutdown: dismantling of non-nuclear facilities that are permanently decommissioned, with access limited to monitored facilities;
- Level 2: dismantling of non–nuclear buildings and nuclear buildings excluding the reactor building, conditioning and evacuation of waste to storage facilities, isolation – containment – the section of the facility surrounding the reactor is kept under surveillance;
- Level 3: full dismantling and removal of the reactor building, materials and equipment that is still radioactive; monitoring is no longer necessary. After these operations, the site can be used for industrial purposes once again.

In practice, the operations leading to Level 1 and then to Level 2 are conducted consecutively over a period of time of approximately 5-10 years after the reactor ceases production. A waiting period may occur between the end of operations leading to Level 2 and the beginning of operations leading to Level 3, in order to allow the radioactivity in the irradiated materials to decay. The length of this waiting period may vary, depending on the comparative interest of radioactive decay and the length of time the facility must be monitored and can depend on the re-use envisaged for the site. At the end of this waiting period, the length of time spent on operations leading to Level 3 is estimated to be approximately 10 to 15 years. Furthermore, conventional buildings can be kept and used during decommissioning. The reference scenario chosen by EDF is that of decommissioning with no waiting period.

Decommissioning of first-generation power plants that have been shut down

EDF has chosen to completely dismantle power plants that have been shut down (one PWR: Chooz A, one heavy-water reactor (HWR): Brennilis, one fast neutron reactor: Creys-Malville and six NUGG-type reactors in Bugey, Saint-Laurent and Chinon) by 2035, following the delay by ANDRA in commissioning the long-lived LLW storage. The sites remain the property of EDF, and they will remain under its responsibility and monitoring. With regard to the other PWR power plants, certain decommissioning options, including those relating to the timeframe, have not yet been finally decided.

Given its role as responsible owner, EDF will act as the contracting authority for the decommissioning.

The regulatory framework for decommissioning was established and the authorisation processes laid down in 2003. It is characterised, for a given site, by:

- a single decree allowing for complete decommissioning, following agreement by the ASN;
- key meetings to be held with the ASN, integrated in a safety reference system;
- an internal authorisation procedure for the operator, independent of the operational staff and audited by the ASN, and allowing work to be started within the authorised safety reference limits (see Section 6.5 ("Legislative and regulatory environment")).

The decree for the decommissioning of Bugey 1 was published in the *Journal Officiel* on 20 November 2008.

In an agreement signed in December 2008, EDF and the CEA clarified their respective roles in relation to the Brennilis and Phénix sites. By this agreement, EDF and CEA became completely both technically and financially responsible for the Brennilis and Phénix sites respectively, which clarifies the operational management of projects.

Regarding the Brennilis site, EDF made a new request to the ASN at the end of July 2008 for authorisation to decommission. This new request follows the Council of State's (*Conseil d'État*) decision on 6 June 2007 to cancel the decree authorising EDF to perform the complete decommissioning of the reactor. This is because the results of an impact study on the decommissioning work for the plant had not been issued publicly before the publication of the decree. Following this decision, EDF took steps in 2007 to ensure that the facility would not pose a threat while the decommissioning work was halted. The public inquiry was held from 27 October to 11 December 2009. The inquiry commission issued an unfavourable opinion on the project on 15 March 2010. This opinion was, however, accompanied by a recommendation for the completion of certain works. In response, a decree published in the *Journal Officiel* on 28 July 2011 enabled the partial decommissioning of the power plant to be resumed and finalised. Final and complete decommissioning will be covered by an additional decommissioning decree for which EDF lodged a request on 29 December 2011.

The decommissioning of EDF's nine shutdown first generation units will produce approximately 1,000,000 tons of primary waste materials, of which 80% is standard waste material and none is high-level waste. The remaining 20% comprises very low to medium-level waste including about 2% waste requiring the availability of an long-lived LLW storage facility.

The following waste removal procedures are currently being implemented in order to complement those already existing (short-lived, intermediate- and low-level waste and very-low-level waste):

- the project to build a packaging and interim storage installation for radioactive waste (ICEDA), launched at the Bugey site. The public inquiry, held in June and July 2006, led to a favourable opinion and a decree on 23 April 2010 authorising EDF to build the facility. At the same time, appeals against the decree and the building authorisation were lodged (see Section 20.5 ("Legal proceedings and arbitration"));
- the long-lived LLW storage facilities provided for under the law of 28 June 2006 concerning the long-term management of radioactive material and waste. The site search begun by ANDRA in 2008 did not bear fruit, and in order to provide the time needed for consultation, the government decided in 2010 to lift schedule restrictions on the long-lived low-level waste storage project and asked ANDRA to continue discussions with regions in which towns had made an application in 2008. To date, the French State has not provided any more information about the site search (see Section 6.2.1.1.3.4 ("The nuclear fuel cycle and related issues")).

Decommissioning costs

EDF nuclear power plants

Since the beginning of operations at its power plants, EDF has made provisions to cover decommissioning operations, engineering, surveillance and maintenance of facilities, and site security (see note 30.1 to the consolidated financial statements for the year ended 31 December 2011). The accrued amounts correspond to EDF's estimate for decommissioning costs incurred in order to reach Level 3. Since the end of 2007, in accordance with the provisions of the law of 28 June 2006 and its implementing legislation, the part corresponding to the management of the long-term radioactive waste from decommissioning has been grouped with all provisions of nuclear waste. Therefore, the amounts provided for decommissioning concern strictly industrial operations only.

With respect to PWR reactors, provisions were made for all 58 operational units, on the basis of an estimated amount of $€_{2011}$297 per installed KW for all decommissioning operations, excluding management of decommissioning waste.

The detailed decommissioning cost estimate prepared in 1999 using the representative example of the Dampierre site was updated by EDF in 2009 to take into account the feedback of the dismantling operations carried out by EDF on its first-generation plants and level 3 decommissioning operations carried out by other operators, mainly US operators. When this update took place, an analytical approach verified that the decommissioning costs per installed kW for the four 900 MW units at the Dampierre site could indeed be extended to the entire PWR fleet and the provisions made for the decommissioning of the 58 operational units did not need to be reviewed either upwards or downwards.

As part of the update of this Dampierre study in 2009, EDF commissioned an intercomparison study from the La Guardia firm based specifically on the Maine Yankee reactor. The results showed firstly that the estimates made by La Guardia and by EDF were very similar, and secondly that any intercomparison exercise requires in-depth checking of the scope and assumptions considered. In particular, it is advisable to take account of the specific requirements laid down in each country, the level of standardisation and homogeneity of the fleet, the subsidiary, the number of units per site, any industrial re-use of the site, and so on. As sole owner, operator, architect and assembler, EDF benefits from knowledge of its power plants and the expertise of a specialist engineering body in this field.

Furthermore, an international comparison conducted by the OECD in late 2003 showed that EDF's estimates are consistent with the estimates made by other countries. With the exception of a few specific cases (Sweden, Japan), the costs advanced by each party are actually fairly similar, with France at 10% to 15% below the average, mainly explained by the series effect that can be reasonably expected from the decommissioning of the PWR fleet. Unlike the PWR facilities that are in operation, first generation reactors at shutdown are very different from each other and the estimated decommissioning costs have been established reactor by reactor.

An agreement was reached in 2011 between the CEA, EDF, AREVA and the French department for Energy and Climate (DGEC) following the request made by the DGEC that audits should be made on assessment tools used for end-of-cycle commitments concerning EDF, AREVA and the CEA. The audits to be carried out fall under the law of 28 June 2006 relating to the sustainable management of radioactive waste and materials and the decree of 23 February 2007 on secure financing for nuclear charges.

Third-party installations: The Hague (AREVA) and Phénix (CEA)

As the responsibility for the decommissioning of facilities is incumbent on their operator, EDF wished to free itself financially from these operations.

The relationship between EDF and AREVA concerning the transport, processing and recycling of spent fuel was formalized for the 2008-2040 period by the above mentioned framework agreement signed on 19 December 2008.

The contractual implementation of this framework agreement led to the signing on 12 July 2010 of a processing-recycling agreement and the protocol for waste recovery and treatment and the permanent shutdown and dismantling of the plant at The Hague (RCD–MAD/DEM protocol). It sets the amount of the cash compensation balance to be paid by EDF for its share of the decommissioning of facilities at The Hague, an operation for which the principle was agreed in 2003 and the last payment was completed in 2011, (see section 6.2.1.1.3.4 ("The nuclear fuel cycle and related issues") and Note 49.2.3 to the consolidated financial statements for the year ended 31 December 2011).

Similarly, the agreements with the CEA in late 2008 clarified the financial responsibilities of both parties. Following a cash payment in 2009, EDF was released from any obligation for the decommissioning of the Phénix power plant, which has been shut down.

6.2.1.1.3.7 Assets available to cover long-term nuclear-related commitments (outside the operating cycle)

Dedicated assets have been gradually built up since 1999 to cover long-term nuclear commitments. The law of 28 June 2006 and its implementing regulations identified provisions that are not associated with the operating cycle and must therefore be covered by dedicated assets.

For EDF, these provisions relate to:

- decommissioning of nuclear power plants (11.4 billion Euros as of 31 December 2011, see Note 30.1 to the Consolidated Financial Statements for the year ended 31 December 2011);
- the long-term management of radioactive waste (6.7 billion Euros at 31 December 2011, see Note 30.1 to the Consolidated Financial Statements for the year ended 31 December 2011);
- the share of the provision for the plants' last cores related to the future costs of long-term management of radioactive waste (0.4 billion Euros at 31 December 2011).

The provision for spent fuel management and the share of the provision for last cores related to the cost of non-irradiated fuel are associated with the operating cycle and are therefore excluded from the calculation basis for the dedicated assets.

The law of 28 June 2006 set a timeframe of 5 years to allow the value of the portfolio of dedicated assets to at least equal the value of provisions, thus by June 2011 at the latest. The NOME law of 7 December 2010 granted operators a five-year extension of the deadline by which the assets must completely cover the liabilities (thus no later than June 2016), subject to the operator meeting criteria prescribed by the law, which EDF do. The provisional schedule for annual allocations was drawn up so as to meet the objective set out by the law.

In 2011, the cash allocation to EDF's dedicated assets amounted to 0.3 billion Euros. At 31 December 2011, dedicated assets represented a realisable value of 15.7 billion Euros (including 13.3 billion Euros for the financial portfolio of shares, bonds and cash, and 2.4 billion Euros for RTE securities assigned to the dedicated assets) compared with 18.5 billion Euros in provisions (see Note 48.3 to the consolidated accounts for the year ended 31 December 2011).

6.2.1.1.4 Hydropower generation

Electricity generated by EDF from its hydropower plants represented 5.8 % of its total electricity production in 2011.

6.2.1.1.4.1 EDF's fleet of hydropower generation facilities

EDF's fleet of hydropower facilities in mainland France comprises 435 power plants:

- approximately 14% of the power plants have a unitary capacity that exceeds 100 MW; they represent approximately 60% of total output;
- approximately 50% of the power plants have a unitary capacity that is below 12 MW; they represent less than 7% of total output.

Average age of the hydro Fleet is 68 years.

The table below summarises the maximum power of the hydropower plants, as well as their net generation and consumption by pumping operations for the last three years, according to whether their capacity is more or less than 12 MW.

	31/12/2009	31/12/2010	31/12/2011
Hydropower plants with capacity less than or equal to 12 MW			
Maximum capacity (MW)	1,016.0	1,011.5	996.2
Net pumping generation (TWh)	2.8	3.1	2.2
Consumption by pumping operations (GWh)	34.3	40.0	16.1
Generation including pumping (TWh)	2.8	3.1	2.2
Hydropower plants with capacity greater than 12 MW			
Maximum capacity (MW)	19,011.1	19,011.1	19,011.1
Net pumping generation (TWh)	32.3	35.7	24.6
Consumption by pumping operations (TWh)	6.8	6.6	6.9
Generation including pumping (TWh)	39.1	42.3	31.5
TOTAL MAXIMUM CAPACITY (GW)	**20.0**	**20.0**	**20.0**
TOTAL NET PUMPING GENERATION (TWh)	**35.1**	**38.8**	**26.8**
TOTAL GENERATION INCLUDING PUMPING (TWh)	**41.9**	**45.4**	**33.7**

In terms of mainland France, the power plants are mainly located in mountainous areas in the Pyrenees, the Alps, the Massif central and the Jura, as well as on the Rhine. In all, they represent an installed capacity of approximately 20 GW (excluding French overseas departments and Corsica), or 20.5% of EDF's fleet, for an annual generation capability (i.e., for average hydraulicity, see glossary) of approximately 45 TWh, pumping included, which makes France the second-largest generator of renewable electricity in the European Union.

The various hydropower infrastructures were designed to optimise the uses of water resources in the valleys. As a result of the size and variety of its fleet, EDF has systems that are capable of responding to all types of demand, whether base load or peak, and that offer optimisation leverages due to their flexibility of use:

- run-of-river facilities like those on the Rhine do not have storage capabilities and produce energy depending on the supply of water available at any given time. They represent a total capacity of about 3.6 GW and energy production of 17.7 TWh;
- EDF has one tidal power plant on the Rance: it uses the rising and falling movement of the tide to create the difference in levels that is essential to the generation of energy, and which produces electricity in a very reliable manner. This station has a total capacity of 240 MW and energy production of 0.5 TWh;
- pondage power stations use average sized reservoirs (smaller than a lake) and are used occasionally during the week or during the day to cover peaks in demand. They have a total capacity of about 3.1 GW and energy production of 9 TWh;
- the pumped storage power plants comprise an upstream reservoir and a downstream reservoir. During periods of low prices, water is pumped up from the downstream reservoir to create a water supply that will be used to generate electricity during peak load periods (the water is then "turbined" from the upstream reservoir to the downstream reservoir). They have a total capacity of around 4.3 GW, which over the past few years has enabled them to turbine some 5 TWh thanks to pumped water stored in the upstream reservoirs (for pumping of around 7 TWh). Natural water supplies to the upstream reservoirs in some pumped storage power plants also enable additional generation by these systems of an average of 1.1 TWh per year.
- engineered lakes (seasonal reservoirs) located in mountainous regions (Alps, Massif Central and Pyrenees) represent a total capacity of 8.8 GW and energy production of 16.1 TWh. They are used for their high storage capacity from season to season. Depending on demand, they can also in some periods fill their reservoirs in order to be available during periods of high consumption or in order to ensure balance in the electrical system.

6.2.1.1.4.2 Hydropower safety

Hydropower safety comprises all the provisions made when designing and operating hydropower systems and to ensure the protection of people and goods against the dangers associated with water and due to the presence or operation of facilities. Hydropower safety is the main, ongoing concern of the producer (see Section 4.2.2.2. ("Management of hydropower safety risk")). It involves three main activities:

- control of operating risks: variations in levels of water bodies or flow rates downstream of facilities;
- management of operations during flood periods, in order to ensure safety with respect to facilities and inhabitants; and
- the prevention of a major risk, such as the breach of a dam, by means of monitoring and maintenance of installations under the supervision of public authorities, mainly the French regional environment, land use and housing authorities (*Directions Régionales de l'Environnement, de l'Aménagement et du Logement* or "DREAL"). Among the most important dams, 68 are subject to a specific administrative procedure (*Plan Particulier d'Intervention*) implemented by the relevant prefect.

EDF performs regular monitoring and maintenance of its dams, including continuous testing. Real-time analysis and reports for each site with several parameters (settlement, pressure and outflow measures associated with a visual inspection of concrete and the control of mechanical parts) enable EDF to regularly prepare reports on the condition of its dams. Thanks to a series of sensors, EDF's teams in Grenoble and Toulouse can analyse the most important or the least accessible dams remotely and, if necessary, in real time.

In addition, a comprehensive check-up of each of the 150 largest dams is carried out every ten years, as well as a drain down or a structure inspection using underwater equipment. These operations are carried out under the supervision of public authorities (DREAL and STEEG – *Service Technique de l'Énergie Électrique et des Grands Barrages,* or, Electrical Power and Large Dams Technical Service). In 2011, EDF carried out 22 complete check-ups at its sites.

At an organisational level, the hydropower safety inspector, who reports directly to the Chairman and CEO of EDF, drafts a report each year intended for the EDF Chairman and hydropower safety partners. The aim of this report, after analyses, inspections and assessments are performed by the Hydropower Safety Inspector, is to give an opinion on the level of hydropower safety of the Group's facilities, and to provide areas for thought and development, so as to ensure improvement and consolidation. This report is published on the Group's website. Hydropower safety is an absolute priority for hydropower generation, and has been the catalyst for the substantial development in operating practices and policies adopted over the last few years. It is a determining factor in influencing decisions relating to the maintenance of EDF's assets.

6.2.1.1.4.3 Performance of the hydropower generation fleet

A highly-automated fleet

In order to take advantage of the flexibility of its hydropower generation facilities, for some years now, EDF has been initiating ambitious programmes involving automation, remote control of hydropower plants and centralized management of the valleys. Currently, the largest plants in EDF's hydropower fleet, representing over 15 MW and over 75% of its installed hydropower capacity are remote-controlled from four control centres capable of changing their operating programme at any time in order to respond to the needs of the electrical system and to economic opportunities arising on the electricity market.

Technical performance of the fleet and hydropower conditions 2011

Hydropower generation may witness substantial variations from one year to the next, depending on climatic fluctuations in water resources. From this standpoint, 2011 was not a typical year. Due to an acute lack of snowfall, especially in the Northern Alps and the Swiss Alps, and to very low levels of rainfall in Spring and Autumn, despite the relative improvement seen in

the summer months, hydrological conditions remained extremely poor overall in many reservoirs in the Massif Central region (Dordogne, Vienne), the Northern Alps (Ain, Rhône, Isère) and the North-East (Meuse).

Overall water availability and hydropower generation were 30% below normal levels, inviting comparisons with 2005 and 1989, the two driest years since the record year of 1949. As a result, hydropower electricity generation before the deduction of the power needed to operate pumped storage plants was 33.7 TWh in mainland France and 26.8 TWh in net terms. Thanks to careful management of stored water, EDF was still able to respect most of its pricing and support commitments(1) regarding other stakeholders.

The overall availability of the hydropower fleet, i.e., the percentage of time over the year during which the power plant is available at full power, was approximately 82.1% in 2011, down slightly compared to 2010. For 2011, due to faults in some generators, the unavailability of EDF's hydropower fleet resulted from facility maintenance (14.6%, planned maintenance) and unplanned outages due to the extension of maintenance works and contingencies (3.3%). The demand response rate, i.e., the rate of success in responding to start-up orders received by the power plants, has been over 99% for several years in a context of an increasing number of orders for hydropower generation sites.

Continuing the procedure initiated in 2005 for identifying risks of faults by material type and in a context marked by some instances of faults leading to the medium-term unavailability of installations (Tuilières dam in Dordogne, etc.), EDF decided, in 2006, to implement a programme to upgrade the technical standard and strengthen site maintenance for a overall amount of 560 million Euros over the 2007-2011 period in order to renovate certain installations, to maintain a lasting high level of hydropower safety, and to preserve the long-term technical performances of its fleet. The total budget to renovate the facilities was reassessed to take into account the breadth of work, and now stands at around 900 million Euros for the 2007-2015 period, of which 800 million Euros is dedicated to the safety of facilities. This renovation programme for hydropower facilities, known in French as "*Sûreté et Performance de l'Hydraulique*" (Hydropower Safety and Performance), or "SuPerHydro" will, temporarily while the work is ongoing, entail longer programmed outages (resulting in a drop in overall availability of several points) than those recorded in recent years. However, implementing the programme has no impact on unplanned outages in the hydropower fleet, with the rate of unplanned outages due to equipment failure and the demand response rate both remaining at good levels.

In 2011, EDF also began another ambitious modernisation project in terms of the industrial performance of its hydropower fleet, at an overall cost of 840 million Euros over the period 2009-2021, of which some 10% was spent in 2009 and 2010 on the development of pilots. This project, known as "RenouvEau" aims to modernise the maintenance and operation of the hydropower fleet, specifically via the renovation of electrical facilities, control monitoring and computerised management, maintenance and operating tools. Thanks to modernised and standardised maintenance and operating practices (e-operating, e-monitoring, computer-aided maintenance management, etc.) to improve the operating performance of the hydropower fleet, in particular its generation capacity, its availability and its contribution to system services.

6.2.1.1.4.4 Current and future hydropower generation issues

The hydropower fleet faces the following issues: concessions renewal, managing access to water, development.

Concessions renewal

Hydropower generation facilities are operated through concessions granted by decree, for facilities exceeding 100 MW, or by the prefect, for facilities whose capacity is between 4.5 MW and 100 MW; and permits granted by the prefecture for facilities of less than 4.5 MW.

EDF currently holds the majority of the hydroelectric concessions in France.

The concessions had an initial term of 75 years, pursuant to the French law of 16 October 1919, with respect to hydropower, and are in general renewed for terms of 30 to 50 years. The renewal of these concessions provides an opportunity to update the specifications in order to incorporate new requirements for water resource management and to take into account the provisions set forth in the latest specifications annexed to decree 99-872 dated 11 October 1999, modified by decree 2008-1009 dated 26 September 2008.

Because of its status as a French société anonyme, and pursuant to the Sapin law (1993) (see Section 6.5.4.2.4 ("Regulations applicable to hydropower facilities" below)), EDF is now subject to open competition for the renewal of its hydropower concessions.

On 22 April 2010, the government announced the scope of the concessions that will be renewed through a call to tender by 2015 in mainland France. Ten valley concessions with total power of 5,300 MW, representing some 20% of the French hydropower fleet, will thus be renewed and opened up to competition (including 200 MW of requested surplus capacity). The government has decided on the early termination of 13 concessions, including 12 held by EDF, in order to create groupings by valley.

In all, the concessions held by EDF and affected by these renewals represent licensed capacity of about 4,300 MW and an average production of nearly 7 TWh per year, or 15% of EDF's hydropower generation, of which almost half with early termination (about 2,150 MW and 3.5 TWh).

Between 2015 and 2025, approximately another 1,000 MW and 3 TWh will expire and be opened up to competition.

(1) These commitments mainly involve the retention of a minimum price in the summer, so as to enable tourism on the water body concerned (navigation, bathing, etc.) and to support upstream flow rates to enable usage (drawing for irrigation, or water supply) or to conserve the aquatic environment.

The table below gives the schedule for renewal of concessions held by EDF published by the DGEC on 22 April 2010[1], updated with regard to the Lac Mort and Drac concessions with the provisional schedule drafted on 20 December 2011 by DREAL Rhône Alpes.

New concession	Facility	Max Gross capacity (*MW*)	Call for tenders*	Selection of candidate*	Award date*
Lac Mort	Lac Mort	10	Mid-2012	Early 2014	Mid-2015
Drac	Sautet Cordeac St Pierre Cognet	218	Late 2012	Early 2014	Mid-2015
Truyère	Brommat Sarrans Le Bousquet Couesque Montézic Lardit Cambeyrac Castelnau Golinhac	1,914	Mid-2011	Late 2012	Mid-2014
Bissorte	Bissorte Super-Bissorte	882	Early 2012	Mid-2013	Late 2014
Dordogne	Bort Rhue Auzerette L'Aigle Chastang Argentat Enchanet St Geniez Hautefage	1,118	Mid-2012	Late 2013	Late 2015
Beaufortain	Girotte Belleville Hauteluce Beaufort Villard	128	Mid-2012	Early 2014	Late 2015
Brillane-Largue	La Brillanne Le Largue	45	Mid-2012	Early 2014	Late 2015

* *Dates are plus or minus six months. The capacities do not include a total of 200 MW of surplus capacity approved by DGEC at Bort and Brommat.*

Given the complexity of the procedure, the State obtained support in the technical, legal, financial and scheduling areas, and should update the initial schedule, published on 22 April 2010, during the first half of 2012.

Under current regulations, if a concession is not renewed, the former concession holder does not receive any compensation. Upon expiration of the concession, all of the facilities belonging to the French State (installations from the dam to the turbine) must be in "good working condition and maintenance". The amended finance law for 2006 provides for the reimbursement of unamortized expenses related to modernisation works or to works that permit the expansion of the generation capacity, provided that these works were made during the second half of the concession.

Concessions for which the expiry term has been advanced must be compensated by the French State in order to offset the shortfall resulting from the early termination of the concession's operation, for the outgoing holder of the concession, pursuant to the provisions of the concessions' rules.

At the time the hydropower concessions are renewed, they are subject to an annual charge indexed according to the revenue from sales of electricity produced by the conceded hydropower structures, paid to the French State and allocated to the departments on the territory through which the water courses that are used flow. The Grenelle 2 law of 12 July 2010 provides that the fee shall not exceed a limit set on a case-by-case basis by the licensing authority as part of each competitive tender.

Decree No. 2008-1009 dated 26 September 2008 sets the rules and procedures for a hydropower concession request in a competitive market. It determines 3 criteria for the choice of the future concession holder: (i) guarantee of the energy efficiency of the operation of the waterfall; (ii) respect of a balanced management of water resources; (iii) best economic and financial conditions for the licensing authority. The new procedure for the designation of a concessionaire will now have a duration of 5 years (against 11 years currently)[2].

EDF is preparing to submit its best offer for each concession opened to competition, combining improved energy efficiency, attention to aquatic environments, compensation of the State and municipalities through fees and land development, while ensuring the safety and security of the operation. To succeed, EDF is relying on its full expertise in operations and engineering as well as in the field of environmental protection.

(1) Source: French department for Energy and Climate (Direction Générale de l'Energie et du Climat) (2010).

(2) These durations cover the full length of the open competition process to designate a concessionary, from the call for tender to the designation of the selected candidate.

Managing access to water

The 239 dams-reservoirs operated by EDF in France enable the storage of 7.5 billion cubic meters of water, i.e. 75% of national surface storage reserves.

The hydropower installations have positive effects on both economic development and the environment. EDF has a proactive management policy in relation to its hydropower resource, which it enforces in cooperation with various water stakeholders. EDF has entered into agreements with local elected officials, farmers, fishermen, managers of tourist sites and manufacturers.

EDF gives preference to consultation with local users. This process aims first at measuring the real effects of hydropower operations on the environment and on other uses, before attempting to minimise these effects when technically possible and financially reasonable.

As a result, 700 million cubic meters of water can be released each year from the dams according to needs, to satisfy uses other than the electricity generation (drinking water supplies, to supplement periods of low flow, irrigation, production of artificial snow, water sports, etc.).

The law of 30 December 2006 concerning water and aquatic environments contains provisions relating to the management of water resources (in particular, the value of reserved flows[1] and the flexibility of hydropower plant operations). EDF estimates that these provisions will have medium-term consequences for its hydropower activities (see section 6.5 ("Legislative and regulatory environment")).

Generally speaking, since the start-up of the first generation facilities, EDF has endeavoured to better understand the impact of its generation activities on the environment, especially in terms of biodiversity (see Section 6.4.3.2.3 ("Helping to preserve biodiversity")). In 2011, this desire became reality with the signing of a partnership with the National Office of Water and Aquatic Environments (ONEMA) for the protection and restoration of aquatic environments. This framework agreement lasting 4 years covers several issues associated with managing water resources, managing aquatic species, the dynamic of rivers and socio-economic aspects. This agreement was complemented by a specific research and development section on the response of aquatic ecosystems to the presence and operating methods used by electricity generation facilities.

The dam reconfiguration project at Poutès sur l'Allier, approved by the State on 6 October 2011, is also part of this strategy. The result of dialogue between elected representatives and associations, under the aegis of the public authorities, this new-look dam will combine environmental performance and electricity generation using renewable electricity.

The innovative project designed by EDF's hydraulic engineering division will see the dam reduced from 17 to 4 metres in height, making it easier for migrating fish to pass it, with only a 10% impact on the dam's maximum output and generation capacity.

Development

95% of France's hydropower capacity is currently being operated. EDF is nevertheless continuing the development of its hydropower activities, through the study and realization of new projects.

- In Alsace, in 2008 EDF announced a hydropower energy development plan over 5 years for a total capacity of 130 MW and for an amount of 225 million Euros:
  - In 2008, EDF commissioned the Brisach hydropower micro-plant, with capacity of 2.7 MW; during the inauguration of this plant, EDF announced its development plan in Alsace;
  - In 2009, EDF participated in the commissioning of the Kehl micro-plant, located on the German bank of the Rhine, with a capacity of 1.4 MW. A similar project is being studied close to the Kembs dam, for a capacity of 8 MW and a generation capability of 28 GWh, with commissioning planned for 2014;
  - The Gambsheim hydropower plant will be reinforced by the installation of an additional 28 MW generator set. A similar operation is in progress on the Iffezheim dam in Germany, with the installation of an additional 38 MW generator set on the bank of the Rhine, to be commissioned in 2012;
  - In the Vosges mountains, under a new concession awarded on 20 April 2009, the old pump storage hydropower station at Lac Noir should be replaced after 2016 by a modern plant with a capacity of 55 MW;
  - measures for the preservation of water resources and biodiversity will be implemented, notably with the realization of fish passes at Strasbourg and Kembs.
- A tidal turbine farm demonstration unit on the Paimpol-Bréhat site in the Côtes d'Armor should be commissioned by 2012. The aim of this 2 MW project is to test the principle of energy production from tidal currents under real conditions (see section 6.4.1.2.1 ("Description of new energies")). The first tidal turbine was placed in the water off Paimpol-Bréhat on 22 October 2011. Its immersion at a depth of 35 metres will enable validation of the technical choices, in particular regarding facility conditions and performance. This demonstration unit, the first of its kind, will eventually comprise 4 tidal turbines.
- Generation from reserved flows will continue to be developed. The purpose is to equip a certain number of dams in order to process the reserve flow through the turbines and recover a portion of the associated energy. In 2011, 2 projects were commissioned for a capacity of 0.6 MW and energy generation of 5 GWh. Projects are under consideration or in progress for total capacity of some 14 MW and energy generation in the region of 103 GWh, with expected commissioning dates ranging from early 2012 to 2015.

(1) Minimum flow maintained downstream of dams to preserve aquatic life.

In addition, EDF's objective is to use all available opportunities for expansion, including:

- development of small hydropower plants (with less than 12 MW capacity): 3 small construction projects are being studied (Echirolles, Rabuons and Plan du Var2) for a capacity of 7 MW and energy generation of 28 GWh. They will be commissioned between 2013 and 2017. SHEMA, a fully-owned subsidiary of the EDF group via EDEV, and its subsidiaries, specialise in managing and operating small hydropower construction projects and to this end have a fleet of 81 power plants. One of their aims is to develop small-scale hydropower by:
  - optimising and increasing the generation capacity of the existing fleet (renovation of 16 power plants in the Mayenne region, renovation programme for power plants in the Var, Lot and Dordogne regions);
  - acquiring small hydropower facilities in France (12 power plants purchased in 2011 for 7 MW and 33 GWh);
  - building new small-scale hydropower facilities (Palisse power plant under construction in the Cantal region for 2.6 MW and projects under consideration);
  - implementing partnerships for project development.
- optimisation of the potential of pumped storage plants in France. The Prime Ministerial decree of 28 September 2011 approved an additional clause to the specifications relating to the development and operation of the Grand'Maison waterfall, enabling EDF to optimise the use of pumped storage plants during the summer months, tripling its pumping-turbining capacity over this period;
- look into the possibilities for 'surplus production' (for instance, by increasing the capacity of existing hydropower plants) specifically detailed in the law of 13 July 2005 (the "POPE" law) setting out guidelines for energy policy (see Section 6.5.2.2 ("French legislation: Energy Code")) to contribute to the development of peak processes. In 2010, EDF also submitted a proposal to the administration to increase the capacity of the power plant in La Bathie in Savoie by modifying existing groups, which will raise the current capacity by 45 MW; the ministerial decree made by the energy minister on 31 May 2011 gave EDF permission to continue with the requested capacity increase; Likewise, the ministerial decree of 18 December 2011 gave EDF the permission it requested to increase the capacity of the Serre-Ponçon Concession by around 55 MW. Other projects to allow EDF to benefit from the provisions of the POPE law are under consideration, specifically in terms of the pumped power storage plant at La Coche;
- to take the opportunity during facilities upgrades to increase their capacities. In 2010 EDF took the opportunity during a major renovation of the pumped storage plant at Revin to improve the facility's performance (increase of energy produced of about 20%);
- upgrading existing facilities (modernization, optimising generation, etc.) within the scope of concession renewals. In the context of renewing the Moyenne Romanche concession and decrees published on 31 December 2010, EDF has begun work to replace 6 small existing plants with the construction of a new subterranean power plant (Romanche-Gavet power plant) with a capacity of 93 MW and energy generation of 560 GWh.

These hydropower development projects by the EDF group in mainland France are fully consistent with the policies of the Grenelle environmental action plan.

6.2.1.1.5 Fossil-fuel fired generation

EDF's electricity production from its fossil-fuel fired power plants in continental France represented approximately 2.6% of its total electricity production in 2011. This fleet, which has an average age of approximately 30 years, had a total installed functioning capacity of 12,200 MW in 2011 (for a total installed capacity of 14,275 MW).

Fossil-fuel fired generation methods have a certain number of advantages: a high degree of reactivity and flexibility (quick start-up and power modulation); the ability to be shut down for extended periods (stand-by), or conversely to be brought back into operation within short periods of time; and investment costs which are lower than for nuclear or hydropower facilities, and shorter construction periods.

Furthermore, the most modern fossil-fuel fired plants meet the environmental requirements of the latest directives in force.

Fossil-fuel fired generation methods are one of the essential components of the energy mix to ensure the balance of production-consumption in real time and to accommodate the fluctuations in electricity consumption. Together with some hydropower facilities (lakes, pumped storage plants), the fossil-fuel fired generation methods are used to cover mid-merit and peak demand electricity requirements. For this reason, they play an important role in adjusting EDF's generation capacities in response to the changes of its customers' consumption (or demand).

6.2.1.1.5.1 EDF's fleet of fossil-fuel fired generation facilities

As of 31 December 2011, the fossil-fuel fired generation facilities operated by EDF are of different types, both in terms of fuel and power:[1]

Fuel	Unit capacity (MW)	Number of units in operation	Total capacity (MW)	Year commissioned	Energy produced in the last three years (TWh)		
					At 31/12/2009	At 31/12/2010	At 31/12/2011
Coal	250	9	2,250	from 1966 to 71	14	14.5	10.9
	585	1	585	1969			
	580	3	1,740	in 1983 and 84			
Fuel Oil	250	1	250	In 1971	1.8	2.1	0.4
	585	4	2,340	from 1968 to 75			
	685	4	2,740	in 1976 and 77			
Fuel oil fired / Dual fuel turbines	85	4	340	in 1980 and 81	0.2	0.3	0.1
	203	1	203	In 1992			
	134	1	134	In 1996			
	128-129	2	257	in 1997 and 2007			
	187	2	374	In 2008			
	185-187	3	557	in 2009 and 2010			
Combined cycle gas turbine	430	1	430	2011			0.4

The installed capacity of the fossil-fuel thermal fleet in operation in mainland France stands at 12,200 MW, including the Blénod combined cycle gas plant commissioned on 13 October 2011. This is EDF's first combined cycle gas plant in France and it complements the investments made in combustion turbines, very reactive extreme peak resources[2] recently commissioned in Vitry (Arrighi), Vaires-sur-Marne and Montereau. Furthermore, since 2011, the two Montereau combustion turbines can operate using natural gas or domestic oil, further improving their flexibility.

The total reserve power at the end of 2011 is 2,075 MW following the recommissioning of the Gennevilliers 1 combustion turbine (203 MW) on 1 June 2011.

The total installed capacity of the fleet in mainland France is thus 14,275 MW.

6.2.1.1.5.2 Issues relating to fossil-fuel fired generation

Updating of the most recent coal-fired production means to meet mid-merit load capacity demand

For mid-merit load capacity, maintaining the most recent (i.e. most efficient) coal-fired units is the best solution to ensure availability of competitive capacities.

In particular, the most recent 600 MW coal-fired units benefit from the lowest fuel generation costs of all of the fossil-fuel fired generation facilities (better efficiency, seaside units, and large capacity sites). Their power, along with the flexibility of their generation, are essential advantages. They are equipped with a gas flow desulphuration system (90% reduction in sulphur dioxide emissions) and a smoke denitrification system (80% reduction in nitrogen oxide emissions). These processes mean that the units comply with environmental restrictions applicable since 2008, as well as meeting tighter regulations to be implemented from 2015. A renovation programme for these coal-fired units is currently in progress by EDF, with the aim of improving their reliability and the extension of their operating life after 2025.

However, because of restrictions in environmental regulations, EDF plans to shut its nine 250 MW coal-fired units along with the Havre 2 unit by 31 December 2015. For these units, maintenance programmes have been drawn up taking their forthcoming shutdown into account.

Reinforcement of the combustion turbine fleet and updating of the oil-fired fleet to contribute to meeting peak requirements

Since 2007, EDF has commissioned 1,060 MW in extreme peak capacity via combustion turbines on its sites in Vitry-Arrighi, Vaires-sur-Marne and Montereau. These highly responsive facilities are mobilised during periods of high electricity consumption.

Furthermore, EDF decided to equip two oil-fired units with low No_x burners, to enable them to operate until 2023, complying with the environmental regulations applicable from 2016.

Modernisation of the fossil-fuel thermal generation fleet with combined cycles

In addition to the construction of a 430 MW combined cycle gas turbine commissioned in Blenod in 2011, EDF is continuing a repowering project for three oil-fired units on the Martigues site (3 x 250 MW) into two combined cycle gas turbines, each with a capacity of 465 MW. At the end of December 2011, two of the three oil-fired units had been shut down. Industrial commissioning of the first combined cycle gas plant in Martigues is scheduled for the first half-year 2012. The second combined cycle plant will be commissioned during winter 2012-2013.

(1) This table takes into account the shutdown of two of the three fuel oil-fired units in Martigues that were under renovation at 31 December 2011 (See 6.2.1.1.5.2. ("Challenges relating to generation by fossil-fired facilities")).

(2) "Extreme peak" designates plants running fewer than 200 hours per year.

These renovation and modernisation projects of the fossil-fuel fired generation fleet will enable EDF to reduce atmospheric emissions of CO_2, nitrogen oxides, and sulphur oxide. Except for the site of Martigues, which is subject to a specific regulation, the oil-fired units now use fuel at "Ultra low sulphur content" (oil known as "ULSD" with 0.55% sulphur content).

In addition to these projects, in December 2011, EDF decided to commit to the joint development with General Electric of a new generation combined cycle gas plant, fitted with FlexEfficiency50 technology. This joint development will provide an opportunity to operate a combined cycle plant with innovative characteristics in terms of capacity, with 510 MW achievable in less than 30 minutes, and output (61% versus an average output for a standard CCGT plant of 57-58%), while providing good environmental performance, with CO_2 emissions on average 10% less than those for a standard CCGT plant. At this stage of the project, commissioning is due at the end of 2015.

Lastly, concerning CCS technology (*Carbon Dioxide Capture and Storage*), the EDF group is participating in post-combustion and oxy-combustion capture projects with industrial partners as well as in studies concerning the transmission and storage of CO_2. A CO_2 capture demonstration is thus under construction at the Havre site. This project, a 25% stake of which is financed by the Demonstrator Fund coordinated by ADEME, is spearheaded in partnership with Alstom and Veolia Environnement. This demonstrator will enable tests to be performed on the impact of post-combustion amine capture (a chemical process that consists of trapping CO_2 using an ammonia-based compound) on CO_2 found in smoke coming from the combustion of coal, as well checking the impact of this technology in an industrial setting, and analysing its flexibility during operation. The project was committed to for 2010-2013 with rollout scheduled over 3 stages: study, construction and operation. At the end of 2011, the main body of civil engineering work was complete.

Evolution of the environmental regulatory framework

Fossil-fuel thermal power plants are operated now within the context of regulations that apply to installations classified for environmental protection purposes (*installations classées pour la protection de l'environnement* or ICPE), as well as regulations relating to greenhouse gas emissions and a specific regulation for air quality (see section 6.5.4.1 ("Basic regulations applicable to the environment, health, hygiene and safety")).

The regulations relating to greenhouse gas emissions led to the establishment, in 2005, of the national CO_2 quota allocation plan. During the first period (2005-2007), these quotas covered the actual CO_2 emissions of the fossil-fuel fired fleet. In line with the national CO_2 quota plan for the period 2008-2012, EDF (mainland France) received 14.4 million tonnes of quotas for its power plants in mainland France in respect of 2011[(1)]. At the same time, total emissions of the EDF fleet in mainland France rose to 10.9[(2)] million tonnes. In the mainland France area, EDF thus observed a surplus of around 3.5 million tonnes in 2011.

The adaptation of its fossil-fuel fired generation facilities undertaken by EDF is a result of the obligations imposed by regulations on air quality and the reduction of emissions of airborne pollutants, which have targets to be met by 2015. The tightening of this regulation for 2015 is an important challenge for EDF, particularly with regards to the operation of its fuel oil units beyond this date.

Thanks to the shutdown of the oldest fossil-fuel thermal power plants, updating of the most recent plants, set up of pollution-reducing procedures and the use of low sulphur fuel, EDF has set a target to reduce by 30% its emissions of CO_2 (measured in tonnes) between 1990 and 2020 and to reduce by 65% its emissions of SOx, NOx and dust between 2005 and 2020 (see section 6.5. ("Legislative and regulatory environment")).

Generation and technical performance

Fossil-fuel fired generation represented 11.8 TWh in 2011, a decrease of about 30% compared to 2010. It represents 2.6% of EDF's annual generation in mainland France. The drop in output in 2011 can be explained by the good performance of the nuclear fleet, the clement temperatures over the year as a whole and the slowdown in electricity consumption due to the economic crisis.

The reliability of the fossil-fuel fired generation fleet was confirmed in 2011, standing at the same level as European standards. A marked improvement was seen in the ability of oil-based units and CTs to respond to calls from the optimiser. Minimising unplanned outages is the essential aim for generation means such as fossil-fuel fired facilities, operating at mid-merit and peak. The goal for these generation methods, that are called upon throughout the year on a variable basis (EDF's fossil-fuel fired power plants operate annually between 1,500 and 6,000 hours for coal, 200 and 1,500 for oil, and several hundreds of hours for combustion turbines) is to ensure the system's security through maximum levels of reliability and availability.

The decommissioning of the existing fleet

EDF has planned all of the decommissioning operations for its existing fossil-fuel fired generation facilities. The provisions for these operations have been made in an amount that corresponds to the cost of decommissioning all of the units being operated and the cleanup of the sites (see note 31 to the consolidated financial statements for the year ended 31 December 2011).

In 2011, EDF continued the decommissioning work started in 2006 on sites that have been permanently shut down.

(1) The allocation of quotas in respect of 2011 may change, in particular regarding the portion that may be allotted to new facilities.

(2) CO_2 emissions from the EDF fleet in mainland France for 2011 may change slightly, according to the latest breakdowns.

6.2.1.2 Sales and marketing

6.2.1.2.1 Presentation of the market in France

6.2.1.2.1.1 Demand

Domestic consumption in France, including Corsica, during the 2011 fiscal year stood at 478.2 TWh(1), down 6.8% from 2010. However, after weather-factor adjustment, it was up 0.8%.

6.2.1.2.1.2 Competition

Since 1 July 2007, the French market has been fully open for electricity sales. Every customer who has never left regulated sales tariffs is free to exercise their eligibility at any time without notice to take up an EDF market price offer or an offer made by an EDF competitor.

Among electricity suppliers on the French market, EDF's main competitors are GDF Suez, E.ON (SNET), Enel, POWEO and Direct Énergie. The main competitor, GDF Suez, with over 11 million gas and electricity customers in mainland France is the leading gas supplier(2).

E.ON (SNET) and ENEL do not compete in the residential customer market.

Direct Énergie has assembled a portfolio of more than 700,000 customers(3) since 2003 and developed Neoen, a subsidiary dedicated to renewable wind and photovoltaic energies.

POWEO, backed by the Verbund Group (an Austrian operator specialising in hydropower), generates energy and has a portfolio of some 385,000 customer sites(4). In 2011, POWEO announced the sale of its generation assets to Verbund. The latter transferred the majority of POWEO's capital to Direct Énergie's shareholders.

In order to supply their clients, EDF group competitive suppliers have access to:

- their own generation capacities;
- 30.8 TWh over the second half-year 2011, associated with regulated access to electricity from the existing nuclear fleet (*Accès Régulé à l'Électricité Nucléaire Historique* (ARENH)) since 1 July 2011 (see Section 9.2.2.4.1.1 ("NOME law on the new electricity market organisation"));
- 40.3 TWh made available in 2011 by the EDF group through "Capacity Auctions" (VPP) described in section 6.2.1.3.3 ("Capacity auctions");
- 10 TWh made available since 2008 by the EDF group through "Supplier Calls for Tender (SCT)" following the ruling on 10 December 2007 of the Competition Authority (see Section 6.2.1.3.4 ("Supplying electricity to alternative suppliers in France")).
- imports;
- the wholesale electricity market.

On 31 December 2011, according to the CRE, alternative suppliers, i.e. excluding historical suppliers such as EDF and Local Distribution Companies, had 5% market share on residential sites and 8% market share on non-residential sites(5). The main provisions of the NOME law promulgated on 7 December 2010 concerning electricity sales and supply are as follows:

- Blue regulated electricity tariffs (current equal to or below 36 kVA) and yellow and green regulated electricity tariffs are now covered by provisions described in paragraph 6.2.1.2.1.3.1 ("Regulated rate contracts") below;
- The transitory tariff for market adjustment (*Tarif Réglementé Transitoire d'Ajustement au Marché* (TaRTAM)) ended on 30 June 2011, when the ARENH programme was effectively implemented;
- From 1 July 2011, ARENH was implemented to benefit EDF competitor suppliers. This programme allows competitors to supply their end-users located in mainland France through EDF after the signing of a framework agreement. The primary ARENH allocation mechanism is as follows:
  - at regular intervals during the year ("windows"), EDF competitors make ARENH requests to the CRE for the following 12 months, based upon delivery load forecasts;
  - the CRE determines the ARENH ex-ante rights of each provider based upon provider forecasts according to their customer portfolio, and to established allocation methods. It then notifies each provider about its allocated load, and EDF's aggregated load. Delivered loads in total cannot exceed 100 TWh for deliveries to end users; this ceiling will be gradually increased from 1 August 2013 to take account of ARENH rights that may be beneficial to network operators' losses;
  - ARENH rights depend on the historic nuclear generation portion of end-user consumption in France, and as such do not cover consumers' supply in its entirety; Methods of calculation may be revised, specifically in the event of a ruling made by a competent body affecting the annual generation by historic nuclear fleet power plants;
  - at the end of each year, the CRE settles the ARENH rights of each supplier based on the consumption given by their customers;
  - in order to guarantee the usefulness of the competition-driven mechanism to the benefit of end-users, an additional price component is then billed to every supplier whose actual rights are below those allocated based on their forecast; this additional price component includes a part that is returned to EDF reflecting the profit made from selling on any surplus rights on the wholesale market, and a part to encourage accurate forecasts, applicable beyond a given tolerance;
  - the ARENH price is set by decree of the Ministers for the Economy and Energy, after consultation with the CRE for the first three years, and then on the suggestion of the CRE from the end of 2013.

The ARENH price was set at €40/MWh for the second half-year 2011 and €42/MWh from 1 January 2012.

Some thirty suppliers signed a framework agreement with EDF. The first window, corresponding to deliveries from 1 July 2011, was subject to the annual sale of 61 TWh of ARENH for competing suppliers with EDF, i.e. until 30 June 2012. This annual sale was reassessed by suppliers at a virtually identical volume from 1 January 2012.

(1) Source: Electricity report published by RTE on 19 January 2012.
(2) Source: gdfsuez.com website commission (press file presenting the Energy Europe business line – p14 – 1 February 2012).
(3) Source: direct-energie.com website (Group/Business/Supply page).
(4) Source: poweo.fr website (Poweo.fr/qui sommes nous ? / Chiffres clés).
(5) Source: Market watchdog (Observatoire des marchés) / CRE.

6.2.1.2.1.3 Regulated tariff contracts, transaction tariff system (TaRTAM) contracts, and market-rate contracts

In the context of the opening energy market, the following distinctions must be made with respect to sales of electricity in France:

- regulated sales tariff contracts, offered only by historical suppliers (EDF and non-nationalised distributors);
- contracts at the transition tariff system (TaRTAM), in force until 30 June 2011. Access to this type of contract was open to customers who had previously exercised their eligibility for the site(s) covered by the request;
- market condition contracts offered by both historical and alternative suppliers.

6.2.1.2.1.3.1 Regulated sales tariff contracts

Access to regulated electricity and natural gas tariffs

The principles defining rights to tariffs were amended successively by the law of 21 January 2008 regarding regulated electricity and natural gas tariffs, the law of 7 June 2010 expanding the reversibility principle of regulated tariffs for residential end users to include natural gas, and the 7 December 2010 NOME law.

Since the NOME law entered into force, the situation (by energy source and customer category) is as follows:

- Electricity
  - Domestic and non-domestic end users having subscribed for their site(s) with power less than or equal to 36 KVA: These customers benefit from regulated electricity tariffs on request. They can thus shuffle between regulated and market tariffs without a legal time limit.
  - Domestic and non-domestic end users having subscribed for their site(s) with power greater than 36 KVA: Only customers benefiting from regulated tariffs from the date the NOME law was enacted and sites created after that date may continue to benefit until 31 December 2015. They can shuffle between regulated and market tariffs provided they maintain their account and tariff for at least one year. After 1 January 2016, these same customers will no longer benefit from the regulated sales tariff for consumption by these sites.
- Natural gas
  - Domestic and non-domestic end users consuming less than 30,000 KWh of natural gas annually: These customers benefit from regulated natural gas tariffs on request. They can thus shuffle between regulated and market tariffs without a time limit.
  - Domestic and non-domestic end users consuming more than 30,000 KWh of natural gas annually: These customers can no longer benefit from regulated tariffs once they have opted for a market-rate contract.

The tariff structure and the principle of the integrated tariff

The tariff structure includes a range of regulated tariffs applicable to electricity sales. Changes in these tariffs are fixed by order of the French Economy and Energy ministers, after consultation with the CRE.

These regulated tariffs include a fee for making the load available and a variable amount proportional to consumption, with prices that may be adjusted depending on the time of day or season. The range of tariffs has been designed to take into account changes in customers' consumption with various options (peak hours/off-peak hours for residential customers, for example).

The tariff is known as "integrated" because it covers all of the following elements:

- the "supply" portion (around 60% of the tariff cost excluding tax in the case of residential customers on the blue tariff) comprising: (i) the "energy" portion based mainly on operational and investment costs in generating facilities (including downstream processes and R&D) and (ii) client management and marketing management costs.
- the "network" portion (around 40% of the tariff cost excluding tax in the case of residential customers on the blue tariff) comprising the cost of using the public transmission network operated by RTE and the public distribution networks operated by distribution network operators, also called the "delivery" portion.

The decree of 12 August 2009 thus stipulates that the fixed portion and the proportional portion for each tariff version or option are the addition of a portion corresponding to delivery to a portion corresponding to supply, and that these are drawn up in such a way as to cover generation costs, supply costs, the cost of using the public transmission and distribution networks and marketing costs, borne by EDF and Local Distribution Companies (LDCs) to supply their customers, as well as a reasonable profit margin.

As part of its public service missions, EDF since 1 January 2005 has also offered a Basic Necessity Tariff (TPN) for electricity in accordance with the conditions set out in decree no. 2004-325 of 8 April 2004. This decree was amended by the decree of 6 March 2011 with a view to allowing the automatic allotment of the tariff to all customers fulfilling the granting conditions.

Lastly, decree no. 2008-778 of 13 August 2008 made under Article 7 of law no. 2003-8 of 3 January 2003, today codified under Article L. 445-5 of the Energy Code implemented a special solidarity tariff for gas provided by all suppliers, financed by a contribution that will be passed on to all end customers.

Customers benefiting from regulated tariffs receive a single electricity bill for supply, delivery and associated taxes. This bill indicates the network usage cost portion calculated on the tariff for using the public electricity transmission and distribution networks ("TURPE"), set by the CRE proposal (see section 6.2.2.4 below, ("Tariffs for using the public electricity transmission and distribution networks (TURPE)")). The separation of generation-sales and marketing activities from those of transmission-distribution is thus highlighted. The following taxes and contributions appear on the electricity bill:

- value-added tax (VAT);
- contribution to the Public Electricity Service or CSPE (see section 6.5.1.2 ("French legislation: Energy Code")) was set on 1 January 2011 at €7.5/MWh and at 31 July 2011 at €9/MWh. An increase of €1.50/MWh to this contribution is planned for 1 July 2012. Since 1 January 2011, the CSPE has been capped at €550,000 per consumption site and per annum, and the total amount due in respect of this contribution by all industrial companies consuming over 7 GWh of electricity per annum is also capped at 0.5% of its added value;
- municipal and departmental taxes, collected and reversed by EDF to municipalities; on 1 January 2011, the NOME law transposed directive 2003/96/EC of 27 October 2003, restructuring the community tax structure for energy and electricity products and transforming them into taxes on end-usage electricity consumption ("TCFE");
- The CTA levy (*Contribution Tarifaire d'Acheminement*), which contributes to covering a portion of the fees for the pension system (see section 17.6.1.1 ("Special pension system")).

At 1 July 2011, the increase excluding tax of regulated sales tariffs was an average of 1.7% for blue tariffs, and an average of 3.2% for yellow and green tariffs, in line with the decree of 28 June 2011. This development was identical within each tariff colour. It did not provide an opportunity to reform the structure, in contrast to previous years.

Another decree of 28 July 2011 on electricity sale tariffs to other Local Distribution Companies entailed a 1.3% rise in these tariffs from 1 August 2011.

6.2.1.2.1.3.2 TaRTAM contracts

Law no. 2006-1537 of 7 December 2006 pertaining to the energy sector provided for the creation of a transition tariff system (TaRTAM) and its application over a period of two years for every customer who exercised their eligibility by requesting this tariff.

Subsequently, TaRTAM was extended three times: until 30 June 2010, then until 31 December 2010, with a view to entry into force of the NOME law on 1 January 2011, and lastly by the NOME law of 7 December 2010, until the date of effective implementation of ARENH activities, thus 1 July 2011.

Only those customers benefiting from TaRTAM on 31 December 2010 automatically continued to benefit from it for supply of their sites until 30 June 2011, without the ability to change the tariff parameters of their contracts, except in the event of a sustainable change in the activity of their site(s), reflected in a change in their requirements. Finally, all clients who cancelled TaRTAM by 31 December 2010 could not subsequently claim it again.

TaRTAM price fluctuations were decorrelated from regulated sales tariff fluctuations by the decree of 12 August 2009 setting the new regulated transition tariff system. The decree of 31 August 2010 setting the new regulated transitional tariff system, published in the *Journal Officiel* of 16 September 2010 increased the TaRTAM structure equilaterally by 0.6% to integrate the TURPE increase which came into effect the preceding 1 August. The TaRTAM structure was not changed for 2011.

In the first half-year 2011, sites using TaRTAM represented consumption of 35 TWh, of which 15.3 TWh were delivered by EDF. At 1 July 2011, all customers formerly using TaRTAM subscribed to a market-rate contract with EDF or one of its competitors.

6.2.1.2.1.3.3 Market-rate contracts

In France since 1 July 2007, those customers who have never exercised their eligibility right have been free to leave the regulated sales tariffs at any time and without notice to pursue an EDF contract or one provided by another supplier. Those customers with power level commitments over 36 kVA who exercised their eligibility right after 7 December 2010 and chose to return to regulated tariffs must continue to hold them for at least 1 year (see Section 6.2.1.2.1.3.1 ("Regulated sales tariff contracts")). With the exception of customers connected to the transmission network, who must sign separate transmission and delivery contracts; all other customers who have exercised their eligibility right may enter into a single contract with the supplier of their choice for their electricity supply and delivery. As is the case for regulated tariff contracts, their electricity bill includes the electricity supply price, the transmission and distribution network access tariff (TURPE), and government mandated charges: CSPE, CTA, local taxes or TCFE following implementation of the NOME law, and VAT outlined in section 6.2.1.2.1.3.1 above.

6.2.1.2.2 Customer Division

EDF's sales and marketing activities in France are managed by the Customer Division.

6.2.1.2.2.1 Introduction and marketing strategy

EDF markets energy and services to more than 26 million customers in France (excluding overseas departments and Corsica), that is more than 32 million sites.

On the electricity market, EDF's sales stood in 2011 at 370.2 TWh[(1)], giving a market share of 80.2%. In 2010, sales stood at 410.9 TWh and market share at 83.4%.

EDF provides gas supply to all its customers. In 2011, EDF marketed 18 TWh, giving a market share of 3.62% on over 720,000 sites. At the end of 2011, EDF supplied gas to about 713,000 customers including 619,000 households (versus more than 572,000 customers including around 480,000 households at the end of 2010).

EDF wants to strengthen the value of its portfolio by increasing loyalty among its customers via the excellence of the customer relationship and by proposing offers that respond to the new competitive and environmental challenges. With this in mind, EDF is implementing a contact and marketing strategy over several channels, while strengthening its operating performance.

EDF integrates energy efficiency in supplying electricity thanks to offers (at regulated tariffs or market rates) that provide an incentive to manage demand and smooth out peak consumption. This range of offers will be gradually broadened depending on the deployment of smart meters (see section 6.2.2.2.3 ("The electricity market")).

In addition to electricity supply offers and corresponding gas offers, the Group supports its customers in all market segments, in their investments

(1) Data exclude internal sales, sales to foreign operators and notifications of block trades, including Eurodif contract processing, adjusted for cut-offs.

and actions both in terms of energy efficiency and decentralised generation, by helping them to make the most appropriate choices for their situation so as to better manage their energy expenditure.

This procedure meets the objectives of the POPE act of 13 July 2005 on energy policy guidelines and the associated application decrees, and the Grenelle 2 law of 12 July 2010 (see section 6.5.4.1 ("General regulations relating to the environment, health, hygiene and safety")) enabling EDF to obtain Energy Economy Certificates (CEE) in return for actions taken with its customers. In this context, EDF is developing high-performance electrical solutions (heat pumps in well-insulated buildings, electric vehicles, etc.). Furthermore, EDF is committed to the promotion of future electrical smart systems. As such, the Group is preparing and experimenting with tariffs and service offers, as well as taking part in the design and operation of projects like the Smart Lyon demonstrator, which consists of testing innovative electrical solutions with some 10,000 residential and tertiary customers.

EDF is thus positioned as a major player in the transition towards a low-carbon society thanks to its visible and sustainable action on the ground. Present throughout the country, it has strong links with the French population, the industrial network and all local governments and licensing authorities. This presence also helps fulfil the public service values: customer proximity, service continuity, professionalism and social responsibility.

In this regard, the Group acts to ensure that electricity does not become an aggravating factor in insecurity. Its approach, centred on maintaining access to energy integrates the promotion and implementation of subsidised energy tariffs, support for customers in difficulty and contributions to the Housing Solidarity Fund and the Live Better programme. Its approach is complemented by targeted partnerships with public authorities and players in the associative sphere working to combat energy insecurity.

6.2.1.2.2.2 Activity by client category

A. Residential and business customers

EDF has 25.9 million residential and business customers. In 2011, the sales volume stood at 152.2 TWh of electricity and 7.7 TWh of natural gas. At the end of December 2011, it had reached nearly 619,000 residential gas customers and some 84,000 business gas customers.

EDF's marketing strategy for its residential customers is based on energy efficiency and home comfort. For business customers, EDF proposes a range of offers combining supply with services, as well as energy efficient solutions with lower CO_2 emissions. Its range of services and check-ups allow business customers to focus on running their businesses and enhancing their performances.

Energy supply

Since 2005, EDF has offered its business customers natural gas, and since 1 July 2007 it has offered its residential customers gas and electricity at market prices: "My natural gas contract" and "My electricity contract".

EDF has developed a number of contact and marketing channels to market its services to a mass market (i.e. more than 30 million incoming calls, 109 million customer bills annually): more than 110 stores nationally, 49 customer service centres ("CSC") open from 8:00 a.m. to 9:00 p.m., six days a week; several hundred retailers; a voice-response system; a website; and a network of around 5,500 EDF Bleu Ciel qualified partner installers specialising in energy saving thermal renovations.

EDF "Bleu Ciel" residential offers

EDF has the whole range of offers and services aimed at residential customers: (i) supply-related services: safety of indoor installations (Diagnostic Sécurité Électrique), insurance (energy bill insurance – "AFE"), energy management system ("Suivi-Conso"), electrical and plumbing outage assistance ("ADEP"), financing solutions (new home loans – *Prêt habitat neuf*, renovation loans – *Prêt Rénovation Bleu Ciel d'EDF*), payment methods (e-billing, direct contact billing service, online branch, etc.) ; and (ii) "major transition" services: move-ins, energy savings construction and thermal improvement projects. The range of offers includes advice, diagnostics, personalized assistance (*Objectif Travaux et Estimation Travaux* offers), as well as financing for all home thermal energy savings projects, including equipment maintenance and services provided by EDF Bleu Ciel partners;

EDF has set up several marketing partnerships to support these offers, notably with:

- Cardif to set up a group insurance agreement covering electricity or gas bill payments in the event of death or disability of an EDF customer ("AFE");
- Crédit Foncier to offer residential customers new home loans (*Prêt habitat neuf*) for construction projects in compliance with EDF "Bleu Ciel" specifications;
- Texeurop to set up a construction estimate service "*Estimation travaux*".

Additionally, a partnership was established with Axa Assistance and Europe Assistance for their "Outage Assistance" programme for both residential and business customers.

"EDF Pro" offers for business clients

With its business offers, EDF Pro aims to make its customers' lives easier by offering them advice and solutions for better control of their energy consumption, optimising their bills, receiving repair services and respecting the environment while reconciling performance and business continuity.

While all business customers share the same concerns (enhanced energy performance, expertise, and reliable supplies), each business sector and profession has its own specific needs. To deal with such diversity, EDF Pro offers a set of services and options that are best suited to the expectations of all its business customers in lighting, heating and air-conditioning. EDF also helps business customers who plan to move or to renovate their commercial premises.

Earning of energy savings certificates

Regarding residential and business customers, energy savings certificates are earned from:

- offers providing solutions for home energy efficiency renovation (heating, hot water, insulation and ventilation) using high-performance materials. In addition to advice and check-ups, customers are put in touch with EDF "Bleu Ciel" partners who handle and coordinate the general contracting. EDF has thus supported some 1,400,000 renovations since mid-2006;
- EDF's partnership strategy, under which qualified small construction and renovation professionals are granted Bleu Ciel d'EDF partner certification under certain terms. Certification involves the granting of a brand license that states the precise conditions and sets the commission that the partner pays to EDF. This network of partners allows customers carrying out construction or renovation work to have access to approximately 5,500 professionals in all aspects of the building trade, all of whom are committed to energy efficiency, alongside EDF.

EDF also contributes to training and the promotion of energy savings:

- FEEBAT (*Formation aux Économies d'Énergie des salariés et artisans des entreprises du Bâtiment* or Energy Savings Training for Construction Craftsmen and Companies): this program was created with building trade professionals and the French Environment and Energy Management Agency (ADEME) to develop businesses' ability to respond to the energy efficiency renovation market. Since 2008 more than 40,000 professionals have been trained, thanks to EDF funding under the energy savings certificates programme. The system was opened up to materials distributors and project management;
- overhaul of the Grenelle Environnement best practices: this programme, launched by the Minister of Ecology, Energy, Sustainable Development and the Sea in November 2007 with building trade organisations, is designed to help businesses grappling with issues related to the Grenelle environmental action plan. Updated and integrated into reference training materials, these new rules will improve the quality of implementation of the renovations;

Solidarity policy

EDF takes part in the scheme financed by the CSPE implemented to help people in difficulty and facing financial insecurity. Low-income customers can access subsidised energy prices for electricity and natural gas, as well as free arrangement and start up. At the end of 2011, 625,000 households (the Paris region, Corsica and overseas departments) benefited from a basic necessity tariff (TPN), and 14,600 benefited from a special socially responsible tariff for gas.

In 2011, EDF contributed 22.6 million Euros to the Housing Solidarity Fund ("FSL") which helps to write off unpaid bills for customers in financial difficulty. In 2011, it helped more than 210,000 households.

Over and above its legal obligations, EDF promotes its "energy guidance" offer bringing together services and advice about rates, usage, energy management and payment terms. In 2011, over 220,000 people took advantage of it.

To be closer to disadvantaged people, EDF provides 200 local contact points, in addition to its store network. The many partnerships developed by EDF with specialised associations in social mediation, such as PIMMS (Multiple Service Mediation Information Point), ANIL (National Housing Information Agency), a partner since October 2011, make these structures recognised sites for the dissemination of information and mediation, thus making public services easier to use. In this respect, the French customer relations association presented its Social Innovation Award to the PIMMS national union in 2011.

EDF also supports awareness-raising in terms of energy management and home renovation, from both a financial and technical perspective, thanks to many partnerships (associative partners, low-income housing agencies, etc.) to help families facing energy insecurity, alongside the Fondation Abbé Pierre, as part of the "2,000 roofs for 2,000 families" programme (2,025 families took advantage of the programme in 2011), SOS Familles / Emmaüs France, Secours Catholique and Secours Populaire; the Unis-Cités association as part of the "Mediaterres" programme; and since June 2011 with the National Union of Community and Inter-Community Centres for Social Action (UNCCAS).

EDF has also strengthened its commitments to the National Agency for Home Improvement (Anah) in connection with the "Live Better" programme. The Agreement signed in September 2011 under the aegis of the government in response to the Grenelle II law is aimed at the energy efficiency renovation of 100,000 homes whose owner-occupiers have low incomes over the 2011-2013 period. EDF will contribute up to a capped amount of 49 million Euros over the term of the Agreement, which corresponds to the renovation of 58,000 homes. EDF contributes to the mapping of targeted households and provides expertise in energy management actions (awareness-raising/training).

Lastly, EDF confirmed its commitment to innovation by signing a partnership with the Fondation de France in August 2011. The aim is to support 16 innovative projects in technical, sociological or economic terms, in connection with combating energy insecurity.

In return for these commitments, EDF is given Energy Economy Certificates.

B. Corporate customers

EDF has some 215,000 corporate customers, with electricity sales of 174.3 TWh for 2011 and 9 TWh for natural gas. In 2010, the company had 218,000 customers with electricity sales of 198.3 TWh and 11.9 TWh for natural gas.

EDF assists its corporate customers in managing their energy, regardless of their sector of activity, their size or their organisational set-up. It aims to make energy performance an integral part of the overall performance of companies, both economic and environmental performance. Consistent with 2010 and due to the completely new context ushered in after the implementation of ARENH on 1 July 2011, EDF changed its range of offers dedicated to companies as well as its relational system.

As part of the long-term contract lasting 24 years signed on 31 July 2008, EDF and the consortium founded by seven major industrial groups (Exeltium) signed two amendments on 25 March 2010. These agreements thus deal with total supply of 311 TWh, delivery of which is scheduled in two stages. The first stage covers 143 TWh which started in the first half-year 2010. Delivery of the second stage of the contract, i.e. 168 TWh, did not start on 1 February 2011 as scheduled. Discussions are ongoing with start-up expected in the coming months. The aim of the partnership is to secure part of the

electricity supply of electricity-intensive industrial partners, Exeltium shareholders, under the supervision of the European Commission.

The offers

The EDF range of offers is adapted to customers' expectations and their respective profile, specifically with electricity supply offers providing competitive solutions that comply with new market rules as set out by the NOME law.

EDF also enhanced its range of services intended for all its customers, whether small companies or large industrial customers. These services are designed to:

- simplify contract management and optimise energy expenditure: thanks to the multi-site bill, paperless billing, consumption monitoring, customised alerts, etc.;
- optimise energy efficiency projects. EDF supports companies of all sizes in their projects and implementation in three areas: building insulation, energy efficient or renewable energy equipment installation, and industrial process improvement in conjunction with its energy efficiency service subsidiaries. This approach enables EDF to obtain Energy Economy Certificates ("CEE") and thus meet its obligations.
  Services offered respond to customer expectations: audits, engineering and detailed studies, equipment delivery and installation, operating services and maintenance of newly installed equipment, financing options and remote monitoring of energy efficient performance, etc.
  To reinforce its expertise and best respond to its customers' investment projects, EDF has sought partners, more than 600 companies committed to energy efficiency and the reduction of CO_2 emissions;
- to support customers in the "low carbon" strategy: highlighting the value of commitments to renewable energy, diagnostics, carbon reduction and offsetting, and monitoring and assessing savings made.

In order to be ever closer to the varied expectations of its customers, EDF in 2010 set up differentiated services devoted to large industrial customers, specifically with:

- custom electricity and gas supply offers;
- the development of interruption capacity for their customers;
- assistance on a European level through entities of the EDF group. EDF has a "Large Business Customers and Key Accounts" marketing network for managing large business customers who operate on a European scale and have a centralised purchasing structure. This coordinated network spanning 7 European countries (Belgium, Italy, the United Kingdom, Austria, Hungary, Slovakia and Poland) thus offers multi-country energy solutions;
- support for controlling their energy consumption and CO_2 emissions through the implementation of Energy Progress Contracts. These contracts rely upon EDF Entreprises' expertise in terms of eco-efficient solutions in processes and utilities, proposing initiatives to be implemented and guaranteeing the resulting savings. These initiatives lead to energy savings investments that benefit the CEE system.
- CO_2 trading for companies subject to the French national quota allocation plan (PNAQ).

In addition to supplying electricity and services, EDF markets a full range of offers for the supply of natural gas intended for its customers. It offers them a single contact and simplified management of electricity and gas contracts. The natural gas offer features management and advisory services, including online monitoring, annual consumption assessments, energy savings check-ups and other services.

Relational system

EDF uses a full relational system to stay close to its customers, their issues and their expectations. In fact, some 2,300 employees in eight regional sales divisions and one Key Accounts national division put EDF's expertise to work supporting and processing customer requirements.

With efficiency and proximity at the heart of the customer relationship, EDF employees use solutions that suit customers, according to their profiles and consumption habits, with the ambition of encouraging dialogue and making it easier to access information. Thus, in addition to classic communication channels, EDF has specifically developed:

- A website specifically dedicated to companies. On the site they can perform standard operations, find a simplified presentation of offers, read the energy magazine or access a Frequently Asked Questions page classified by theme;
- The energy monitoring organisation was set up in 2009 with the ambition of offering customers a place to talk about corporate behaviour in an ever-changing energy context and to offer issues to reflect on in terms of the adjustments required to cope with the new challenges of energy.

C. Local authorities, low-income housing agencies, Local Distribution Companies (LDC) and public service providers

Law no. 2009-967 of 3 August 2009 regarding implementation of the Grenelle environmental action plan gives local authorities a major new role in local energy policies. In this context, EDF has strengthened its links to the local community by offering each authority, regardless of size, a designated local contact person. This personalised relationship system, today involving some 500 EDF contacts, was widened to include public institutions with decentralised decision-making powers (hospitals, universities and major graduate schools, chambers of commerce and industry, ports and airports) since 1 July 2011.

EDF acts in five areas for these customers: supplying electricity and gas, responding to customer energy problems (proposing customised offers and solutions for energy needs), help with their different plans (national climate plan, green neighbourhoods, sustainable cities, etc.), signing supply concession agreements in connection with ERDF (see section 6.2.2.2.4 ("Concessions")) and developing sustainable mobility offers with local authorities.

EDF manages thus more than 55,000 customers in this market: local authorities including municipalities, public institutions for inter-municipality cooperation (cities, metropolitan areas, inter-municipal associations), regional and general councils; public institutions (secondary schools and sixth-form colleges, nursing homes, etc.), 3,278 regional public institutions, 996 public and private management

agencies for public housing (low-income housing agencies); and 159 LDCs (137 electric, 19 combined gas and electricity, 3 gas).

All of these customers account for about 1.2 million electricity sites, of which 256,000 are for low-income housing agencies, with an annual consumption of 27.7 TWh, and 4,330 natural gas sites with an annual consumption of 1.3 TWh. Coupled with that are 17.1 TWh per annum of electricity sold to LDCs in 2011.

Customer solutions and offers

In 2011, in connection with the supply of electricity and natural gas, EDF enhanced its range of electricity offers by adding more targeted offers according to sector of activity (Winter Sports offer, Secondary Schools-Sixth-Form offer, and Public Lighting offer). This complemented the "Balance" (*Equilibre*) offer, produced using renewable energy sources.

EDF also offers:

- customised management services to municipal and low-income housing agency customers, specifically web-based cost and consumption monitoring, Dialège, e-billing or billing data sent electronically;
- a cost amount offer ("CAO") designed for low-income housing agencies. Its aim is to enhance energy efficiency in low-income housing and allow EDF to earn energy savings certificates. In 2011, some 128,000 low income housing units were assisted thanks to this offer;
- the signing of agreements with local authorities on controlling their energy consumption. Some local authorities have been granted responsibilities in the area of energy, and they coordinate specific initiatives in Energy Demand Control (EDC) and renewable energy sources in their geographical areas;
- high-performance energy efficiency offers following the Grenelle environmental action plan, such as: the "Infrastructural Energy Analysis" offer allowing governments and housing agencies to categorise and prioritise energy savings and CO_2 reduction initiatives for their infrastructure through a multi-criteria approach (energy and environmental criteria, technical standards, etc.); a range of Energy Demand Control (EDC) and ENR-related advice permitting assembly of an optimal building programme through detailed energy analysis of selected buildings; and the "Development-related Energy Analysis" enabling upstream land-use planning, evaluation of local energy solutions optimised according to societal, economic and environmental criteria;
- low-carbon solutions for evaluating, reducing and compensating for energy consumption-related carbon emissions of a building or of the organisation of an event;
- assistance in raising awareness through communication tools and innovative events: training courses, green toolkits and so on.

6.2.1.2.2.3 Promotion of electrical vehicles

The EDF group is committed to the promotion of electric vehicles to support its customers as they move towards sustainable choices in terms of mobility aimed at lowering CO_2 emissions.

It implements an active partnership strategy that is open to the various technological solutions developed by manufacturers, including both electric vehicles and plug-in hybrid vehicles, in tandem with European players such as Renault, PSA, BMW, Daimler, and forerunners such as Toyota, the leader in plug-in hybrid vehicles.

These partnerships are backed by an ambitious programme of experiments which began in 2010 with Toyota in Strasbourg, BMW in Paris and Daimler in Great Britain, continuing in 2011 with the launch in April of an experiment with Renault implementing 100 electrical vehicles in the Val de Seine region.

The expertise of the EDF group in terms of charging infrastructures helped its subsidiary SODETREL to be awarded the call for tenders launched by the Metropolitan Government of Nice Côte d'Azur, alongside Veolia Environnement, for the delegation of public service dealing with an electric vehicle self-share service. Autobleue was inaugurated on 9 April, and over time will include 210 electric vehicles and 70 charging stations.

Along with these projects, the Group's business offer took shape in 2011. Now individual customers can call 3929 to receive support in terms of their equipment at charging points, while local governments and companies can obtain a full turnkey solution from SODETREL.

6.2.1.2.4 The Gas Division

The gas portfolio optimisation businesses, from 1 October 2010, come under the Gas Upstream Downstream Optimisation Division (Gas Division) that has been set up within EDF's Customer Division.

The Gas Division's main responsibility is to manage the balance between upstream assets (long term sourcing contracts, storage capacities and transport capacities) and forecasted sales, whilst respecting the permissible risk limits set by the head of the Group.

Optimisation consists of carrying out short to medium term economic arbitrages between the various resources available so as to satisfy EDF's supply commitments to its customers, whilst at the same time managing the upstream asset, consumption and market risks and their financial consequences.

The Gas Division relies exclusively on EDF Trading, a wholly-owned EDF subsidiary, for its wholesale market transactions (see section 6.4.1.1.2 ("EDF Trading")).

It also manages the contractual relationship and invoicing of external counterparties (including EDF Trading) as regards supply contracts and access to gas infrastructures.

The Gas Division manages around 32.6 TWh of supply contracts.

6.2.1.2.2.5 Service subsidiaries supporting energy efficiency development

Supporting customers in their energy efficiency and decentralised generation investments and actions is one of the major priorities of the Group's marketing strategy. Service subsidiaries help meet this objective with various customer categories (Residential, Business, Corporate and Local Authorities) and cover a broad scope of activities, including studies, construction, equipment maintenance, investment financing and backing in obtaining authorisations and subsidies.

The portfolio of service subsidiaries has resulted from successive stakes taken over existing companies, as well as from the subsidiarisation of businesses that EDF developed itself. These subsidiaries are backed by EDEV (see section 6.4.1.6 ("Other equity interests") and Chapter 7 ("Organisational charts")).

Integration of energy efficiency services

EDF Optimal Solutions (EOS)

EDF Optimal Solutions brings EDF energy efficiency services to companies and local authorities. It implements global solutions that reduce energy costs and CO_2 emissions, such as improvements to industrial processes, the design and creation of energy power plants and fluid generation, and improvements to industrial and service buildings.

Climatic and electrical engineering, renewable energies, insulation, heating, cooling and lighting systems, user-targeted communications, and performance management and control are all notable examples of the technical solutions offered.

The main competitors of EOS include vertically integrated players such as the GDF Suez group or public housing/construction players, as well as groups involving important public housing/construction players and energy services like Eiffage, Vinci or Schneider.

Everbat

Everbat, a wholly-owned company of EDF, acts as a package builder for the technical aspects (heating, cooling, hot water, photovoltaics, etc.) of public and private calls for competitive tenders from local authorities, property developers, low income housing agencies and industrial companies.

Heating Specialists

Fahrenheit

Company wholly-owned by EDF, Fahrenheit performs maintenance work on central heating and hot water systems for residential customers, offices, rent-controlled housing managers, and for jointly owned properties. Its main commercial brand is "Chaleur Maintenance" (CHAM).

Fahrenheit is expanding its business in the area of the heat pump (PAC) cleaning and maintenance.

Engineering Firms

Bastide-Bondoux, ETC and ICR-LBE

These engineering firms, wholly owned by EDF (86% for ICR-LBE), conduct thermal studies and provide advisory and optimisation services for all new or existing residential, service or industrial buildings.

Financial services

Domofinance

Domofinance was created in 2003 and licensed as a financial company by the *Comité des Etablissements de Crédit et Entreprises d'Investissement* (CECEI) on 29 September 2003, pursuant to Articles L. 511-9 to L. 511-14 of the French Monetary and Financial Code.

EDF holds a 45% equity interest in Domofinance; the remaining 55% is held by BNP Paribas Personal Finance (a subsidiary of the BNP Paribas group).

Domofinance meets the financing needs of residential customers of EDF who wish to integrate efficient energy solutions in their home renovation projects. In particular, it markets and finances the EDF Bleu Ciel renovation loans.

In 2011, Domofinance granted more than 50,700 loans.

Waste treatment

See section 6.4.1.5 ("TIRU").

Downstream integration of smart electrical systems

Thanks to the opportunities offered by smart electrical systems, the role of electricity, an "intelligent energy" as a vector for transition towards a low carbon society specifically built around sustainable cities is another major priority around which the Group's marketing strategy is based.

Recently-created subsidiaries are now working in this strategic area.

Netseenergy

Netseenergy, wholly-owned by EDF, has historically developed and produced the range of services for remote monitoring of load curve (e.g. Adviso) which gives customers access to an online graph of their consumption load curves. Since 2010, the company has marketed a new range of energy efficient voice-activated services in the business market. It also directs a growing part of its research on the growing and cutting-edge field of smart grids, in particular long-distance electrical usage disruption to level out peak consumption periods.

EDEV Téléservices (Edelia)

Edelia, wholly-owned by EDF, ensures rollout and operation of prototypes in the context of smart electronic systems, notably the "OpCo" experiment in Brittany of scattered disruption of residential customer usage. It conducts and develops full industrial solutions able to reach up to 100,000

customers (screens, home equipment management, experimental rate offer management, etc.). In the context of pilot projects, Edelia develops interconnected solutions with Linky solutions and compatibility with all energy savings systems installed by their customers.

6.2.1.3 Upstream/downstream optimisation – trading

6.2.1.3.1 Role and activities of the DOAAT

The primary function of the Upstream/Downstream Optimisation & Trading Division (*Direction Optimisation Amont/Aval & Trading*, or "DOAAT") is to ensure a balance for electricity between upstream resources and EDF downstream outlets in France, and to maximise the gross margin of the integrated upstream/downstream entity:

- upstream resources: fleet of generation facilities, long-term electricity supply contracts, wholesale purchasing, purchase obligations from decentralised generating companies;
- downstream resources: long-term supply contracts, end user sales, wholesale market sales, sales to alternative suppliers in France, contractual disruption capacity.

Optimisation consists of making short and long-term economic arbitrages between the various resources available to satisfy EDF's supply commitments to its customers, while controlling risks linked to uncertainties related to generation, consumption, market events, and their financial consequences.

DOAAT's objective is to secure and maximise the gross electricity margin of the "generating-supply" entity through optimal use of upstream or downstream asset flexibility and by permanently seeking the best wholesale market purchasing and sales options.

DOAAT deals with supply in terms of fossil fuels – gas, coal and oil - for EDF's plants.

For the longer term, DOAAT is planning and proposing structural changes in the upstream and downstream asset portfolios, based on anticipated changes in the market and company strategy in France.

For transactions on wholesale markets, DOAAT relies exclusively on EDF Trading, a wholly-owned EDF subsidiary (see section 6.4.1.1 ("Optimisation of Group Trading").

DOAAT had 453 employees in France at the end of December 2011.

6.2.1.3.2 Upstream/downstream balance optimisation activities

DOAAT is responsible for the management of physical risks to EDF's upstream/downstream electricity portfolio and the financial consequences therein.

It optimises the Marketing and Generation gross margin by using available flexibility leverage of upstream, downstream and wholesale market portfolios, and proposing changes in value and structure of these portfolios over different time periods.

In the medium-to-long term, DOAAT's role is to create an optimised and balanced view of the EDF's Generation-Marketing portfolio, by determining the financial trajectories and the landscape of acceptable physical and financial risks. The main levers of the portfolio are: (i) seeking new maintenance or operating policies with a view to improving the availability or flexibility of generation resources and adapting the mix of facilities (DOAAT works in support of the DPI in this respect); (ii) segment-based market share strategies, tariff changes, scaling interruptibility and seeking new sales offers (DOAAT works in support of the DCO in this respect); (iii) adapting existing long-term contracts and seeking suitable new structured contracts; (iv) contributes to the preparation of the generation investment programme and, notably, the renewal of the fleet in parallel with the development of long-term downstream market opportunities.

Management of the electricity supply/demand equilibrium can also be considered in shorter periods (3 years to 1 month), within the framework set by extreme risk (volume risk) and price risk policies drafted in accordance with directives of the Corporate Risk Management Division and approved by the company's Executive Committee. From a physical point of view, the main risks for energy are variations in temperature, water availability, availability of the generation fleet and market shares. Thus for example, a decrease in temperature of 1°C in winter leads to an increase in consumption of electricity in France up to approximately 2,300 MW[(1)] and, in two extreme years, the difference in available hydropower loads can reach 15 TWh. The DOAAT also manages the exposure of EDF's upstream/downstream portfolio to energy wholesale markets' prices (electricity, gas, coal and oil products) and the CO_2 emission rights' market's prices variations.

In order to be able to face "volume risk," DOAAT uses sufficient power margins to reduce the likelihood to 1% of EDF being unable to meet its commitments without having to activate exceptional leverage to satisfy its portfolio of market commitments. DOAAT has a group of leverage actions: generating facility maintenance operation programming (especially nuclear power), stock management (fossil fuels, hydropower reserves and customer disruption capacity), and wholesale market sales and purchases. DOAAT manages "price" risk through EDF Trading, which is exclusively tasked with market access on DOAAT's behalf. DOAAT is not able to make wholesale market financial arbitrages.

In the short term (weekly to intraday), DOAAT is tasked with "balance responsibility" within EDF's scope in mainland France and with regard to RTE, i.e., EDF will compensate RTE financially in the event of a discrepancy within the scope of its balance management. The optimisation consists of informing RTE one day in advance of a balanced offer programme for the next day which allows the reduction of the supply costs of EDF's contractual commitments. In order to ensure balance in EDF's scope, the DOAAT can benefit from the flexibility of the customer portfolio (namely disruptions) or generation assets (moving shutdowns and trials, assets which can be mobilised within a few hours, such as the fossil fuel thermal fleet, or within a few minutes, as it is the case for combustion turbines and hydropower plants), depending on their

(1) Source: RTE.

economic value and by hedging them with the "spot" sales and purchases of energy carried out by EDF Trading on the markets. Customer portfolio and generation flexibility also enable arbitrages within the same day.

In addition, DOAAT analyses and evaluates the impact of regulatory and institutional developments on the physical and financial balance of the upstream / downstream electricity portfolio: a system for allocating capacities at the borders; reinforcement of environmental requirements.

Under the aegis of the French Electricity Union (UFE), DOAAT, as some French producers, helps to improve the transparency of the French electricity market by publishing information about the provisional availability of generation resources and the list of unplanned outages from generation units of nominal capacity greater than 100 MW within 30 minutes.

6.2.1.3.3 Capacity auctions

DOAAT manages the capacity auctions mechanism (Virtual Power Plants or VPP). Capacity auctions result from a commitment made by EDF to the European Commission in the context of EDF's acquisition of EnBW shares. Since 2001, EDF has committed to making part of its generating capacity available to the market for an estimated initial 5-year period, in principle until 7 February 2006. This commitment began in 2001 encouraging competition in the French market, in a hitherto inexistent wholesale market. As such, in 2011 almost 40 TWh were made available to the market.

In 2010, the Baden-Württemberg region made an offer to buy out the stake held by EDF International in EnBW. EDF's Board of Directors approved this offer in their meeting on 6 December 2010. Finalisation of the transaction on 17 February 2011 annuls the de facto and de jure circumstances behind the initial decision, denying the grounds for VPP commitments.

EDF, which had not made any requests for suspension in 2006 upon expiry of the initial commitment, made a formal request to the European Commission at the end of June 2011 to be released from its commitments. The European Commission issued a favourable opinion regarding EDF's request on 30 November 2011. In this context, VPP auctions will no longer be renewed in 2012.

This release from commitments does not however call into question the rights acquired during previous auctions, including that of 30 November 2011. Thus EDF will continue to deliver the volumes purchased to counterparts until mid-2015, at which time the delivery commitments for the longest contracts will expire. The loads made available by EDF will thus gradually decrease, totalling 5.3 GW in 2012, 1.5 GW in 2013, 400 MW in 2014 and 150 MW in 2015.

6.2.1.3.4 Supplying electricity to alternative suppliers in France

By its decision of 10 December 2007, the Competition Council accepted and made mandatory the commitment proposed by EDF to make a substantial capacity of electricity of 1,500 MW baseload available to alternative suppliers, i.e., a volume of approximately 10 TWh/annum over periods to fifteen years, at price levels allowing EDF offers to compete on the free mass market.

For an initial period of 5 years, from 2008 to 2012, the price in current Euros was set at €36.8/MWh in 2008, reaching €47.2/MWh in 2012. In 2011, this figure stood at €44.6/MWh.

These loads were made during three successive calls to tender open to all alternative electricity suppliers in France. The awards, which occurred in 2008 and 2009, enabled 9 alternative suppliers to acquire 1,500 MW, which was the total amount of energy offered by EDF. In 2011, following the implementation of ARENH, 4 suppliers out of 9 terminated the rights they acquired via this mechanism, and terminated their contracts with EDF.

In 2011, the total volume of electricity provided by EDF through this mechanism accounted for 8.2 TWh.

6.2.1.3.5 Long-term electricity purchase/sales contracts

EDF has business relationships with European operators such as GDF Suez, Enel, EnBW, Axpo, EGL, Alpic and POWEO, through numerous energy purchase or sales contracts.

In 2011, the volumes sold and purchased represented 49 TWh and 2.2 TWh, respectively.

There are several types of contracts, relating to:
- rights to energy generated by plants, mostly nuclear, in which the counterparts hold a stake during the operation of the facility (see section 6.2.1.1.3.1 ("EDF's nuclear fleet", "Generation allocation contracts"));
- drawing rights for electrical power, totally or partially guaranteed for a period typically between 15 to 25 years.

The portfolio of contracts represents the EDF generation fleet structure, mainly composed of nuclear facilities (EDF sells base load energy and purchases intermediate and peak load energy).

6.2.2 Regulated activities in France

6.2.2.1 Transmission – Réseau de Transport d'Électricité (RTE)

Created on 1 July 2000 and having become a subsidiary on 1 September 2005, RTE Réseau de Transport d'Électricité, known as RTE EDF Transport until 24 January 2012, is the operator of the French power transmission network, which it owns, operates, maintains and develops. With some 100,000 km of high and very high voltage circuits and 46 cross-border power lines, this network is the largest in Europe. Its geographical position places RTE at the heart of the European electricity market. RTE is the entity responsible for the correct operation and safety of the electricity network. It guarantees free and fair access of all users of the network.

RTE was made into a subsidiary in 2005 and the company, a wholly-owned EDF subsidiary, was fully consolidated in the Group financial statements until 31 December 2010. On 31 December 2010, EDF allocated 50% of its RTE shares to its portfolio of dedicated assets to finance the decommissioning of nuclear power plants (see Note 48 to the consolidated financial statements at 31 December 2011). This operation, approved by EDF's Board of Directors on 14 December 2010, obtained the necessary administrative authorisations. Following the operation, RTE remains wholly-owned by EDF, but the governance change following this operation (see section 6.2.2.1.1 ("Organisation of RTE") below) has led the EDF group to discontinue full consolidation of RTE. Instead it has been accounted for under the equity method since 31 December 2010.

In 2011, the RTE group had a net income of 266 million Euros (see note 24 to the consolidated financial statements at 31 December 2011 ("Investments in associates")).

The table below provides a simplified balance sheet of energy flows on the RTE network over the last three years:

(TWh)	2009	2010	2011[1]
Injections			
Output	519.1	550.2	541.9
Withdrawals			
Energy withdrawn for pumping	6.7	6.5	6.8
Deliveries (including losses)	486.7	513.2	478.2
EXPORT BALANCE OF PHYSICAL EXCHANGES	**25.7**	**30.5**	**56.9**

(1) Provisional data (definitive data from the 2011 Electricity Report will be available in July 2012 on the RTE site: www.rte-france.com).

RTE gives special attention to supporting the development of renewable energy in France in the best possible conditions. The development of the transmission network and interconnections is an essential element for ensuring development of renewable energies, particularly wind energy, and their integration into the electrical system.

Within the Very Large Power Grid Operators (VLPGO) organisation, chaired in 2012 by RTE, 14 of the world's main major entities managing transmission networks signed a declaration in 2011 committing themselves to "a common vision" for smart grids, allowing new links to be created between the generation and consumption of electricity. They committed to investing USD 700 billion in the next 10 years to develop the transmission network.

2011 Energy Balance[1]

In 2011, French electricity consumption reached 478.2 TWh, i.e. 35 TWh lower than in 2010, a drop of 6.8%. This fall comes mainly from the effect of particularly mild temperatures, given that 2011 was the warmest year in France since 1900 according to *Météo France*, after an exceptionally cold 2010.

After adjustment to account for the meteorological factor and the fall in consumption of the energy sector (due to the ongoing developments in the uranium enrichment process), consumption is up 0.8% over the year. However, a sharp drop can be observed from summer 2011 onwards.

In fact, after a recovery in the first half-year, the effect of the economic crisis can be seen, with knock-on effects not only for industrial consumption but also for business and individual consumption. Only consumption by SMEs continued to grow over the second half-year.

It is difficult to say at this stage whether this downturn also reflects an enduring change in behaviour due to the efforts made in terms of demand side management.

In this context, in 2011 there were no new highs in power consumption. However, French consumption is still very sensitive to temperature, using 2,300 MW/°C in winter. RTE continues to promote tools to moderate consumption during peak times such as EcoWatt, which has grown in terms of the number of subscribers.

Electricity exchanges with neighbouring countries were influenced by the fall in domestic electricity consumption and the availability of methods of generation in France, as well as by the decision to exit nuclear power taken by the German government. The total balance of exchange falls on the side of exports, reaching 55.7 TWh (+89% compared to 2010), achieving a level comparable with 2007. Annual balances in terms of exchange with Germany, Belgium and Spain became export balances in 2011.

In 2011, French electricity generation (541.9 TWh) was 1.5% below that for the previous year (-8.3 TWh):

- Nuclear power plant generation was up 3.2%, or +13.2 TWh compared to 2010, thanks to improved availability of the nuclear fleet;
- Hydropower plant generation was down 25.6% or -17.3 TWh compared to 2010;
- Generation from wind farms in operation reached 6,640 MW at the end of 2011, or an increase of 875 MW (+15%) on the previous year. In 2011, the wind farm generation fleet continued to grow at a pace of around 70 MW in additional installed power every month. Energy generated by wind farms was up 23% compared to 2010;
- The photovoltaic energy fleet continued its strong growth, with over 1,300 MW brought on-stream in 2011; it reached almost 2,230 MW at the end of 2011. Photovoltaic generation more than tripled compared to 2010, achieving 1.8 TWh in 2011;
- The fleet of thermal power plants fired by renewable fuel, that is to say mainly biomass, biogas and along with household waste to a degree, increased by 3.9% in 2011 to stand at 1,270 MW. Energy produced using renewable fuel was up 12.3% in 2011 to stand at 5.6 TWh.
- Fossil fuel-fired plants, which ensure a supply/demand balance decreased generation by 13.8% (-8.3 TWh).
- The estimated quantity of CO_2 emitted by the French electricity generation fleet was down 19.8% to stand at 27.4 million tonnes in 2011 (34.2 million tonnes in 2010). This fall is much bigger than that for generation, due to a different energy mix. In fact, despite a substantial deficit in hydropower generation, the 3.2% rise in nuclear generation between 2010 and 2011 and the increase in wind farm and photovoltaic generation meant that the use of fossil-fuel fired power plants could be reduced. Thus electricity generated from non-carbon energy sources reached 90%

(1) Source: Electrical power in France in 2011 (RTE).

in 2011, compared to 88% in 2010. The installed capacity of the generation fleet in France rose over 2,600 MW to end 2011 compared with end 2010, of which some 700 MW was on the transmission grid.

6.2.2.1.1 Organisation of RTE

In accordance with its articles of association, approved by directive no. 2005-1069 of 30 August 2005, RTE is a *société anonyme* (limited company) composed of both an Executive Board and a Supervisory Board.

The RTE Supervisory Board includes twelve members divided up into three nominating councils, including four employee representatives, up to four government representatives, and remaining members appointed by the Ordinary General Meeting. This number depends on how many representatives the State has appointed.

Until 31 December 2010, the government only appointed two members to the RTE Supervisory Board, bringing the number of EDF members to six. Concomitantly with the allocation of 50% of RTE shares to the dedicated asset portfolio on 31 December 2010, the State wished to see a change in the governance of RTE, reflected in an increase in the number of its representatives on the Supervisory Board, today standing at four.

The RTE Executive Board is made up of four members exercising their duties under the control of the Supervisory Board, within the bounds set by the Energy Code and RTE articles of association. Subject to the approval of the Minister for Energy, the Supervisory Board appoints the Chairman of the Executive Board as well as, based on the Chairman's recommendations, the other members of the Executive Board.

Directive 2009/72/EC of 13 July 2009 confirmed the principle set down by directive 2003/54/EC according to which the management of an electricity transmission network must be performed by a distinct legal person from those performing generation or supply activities, while substantially reinforcing the obligations of independence of the transmission network manager. France chose the independent transmission network manager template, allowing an integrated group to be maintained, at the cost of high restrictions in terms of relations between RTE and the vertically integrated entity (see section 6.2.2.1.3 ("Institutional and Legislative News" below)).

6.2.2.1.2 Activities of RTE

In France, RTE manages a Public Transmission Network (PTN) in application of law 2004-803 of 9 August 2004 and performs its missions within the conditions set down by PTN concession model specifications. These specifications were approved by decree no. 2006-1731 of 23 December 2006. An amendment was signed on 30 October 2008; it will end on 31 December 2051.

In application of the aforementioned directive 2009/72/EC, codified in this respect in Articles L. 111-3 to L. 111-6 of the Energy Code, transmission network managers must now be certified after following a process involving the CRE and the European Commission, aimed at ensuring that the entity in question indeed satisfies the conditions of independence set out in this paper. RTE lodged a request for certification in June 2011. The CRE's certification decision of 26 January 2012 was published in the *Journal Officiel* on 12 February 2012.

RTE thus manages the transmission infrastructure: it operates and maintains the public transmission network and is responsible for its development, minimising costs for the community and ensuring the safety of the system, people and property.

RTE guarantees access to the transmission network: it enters into contracts with transmission network users on the basis of network access tariffs and in accordance with non-discriminatory regulations.

RTE also manages energy flows: it ensures the supply/demand balance and makes adjustments, manages electricity flows, and manages access rights to international interconnections in collaboration with neighbouring network operators. It mobilises reserves and offsets losses, carries out necessary accounting adjustments and resolves discrepancies.

RTE must confront different challenges as operator of the electricity transmission network: integration of the European market, fundamental restructuring of the power generation fleet, societal changes enforcing restrictions on the integration of new public interest infrastructures and the maintenance of industrial resources to meet the needs of customers and local authorities. To meet these demands, RTE, with the CRE's approval, is entering a new phase in terms of investments: investments have enjoyed substantial growth since 2004, and have been brought to more than 1 billion Euros per year over the period 2009-2012. RTE finances this investment from its own resources, generated principally from the tariffs paid by the users of the network. This tariff is calculated without discrimination to cover all of RTE's costs, insofar as they correspond to an efficient management of transmission, and a fair return on the capital committed to approved investment programmes (see section 6.2.2.4 ("Tariffs for using the public electricity transmission and distribution networks "TURPE") below).

6.2.2.1.2.1 Management of the transmission infrastructure

Maintenance

RTE is responsible for maintaining the transmission network, through everyday maintenance, emergency repairs and the renewal of installations that are at the end of their service lives or that are damaged.

Following the storms of 1999, RTE implemented a "mechanical safety programme". Undertaken with numerous external subcontractors, the programme's objective is to protect against major climatic events by strengthening the mechanical resistance of overhead lines to enable them to withstand wind speeds of up to 150 km/hr and the transformation or installation of approximately 16,400 anti-fall pylons in order to prevent a domino effect when faced with higher wind speeds.

The installation of anti-fall pylons should be completed by the end of 2013. These special pylons present significantly improved mechanical resistance and are installed every 3 to 5 kilometres on very high voltage lines (225,000 and 400,000 volts). In 1999, tree falls were responsible for causing 50% of all damage to pylons. RTE has thus undertaken expanding forested areas to their original size, and this work was 98% complete by the end of 2011.

By the time the programme is completed in 2017, RTE is set to have spent a total of 2.4 billion Euros on making its network mechanically secure. This represents an average rate of expenditure of around 160 million Euros per year. The programme involves 45,000 km of overhead lines on the RTE network.

Heavy snowfall in December 2010, and the Klaus, Xynthia and Joachim storms in 2009, 2010 and 2011 respectively, which were stronger in certain areas than 1999 but incurred less damage, demonstrated the soundness and results of RTE mechanical network security programme actions.

By 2017, this security work will ensure that each RTE customer delivery point will be connected to the network by at least one line capable of withstanding wind speeds equivalent to those of 1999, in compliance with the new more rigorous mechanical resistance standards.

Electricity quality reached its best historical result in equivalent outage time. 2011 was noted for a drop in customers' equivalent outage time which reached its lowest ever level historically, with a value of 2 minutes 04 seconds, all events combined, and 1 minute 44 seconds excluding exceptional events.

This good result is supported by a maintained level of long outage occurrences and short outage occurrences at a level close to that observed in 2010 excluding exceptional events, which was historically the best level ever achieved.

The improvement in equivalent outage time, thanks to a low number of high-impact incidents (only 2 incidents cost over 100 MWh of undistributed energy in 2011, compared to 13 in 2010), is enhanced by RTE's efforts in terms of network operation, maintenance and development.

Development and realisation of new investment in the transmission network

In addition RTE is continuing to develop the network. New projects aim to reinforce the national grid and anchor the French transmission network within the European system.

Each year RTE produces a multi-annual investment programme that is submitted to the Energy Regulation Commission (Commission de Régulation de l'Énergie, or CRE). In 2011, the total amount invested by RTE stood at 1,180 million Euros, of which 1,030 million Euros was for network facilities. The main investments in this respect covered the strengthening of interconnection links with Spain and Italy, the development of the generation and building reception area on the 400 kV Cotentin – Maine line. In 2011, one-third of investments were devoted to the renewal of existing facilities.

In 2012, the total amount of RTE investment should reach 1,386 million Euros, i.e. over 200 million Euros more than in 2011 devoted to network investments. This increase is mainly due to the expansion of the France – Spain and Cotentin – Maine projects, and the strengthening of transit capacity in the Rhône Valley line.

In 2011, the regulated asset base (RAB) increased by 0.18 billion Euros, going from 11.2 billion Euros at 1 January 2011 to 11.3 billion Euros at 1 January 2012. To recap, the RAB is remunerated by the WACC tariff of 7.25% before tax. It represents RTE's industrial asset base, after deduction of investment subsidies, and is calculated excluding assets in progress (which are remunerated at the tariff of 4.8%).

6.2.2.1.2.2 Power flow management

Cost allocation

The costs corresponding to the balancing offers activated by RTE as a result of negative imbalances are passed on to the balance responsible entities (generators, traders, suppliers, etc.) proportionately, based on their imbalance. In the event of positive imbalances, RTE financially compensates the balance responsible entities.

Interconnections

RTE manages access to international interconnections in collaboration with the transmission system operators of neighbouring European countries.

The European electricity transmission networks are interconnected and ensure that energy can be transmitted from one country to another. These interconnections are used to ensure the operating safety of the electricity transmission networks (in particular using neighbouring electricity generation or transmission equipment to compensate for a major generating or transmission unit outage in France and vice versa) and to develop the European electricity market by enabling an electricity supplier to sell its energy to a customer in another country in the European Union. Moreover, these interconnections, by working on the basis of time differences between peak-loads on different sides of borders, enable generation capabilities to be better shared at a European level.

France-Spain Interconnection

INELFE (Interconnection Électrique France Espagne) is a Franco-Spanish company created in October 2008 to carry out the whole of the interconnection project between France and Spain, from the initial feasibility studies through to completion of the actual construction work. The company will guarantee that the technical and environmental solutions selected by France and Spain for this project are consistent. INELFE is a simplified joint-stock company with shares held equally by RTE and its Spanish counterpart REE (Red Eléctrica de España) and it will benefit from the structures and expertise of both its parent companies as regards the design and construction of the link. In October 2009, the Ministry for Ecology, Energy, Sustainable Development and the Sea confirmed the route (area of least impact) proposed.

By order of 22 April 2011, the French part of the Baixas-Santa Llogaia underground direct current link, and part of the France-Spain project, was declared to be of public utility. The declarations of public convenience (DUP) for "Baixas substation" and "service gallery" were also signed by the Prefect of the Pyrénées-Orientales region on 4 May 2011. The work will last three years, with planned commissioning in 2014. With this in mind, an agreement signed on Thursday 6 October 2011 between BEI, INELFE, REE and RTE schedules the participation of BEI in financing the France-Spain underground interconnection link in the form of a loan of 350 million Euros granted to the two network managers, REE and RTE. This financing will contribute half of the project's total budget of 700 million Euros.

In connection with the EEPR (European Energy Program for Recovery), 225 million Euros of the interconnection's financing is also subsidised by the European Union. This is a large-scale, innovative project: the new line will link up the substations in Santa Llogaia (near Figueras) and Baixas (near Perpignan) via a fully underground route of 64.5 km in length (31 km in Spain, and 33.5 km in France). Crossing the Albères mountains will be achieved thanks to a long service gallery of 8.5 km, parallel to the tunnels of the High Speed Rail Line (LGV) between Perpignan and Figueras. The main aim of this new interconnection is to double the electricity exchange capacity between the Iberian peninsula and the rest of Europe, rising from 1,400 MW to 2,800 MW.

European Network Coordination

In December 2008, RTE and ELIA created a joint venture called Coreso, operational since February 2009, with the aim of coordinating the operation of electrical grids covering France and Belgium. The creation of Coreso meets the needs of strengthening operational cooperation between transmission system operators (TSOs) as expressed both by the European Commission and by the actors on the electricity market. Coreso should enable a better integration at the regional level of the production from renewable sources and guarantee a secure management of border flows which are rising sharply.

National Grid became a Coreso shareholder in May 2009, followed by Terna and 50Hertz, Transmission System Operators (TSOs) in Italy and north-eastern Germany, on 26 November 2010. The integration of these TSOs enabled the technical coordination centre to greatly expand the scope of its European network monitoring. The expansion is part of RTE's desire to contribute to the validation of European electricity networks' "common interests" and makes cooperation with other TSOs a key performance component in the dynamic of its industrial project. Coreso is now being recognised more widely as a stakeholder in European coordination processes.

Market Coupling

Because of existing limitations in transnational exchange capacity, EC regulation n° 714/2009 establishes new European-level rules to handle network congestion problems for interconnection capacity allocation (see section 6.5 ("Legislative and regulatory environment")). For practical purposes, there are two methods that allow for compliance with this regulation:

- Interconnection capacity allocation by open auctions: the sale of exchange programming rights;
- allocation by implicit auctions: interconnection access priority is given to the least expensive energy blocks.

Market coupling will be carried out in this latter case. Market coupling is based on the performance of energy markets and relates to merging the order books (purchases/sales) of two neighbouring markets and creating a common price for both markets, within the import and export exchange capacities' limit.

Trilateral market coupling (a first in Europe apart from Noordpool) of the French, Belgian and Dutch electricity markets was started in November 2006, and today is a success. Since 2007, electricity markets and transmission system operators in Belgium, France, Germany, Luxembourg and the Netherlands have made significant progress in electricity market coupling in the CWE (Central and Western Europe) region and improved supply security coordination. In October 2008, 7 TSOs (RTE, Elia, TenneT, Cegedel Net, EnBW, E.On Netz and RWE TSO) created a joint venture called the Capacity Allocation Service Company (CASC-CWE) to offer one-stop transmission capacity auction allocation to CWE zone country borders (France, Benelux and Germany).

After more than three years of work, on 9 November 2010, RTE and its partners in the CWE region, network administrators and markets successfully launched market coupling in the France/Germany/ Benelux region. Market coupling in the region enabled simultaneous optimisation of trans-border interconnection capacity for generation in all the countries within the region. Barring interconnection congestion, this will enable a flat price in all these countries.

Since the launch, a flat price has also been set throughout the day in the zone, proving successful with network infrastructure usage facilitated by market coupling.

This coupling marked an important step toward creating a single European energy market. Exploration is currently underway to expand regional coupling to north-west Europe, including France, Germany, Benelux, Scandinavian countries and the United Kingdom, by the end of 2012. Income from the capacity allocation across interconnections was down in 2011 compared to 2010, essentially as a result of better energy price convergences between France and most of its neighbouring countries, encouraged by improved investment in cross-border lines and the implementation of more effective market coupling systems. In fact in 2011, market coupling enabled baseload electricity price convergence more than 67% of the time with Germany (compared with 45% in 2010) and over 99% of the time with Belgium (compared with 98% in 2010).

6.2.2.1.2.3 RTE international activities

RTE International, a subsidiary of RTE created in September 2006, is RTE's interface for all engineering and consultancy services outside of France, either in response to calls for tender or by privately negotiated contracts. RTE International's turnover made up a minor part for that of RTE.

A cooperation agreement was signed on 2 November 2011 between RTE and State Grid Corporation of China (SGCC), the main transmission and distribution operator in China. This agreement covers both corporate strategy, network management in terms of operation, security, maintenance and development of smart grids as well as the integration of renewable energy. This cooperation agreement is in addition to the one signed by RTE in March 2010 with China Southern Grid, Southern China's TSO. The agreement with SGCC thus gives coverage across the entire territory of the People's Republic of China.

6.2.2.1.3 Institutional and legislative news

Directive 2009/72/EC of 13 July 2009 confirmed the principle set down by directive 2003/54/EC according to which the management of an electricity transmission network must be performed by a distinct legal person from those performing generation or supply activities, while substantially reinforcing the obligations of independence of the transmission network manager.

As part of the transposition of this directive, France decided to use the so-called independent transmission network operator model. This model allows an integrated group to be maintained, at the cost of high restrictions in terms of relations between RTE and the vertically integrated entity (VIE), including group entities in charge of generation or supply.

These restrictions, set down in directive 2009/72 were transposed into domestic law and codified in Articles L. 111-9 *et seq.* of the Energy Code. Essentially they cover the performance conditions of the mandates of RTE's directors within the VIE.(1).

As regards relations with other VIE entities, Article L. 111-18 of the Energy Code sets out the principle of prohibiting the provision of services by these entities for the benefit of RTE, with the exception of those required to ensure the safety and security of the transmission network. Confusion of image is also prohibited, requiring RTE to specifically own its brand.

Pursuant to Article L. 321-6 of the Energy Code, RTE drafts a ten-year network development plan outlining the main infrastructures that must be built or substantially altered within ten years, investments already agreed and new investments that must be made within three years. This chart is sent to the CRE which checks that it covers all requirements. Every four years, it is submitted for approval to the Minister in charge of Energy. In addition, in order to apply this ten-year plan, the Chairman of the RTE Executive Board submits the investment programme for the public electricity transmission network to the CRE on an annual basis, in accordance with RTE's medium-term financial plan.

Finally, pursuant to Articles L. 111-34 *et seq.* of the Energy Code, RTE must designate a compliance officer who must ensure that the independence principle is respected, and specifically check that the ten-year network development plan is correctly carried out.

6.2.2.1.4 Tariff for using the public transmission networks

The tariff for using the public transmission network is a component of TURPE (see section 6.2.2.4 ('Tariffs for using the public electricity transmission and distribution networks "TURPE" ')).

6.2.2.2 Distribution – Électricité Réseau Distribution France (ERDF)

The main purpose of distribution activities is to deliver the electricity sold by electricity suppliers to end-users. ERDF is a wholly-owned subsidiary of EDF resulting from the subsidiarisation of distribution activities and operational since 1 January 2008. ERDF serves approximately 34,000 out of 36,500 French municipalities. In 2010, this represented 95% of the volume of electricity distributed in France, 5% being distributed by local distribution companies (LDC).

ERDF operates through the following businesses: ensuring as concessionaire the management of concession assets (network expansion, improvement and renewal), conducting and maintaining the network to ensure delivery continuity, performing construction on the network, ensuring network access to all users in context of active contractual provisions and managing meter units, acquiring, processing, and transmitting network user consumption data.

In 2011, ERDF distributed electricity to more than 34 million Points Of Delivery (POD) in mainland France via a network of approximately 1.3 million kilometres.

There were 36,770 ERDF employees at 31 December 2011.

The electricity loads transmitted on ERDF's network in 2011 were:

Injections:	363.2 TWh	by RTE: 338.2 TWh; by decentralised suppliers: 25 TWh
Drawdowns:	340.1 TWh	
Losses:	23.1 TWh	

The distribution network generates losses, which are in part due to physics (the Joule effect) and depend directly on the quantity of electricity transmitted. ERDF must compensate for these losses in order to supply the quantity of electricity required by the end-users. In 2011, the loss rate was 6.4% of electricity injected into the network, i.e. 23.1 TWh. The cost to ERDF was 1,540 million Euros in 2011. To compensate for these losses, ERDF purchases the corresponding electricity on the market by means of invitation to tender, placing approximately 20 qualified suppliers in competition. From 1 August 2013 on a gradual scale, ERDF may, as other network operators do, use the ARENH programme to buy its losses. As such in 2013, ERDF may benefit from ARENH prices for around 15% of its loss purchases.

ERDF delivers electricity to the installation terminals (meters) of network customers, where the withdrawals are made. A number of different operators inject electricity into the distribution network. It is mainly through RTE, which is responsible for transmission in France (see section 6.2.2.1 ("Transmission – RTE Réseau de Transport d'Électricité")), and generators, in their capacity as facilities whose size enables direct injection into the distribution network, that corresponding injections occur at source substations throughout the network. These injections must compensate, at all times, for customer withdrawals and network losses. Failure to do so may result in deterioration in the quality of the supplied product (quality of the wave, voltage and even the continuity of supply).

6.2.2.2.1 ERDF Organisation

Since 1 January 2008, EDF group distribution activity in France, in accordance with the legal framework, has been almost exclusively provided by ERDF, a French *société anonyme* (limited company) with an Executive Board and Supervisory Board responsible for managing the public electricity distribution network.

(1) In particular, directors' remuneration and employee salaries must be determined by indicators specific to RTE. They cannot hold any stake in or receive any financial advantages from those companies comprising the VIE, with the exception (for employees) of rights they hold, at 1 June 2011, on bonus share plans, participation agreements or profit-sharing agreements.

In accordance with directive 2003/54/EC including principles from directive 2009/72/EC of 13 July 2009 which stipulates that when the distribution network administrator is part of a vertically integrated corporation, its organisation and decision-making must be legally independent of other activities unrelated to distribution, EDF and Gaz de France, today GDF Suez, decided to subsidiarise their network administrators; their two subsidiaries ERDF and Gaz réseau Distribution France (GrDF) share a common service pursuant to the legal framework (see section 6.2.2.2.5 ("Relations between ERDF and GrDF within the Common Service.")).

Pursuant to the law of 9 August 2004, a partial asset transfer agreement allowed EDF to transfer its electricity distribution activity related assets and liabilities (such as rights, authorisations, obligations, and contracts related to managing its public electricity distribution network) to ERDF.

The ERDF Supervisory Board is made up of 15 members, of which eight are appointed by the Ordinary Shareholders' Meeting, five are employee representatives elected according to French law n° 83-675 passed on 26 July 1983 relating to the democratisation of the public sector and two are French government representatives. The ERDF Executive Board includes 2 members exercising their duties as monitored by the Supervisory Board.

ERDF mission

ERDF operates the public electricity distribution network in mainland France according to conditions set in the concession bid specifications (see section 6.2.2.2.4 ("Concessions")), and provides other public services assigned by French law. To accomplish this mission, ERDF:

- outlines and implements operating, investment, and expansion policies for its electricity distribution network;
- ensures connection and user access to these networks under non-discriminatory, objective, and transparent conditions, and also provides interconnections with other networks;
- gives users the information needed to access its networks efficiently (except for information protected by regulations or law);
- handles relations with energy regulatory bodies (e.g. the French Energy ministry, the French Energy Regulatory Commission, and Government agencies granting public distribution licenses) in connection with its activities;
- handles relations with local authorities;
- negotiates, signs, and manages concession contracts;
- operates, repairs and maintains the electricity distribution networks;
- oversees the design and construction of network infrastructure, and provides project management for these networks;
- provides metering services to network users, including the supply, installation, maintenance, weather checking, and replacement of meters, and the management of data collected from the meters, as well as all responsibilities related to these activities;
- provides non-nationalised distributors (DNN), other distributors, and Government organisations with the services that are specified in Article L. 2224-31, paragraphs III and IV, of the French General Code for Local Governments; and
- and, more generally, carries out all operational, commercial, financial, or property-related activities necessary to achieve the above.

6.2.2.2.2 Distribution network

Technical specifications

As of 31 December 2011, the distribution network for which EDF is the concessionaire (see section 6.2.2.2.4 below ("Concessions")) comprises approximately:

- 613,000 km of 20,000 volt high voltage lines (HVA);
- 692,000 km of 400 volt low voltage lines (LV);
- 2,240 HVB/HVA source posts; and
- 751,000 HVA/LV transformers.

Upstream, network boundaries are generally the source substation, the operational portion of which is ERDF property, ensuring the interface between the transmission and distribution networks. In certain cases, still upstream, it is the substation connecting to generation installations in turn directly connected to the distribution network and downstream, the circuit breaker installed at the customer's premises, all fall within the scope of the concession.

Evolution in investments

ERDF's investments have evolved as follows:

Gross investments

(in millions of Euros)	2009	2010	2011
User and street connections	1,004	1,206	1,309
Intentional investments (reinforcement, security, quality, IS, etc.)	1,309	1,354	1,512
ERDF Total Investments	2,313	2,560	2,821
Facilities handovers by third parties and local authorities[1]	902	940	932
TOTAL NETWORK INVESTMENTS	**3,215**	**3,500**	**3,753**

(1) After article 8 and PCT deduction.

In 2011, 2.8 billion Euros were invested, 1.3 billion Euros of which were mainly allocated to the connections of new customers and producers. The relaunch of investments started in 2008 meant an increase of 508 million Euros of investment in the distribution network between 2009 and 2011. The additional resources engaged thereby are applied to ensuring networks' security, to safety in general, to environmental protections and to quality of transmission, fields in which customers and local authorities' expectations are particularly high. In addition, the licensing authorities invested approximately 932 million Euros in 2011, bringing the total investment in distribution networks in mainland France in 2011 to 3.8 billion Euros.

A "climate contingencies" action plan was developed and launched in 2006 in accordance with the Public Service Contract (see section 6.4.3.5 ("Public Service in France")). This plan is based on a complete evaluation of the network's potential weaknesses in respect to climatic events, and provides, in particular, for the burying of over 30,000 km of medium-voltage lines by 2016. The plan was complemented by a "life extension" programme for the high-voltage overhead network of 27 million Euros.

In 2011, to provide for the financial consequences of storms on the overhead distribution network, ERDF took out cover for a global capacity of 190 million Euros.

In order to comply with the Public Service Contract's objectives as well as with environmental and aesthetic objectives, ERDF has also undertaken to bury 90% of the new high-voltage lines and to apply discreet techniques to install two-thirds of the new low-voltage lines (LV). ERDF is not seeking to bury its entire network. A buried network would effectively be as vulnerable to outage risks as an overhead one: it may be subject to external shocks (heat waves, floods, construction, etc.), and the time required to locate incidents and re-establish the customers' supply is generally longer than in the case of an overhead network.

In 2011, ERDF built over 97.8% of new medium-voltage lines using the underground technique and over 78.8% of new low-voltage lines using the underground or discrete technique (twisted cable). It thus exceeded its commitment to the State to reduce the visual impact of the networks established under its contractorship. Also as part of its climatic hazards plan, ERDF laid more than 5,200 kilometres of overhead high voltage lines (HVA) in 2011, i.e. 5% more than 2010.

Quality of service

In order to be able to face major incidents, ERDF established a special rapid-response taskforce ("FIRE") that can mobilise at any time to any region affected with teams from other regions in order to restore electricity to customers as quickly as possible.

The quality of services is a major objective of ERDF. In 2011, the average outage time excluding transmission incidents and excluding exceptional events (70.6 minutes) improved on 2010 (85.3 minutes) despite the Joachim storm at the end of the year, which accounted for 10 minutes of outage in this criterion. Quality of service is also reflected in maintaining a steady voltage, as close as possible to a value set by regulation, and by minimising the number of outages. Decree no. 2007-1826 of 24 December 2007 sets out the quality of service thresholds to be respected by distribution network operators. Regarding the quality of voltage, over 99% of customers in 2011 were considered "well supplied" under existing regulations.

Renewable energy development

Development in terms of connecting renewable energy generation power plants is ongoing and these facilities are mainly connected to the public distribution network: 94% of on-shore wind farm facilities and almost 100% of photovoltaic facilities are connected.

Within the scope of ERDF, the number of connections made to photovoltaic generation facilities has increased markedly: by the end of 2011, 2,321 MW of photovoltaic facilities were connected (compared to 808 MW by the end of 2010), representing some 229,000 facilities (143,112 were connected in 2010). The development of wind farm generation connected to the public distribution network is also ongoing, and over 6,000 MW were connected by the end of 2011.

6.2.2.2.3 Electricity market

Functioning of the electricity market

The French market for electricity supply has been open on a competitive basis to all customers since 1 July 2007.

Twenty-four electricity suppliers operate in the French market. They signed a contract with ERDF, defining terms of operation between the supplier and the distributor when the customer subscribes to a single contract encompassing electricity supply and delivery.

Smart grids and communicative meters

Because it is responsible for the continuity of the electricity distribution public service, ERDF continuously invests in order to develop, modernise, automate and make secure the electrical network (grid). The development of an even smarter grid is a major strategic challenge. To achieve this, ERDF has developed the Linky communicative meter system, the first link in the smart grid chain, with its industrial partners. After a successful experiment, close to 300,000 Linky meters are operating in Lyon and Touraine. Based on this success, the French government gave the green light on 28 September 2011 for the Linky industrial project. It will consist of equipping 35 million French homes free-of-charge, for a total investment of 4.3 billion Euros. The Minister announced the setting-up of a Linky rollout monitoring committee, with all stakeholders, in order to choose the appropriate methods to guarantee financing of the rollout. The order made pursuant to decree 2012-1022 of 31 August 2010 regarding meter systems on public electricity networks was signed on 4 January 2012.

Linky will make life easier for customers. It now allows:

- a bill calculated on the basis of the customer's actual consumption, not an estimate;
- many operations performed remotely that no longer require the customer's presence (meter readings, power shifts, putting into service, etc.);
- operation timeframes down to under 24 hours instead of 5 days; 2 hours in emergencies;
- improved monitoring of electrical consumption leading to better management of energy expenditure;

- in the event of a network outage, an easier diagnostic to allow even faster resumption of supply to customers.

ERDF is now testing the following units in terms of network operation, the integration of renewable energies and electric vehicles, while optimising its investments. It is managing or supporting over 10 test units in France and Europe.

Among them is the largest European project for smart grid demonstrator, GRID4EU (co-financed by the European Union, with a 25 million Euro stake for a total cost of 54 million Euros), managed by ERDF which will coordinate 'experience sharing' between test units in France, Italy, Spain, Germany, Sweden and the Czech Republic. The French part of the project, also managed by ERDF, is the Nice Grid demonstrator launched in June 2011 for 4 years. Located within the territory of the Nice Côte d'Azur urban community, the Nice Grid project, costing 30 million Euros is one of the rare projects in the world to study all the issues linked to smart grids: optimising the operation of a high voltage A and low-voltage network (HVA/LV), integrating the mass production of decentralised, intermittent renewable energy (mainly photovoltaic); microgrids; transition between customers who are consumers and "consumer actors"; battery-based storage; and also the study of new business models linked to smart grid concepts.

Institutional and legislative news

The order No. 2011-54 of 9 May 2011 creating the legislative portion of the Energy Code concomitantly transposes a number of provisions appearing in European directive 2009/72/EC. In terms of distributor independence, of note is the appointment by each distribution network manager (DNM) of an independent compliance manager, and the obligation for each DNM to own the brand that identifies it, and to avoid any confusion of image with its parent company. Furthermore, the powers and independence of the CRE specifically in terms of network tariff setting and validation of connection costs have been strengthened.

The decree of 16 June 2011 instigating regional schemes for climate, air and energy brought in by the Grenelle 2 law of 12 July 2010 schedules the creation of regional targets, specifically in terms of electrical renewable energy. This is the first step on the road to a new federated system for the connection of this type of generator.

See also section 6.5 ("Regulatory and Legislative Environment").

6.2.2.2.4 Concessions

ERDF and EDF manage 736 signed concession contracts, covering approximately 95% of the population.

In France, public electricity distribution is generally undertaken in connection with concession contracts. The licensing authorities own the distribution networks for the portion corresponding to return property[1]. Concession contracts are generally entered into for a period of between 20 and 30 years. The average end date of active concession agreements is 2024. The city of Paris contract ended in 2009 but was extended through amendment by 15 years.

The development and operation of public distribution networks (national territory blanket service via public distribution, terminating, and access networks under non-discriminatory conditions to public distribution networks) are conferred, pursuant to the Energy Code (Article L. 121-4) to ERDF, to EDF in zones not interconnected with the mainland metropolitan territory and to LDCs in their exclusive service area.

In compliance with Article L. 334-3 of the Energy Code, concession contracts in progress are deemed to be signed jointly by the licensing authority (local authority or cooperative public establishment), EDF (or the territorially competent LDC) for the supply at regulated tariffs portion, and by ERDF (or the territorially competent LDC) for the networks portion. At the time of their renewal or modification, concession contracts are co-signed according to these terms.

Terms of the concession contracts

A framework of concession contract and specifications was adopted (with adjustments, depending on whether the contract was entered into with an urban municipality or a syndicate of municipalities) in June 1992 following negotiations between EDF and the National Federation of Licensors and Local Utilities (FNCCR) and was validated by public authorities. This concession was updated in July 2007 to account for new French legislation and regulations (see section 6.5.3 ("Public Electricity Distribution Concessions")).

The main provisions of the concession specifications cover the following points:

- the purpose and scope of the concession: the licensing authority guarantees to the concessionaire the exclusive right to operate the public service missions of development and operation of the public electricity distribution network in a given area and supply at regulated sales tariffs. The concessionaire is responsible for the operation of the service, and operates it at its own risk;
- the payment by the concessionaire of charges to the licensor;
- the obligation for the concessionaire to carry out industrial and renewal provisions by taking into account the cost of works replacement which has to be renewed. The renewal provision is intended to financially prepare the renewal of facilities by the distributor. Pursuant to the concession specifications, the rules set out in the accounting manual for concessions and tax rules, the provision for renewal covers the difference between the historical value and the identical replacement value for facilities where ERDF will undertake project management of the renewal before the expiry date of the concession. The provision for renewal only applies to a portion of the assets. It is recorded only for facilities that can be renewed before the end of the concession and whose renewal is undertaken by ERDF. The amounts corresponding to these obligations are subject to an annual report to licensors;
- the practical terms in case of renewal of the concession: the amount exceeding provisions made by the concessionaire for the further renewal of the works conceded in relation to amounts required for these operations will be submitted to the licensing authority, which has the obligation to allocate it to works on the conceded network;

(1) Return property is property whose compulsory return to the conceding local authority at the end of the concession is stipulated in the concession contract, and which is absolutely necessary and essential to the performance of the service conceded. This property is deemed to belong to the licensing authority from the outset.

- practical and financial terms in case of non-renewal (or anticipated termination) when service maintenance is no longer desired, i.e. (i) the return to the licensor of works and material from the concession in normal working conditions, (ii) an indemnity payment equal to the reassessed non-amortized value of the works in proportion to the ERDF financing stake by the licensing authority, and (iii) payment by the concessionaire to the licensor of the balance of provisions established for works refurbishment, augmented by industrial depreciation allowances set in proportion to the concession stake in works financing. In the event of early termination, the licensing authority must also buy back the concession;
- audit of the concessionaire's business, which is carried out by an auditor appointed by the licensor and distinct from the public distribution network operator.

Additionally as part of the implementation of the French Solidarity and Urban Renewal (SRU) and Town Planning and Housing (UH) acts, ERDF and FNCCR signed an agreement on 26 June 2009, called PCT, organising payment to licensors of the delivery tariff fee for financing a connection when the licensors manage the project.

Execution of work on the distribution networks: a skill shared between licensor and concessionaire

Contracting on the networks (the main contractor ensures coordination, implementation, and financing of the work) is shared on the basis of conditions established in each of the specifications, generally:

- with respect to connection (network extensions and creation of connections) and facilities modification (network improvements as a result of an increase in electricity demand or to improve service quality), ERDF and the licensor share the contracting of work by connection type (consumers) in urban areas that are part of the rural electrification networks (i.e. those where the licensor who is also the main contractor can benefit from grants from FACE). In urban networks, ERDF is generally responsible for contracting the work;
- ERDF is the main contractor for maintenance and renewal work (maintenance, pruning, renewal, displacement and compliance);
- the licensor is the main contractor for integrating existing installations into the environment (burying work, improvement of aesthetics, etc.).

Main fees and contributions

Contracts schedule the payment of charges.

To supplement financing that the licensing authority incurs for facilities which they manage that are included in the concession or, from that authority's own interest in works for which the concessionaire is the contractor, or all expenses made by the licensing authority for public service as the purpose of the concession, ERDF pays a fee to the concession authority broken down via its calculation methods as an R1 (operational) fee and an R2 (investment) fee.

As a network operator, ERDF must pay charges for use of public land by electricity facilities. Pursuant to a decree of 26 March 2002, charges paid to local authorities are capped according to their population. They are paid to municipalities or to certain local authority groups, as well as to departments.

ERDF, like local distribution companies, pays into an electricity depreciation and amortization expense fund ("FACE") based on the number of kWh delivered. FACE redistributes the collected funds to the licensing authorities to fund their rural electrification network expenditure.

ERDF and local distribution companies also pay into an electricity tariff balancing fund ("FPE"), which splits the equalisation charges among the distribution network operators. Equalization charges relate to the obligation to ensure that all customers across the domestic market benefit from the same electricity delivery tariff.

6.2.2.2.5 Relations between ERDF and GRDF within the common service

As outlined above, pursuant to directive 2003/54/EC, whose principle is carried forward in directive 2009/72/EC of 13 July 2009, the principle retained in 2008 by EDF and Gaz de France, now GDF Suez, was that of the subsidiarisation of their network operators and shared services department in accordance with the legal framework.

Pursuant to Article L. 111-71 of the Energy Code, these activities are based on shared service with ERDF and Gaz réseau Distribution France (GrDF), a company created on 1 January 2008, and wholly-owned by GDF Suez, which is responsible for the management of the public gas distribution network. Each company nevertheless manages the portfolio of clients independently.

In 2011, ERDF and GrDF took over 90.3 million meter readings and performed approximately 12 million customer visits.

Shared Service Organisation

ERDF and GrDF's shared service is not an incorporated company. Its work includes construction and maintenance of electricity and gas networks, project management, network operation and management, and metering activities.

As of 31 December 2011, ERDF had 36,770 employees. This total includes shared service staff, totalling 35,338 employees (see section 17.1.1 ("Group Workforce")).

On 18 April 2005, EDF and Gaz de France, later GDF Suez, entered an agreement specifically setting out the shared service competencies and sharing of costs and revenue resulting from its activity[1]. This agreement, after having undergone necessary adjustments, was transferred in 2008

(1) The ERDF and GrDF agreement, defined in the rules on sharing common revenue stemming from shared service and codes applied for distribution between ERDF and GrDF. The principal code, used by default in the absence of a specific contractual code, is the "network user" code, calculated from the totality of electricity and gas delivery points, regardless of the customer category. Other codes are applied whose nature is tied to their related activities.

to ERDF and GrDF, under the subsidiarisation of electricity distribution of EDF and GDF Suez.

This agreement also specifies how the joint service will be governed (e.g., organised, monitored, and modified). Within this scope, organisation is being clarified in three areas: connection, territorial representation and delivery. Each company is free to develop their own activities within the shared service. In cases where one company's decisions, especially financial, might impact the other within the shared service, a study is to be conducted. Contingent damages would be compensated through payment of a financial indemnity and/or amendment of the agreement made between the two companies. Decisions regarding common activities are made together by the two companies. Neither ERDF nor GrDF can consequently impose their decision upon the other without agreement of the other party.

The agreement was entered into for an unlimited duration and may be terminated at any time with 18 months' notice, during which the parties must undertake to renegotiate a new agreement. If a new agreement is not entered into at the end of this period, the parties will refer the issue to the mutual dispute resolution procedures, before any referral to courts. The contract also includes provisions requiring the parties to negotiate in good faith, namely in case of a change of applicable law or new circumstances affecting the contract.

6.2.2.2.6 International

ERDF wants to develop its activity internationally by letting its customers access its know-how, expertise and services. This international development will take place in compliance with the articles of association which specifically state that skill valuation should occur "in France and abroad, via subsidiaries or investments, subject to this activity remaining secondary to the network management activity and to the activity receiving no financial assistance from network management activity."

Within this scope:

- On 22 February 2011, ERDF signed a letter of intent with the main Chinese electricity distributor in the Shaanxi province, SPERG. The aim of this cooperation is to support the development of the Chinese energy distributor by providing access to ERDF's expertise and best-performing technologies;
- On 17 June 2011, ERDF and the MRSK holding entered a strategic agreement lasting 10 years scheduling cooperation in terms of managing distribution companies in Russia, innovation i.e. smart meters and/or grids, and research and development, with its first project set up in connection with this agreement being ERDF's appointment to manage TRK, the Russian electricity distribution company in the Tomsk (TRK) region;
- On 30 August 2011 in Beijing, ERDF, EDF and State Grid Corporation China (SGCC) signed a cooperation agreement. The companies will work in two fields: firstly, engineer training and exchanges, secondly services and advices provided by ERDF to an SGCC distribution subsidiary.

6.2.2.3 Island Energy Systems

The Island Energy Systems ("SEI") comprise the electricity networks operated by EDF that are not interconnected or only connected to a very small extent to the continent: mainly Corsica, the French overseas departments and overseas municipalities of Saint Barthélemy, Saint Martin, and Saint Pierre-et-Miquelon.

All these territories are known as "non-interconnected areas to the continental mainland network" outlined in Article L.121-3 of the Energy Code. They share the following characteristics:

- these territories benefit from tariff equalisation with continental metropolitan France;
- the small size of their electrical network and the lack or the insignificance of their interconnection to a continental network means that the generation costs are structurally far higher than those in mainland France and, for this reason, much higher than the portion reflected in the tariffs;
- the obligation to entrust transmission and distribution to a separate legal entity from the one generating and supplying the electricity does not apply.

This situation results in the lawmaker considering additional SEI output costs to be a public service charge and therefore reimbursable through the Contribution to the Public Electricity Service (CSPE) (see section 6.4.3.5 ("Public Service in France")).

EDF's organisation in each of these territories is therefore based on maintaining an integrated structure guaranteeing the majority of output, and all the management functions for supply-demand balance, network operator functions (HVB, HVA and LV) and supplier functions.

In these territories, EDF is the main actor in terms of electricity generation.

The table below gives the main specifications of the Island Energy Systems at the end of December 2011.

	Data to end December 2011	
	Total	of which Corsica
EDF employees	3,250	730
Number of customers	1,055,505	234,840
Network length (*in km*)	33,526	10,986
Installed capacity of the EDF fleet *(in MW)*	1,882	463
of which hydropower fleet and other renewable energy sources	*400*	*142*
of which thermal fleet	*1,482*	*321*
Electricity generation (*in GWh*)		
EDF Generation	5,643	1,325
Energy purchases from third parties	3,688	806
of which "EnR" renewable energy including bagasse	*840*	*101*
of which "Others"	*2,848*	*705*
Total energy generated by EDF and purchased from third parties	**9,331**	**2,131**

In these networks, given the existing imbalance between the MWh generation cost and the sale price at the equalised tariff, EDF's sales activities consist of spearheading energy efficiency actions, either alone or in partnership with the ADEME and local institutions.

However, most of the Island Energy Systems are experiencing significant growth in their electricity consumption (high rate of demographic growth and/or late technological developments in household appliance adoption). This increase in demand must be met by the creation of new generation plants, which are decided upon by the Minister of Industry within the scope of the Multi-Year Investment Programme (PPI), either by means of invitations to tender or by authorising projects developed by private operators. The operators' interest, including EDF, in investing in SEI generation was strengthened by an order taken by the Minister for Industry on 23 March 2006 setting to 11% the nominal remuneration rate before tax of fixed capital in production investments made in Corsica, Overseas departments, St-Pierre-et-Miquelon and Mayotte.

Developments and outlook

Investments designed to modernise and reinforce the electricity generation fleet with guaranteed capacity

The Multi-Year Electricity Generation Investment Programme has set an objective of implementing electricity generation at guaranteed capacity for Corsica and the French overseas departments of 1,166 MW by 2020. This programme includes almost complete refurbishment of existing diesel-fuelled power plants.

On the basis of the strategy adopted, to remain the leading actor in each of these territories as regards installed capacity, the EDF group has taken on the project of renewing its main power plants. Construction sites on four of these diesel-fuelled power plants have been started for a total capacity of nearly 740 MW: Port-Est in Réunion, Bellefontaine B in Martinique, Pointe-Jarry in Guadeloupe and Lucciana B in Corsica. These new generation methods will enable the Group to deliver better industrial and environmental performance and will contribute to meeting part of the emerging electricity requirements in these territories.

Refurbishment of the Saint-Pierre-et-Miquelon power plant for a capacity of 21 MW is also underway.

The EDF group also began developing two hydraulic projects to expand the Rivière de l'Est facility in Réunion to 14 MW of power which was commissioned in 2010 and construction of the Rizzanese facility in Corsica with 55 MW of power which will be commissioned in 2012.

EDF invested 540 million Euros in the electricity generation area in 2011, and plans to invest 660 million Euros in 2012.

Electricity network investments

Continued growth in electricity consumption in these areas, despite energy efficiency actions and the development of renewable energies, has led the EDF group to further strengthen its electricity networks. Because of the abundance of natural parks in Corsica and the French overseas departments, some of the new high voltage connections will be laid using underground and underwater techniques.

EDF invested 190 million Euros in its networks in 2011 and plans to invest a further 170 million Euros in 2012.

A stake in projects intended to better integrate renewable energies into the electricity generation mix and optimise electricity system management

The EDF group supports the emergence and development of different ways of generating power from renewable energies that are tailored to island electricity systems. The ways of choice are those that guarantee abundant, sustainable energy at competitive generation costs, making them credible alternatives to thermal generation: biomass, geothermal, marine and river energy, waste recycling and biogas. The use of LNG as a substitute to fuel oil is currently being researched.

EDF is also helping to develop the technical capacity for using intermittent renewable energies in island energy systems (developing forecasting tools with other producers and universities, commissioning a 1 MW battery in Reunion, which is the first of this capacity in Europe, coupling photovoltaic

generation and storage capacity) and participating in smart grid research projects in partnership with other producers, research laboratories and the French Agency for Environment and Energy Management (ADEME).

A plan to build a marine energy transfer pumping station (marine *STEP* of 50 MW and 1 GWh electricity storage capacity) in Guadeloupe was submitted in response to ADEME's call for expression of interest regarding electricity mass storage.

The EDF group's R&D expertise was called on for all these projects.

6.2.2.4 Tariffs for Using the Public Electricity transmission and distribution networks (TURPE)

TURPE are set in order to cover:

- the costs of transmission and distribution activities, while integrating the generation targets set by the regulator;
- financial compensation equal to the product of the regulated asset base, estimated at 11.1 billion Euros on 1 January 2011 for transmission and 32.2 billion Euros for distribution, and a fixed rate of remuneration corresponding to a nominal rate before tax of 7.25% for the tariff period in force.

In accordance with Article L. 341-3 of the French Energy Code, the TURPE are the subject of reasoned decisions of the French Energy Regulation Commission (CRE). Current TURPE (TURPE 3), which were approved by the ministerial decision of 5 June 2009 (in accordance with the then institutional framework, which provided for a tariff proposal submitted by the CRE being jointly approved by the ministers in charge of energy and the economy), published in France's Official Gazette on 19 June 2009, came into force on 1 August 2009. The CRE drew up its proposal to enable the network operators to cover their costs over a period of four years as of 2009. The CRE's proposal provided for an increase in their costs when a 2% rise in the tariff for using the public electricity transmission and a 3% rise in the tariff for using the public electricity distribution came into force. Then, from 2010 to 2012, the tariff schedule has had to be adjusted according to the rate of inflation plus 0.4% for the transmission network and 1.3% for the distribution network.

In addition, the CRE has set up a mechanism to compensate for the effects on the network operators' income and expenses from external factors that are difficult to predict and beyond the control of these network managers. This income and expenses adjustment account (CRCP) is an off-balance sheet record under previously identified items of all or part of any excess or shortfall experienced by the network operator cleared by decreasing or increasing expenses to be recovered through the public electricity network tariffs over the following years. The annual rise in TURPE also takes into account this factor through clearance of CRCP, the absolute value of which may not exceed 2%; the application of these principles led to a transmission usage tariff increase of 2.5% and a distribution network usage tariff increase of 3.4% on 1 August 2010. On 1 August 2011, the transmission usage tariff increase was 2.56% and the distribution network usage tariff increase was 3.94%. In addition, the Services Catalogue tariff increased by 1.9% on 1 September 2011 when the indexation formula was applied.

The adoption of a four-year tariff period guarantees improved visibility for transmission and distribution network operators as regards changes in their income. This period also facilitates operators in making changes that will help them control costs and improve quality.

Under these conditions in 2011, ERDF's tariff income was around four billion Euros from the transmission network and around 11.3 billion Euros from the distribution network.

Hoping that the network operators improve technical and economic operational efficiency during the tariff period while ensuring compliance with their public service mission, the CRE adopted incentives to control costs and improve quality. To this end, the CRE has accepted the productivity gain levels on controllable operating costs proposed by the network operator. If a network operator makes additional efforts during the tariff period, the additional load released will be shared between the network operator and end users. The CRE has also adopted a specific measure aiming to encourage network operators to control the costs associated with the compensation of network losses.

These provisions are accompanied by a regulatory scheme encouraging transmission and distribution network operators to improve the quality offered to users, in terms of both power supply and quality of service. This quality incentive scheme in particular helps to ensure that network operators do not make productivity gains at the expense of quality levels.

See section 6.5.2.2 "French Legislation" concerning the transmission and distribution of natural gas (law No. 2003-8 of 3 January 2003).

6.3 Presentation of the EDF group's international business

The EDF group is positioned as an energy leader, with a priority aim of investing for sustainable and profitable industrial growth, based on the development of skills and the promotion of our technical expertise. The Group intends to continue to strengthen its international businesses as a complement to its activities in France.

The international activities of the EDF group are an operational expression of the Group's strategic directions (see section 6.1 ("Strategy")); these strategies involve strengthening European positions, and the international rollout of nuclear activities and projects and other key projects.

European positions

The EDF group has consolidated its European presence, the mature market that forms the foundation for its industrial presence.

Group activity in Europe is based upon a will to contribute to building a single market for both electricity and gas, encouraging the emergence of new technologies and innovative solutions that are customised to environmental, social and economic challenges, and lastly to respect natural and human resources, and the wishes of local stakeholder in their concerns over energy issues and associated services.

The principal events of the year illustrating this strategy were:
- In the UK: pursing studies and investments to diversify local generating facilities;
- In Germany: the political authorities from the federated state of Baden-Württemberg, having made their request to give EnBW a strong regional shareholder to refocus the company's business on Baden-Wurtemberg, the EDF group accepted the state's offer to buyback EDF International's stake in EnBW, which was completed on 17 February 2011;
- In Italy: on 26 December 2011, EDF, Edison, Delmi, A2A and Iren concluded a preliminary agreement concerning reorganising Edison's and Edipower's shareholder structures. This agreement of 24 January 2012 was approved by EDF's Board of Directors and was finalised and signed by all the parties concerned on 15 February 2012 giving EDF exclusive control of Edison and thus reinforcing the Group's gas strategy and consolidating its position as pivotal player in Italy;
- In Poland: the launch of the construction project for a 900 MW supercritical coal-fired power plant.

The Group's ambitions in Europe

The EDF group aims to consolidate the coherent industrial group it has in Europe through organic growth and realising synergies at Group level. It will review any new opportunity of profitable development in Europe, which is its core market.

In addition, the Group intends to continue building its gas positions that are necessary to its ambition of becoming an active provider in both the gas and electricity sectors in Europe in order to secure provision of a multi-energy offer for its customers and to ensure competitive supply of the Group's electricity generation means through the use of gas.

The Group is also realising operational synergies among its various entities in France and Europe through the following actions:
- improving operational performance by sharing best practices observed within the Group;
- using the opportunity of the various subsidiaries' generation assets construction projects in order to standardise the design and to group the orders placed with equipment manufacturers;
- coordinating gas supplies and investments in order to further the Group's ambitions in the gas market; and
- developing upstream-downstream optimisation at a European level.

International nuclear

As the largest nuclear generator in the world, the EDF group has major technical assets (in operations and engineering) and solid experience in constructing and operating nuclear plants in France (58 reactors), the United Kingdom (with the acquisition of British Energy) and the United States (through Constellation Energy Nuclear Group, LLC and its subsidiaries, "CENG"), which will allow the Group to be a major player in the revival of nuclear power internationally.

On the other hand, some countries and electric power companies have announced or confirmed their intention to launch or reactivate nuclear projects. This development is motivated by the search for energy independence combined with growing awareness of dwindling fossil fuels and the effect of their use on the environment. This renewed interest translates into the emergence of several models and new industrial partnerships.

EDF has set five criteria for its involvement in international nuclear projects. Priority targets are countries that:
- have chosen nuclear power in the short term;
- are known to EDF and where EDF is welcome;
- are learning the lessons from the Fukushima accident, specifically by placing at the core of their project the role of the future operator and safety management;
- offer favourable conditions to investors in nuclear energy (legislative framework, waste management, public opinion, etc.);
- are interested in projects involving known reactor models.

EDF has thus already identified a certain number of geographical priorities, such as China, the UK, the USA, etc. EDF is also examining other opportunities both in Europe and other areas (see section 6.1.3 ("Strategic areas to 2020")).

In each of these countries, EDF adapts to the institutional context and the industrial environment; the resulting organisational models may be different each time.

The EPR program underway in France and China and planned for the United Kingdom, is currently the benchmark program of the Group. In addition to optimising EPR, it seems essential to strengthen the offer, in connection with following the guidelines laid down by the Nuclear Policy Council brought together by the French President on 21 February 2011, integrating the feedback from the Fukushima accident. Specifically, EDF and AREVA are full stakeholders in the France – China partnership, via negotiation with the Chinese authorities, under the leadership of the General Director of CEA, covering all civil nuclear activities, including safety. These negotiations could enable participation in the development of the Chinese market, giving rise to a partnership comprising, in addition to the supply of products and services relating to the existing or planned nuclear fleet and the building of new EPR reactors, the joint development of a mid-sized third generation reactor (1,000 MW) based on the successful experience of French and Chinese industrial players in the construction and operation of jointly-designed reactors. EDF is thus continuing to develop its reactor and services offer to be proposed on international markets.

6.3.1 United Kingdom

6.3.1.1 Presentation of business and strategy of the EDF group in the United Kingdom

At the date of filing this Registration Document, the figures on the total production and consumption of gas and electricity in the UK in 2011 were not yet published by the Department of Energy and Climate Change. To obtain information on price movements and electricity consumption in the United Kingdom, see section 9.2.1 ("Economic environment") of this Registration Document.

EDF Energy's main competitors in the energy generation sector in the UK, in decreasing order in terms of market share, are: Scottish and Southern Energy (SSE), E.On UK, RWE npower, Scottish Power, Centrica and International Power/GDF Suez. EDF Energy's main competitors in both the gas and electricity supply markets are British Gas (Centrica), SSE, RWE npower, E.On UK and Scottish Power.

The high-voltage electricity transmission network belongs in part to National Grid in England and Wales, and, in part to SSE and Scottish Power in Scotland. The major players in the electricity distribution sector are National Grid, PPL Corporation, UK Power Networks, CE Electric, SSE, Scottish Power, Western Power Distribution and Electricity North West. Gas distribution is shared between National Grid and SSE, Wales and West Utilities and Northern Gas Networks.

EDF Energy is one of the UK's largest energy companies, employing around 15,000 people at several locations throughout the UK. In 2011, EDF Energy retained its position as the largest generator of electricity (in TWh produced) and the largest generator of low carbon electricity in the UK. According to the most recent data issued in October 2011[(1)], EDF Energy retained its position as the largest electricity supplier to non-residential customers (in terms of TWh sold[(2)]) and held on to its position as the fifth largest gas and electricity supplier to residential customers (in terms of customer account numbers)[(3)]. Overall, EDF Energy is the largest electricity supplier to the UK, excluding Northern Ireland.

The security of supply, climate change and affordability comprise the three challenges in terms of energy facing the UK today. The publication, on 12 July 2011, of the Government's White Paper on the Electricity Market Reform market aims to find a balance between the needs of customers, policy makers and investors as part of a strategy for supplying a secure, clean and affordable energy source. EDF Energy welcomes the White Paper and will continue to work with the Government to ensure its provisions are passed into law as soon as possible.

In its last national budget publication in March 2011, the British government announced the introduction of a carbon floor price as of 1 April 2013. It is a major step towards creating the investment framework required for all low carbon technologies, including new nuclear technology (see in section 6.3.1.2.4 ("The UK government's Electricity Market Reform and Planning Framework").

Following the nuclear accident at the Fukushima nuclear plant in Japan, the British Secretary of State requested the Chief Inspector of Nuclear Installations, Dr Weightman, to write a report on the consequences of this accident and the lessons to be learned for the British nuclear industry. Dr Weightman published his final report on 11 October 2011, affirming that there were no major concerns on the safety of the UK's nuclear plants. EDF Energy is fully committed to implementing the recommendations for its existing and new nuclear plants.

The nuclear accident in Japan does not change the need for the UK's having a secure, clean and affordable energy mix. On 18 July 2011, Parliament officially ratified the six National Policy Statements (NPSs) for the Energy Infrastructures under the Planning Act of 2008 regarding nuclear generation. This confirms that the government's policy aims to ensure that new nuclear energy is able to contribute as much as possible to the UK's new capacity needs.

In 2010, "Our Sustainability Commitments" were published, following up on "Our Climate Commitments" and "Our Social Commitments", published in 2007 and 2008 respectively. These commitments show that EDF Energy intends to be a leader of change in the energy sector, by reducing CO_2 emissions and waste, by generating low-carbon nuclear power in a responsible way, by helping customers, by establishing a global culture and by serving communities. Six of the sustainable commitments must be met in 2012; of these, EDF Energy has already honoured the Group commitment to have 2.5 million young people in the UK take part in the Schools of Sustainability Programme. Likewise, the commitment to reduce the CO_2 emissions from its transport activities by 20% has already been met.

Strategy

EDF Energy operates in a complex market environment characterised by volatile commodity prices, high levels of competition and Government involvement in setting energy policy objectives, despite liberalisation. Notwithstanding the current economic downturn, demand for electricity is expected to increase in the long term as decarbonisation policies prompt fuel switching from gas and oil to low carbon electricity particularly in the heat and transport sectors.

EDF Energy aims to add business value through continued operational excellence, achieving maximum value from its existing nuclear and coal-fired plants, increasing downstream profitability based on a risk/profitability ratio that is fair for its customers, and being a benchmark supplier in the relaunch of a new nuclear programme in the UK. EDF Energy intends to build between two and four nuclear reactors in the UK: a double reactor at Hinkley Point and a possible reactor at Sizewell (pending the results of studies currently underway). The plans depend on the required permits being obtained and a solid investment structure being implemented. Consequently, EDF Energy has a key role in the discussion being held with the British Government on reforming the electricity market, a reform that is necessary to create the right economic conditions for these investments.

The other major strategic initiatives include the building of the new West Burton B 1,305 MW Combined Cycle Gas Turbine (CCGT) plant and a fast cycle gas storage project, managing the impact of the phase out of coal generation capacity (following the Large Combustion Plant Directive (LCPD) and the Industrial Emissions Directive (IED)), securing lifetime extensions for existing nuclear plants and presenting renewable genera-

(1) Source: Cornwall Energy Associated.

(2) According to the available data, excluding Northern Ireland.

(3) Source: Cornwall Energy Associated.

tion projects. Downstream, EDF Energy aims to improve the profitability of its professional customer business through controlled margin management, improved cost efficiency and transformation of key processes, drawing on investment in human resources and computer systems, in accordance with the recommendations of the retail market review.

EDF Energy's financial success will very much depend on the energy efficiency of existing and new nuclear plants, which in turn rely heavily on changes in wholesale market energy prices and the availability of its nuclear facilities. EDF Energy's priority is to improve the risk profile of the portfolio in the longer term by optimising relations with the nuclear generation wholesale market, participating in the creation of a fit-for-purpose regulatory framework and setting up a rigorous investment framework.

Support and retention of talents remain very much the priority objectives of EDF Energy so that these strategic goals can be achieved. EDF Energy has continued to invest heavily in the training and career development of its workforce at all levels of the company, including setting up its own Nuclear Power Academy to provide specialised training. EDF Energy intends to hire more than 7,000 highly-qualified staff between 2011 and 2015 to support its UK investment programme.

Structure of the EDF Energy group

EDF Energy is structured around three main business units: *Energy Sourcing and Customer Supply (ESCS); Nuclear Generation; and Nuclear New Build (NNB)*.

Since 2009, Centrica plc (Centrica) has held a 20% interest in Lake Acquisitions Limited, the company in which the Nuclear Generation business unit sits, as well as a 20% interest in NNB Holding Company Limited, the company set up to take charge of the pre-development activities for the new nuclear plants construction programme in the UK. EDF Energy and Centrica want this joint venture to facilitate construction, operation and decommissioning up to four nuclear reactors in the UK (see section 6.3.1.2.4 ("Nuclear New Build business unit")).

6.3.1.2 EDF Energy

In 2011, EDF Energy's revenue amounted to 8,574 million Euros and supplied 52.8 TWh (compared with 63.6 TWh in 2010) of electricity and 25.7 TWh (compared with 30.4 TWh in 2010) of gas to residential, industrial and commercial customers. At the end of 2011, EDF Energy had 5.8 million customer accounts (compared with 5.5 million in 2010), including residential customers, small & medium-sized enterprises and major business.

At 31 December 2011, EDF Energy owned and operated eight nuclear power stations and two coal-fired power stations which in total generated 72.1 TWh (63.4 TWh in 2010) of electricity in 2011, around one fifth of the UK's electricity. In addition, EDF Energy owns one gas-fired power station (Sutton Bridge), which is managed under Hold Separate Arrangements, in compliance with the European Commission commitments made at the time British Energy was acquired. Following these arrangements, EDF Energy must sell its Sutton Bridge power station and is currently examining the different options available under the sale process.

6.3.1.2.1 Group synergies and operational excellence

In 2010, EDF Energy announced that the synergies resulting from mergers represented 170 million pounds (200 million Euros[(1)]), one year ahead of the target set when British Energy was acquired, and should give rise to synergies of 160 million pounds (200 million Euros) before the end of 2011.

In 2011, EDF Energy's EBITDA amounted to 72.7 million pounds sterling (83.4 million Euros) and made cost savings of 34.4 million pounds sterling (39.5 million Euros) due to its Group Synergies and Transformation programme, largely on account of the Energy Sourcing and Customer Supply (ESCS) business unit's operational efficiency schemes, synergies related to engineering and fuel purchase for Nuclear Generation, improved efficiency of support services and savings made on supplies.

(1) On the basis of £1 = €1.162815.

The following table shows EDF Energy's key figures for the financial year ended 31 December 2011.

	31/12/2011	31/12/2010
Electricity supplied (GWh)	52,819	63,591
Gas supplied (GWh)	25,747	30,392
Number of customer accounts (thousands)	5,790	5,517
Total capacity (MW)	**12,956**	**12,994**
Nuclear(1)	8,756	8,733
Coal(2)	4,020	4,020
Gas(2)	82	82
Renewables(3)	98	159
Total output (TWh)	**72.4**	**63.7**
Nuclear(1)	55.8	48.3
Coal(2)	16.3	15.1
Gas(2)	0.03	0.1
Renewables(3)	0.2	0.2
Number of employees(4)	15,536	15,441

(1) The figures shown represent 100% of nuclear capacity, shared 80/20% by EDF Energy and Centrica.

(2) 2011 and 2010 figures exclude Sutton Bridge power station following implementation of the Hold Separate Arrangements (see section 6.3.1.2.5 (Commitments under the European Commission Merger Regulation ("ECMR"))). 2011 and 2010 figures relating to gas include a co-generation programmes capacity. Carbon capacity represents "connection entry capacity".

(3) When EDF Energy holds more than 50% of assets, the capacities shown are 100% of the installed capacity.

(4) 2011 includes staff on maternity leave. For 2010 and on a like-for-like basis, this number amounted to 15,682 employees.

6.3.1.2.2 Energy Sourcing and Customer Supply Business Unit (ESCS)

The ESCS business unit is responsible for maximising the long term value of EDF Energy's residential and business customers portfolio, gas storage assets, fossil-fuel and renewable generation assets, as well as for optimising the company's exposure to the energy markets, while respecting an agreed risk commitment. This business unit employs more than 8,000 people.

ESCS manages the risks inherent to EDF Energy's wholesale market and benefits from the advantages of combining energy sourcing and customer supply activities from all EDF Energy's business units.

Energy sourcing

Nuclear generation

Power generated by the nuclear facilities is sold through intra-group transactions between Nuclear Generation and ESCS business units to provide a simplified improvement to EDF Energy's exposure to the wholesale markets. Since April 2010, 20% of nuclear generation has been sold to Centrica under mutual agreements at a varying price that is based on Heren's prices, in accordance with agreements concluded with Herren.

Thermal energy generation

EDF Energy's generation operations within ESCS (which excludes Nuclear Generation and Sutton Bridge) comprise two fossil-fuel thermal power plants in the UK with a total generation capacity of 4.1 GW, namely:

- Cottam: located in Nottinghamshire, Cottam is a coal-fired thermal power plant with a 2,008 MW capacity generated by four units. The final unit was commissioned in 1970;
- West Burton: located in Nottinghamshire, West Burton is a coal-fired thermal power plant consisting of four coal-fired units and two 20 MW open-cycle gas turbines, with a total capacity of 2,052 MW. The final unit was commissioned in 1970.

Moreover, EDF Energy is currently building a new 1,305 MW Combined Cycle Gas Turbine (CCGT) power station at West Burton, comprising three 435 MW units, the gradual commissioning of which will be conducted by ESCS in 2012.

EDF Energy also owns a co-generation plant (power and heat) with a total generation capacity of 1.4 MW and holds a contract for operating and maintaining a 9.0 MW co-generation plant. EDF Energy also owns four 10 MW gas-fired plants and has an 18.6% shareholding in Barking power station, located in the London area.

In the year ended 31 December 2011, Cottam and West Burton power plants generated a total of 16.3 TWh of electricity.

Renewables

EDF Energy, through EDF Energy Renewables, a joint venture between EDF Energy and EDF Énergies Nouvelles, currently developing its own land and sea wind-driven assets, signs energy purchase contracts with renewable energy generators and assists independent developers to ensure a balance with respect to the obligation of British generators to generate and supply its customers with a certain percentage of electricity from renewable sources. These renewables obligations have been the subject of various reforms and improvements, while in April 2010, the compliance date that was initially set for 2007 was extended to 2037 for new projects.

In 2011, the renewable energies portfolio increased by 6.5 MW due to the Fairfield wind farm, which began operations in the first quarter. At the end of 2011, EDF Energy Renewables was operating 20 wind farms with a total capacity of 268 MW, mainly located in the north of England and Scotland.

EDF Energy Renewables also has a capacity of 242 MW under development, comprising two onshore wind farms (Fallago Rig and Green Rigg) and EDF Energy Renewables' first offshore wind farm on Teesside. Operation of this wind farm, with a total installed capacity of 62 MW, should begin at the end of 2012.

Optimising and managing risks

General principles

The policies surrounding energy purchasing and risk management are consistent with EDF group policies and ensure that EDF Energy's activities are optimised and its services delivered at a competitive price, while limiting the volatility of its margins. EDF Energy buys and sells power, gas, coal, carbon and other commodities on the wholesale markets to fulfil the needs of its generating plants and customers.

Electricity sourcing

Over and above its own generation, EDF Energy sources electricity through:

- wholesale purchase contracts entered into with third parties and subject to EDF Energy's agreed risk management policies. In 2011, EDF Energy purchased approximately 12.3 TWh by this method(1); and
- contracts with generators who are connected directly to distribution networks, without the need for the transmission network hence avoiding associated costs. These are mainly electricity generators using renewable energy sources. In 2011, EDF Energy acquired approximately 1.9 TWh from this market.

Gas and coal sourcing and obtaining CO_2 emission rights

Coal and gas contracts (physical and financial) are entered into by EDF Energy, as well as financial carbon rights procurement, to hedge the fuel requirements of its electrical power plants and gas consumers.

Coal and carbon emission rights purchases are based on generation forecasts and target coal stock levels. 60% of EDF Energy's coal consumption was sourced in the UK; the remaining 40% was sourced overseas by EDF Trading. From 2008 to 2011, EDF Energy entered into various coal supply contracts with local coal producers at a price lower than the market price of coal imported for delivery.

The ESCS business unit needs gas to supply its residential dual fuel customers with dual fuels and for its new West Burton B combined cycle gas turbine plant. ECSC currently sources the gas it needs from wholesale gas markets, mainly buying on the futures market. To create additional value, EDF Energy is also researching possible alternatives with the Group through profitable long-term gas contracts, in order to:

- reduce the risks from being totally dependent on wholesale market (for instance, physical supplies or storage obligations);
- reduce EDF Energy's exposure to wholesale markets, especially as regards liquidities.

Until now, these endeavours have prioritised gas storage. EDF Energy is delivering a fast cycle gas storage unit to operate alongside EDF's existing gas storage unit in Cheshire. The pre-commissioning works of the first chamber, with an initial storage capacity of 4.6 million therms, began in the last quarter 2011. During the course of the coming years, storage capacity will be further increased.

Other opportunities have been identified and are being examined within the Group, with the prioritising of seasonal gas storage in the UK through acquiring shareholdings or agreeing long-term contracts. Other work is needed to assess the potential opportunities provided by long-term gas sourcing and meeting the needs of residential customers or of the West Burton B CCGT power station.

Customer Supply

EDF Energy sells electricity to two main customer segments: residential customers, who represent the Business to Consumer segment (B2C) and business customers, who represent the Business to Business segment (B2B); company customers range from large industrial companies to small private firms. EDF Energy adopts different risk management strategies for B2C and B2B.

B2C retail tariffs tend to follow the overall trend of market prices over the long term, but do not reflect their short term volatility. As a result, a hedging strategy that efficiently smoothes market volatility is regarded as a key competitive factor for all electricity and gas suppliers in the UK market.

In November 2010, the British market regulator OFGEM (Office of Gas and Electricity Markets) announced an examination of the efficiency of retail energy markets, to decide whether additional measures were needed to protect consumers and improve transparency. At the end of March 2011, OFGEM announced a series of conclusions and promised an even more detailed update of this information compiled in December 2011. One initiative proposed by OFGEM to suppliers is to offer customers a single tariff known as *evergreen* (tacit renewal), with a licence fee associated with this tariff fixed by OFGEM and applied in the same way to all suppliers. Customers will just have to compare a single unit tariff and the *evergreen* tariffs, while suppliers will still have the possibility of offering innovative products "of limited duration".

In 2011, EDF Energy conducted a competitive price policy, combining later and smaller price rises than those of its gas and electricity competitors. EDF Energy has thus remained the supplier offering the lowest prices on the market for dual offers (sale of gas and electricity combined) with floating tariffs, thereby protecting its customers from wholesale price fluctuations.

This strategy has enabled EDF Energy to increase its customer portfolio, adding over 300,000 new accounts, thus achieving a new record of more than 5.4 million B2C customer accounts. EDF Energy continues to offer its customers new products, while prioritising assistance given them to cut their energy consumption and make savings. Fixed-price products are thus offered, giving customers protection against price hikes over periods of between 15 months and four years.

(1) The figures represent EDF Energy's net position on the wholesale market. In total, on the wholesale markets, EDF Energy made purchases and sales of a much larger volume than that which is shown here. In total, EDF Energy realised transactions on the market of a volume 10 times greater than the net position.

At the end of December 2011, EDF Energy had 4 million customers and 5.8 million customer accounts. In 2011, it supplied 17.0 TWh of electricity to 3.5 million B2C accounts and 231,037 B2B SME accounts and 35.8 TWh of electricity to 114,502 B2B Major Business accounts. It also had 1.9 million B2C gas customers accounts and supplied 25.4 TWh of gas to these customers in 2011. While EDF Energy's B2C and B2B SME customers are primarily located in London, the South East and the South West of England, its B2B Major Business customers have sites throughout the country.

The churn rate on UK's B2C market remained relatively high compared to other countries, although the rate did fall from its peak of 2008. At the end of 2011, 15.8 million (61%) of UK B2C electricity consumers and 12.4 million (57%) UK B2C gas consumers changed suppliers when the market was deregulated(1).

EDF Energy, like most major suppliers, announced in 2011 that it was suspending its use of door-to-door selling to canvas new customers, which should further reduce the churn rate.

EDF Energy is taking part in the Government Carbon Emissions Reduction Target (CERT) programme for the reduction in CO_2 emissions, the aim of which is to reduce households' carbon footprints by promoting low carbon energy solutions. EDF Energy is forecast to spend more than 400 million pounds sterling in the course of this programme. In July 2010, the programme was extended to December 2012, which increased the target reduction for CO_2 emissions by 293 million tonnes of CO_2 for all suppliers. EDF Energy's obligation is 31 million tonnes of CO_2, out of the 293 tonnes for the whole of the industry; at the end of December 2011, EDF Energy had reached 81.9% of its target.

EDF Energy has also signed up to the Government's Community Energy Saving Programme (CESP), which requires gas and electricity suppliers to propose energy saving measures to private consumers in areas with a high proportion of low income households. The Government estimates EDF Energy's contribution at around 65 million pounds.

The two aforementioned programmes will end in 2012 and will be replaced by Energy Company Obligations, with support from the Green Deal Initiative.

An integral part of EDF Energy's endeavours to improve the service it delivers to customers is a programme called Orchard. This programme is designed to develop and produce a new operational model that will both transform customers' experience and the way in which the service is offered through the use of a new set of customer relations management processes and residential customer and small enterprises billing processes. This programme draws on a new SAP-based customer relations management system. All customer accounts (B2C and B2B SME) have successfully been migrated to the Orchard platform. A total of 5.6 million customers have been migrated to this platform.

6.3.1.2.3 Nuclear Generation Business unit(2)

EDF Energy owns and operates eight nuclear power plants with a total capacity of 8.7 GW. The Nuclear Generation business unit has a staff of more than 5,500.

Nuclear Generation fleet' technology

Seven of the eight nuclear power plants are Advanced Gas-Cooled Reactor ("AGR") power plants (Dungeness B, Hartlepool, Heysham 1, Heysham 2, Hinkley Point B, Hunterston B and Torness) and the eighth is a Pressurised Water Reactor ("PWR") power plant (Sizewell B). Each of the AGR power plants has two reactors and two turbines; the PWR has one reactor and two turbines.

Whereas the AGR design is unique to the UK, the PWR design is the most common reactor type in the world. An AGR differs from a PWR:

- An AGR has a graphite moderator which helps to control the reaction. The reactor is encased in a steel-lined pre-stressed concrete pressure vessel several meters thick which also acts as a biological shield. The steam generator in which water is heated is situated inside the pressure vessel. An AGR uses enriched uranium dioxide encased in stainless steel per its fuel and CO_2 as its coolant;
- A PWR is contained inside a steel pressure vessel filled with pressurized water which acts as the moderator and coolant. The pressure vessel is located behind the biological shields formed by the concrete walls, inside a containment building made of reinforced concrete sheathed in steel. The fuel used is enriched uranium dioxide and is contained in zirconium alloy tubes.

Regulation

The operation of nuclear power plants is subject to strict regulation, especially in areas related to nuclear safety (in particular, in relation to the construction, operation and decommissioning of nuclear installations and the protection of workers and the public against ionising radiations), both in the electricity market and environmental regulations.

Safety

Safety is the main priority and, of all EDF Energy's duties, none is of greater importance than the protection of the public, environment and employees. A well-established safety culture contributes greatly to achieving these objectives. To this effect, EDF Energy continues to invest in training its teams.

The actual and potential seriousness of individual nuclear events are measured from 1 to 7 on the INES scale (International Nuclear Event Scale), with 7 being the most serious. Those of no consequence for nuclear safety are classified as "discrepancies" or "level 0 events". In the year ended 31 December 2011, EDF Energy recorded no nuclear event above 1 of the INES scale ("anomaly") and recorded 19 level 1 events.

EDF Energy applies stringent procedures to reduce to a minimum and check the radiation doses received by staff and subcontractors of all existing EDF Energy's nuclear power plants. Any employee who must enter a radiation area that has controlled access must be fitted with a staff electronic dosimeter, which measures radiation doses and alerts the person carrying the dosimeter if pre-set doses have been exceeded.

Radiation doses are measured in millisieverts (mSv), and the annual legal dose is 20 mSv. In 2011, the individual dose received by all staff of EDF Energy's existing nuclear power stations was 0.119 mSv. The highest individual dose received was 7.6 mSv.

(1) Source: Department of Energy and Climate Change, quarterly energy prices, December 2011.

(2) The former company names of British Energy Group and British Energy Generation Limited have become EDF Energy Nuclear Generation Group Limited and EDF Energy Nuclear Generation Limited respectively on 1 July 2011. Consequently, the Existing Nuclear business unit is now called Nuclear Generation.

Impact of the Fukushima accident on Nuclear Generation

Following the accident that affected the Fukushima nuclear power plant in Japan, a team of more than 70 people was specially formed to resolve any potential problems such as those encountered in Fukushima in March 2011. To date, EDF Energy has conducted assessments requested by the World Association of Nuclear Operators and followed the recommendations of the United Kingdom nuclear safety authority, the Office of Nuclear Regulation (ONR), and has responded to the European Union's stress test requests. With regard to the stress tests, no deficiency was found regarding the operational safety of existing power plants. Nonetheless, a certain number of points to do with improving stress resistance were identified, for which implementing schedules are being prepared. EDF Energy's responses to the stress tests were made public on 4 January 2012. EDF Energy continues to answer questions related to these assessments and to monitor relevant events in Japan and globally.

The operating lifetime of power plants

The potential lifetime of each power plant is determined primarily by its ability to maintain safety procedures in accordance with its nuclear site licence with regard to both technical and financial aspects. Any decision by EDF Energy to extend the operating life of a nuclear power plant beyond its initially scheduled closure date would be based, in large part, on a combination of economic factors and the engineering studies on technical processes and safety issues. Lifetime extensions will require the consent of the Nuclear Decommissioning Authority (NDA) if the extension results in an increase in the costs of performing decommissioning requirements as defined in the Nuclear Liabilities Funding Agreement, signed when British Energy was restructured.

The adequacy of each power plant's safety case has to be confirmed at each scheduled outage, for the purposes of the period following the outage. This confirmation is obtained after the appropriate measures have been implemented regarding inspection, tests, maintenance operations and operational performance checks. The results are then sent to the ONR, which must give its official agreement, in accordance with the nuclear power plant licence, before the reactors concerned can be restarted. A reactor may only be operated following restart for the period determined by the safety case. This period is normally three years for all AGR power plants and eighteen months for the PWR power plant.

In addition, every ten years EDF Energy is required to undertake a Periodic Safety Review (PSR) for each power plant. This review must also be approved by the ONR before the power plant can continue to operate.

The accounting lives and corresponding current scheduled closure dates of the EDF Energy's existing power plants are shown in the following table:

Power Plant	Type of reactor	Start of Generation	Initial Accounting lifetime	Life Extensions already declared	Scheduled closure date	Periodic safety reviews(1)
Hinkley Point B	AGR	Feb. 1976	40 years	15 years	2016	2017
Hunterston B	AGR	Feb. 1976	40 years	15 years	2016	2017
Dungeness B	AGR	Apr. 1983	35 years	10 years	2018	2018
Heysham 1	AGR	Jul. 1983	35 years	10 years	2019	2019
Hartlepool	AGR	August 1983	35 years	10 years	2019	2019
Torness	AGR	May 1988	35 years	10 years	2023	2020
Heysham 2	AGR	Jul. 1988	35 years	10 years	2023	2020
Sizewell B	PWR	Feb. 1995	40 years	–	2035	2015

(1) ONR's response expected.

As the table shows, the accounting lives chosen for AGR power plants were extended by between 10 and 15 years compared with their initial operating lives. These extensions were approved following the required technical and financial assessments and have been awarded the corresponding permits.

EDF Energy will continue this approach, seeking extensions to the operating lives of all its nuclear power plants, whenever justified with regard to safety and finances. To this effect, EDF Energy has implemented a programme relating to its power plants' operating lives: based on a technical assessment of its power plants' potential operating lives, which has been completed in 2011, and subject to required reviews and permits, EDF Energy plans to extend the operating lives of its existing AGR power plants by on average seven years and twenty years for its Sizewell B power plant.

Hartlepool and Heysham 1 were the latest power plants to have their operating lives extended. In December 2010, EDF Energy announced for 2019 a five-year extension to the power plants' operating lives. Plans to extend other power plants' operating lives will be launched, at the latest, three years before each power plant's planned closure date. The next power plants affected by these plans are Hinkley Point B and Hunterston B.

The English regulator has approved the periodic assessments of Heysham 2 and Torness on 29 January 2010, for the period stretching to 2020, subject to respecting the agreed works schedule.

Capacity and output

The table below shows the last two years' actual capacity and output of each of the nuclear power stations.

Power Plant	Capacity (MW)[1]	Output[2] (TWh) Year ended 31 December 2011	2010
AGR Power Plants			
Dungeness B	1,040	1.3	3.6
Hartlepool	1,180	7.4	8.1
Heysham 1	1,160	8.6	5.2
Heysham 2	1,220	8.5	6.4
Hinkley Point B	870	6.1	6.4
Hunterston B	890	6.3	6.8
Torness	1,190	9.0	7.1
PWR power plant			
Sizewell B	1,191	8.6	4.7
TOTAL	**8,741**	**55.8**	**48.3**
LOAD FACTOR[3]		**73%**	**63%**

(1) Capacities are stated net of all power consumed for the power stations' own use, including power imported from the Grid. Capacities are subject to review each year end. The capacities shown reflect the forecast benchmark generation of units from 1 January 2012. In particular, Hinkley Point B and Hunterston B power stations have been adjusted to reflect planned operation at approximately 70% load, due to boiler temperature restrictions.

(2) Output in each year reflects any re-fuelling, planned and unplanned outages. Numbers are rounded off.

(3) Load factors are obtained by dividing the actual output by the output that would have been achieved had each power plant operated at its stated capacity appropriate for the period.

Operational review of the existing Nuclear Generation fleet

For the year ended 31 December 2011, nuclear generation by the fleet amounted to 55.8 TWh, which is in line with the performance target of regular generation above 55 TWh. Nuclear generation in 2011 was up by 7.5 TWh on 2010 (48.3 TWh). The increase principally reflects lower output in 2010 due to extended outages attributable to the pressure vessel cooling water leak on Dungeness B Reactor 21, the standpipe repair on Heysham 2 Reactor 8 and the pressuriser heater repairs at Sizewell B.

During the year ended 31 December 2011 there were scheduled outages of the company's existing nuclear generating plants. The scheduled outages occurred at the Hartlepool 1 reactor 1, the Heysham 2 reactor 7, the Hunterston B reactor 4 and Sizewell B; the statutory outage of the Hinkley Point B reactor 4 for 2011 completed on 4 January 2012. This outage programme reflects the importance given to investing to improve the long-term reliability and the safe operation of the company's nuclear generation fleet by proactively targeting investments that ensure equipment reliability and that reduce the risks of future losses.

Plant status

Dungeness B

In 2010, the two reactors were shut down during long periods and operated at reduced output due to problems related to the station's fuel route plant, which allows radioactive waste to be removed from reactors and new fuel to be added. Additional protection systems were added to the fuel transmission system to correct identified malfunctions and the station's fuel transmission was made fully functional in January 2012. Refuelling can now continue, which will enable the two units to operate at full capacity in 2012.

Heysham 1 Reactor 2

In October 2006, the load of the Heysham 1 reactor 2 was reduced to approximately 80% of its full load in order to reduce the surface area temperature of a section inside the reactor, known as the Hot Box Dome. The degrading process of this surface has the potential, if not resolved, to limit the output of the other reactors at Heysham 1 and Hartlepool to a level below full load.

A modification to create additional cooling paths was carried out successfully on Heysham 1 Reactor 1 during its 2010 statutory outage. It was also announced in March 2011 that this solution would be applied to the Heysham 1 reactor 2, which led to an increase in capacity to around 90% of its maximum load.

Further analysis has since helped to increase the accuracy of temperature measurements of the hot box domes upper surface, which led to the announcement on 7 October 2011 that Heysham 1 reactor 2 was operating at 96% of its maximum load.

Sizewell B

In March 2010, the Sizewell B plant was shut down following indications of higher than normal moisture levels within the containment building. It was later found that a certain number of pressurised heating systems were defective. The heating systems were repaired and the plant returned to service on 30 September 2010. During the 2011 outage for refuelling, all the other pressurised heating systems were successfully replaced.

Cost of managing radioactive waste and decommissioning power plants - Agreements for the restructuring of the British Energy group

Restructuring Agreements were originally entered into on 14 January 2005 as part of the restructuring plan implemented from 2002 under the aegis of the British Government; the agreements aimed to stabilise the financial situation of the old British Energy group, later known as EDF Energy Nuclear Generation Group. By virtue of these restructuring agreements:

- The Nuclear Liabilities Fund (NLF), an independent body created by the British Government as part of the restructuring plan, acting upon the instructions of Secretary of State agreed to finance up to the value of its assets: (i) qualifying contingent and/or latent nuclear liabilities (including liabilities for management of radioactive waste from the Sizewell B power plant); and (ii) qualifying decommissioning costs for EDF Energy Nuclear Generation group's existing nuclear power plants;
- *the Secretary of State agreed to fund:* (i) qualifying uncontracted nuclear liabilities (including liabilities relating to the management of radioactive waste resulting from operation of the Sizewell B power plant) and qualifying costs of decommissioning, in each case in relation to nuclear power plants owned and operated by the EDF Energy Nuclear Generation group, to the extent that they exceed the assets of NLF; and (ii) subject to a cap of 2,185 million pounds sterling (in December 2002 monetary values, adjusted accordingly), qualifying contracted historic liabilities for the EDF Energy Nuclear Generation group's spent fuel (including liabilities for management of spent fuel from AGR plant operations prior to 15 January 2005); and
- The EDF group is responsible for funding certain excluded or disqualified liabilities (mainly liabilities incurred in connection with operation of the power plants that does not comply with the safety rules and due diligence) and the potential associated obligations to the NLF and the Secretary of State relating to these liabilities for its subsidiaries. These liabilities are guaranteed by the principal subsidiaries of the EDF Energy Nuclear Generation group.

Some companies of the EDF Energy Nuclear Generation group, including EDF Energy Nuclear Generation Limited have entered into a separate contract with the Nuclear Decommissioning Authority (NDA) for management of radioactive waste from operation of AGR plants, from 15 January 2005, and have no responsibility for this waste after it is transferred to a treatment site at Sellafield.

The Secretary of State and EDF agreed to the limited amendments to the Restructuring Agreements in connection with Lake Acquisitions' acquisition of EDF Energy Nuclear Generation group. The amendments, among other things and subject to limited exceptions, restrict the majority of rights and obligations imposed by the Restructuring Agreements only to EDF Energy Nuclear Generation Group and its subsidiaries and affiliates, and, accordingly, do not extend similar rights and obligations to EDF, nor to its subsidiaries and affiliates. The amendments do not impact on the contractual funding commitments of the Secretary of State or NLF to EDF Energy Nuclear Generation Group.

Certain amendments have been made to the Restructuring Agreements, reflecting EDF Energy Nuclear Generation Group's access to an improved credit rating following the acquisition. In particular, EDF Energy Nuclear Generation Group is required to maintain a minimum cash reserve. The amendments reduced the minimum level of this reserve to 290 million pounds sterling. The cash reserve may be further reduced to zero provided EDF Energy Nuclear Generation Group achieves and maintains an investment grade rating or irrevocable Committed Facilities of the same amount are put in place between third-party financial institutions or a member of the EDF group with an investment grade rating and a member of EDF Energy Nuclear Generation Group.

6.3.1.2.4 Nuclear New Build Business Unit

Nuclear New Build business unit activity

EDF Energy intends to build up to four nuclear reactors in the UK: a twin reactor at Hinkley Point and a possible further twin at Sizewell. The plans depend on the required permits being obtained and a solid investment structure being implemented.

Safety is a key aspect of the EPR design. The same EPR technology is already being developed at the new nuclear power plant currently being built by EDF in Flamanville, France, and at Taishan in China (see 6.2.1.1.3.5 ("Preparing the future of nuclear plants in France" – "The European Pressurised Water Reactor (EPR) and the other reactors"). The use of this same technology, which will be tailored to UK requirements, will provide efficiency gains resulting from the standardised building design and operating of a series of power plants. In 2011, much of the focus was again on Generic Design Assessment (GDA) and Nuclear Site License (NSL) application as well as planning and applying for consent essential to the progress of the project.

Work carried out in 2011

The work of preparing the Hinkley Point C site progressed well. A plan is now in place to eliminate the planning conditions linked to the start of preparatory work. Good progress was made regarding the leases and the transfer of control of existing power plant land to the nuclear new build programme, which should be finalised by the end of March 2012.

Forging

A contractual agreement was finalised with AREVA in the third quarter of 2011, to carry out critical forging work at the Hinkley Point C reactor 1. Japan Steel Works and Creusot Forge began casting the nuclear reactor vessel in November 2011.

Land purchases

Land purchasing has reflected the progress made in planning, by responding and adapting to areas and sites identified and as an integral part of the public consultation process and the application process. Negotiations were conducted in 2011 with more than 40 landowners that own land affected by the 19 road sites and associated developments. Significant progress was made, with some transactions being made and most negotiations on track. EDF Energy aims to secure the land it needs through agreements with private individuals, but forced expropriations could be used if necessary.

EDF has already bought most of the land needed on the main site on which the Hinkley Point C station is to be built. The agreement for the Hinkley Point C excavation and preparatory work, authorising the preparatory work to begin, was signed on 27 January 2012.

IT implementation

The main priority of the project's IT implementation was to build the technical infrastructure needed to manage the project, which comprised the design and building of an IT network dedicated to the nuclear new build programme being flexible enough to give the possibility of a partnership while protecting data and ensuring compliance with the regulatory provisions. The network should be operational at the beginning of 2012, subject to ONR approval.

Progress was also made to procure reactor components through a contract signed with AREVA, to start the forging of some of the main reactor's components.

The UK government's Electricity Market Reform and planning framework

The beginning of 2011 was marked by the government announcing its intention to propose bills for the creation of the Office for Nuclear Regulation (ONR), a new authority to regulate the nuclear industry.

In its last national budget publication in March 2011, the UK government announced the introduction of a carbon floor price from 1 April 2013. From this date, fossil fuel supplies used in large electricity generation units will be taxed. The supplies will be taxed at the carbon price support rate according to the average carbon content of the fossil fuel used. The carbon floor price was presented as an integral part of the Finances Act 2011 and received Royal Assent on 19 July 2011.

The carbon floor price will start at around £16/t CO_2 in 2013 will follow a linear curve increase, reaching £30/t CO_2 in 2020. The floor price will increase at a rate of around £2/t CO_2 per year, between 2013 and 2020. The Government currently intends the floor price to rise to £70/t CO_2 in 2030 (all figures are expressed in relation to 2009 prices) but this should be assessed by the European Union and be subject to international CO_2 emissions targets. The carbon price support rate will still be set two years in advance, at the same time as the indicative rates, which will be set for two extra years. On this basis, the final rate of support of the price of coal for 2013/2014 was adopted as part of the 2011 budget, together with the indicative rates for 2014/2015 and 2015/2016. In the same way, the final rate of support for 2014-2015 was adopted as part of the 2012 budget, with indicative rates for 2015-2016 and 2016-2017.

The Government indicated that the floor price would increase the diversity of electricity generation sources in the UK, by investment for a wider range of technologies, including nuclear, instead of concentrating on gas generation. The Government's response was to give strong priority to investment in low carbon electricity generation, including EDF Energy plans to build new power plants and to potential investments to extend the operating lives of its existing nuclear fleet.

Following the consultation on EMR conducted by the government in March 2011, the White Paper published on 12 July 2011 sets out its position on the way to reform the UK's electricity market. While confirming the provisions on the carbon floor price, the White Paper prioritised three other components of its policy to reform the electricity market: a feed-in-tariff with Contracts for Difference (means of protection against high electricity prices that enables investors to reduce the cost of capital), a capacity mechanism (in the form of a market capacity, a mechanism that will respond to the required capacity volume to help ensure security of energy supplies), and finally an emissions performance standard (annual CO_2 emissions cap, which will initially be the equivalent of 450g CO_2/kWh for all new fossil fuel power plants, with no impact on new nuclear power plants).

In accordance with the schedule published by the government, the legal provisions allowing this reform should be presented in the spring 2012, to be applied in 2013/2014 with provisional agreements applied in the meantime.

Planning reform

On 19 July 2011, the Secretary of State for Energy and Climate Change presented the six National Policy Statements on energy infrastructures by virtue of the Planning Act 2008, including nuclear electricity generation.

The energy National Policy Statements set out the national policy by virtue of which major energy plan proposals will be assessed by the Infrastructures Planning Commission. This Commission will be replaced in April 2012 by a national infrastructures planning committee, to which the functions of the Commission will be transferred.

The Statements confirm that the government's policy is that new nuclear power should be able to contribute, as much as possible, to the UK's needs for additional capacity. Eight sites have been identified as potentially suitable for constructing new nuclear power plants by 2025 and EDF Energy currently owns land at five of them: Bradwell, Hartlepool, Heysham, Hinkley Point and Sizewell.

On 26 August 2011, Greenpeace filed an application for a judicial review against the Secretary of State's decision, on the grounds that the government had neither fully taken into account the affects of the Fukushima accident nor sufficiently consulted the stakeholders. This application was refused by the High Court of Justice on 5 December 2011.

Planning progress

Consent to carry out renovation works at the Hinkley Point C site, including land decontaminating, was given by Somerset County Council in January 2011.

At the end of 2010, EDF Energy submitted permit applications to the relevant authorities to carry out preparatory and building work at the site; the permits were approved in July 2011. EDF Energy completed a second consultation phase regarding its proposals for Hinkley Point C in October 2010. This was followed by a consultation in February and March 2011 and a further consultation in July and August 2011.

EDF Energy's plans for developing Hinkley Point C were finalised following these consultations, and a new Development Consent Order application was submitted to the Infrastructure Planning Commission

on 31 October 2011. The Commission accepted and published the application on 24 November 2011. Thus, EDF Energy plans to proceed to providing public information.

In the third quarter 2011, applications were submitted to the Environment Agency concerning required consent for radioactive emissions resulting from activities, as well as consent regarding combustion and water discharge activities. The Environment Agency is bound to proceed to a public consultation before this consent can be given.

Generic Design Assessment and nuclear site permit applications

Generic Design Assessment

In July 2011, the Health & Safety Executive published a report on the problems of Generic Design Assessment and plans for remedying incidents. Only the plans for remedying incidents still require an agreement concerning certain lessons learned from Fukushima.

On 14 December 2011, the ONR published its provisional consent for the UK's EPR, but important points remain to be resolved before final consent is given. The Environment Agency has also published its provisional consent for the EPR's design. The ONR has reaffirmed that no building related to the safety of a nuclear island will be authorised until all Generic Design Assessment problems related to the design have been satisfactorily resolved and definitive approval of the design has been obtained.

Nuclear site permits

The nuclear site permit application for Hinkley Point C was submitted to the ONR before the deadline on July 2011. The application was first submitted for the review process for the nuclear new build programme; it included the new build programme conformity form, which highlights the components of the integrated management system that comply with the 36 conditions for receiving nuclear site permits.

The ONR has opened the permit delivery procedure. The nuclear site licence provides the framework in which future consent will be given by the ONR.

6.3.1.2.5 Commitments under european commission merger regulation (ECMR)

The British Energy Acquisition was subject to certain conditions, in accordance with European merger regulation. On 22 December 2008, the European Commission announced its decision to approve the acquisition, subject to certain commitments by EDF: to divest EDF Energy's gas-fired power plant at Sutton Bridge and British Energy's coal-fired power station at Eggborough; to sell minimum volumes of electricity on the UK wholesale market, ranging from 5 to 10 TWh per year during the period from 2012 to 2015; to divest one site potentially suitable for the construction and operation of a new nuclear plant situated adjacent to existing British Energy stations at either Heysham or Dungeness, at the option of the potential purchaser; and to give up one of the combined group's three grid connection agreements at Hinkley Point

Apart from the divestment of the Sutton Bridge plant and commitments to sell minimum volumes of electricity, all other commitments were met.

Sutton Bridge is a combined cycle gas turbine (CCGT) thermal plant with a capacity of 819 MW, which was commissioned in May 1999 and bought from Enron by EDF Energy in April 2000. Because of the divestment commitment, Sutton Bridge is currently operated under separate management agreements under the responsibility of a separate manager. EDF Energy has implemented a virtual capacity right, according to which a third party benefits from the plant's output and all the associated advantages but also all the associated commitments.

6.3.1.3 London 2012 Olympic and Paralympic Games

EDF is the official partner for supplying electricity to the London 2012 Olympic and Paralympic Games, and a tier one partner, alongside Adidas, BT, BP, British Airways, BMW, Lloyds Banking Group and Sainsbury (Paralympic Games only).

This partnership is an opportunity to raise the image of the EDF brand, to highlight in the eyes of the public EDF's position of leading international supplier, as well as furthering EDF's development in the UK.

Under this partnership, EDF will supply the London 2012 Olympic Games with low carbon electricity generated from various nuclear and renewable energy sources. EDF will also supply the fuel that will light the Olympic flame and cauldron. Through its involvement in the first Olympic Games, in line with the spirit of sustainability and thanks to its vision regarding low CO_2 emissions for the London Games, EDF has launched several energy efficiency initiatives, such as reducing the carbon footprints of London landmarks (Tower of London, EDF Energy's London Eye, etc.), and contributing to installing new charging points for electric vehicles to facilitate electric transport in London.

EDF aims to use the opportunity presented by the Olympic Games to promote responsible energy consumption and promote awareness of smarter electricity consumption.

6.3.2 Italy

The EDF group operates in Italy mainly through its shareholdings in Edison, the second largest operator on the Italian electricity and gas markets. As of 31 December 2011, the Group held 19.36% of Edison's share capital directly (18.96% of its economic interests after accounting for shares in the employees savings plan(1)), and 50% of the share capital of Transalpina di Energy (TdE), which in turn holds 61.28% of Edison's share capital (60% of its economic interests). EDF's direct and indirect interests in Edison thus gave it 50% of voting rights and 48.96% of economic interests.

This interest results from agreements entered into during the year 2005 by the Group with A2A SpA (formerly AEM Milano) and provided for the joint takeover of Edison by EDF and A2A SpA. The terms and conditions of this takeover are described below in section 6.3.2.1.2 ("Governance and agreements between EDF and A2A").

On 26 December 2011, EDF, Edison, Delmi, A2A and Iren reached a preliminary agreement concerning reorganisation of Edison's and Edipower's shareholder structure. The final agreement was approved by EDF's Board

(1) The shares comprising the employees savings plan do not give voting rights but give the right to receive a share of the company's profits and grossed-up dividends.

of Directors on 24 January 2012 and the associated contracts were signed by all parties concerned on 15 February 2012.

Furthermore, the EDF group operates in Italy through the following subsidiaries and shareholdings at 31 December 2011:

- Fenice: the Group holds 100% of Fenice's capital, a company that specialises in electricity generation, energy-related service supply, solid and liquid industrial waste treatment, and environmental activities;
- The groups Dalkia, EDF Energies Nouvelles and EDF Energies Nouvelles Réparties also own subsidiaries and holdings in Italy.

As regards nuclear energy, ENEL and EDF terminated their partnership for the development of their EPR project following the referendum of 13 June 2011, which led to Italy's nuclear programme being abandoned (by 94% of the votes and 57% participation).

6.3.2.1 Edison

Edison is the oldest Italian electricity company and is currently the second largest provider on the Italian electricity market (the main competitors being the national supplier ENEL in first position, as well as ENI, E.ON and A2A) and on the gas market (the main competitors being ENI and ENEL).

In 2011, net electricity generation by Edison in Italy was at 33.2 TWh, which accounted for 11.5% of net electricity generation in Italy (41.8 TWh and 15% in 2010), and gas activities accounted for 15.2 Gm^3, or 19.6%, of Italian gas demand (15.8 Gm^3 and 19.0% in 2010). Edison hydrocarbon generation activity in Italy and abroad was up against 2010 to reach a level of 2.2 Gm^3 for gas generation and 3.5 million barrels for hydrocarbon generation.

In 2011, Edison generated 12,097 million Euros of revenue and an EBITDA of 1,003 million Euros(1). In EDF group's consolidated financial statements at 31 December 2011, Edison is consolidated by proportional integration at 48.96%.

Edison is listed on the Milan stock exchange pursuant to whose regulations it publishes a certain amount of information, in particular, its annual report, available on its website (www.edison.it).

6.3.2.1.1 Strategic interest of Edison shareholding

The Italian electricity markets have a strong strategic interest for EDF: the Italian gas market is the third largest European Union market and the Italian electricity market, the fourth largest European Union market, is connected to the French market and until now has benefitted structurally from an average level of high prices. The position and ambitions for growth of Edison allow the Group to implement a balanced strategy in Italy based on Edison's ambitions to manage and develop its electricity production fleet, its customer portfolio and its gas business.

In terms of supply, at the end of 2008 Edison had already started, and aims to continue for the coming years, a significant development of its electricity sales to residential customers and small and medium-sized enterprises, as well as its gas sales to large industrial customers. The development of an end customer portfolio is part of the Group's strategy to promote upstream-downstream balance of its positions.

In implementing its gas strategy, the EDF group can benefit from the experience that has been developed over the course of many years by Edison along the entire gas value chain, from exploration/generation to direct sale of natural gas.

6.3.2.1.2 Governance and agreements between EDF and A2A

On 12 May 2005, EDF, AEM Milano, WGRM Holding 4 S.p.A. (WGRM, a wholly-owned subsidiary of EDF) and Delmi S.p.A. (Delmi, a subsidiary then held at 95% by AEM Milano) entered into a Structure Agreement and a Shareholders' Agreement governed by Italian law, relating to the implementation of their joint takeover of Edison and the exercise of their joint control. To this effect, they formed Transalpina di Energia S.p.A. (TdE), a jointly-held holding company, in which WGRM and Delmi each hold 50% of the share capital.

Since 1 January 2008, AEM Milano has become A2A S.p.A. (A2A) after its merger with ASM Brescia S.p.A., ex-state-owned utility serving Brescia in Lombardy. A2A is an integrated Italian operator listed on the Milan stock exchange, operating in the generation, import, marketing, distribution and sales of electricity and gas to end-users, as well as waste processing and urban heating.

Delmi is controlled by A2A, which holds 51% of its share capital and voting rights, by industrial partners holding 35% (ENIA now IREN following the merger with Iride, SEL and Dolomiti Energia) and by financial operators holding 14%.

EDF group also directly holds 18.96% of Edison through its MNTC subsidiary (see the organisational chart in chapter 7 of this registration document).

The Structure Agreement, the provisions of which would stay in force until 31 December 2020, contains a provision relating to the change of control of A2A or Delmi. In the case of a third party other than the city of Milan acquiring the control of A2A (formerly AEM S.p.A), or in the case of a third party other than A2A appointing the majority of the members of the Board of Directors of Delmi, this provision gives EDF a call option to repurchase Delmi's stake in TdE. The Structure Agreement has a similar provision as to EDF and WGRM towards A2A.

Joint control of Edison

A Shareholders' Agreement provides for rights and obligations of TdE shareholders, the exercise of joint control of Edison and the rights and obligations of EDF and A2A in respect of TdE and Edison. This Shareholders' Agreement, which came into force on 15 September 2005, was subject to several extensions. In connection with their discussions relating to a new industrial project for Edison and the shareholding structure of TdE, A2A, Delmi and EDF, it is currently agreed that the Shareholders' Agreement will end on closing of the Edison takeover by EDF and in any event on 30 June 2012, though with the possibility of an extension for a three-year period in the absence of any objections from one of the parties before 30 June 2012. In the event of such a three-year extension, each party will retain the ability to terminate the agreement at any time in the event that the party wishing to terminate did not respect all their obligations as scheduled in the agreement of 15 February 2012.

(1) Source: 2011 Edison Annual Report.

Specific provisions of the Shareholders' Agreement

The Shareholders' Agreement establishes the fundamental principle that the management of Edison will be determined exclusively by TdE.

The Shareholders' Agreement will be automatically terminated if EDF or A2A (directly or indirectly) cease to hold more than 50% of the voting rights which can be exercised at the TdE Shareholders' Meetings or if the assets of Delmi are liquidated.

TdE

The Board of Directors of TdE is comprised of 10 members elected by the Shareholders Meeting, five appointed by EDF and five appointed by Delmi. Delmi appoints the TdE Chief Executive Officer (a position similar to Directeur Général under French law), and EDF will appoint the Chairman of the Board of Directors.

The meetings of the Board of Directors require a quorum of eight members, and decisions are made by a qualified majority of eight members. No director will hold the right to a deciding vote.

Edison

In accordance with the Shareholders' Agreement, the Edison Board of Directors is comprised of 13 members elected by the Shareholders' Meeting. These members are the five directors of TdE appointed by EDF, the five directors of TdE appointed by Delmi, two independent directors, one each appointed by EDF and Delmi, and since 2 April 2008 one director appointed by the minority shareholders through a list system.

Delmi appoints the Chairman of the Board and the Chief Financial Officer of Edison (CFO), who can also be a director; EDF appoints the Chief Executive Officer (CEO) and the Chief Operating Officer (COO). The meetings of the Board of Directors require a quorum of 10 members and the decisions will be made by a qualified majority of 10 members. No director will hold the right to a deciding vote.

Please note, the amendment to the agreement of March 2011 also provides for the appointment of the boards of directors of Edison and TdE, for a period of one year, by the shareholders' meetings of Edison and TdE that will approve the annual financial statements.

Agreement on reorganising Edison's shareholder structure and industrial activities

EDF wishes to take exclusive control of Edison to strengthen the Group's gas strategy and consolidate its position as key player in Italy, furnishing itself with the means of an ambitious expansion policy in southern Europe and the countries around the Mediterranean.

Under the terms of the agreement of 15 February 2012, which should be implemented before 30 June 2012:

- EDF will take an 80.65% controlling interest of Edison, through acquiring 50% of TdE for a total amount of 705 million euros (jointly owned by Delmi and EDF with 50% each). This acquisition is subject to Consob confirming that the compulsory public offering price resulting of the EDF's acquisition of 50% of TdE shall not be more than 0.84 Euros per Edison share;
- Delmi will acquire 70% of Edipower's share capital (50% of which is currently held by Edison, and 20% by Alpiq);
- Edison will finalise a gas supply agreement with Edipower for volumes covering 50% of its needs for the next six years.

All these operations are also subject to their being approved by the relevant competition authorities.

Following these operations, EDF would hold at least 80.65% of Edison's share capital (before the effect of the compulsory public offering). Simultaneously with the takeover of Edison by the Group, Delmi will take over Edipower by acquiring Edison's stake (50%) and Alpiq's stake (20%) in Edipower, for a total price of €805 million.

Following this restructuring, EDF intends to give Edison a new outlook, with:

- possible growth on Italy's electricity market, the 4th largest electricity market in Europe, mostly gas generated;
- development in Exploration and Generation (oil and gas), a sector in which the EDF group can draw on the Edison's internal expertise;
- development of gas infrastructures: access to a LNG terminal (Rovigo) and import pipelines (ITGI/IGB, Galsi) additional to Group projects (South Stream, Dunkirk methane terminal);
- securing gas supplies from the south and establishing a possible gas hub for Europe;
- international development in the Mediterranean basin (Balkans, Greece, Turkey, Egypt, etc.) and central Asia, mainly due to Edison's engineering skills in fossil-fuel fired and hydroelectric generation.

6.3.2.1.3 Edison's business in the electricity sector

After Enel, Edison occupies the number two position in the Italian electricity generation market.

Output

The Edison group's installed capacity was 11.5 GW on 31 December 2011 (including 50% of Edipower's installed capacity of 3.8 GW) with net electricity generation in Italy of 33.2(1) TWh in 2011 (including the energy from 50% of the Edipower's generating capacity).

In 2011, in an economic and market climate that remained difficult, Edison continued its policy of reducing its exposure to the commodities market and markedly increasing its purchases on the markets, thus optimising its supply sources.

In accordance with the agreements signed between shareholders, Edison holds, as at 31 December 2011, 50% of the capital and of the voting rights of Edipower. Pursuant to the Tolling Agreement (right to benefit from generation capacities at an agreed price) for the thermal power plants and pursuant to a Power Purchase Agreement for hydroelectric power plants, Edison benefits from a right to 50% of Edipower's existing and future thermoelectric and hydroelectric generation capacities between 1 January 2004 and 31 December 2011. The remaining 50% is divided between Alpiq (20%), A2A (20%), and IREN (10%). The contracting parties are jointly committed to Edipower. If any of the parties fails to perform its obligations, the remaining contracting parties would have to purchase a quantity of energy equal to that of the defaulting contracting party at the level of its respective share.

(1) Source: Edison.

Edison's generating fleet and corresponding power output (including its share in Edipower) are as follows:

2011 Installed capacity and output of the Edison group(1)

	Installed capacity		Output	
Edison + 50% Edipower	**GW**	**%**	**TWh**	**%**
Thermoelectric	9.4	80	27.2	82
Hydroelectric	1.7	15	5.3	16
Renewable energies	0.4	5	0.7	2
TOTAL	**11.5**	**100**	**33.2**	**100**

Development projects

Since the end of 2007, Edison has achieved its objectives in terms of electricity generation capacity in Italy and is focusing on consolidating its positions on the Italian market and particularly strengthening the company in the renewable energy sector (459 MW wind generated output, 13 MW photovoltaic output at the end of 2011).

In the future, Edison aims to expand operations in the Balkans, especially in the Mediterranean basin, including Turkey where Edison already has an office.

Expiry of CIP6/92 agreements

In 2011, the installed capacity of Edison's plants receiving a CIP6 subsidy (a plan particularly characterised by affordable tariffs compared with the average market price), is approximately 370 GW in total, of which 234 MW is thermal powered and 136 MW wind generated.

On 2 December 2009, the Ministry of Economic Development issued a decree providing for economic conditions of anticipated voluntary termination of CIP6 agreements. Edison subscribed to the early termination of CIP6 agreements for a total of 1,271 MW, including for the Taranto CET2 power plant. The Taranto CET2 and CET3 power plants were, moreover, sold on 10 October 2011 to ILVA (part of the Riva Group) for around 164.4 million Euros.

Sales and marketing structure

In 2011, Edison sold 72.2 TWh of electricity (+0.4% compared to 2010), including 33.2 TWh generated and 39 TWh bought on the markets. Sales to end-customers amounted to 23.5 TWh, a drop of 13.8% on 2010. Edison's marketing activity both on the business customer segment and the residential customer segment remains a principal vector for Edison's downstream growth, with more than 1.3 million customers at the end of 2011.

6.3.2.1.4 Edison's gas sector business

Edison, following ENI, ranks 2nd on the Italian market for gas supply in Italy, with a 19.6% market share in 2011.

Edison's gas supply portfolio for 2011 comprised about 15 Gm^3 bought (of which about 12 Gm^3 was via pipeline and LNG) and more than 2 Gm^3 of own output (of which 0.5 in Italy). Change in inventory and network losses were 0.124 Gm^3.

In 2011, Edison supplied 1.5 Gm^3 of gas to the industrial sector, 2.1 Gm^3 to the residential sector and 9.1 Gm^3 to the thermoelectric sector; the last volume included Edison's own needs. The Edison gas portfolio is based on long-term contracts, which has allowed and continues to allow Edison to secure medium- and long-term gas supply.

Edison, according to contract terms signed in May 2005 with the company Rasgas (ExxonMobil and Qatar Petroleum), for 25 years has 80% (i.e. 6.4 Gm^3/year) of the new Rovigo offshore regasification terminal capacity (8 Gm^3/year), commissioned in autumn 2009. This terminal is powered via Qatari Gas.

In 2010, due to the difficult gas market situation, Edison, like all other players in the sector, asked suppliers to adjust their contractual conditions. Edison concluded the renegotiation of the long-term Norwegian gas contract in February 2011 and the negotiation of the long-term Russian gas contract with Promgas in July 2011. The other supply contracts (Qatar, Libya, Algeria) are current being negotiated or are under arbitration.

Edison participated in two gas import infrastructure projects: GALSI, a gas pipeline connecting Algeria and Italy via Sardinia (annual capacity of 8 Gm^3) and the ITGI (Turkey-Greece-Italy Interconnection with annual capacity of 10 Gm^3), a gas pipeline providing gas transmission coming from Caspian Sea countries via Turkey, Greece, and Italy. An IGB component (Greece-Bulgaria Interconnection), will connect Greece with Bulgaria.

In exploration-production, (E&P), Edison had around 60 concessions and exploration permits in Italy and 23 abroad, and had around 50 billion cubic meters equivalent of reserves on 31 December 2011. Abroad, Edison's biggest asset is the Abu Qir deposit in Egypt for which Edison bought the exploration, production and development rights for an initial length of 20 years in early 2009, extendable by 10 years at Edison's request. This deposit produced in 2011 1.2 Gm^3 of natural gas and 1.3 million barrels of oil.

In addition, Edison expanded its exploration-production operations in Norway. At the beginning of 2011, Edison obtained three gas exploration permits. In the Barents Sea and the Norwegian Sea, Edison has the role of operator with 60% in joint ventures with North Energy ASA. In the North Sea, Edison holds 10% in a joint venture with Talisman Energy which will have an operator role (40%), Det Norske ASA (20%), Skagen (10%), and Petoro AS (20%). In April 2011, Edison obtained two exploration permits in the Norwegian continental platform. Finally, in January 2011, Edison obtained three new interests: two in the North Sea (one as operator) and one in the Norwegian Sea.

(1) Source: Edison.

Finally, concerning storage activity, Edison will increase its Italian capacity as a result of site reinforcement at Cellino, Collato and of the development of new concessions, particularly San Polito-Cotignola.

6.3.2.2 Energy efficiency in Italy

The Group is involved through the Fenice company mainly in the field of energy efficiency and outsourced management and operation of cogeneration and tri-generation plants, electricity substations, fossil fuel-fired power plants producing both superheated water and steam for industrial use or site heating, cold generation power plants, compressed air generation units, and internal electricity distribution units, as well as various energy streams (hot air, refrigerated air, industrial compressed air and gas). It also has an indirect presence through SIRAM (a wholly-owned subsidiary of Dalkia International) in energy efficiency and optimisation and in environmental fields (sanitation, continuous facility surveillance, environmental engineering, lab analysis, etc.).

6.3.2.2.1 Fenice

Fenice, a wholly-owned subsidiary of EDF, operates electricity, heat, and compressed air production plants and associated distribution networks in Italy, Spain, Poland and Russia, along with environmental assets historically linked to the industrial sites of the Fiat group when EDF purchased Fiat's stake in Fenice. Today, Fenice focuses on supplying electricity and environmental services to manufacturing companies and public agencies, alongside building new co-generation facilities (combined production of electricity and heat) or trigeneration (combined production of electricity, heat and cold).

In 2011, Fenice generated 484 million Euros of sales revenues.

In terms of energy assets, the Fenice group had electricity generation capacities of 487 MW and heat generation capacities of 3,329 MWth on 31 December 2011.

The Fenice group has 48 generation sites of thermal power generation facilities (steam, superheated water, and hot water), electricity and compressed air.

In addition, on the same date, Fenice was operating and maintaining eight power generation stations (O&M) in Italy for third parties. It was decided to maintain and develop industrial and commercial relations with the Fiat group when EDF acquired Fenice. The Fiat group therefore finalised agreements with Fenice prior to 2002 for service provision contracts for a minimum duration of eight years, which led to the transfer of assets to Fenice. These contracts were renegotiated at the end of 2006 and, as a result, their duration has been extended until 2012 and new development projects have been agreed upon. In January 2012, in compliance with the agreements, Fiat terminated the contracts, but is continuing negotiations with Fenice that began several months ago in order to consider their renewal. If these agreements are not renewed in 2012, Fiat is committed to buy back from Fenice all of the assets used for these agreements for an amount equal to the net book value of these assets. The workforce operating the assets would be transferred back to Fiat. Finally, due to the decommissioning of its Termini Imerese station (Sicily) in December 2011, Fiat purchased from Fenice its current assets at the site for 18.3 million Euros and Fenice's staff were transferred to Fiat, pursuant to the contract.

Fenice has two fully-owned European subsidiaries, one in Spain, Fenice Instalaciones Iberica, and one in Poland, Fenice Poland S.p.z.o.o. These two companies are mainly involved in the thermal plant operation and outsourced management with combined electricity, heat and cold production. It also ensures different energy and environmental services (hot or cold, compressed air, industrial gas, and waste and liquid effluent treatment). Fenice also fully owns a third subsidiary in Russia, Fenice Rus, created in November 2009 with the aim of marketing services in the field of energy efficiency to industrial companies. Two first contracts have already been agreed with Russian companies. Fenice also owns 50% of the company Interenergoeffect, a joint venture set up with the Russian company Inter RAO (a mostly state-owned listed company) with the objective of developing energy efficiency projects in Russia. Since its creation, Fenice Rus has finalised the building phase of the first two contracts, which are now fully operational, enabling the company to make a small profit after its first year of operations. A third contract was also signed and will be operational before summer 2012. Other projects are under discussion (both for Fenice Rus and InterEnergoEffect) with industrial companies of different business activities.

Furthermore, Fenice is active in the environmental sector: the company builds and operates waste water treatment plants, runs an incinerator for industrial and municipal waste, provides environmental consulting services, etc. Since its acquisition by the EDF group, Fenice has pursued a policy of diversifying its customer base and its sector of activities This policy was strengthened after the start of the economic crisis at the end of 2008, which seriously impacted the automobile industry, in order to orientate the company as a priority in the following areas:

- the strengthening of relations with its historical customer, the Fiat group, through the implementation of a strategic industrial partnership designed to prepare for the renewal of contracts at the end of 2012;
- the reorientation of its development activities centred principally on energy efficiency and environmental services in target markets through the implementation of strategic partnerships. Fenice has started to extend its activities in Spain, Poland, Russia, and China as well as in Central European countries benefiting from existing or newly-implemented incentive systems. A partnership with EDF in France was also entered into with the signing of a first contract for an environmental survey of a site under decommissioning.

6.3.2.2.2 Dalkia

Dalkia has established a presence in Italy through SIRAM, a company with its registered office in Milan and 900 million euros of sales revenues and a workforce of more than 4,000 people. Established more than one hundred years ago, this company operates in the fields of energy efficiency and optimisation. It has a portfolio of around 1,400 customers, owning a large number of facilities with a combined thermal output of around 5.5 GW and more than 160 MW of electricity.

6.3.2.3 Renewable energy in Italy

In addition to its renewable energy activities through Edison, EDF EN and EDF ENR operate in Italy, a country with strong potential for growth in renewable energies. Thus, EDF Énergies Nouvelles increased its generating capacity over the year, totalling 487 MW gross wind energy, i.e. 304.9 MW net at 31 December 2011. Two power plants were commissioned in 2011, for a total of 122 MW.

Growth was especially high in Italy, mainly because of growth of its photovoltaic division. Installed solar capacity was 122.2 MWc gross (92.2 MWc net), i.e. an increase of 35%.

6.3.3 Other international

6.3.3.1 Continental Europe

6.3.3.1.1 Central and eastern Europe

The Group operates in three central and eastern European countries: (i) Poland (electricity generation, cogeneration, marketing), (ii) Hungary (cogeneration, distribution, marketing), and (iii) Slovakia (distribution, marketing).

The EDF group also operates in these countries through its subsidiaries Dalkia International and Fenice, mainly in co-generation, major urban heating systems and energy efficiency.

6.3.3.1.1.1 Poland

The Group operates through the following four main subsidiaries:

- the Group controls the electricity generation company Ersa[1] in the Rybnik region, which has an installed capacity of 1,775 MW. Ersa owns 100% of Everen, a company marketing the electricity generated by all the EDF group's plants in Poland. The renewal of four coal-fired power generation units of 220 MW each by one 900 MW supercritical unit was decided by EDF's Board of Directors, and publicly announced on 5 December 2011. The plant's factory block will be supplied by Alstom. The Rybnik site will be characterised by combining the burning of biomass and coal to generate up to 10% of green energy.
- the Group controls the EC Wybrzeze co-generator[2] in the Gdansk region. ECWybrzeze has an installed capacity of 331 MW and 1,199 MWth;
- the Group also controls the co-generator of the town of Krakow, EC Krakow[3]. EC Krakow has an installed capacity of 460 MW and 1,118 MWth.
- Finally the Group controls the co-generator Kogeneracja[4] in the town of Wroclaw. Its installed capacity is 363 MW and 1,124 MWth. Kogeneracja owns 98.4% of the heat and power generation company, EC Zielona Gora (whose installed capacity is of 221 MW and 296 MWth).

The company Energokrak owned by Ersa, EC Krakow, EC Wybrzeze and Kogeneracja, oversees the coal and biomass supply of all EDF group sites in Poland.

In the field of environmental protection, the EDF group is a leader in biomass power generation. Calls to tender were issued in spring 2011 as part of the programme of investments in clean-up facilities (desulphurisation and denitrification).

In November 2009, EDF and Polska Grupa Energetyczna (PGE, Poland's leading electricity operator, which is listed on the Warsaw stock exchange) signed a cooperation memorandum in the field of nuclear energy. The subject of the memorandum included the carrying out of feasibility studies for developing nuclear reactors in Poland and the building of the first reactor in Poland before the end of 2020. The conclusions of these studies, which were completed mid-2010, confirm the interest of including nuclear energy in Poland's energy mix. Following PGE's letter of invitation sent to EDF in June 2011, the two groups are discussing the terms of the possible continuation of their partnership.

On 21 December 2011, EDF announced its acquisition of interests held by EnBW in Poland. These acquisitions, which were finalised on February 16, 2012, concerned EDF International's acquisition (indirect) of 32.45% of the shares in ERSA, 15.59% of the shares in the co-generator Kogeneracja and 25% of the shares in the shared EDF Polska CUW service centre.

6.3.3.1.1.2 Hungary

In Hungary, the Group has electricity generation, marketing and distribution businesses, through two subsidiaries: Budapesti Erömu ZRt (BE ZRt) and EDF DÉMÁSZ ZRt.

2011 was characterised by a still fragile economic situation. Concerns about Hungary's economy increased in the markets, leading to a sharp drop in the value of the Hungarian forint. The situation was made worse by new measures taken by M. Orban's government (following on from a 1.05% tax on revenue called the "crisis tax" that was introduced in 2010) against foreign companies, in particular in banking and energy sectors, over which the government tries to increase its influence.

BE ZRt

At 31 December 2011 EDF owned 95.6% of BE ZRt, a company generating heat and electricity. BE ZRt has an installed net installed capacity of 404 MWe and 1,267 MWth, and supplies 60% of the Hungarian Capital's heat needs.

Almost all BE Zrt's electricity output (1.7 TWh p.a.) was sold, up to the end of 2008, to a single Hungarian purchaser, Magyar Villamos Muvek Zrt. (MVM) through three long-term power purchase agreements (PPAs). These contracts were cancelled with no compensation from the Hungarian government at the end of 2008 after the European Commission demanded their termination on the grounds that they constituted illegal State aids contrary to competition rights. Since 1 January 2009, BE ZRt has sold half its electricity through a new eight-year commercial contract with MVM, and the other half to the power system operator MAVIR within the framework of a regulatory mechanism with cogeneration support. Initially valid until 31 December 2010, this mechanism was extended until June 2013 for BE ZRt by decision of the Hungarian energy regulator on January 2010. BE ZRt submitted an application to the Hungarian Court of Justice for a review of this decision, in order to obtain an extension until 2015.

However, at the end of 2010, the Hungarian government implemented reforms challenging this mechanism:

- The cogenerated power prices were cut by 15% from 1 January 2011. Then, the cogeneration support was abolished on 1 July 2011, thus ending its sale contract with MAVIR. MVM informed BE ZRt at the end of 2010 of its intention to request that the sale contract be terminated as it had become unprofitable following the hike in electricity prices. An agreement for BE ZRt was signed at the end of January 2011, thus avoiding litigation between these companies and enabling BE ZRt to continue selling half of its cogenerated electricity to MVM until 2016.
- At the same time, heat prices governed by a commercial contract were frozen from April 2011, and then set by decree, on 1 October 2011, at a level well below the contractual prices. Faced with a critical situation, on account of the Hungarian government's amendments to the regulatory framework, the company appealed to the regulator, who reviewed its tariff schedule twice. Following the second review, the regulatory

(1) As of 31 December 2011, EDF held an indirect holding of 64.9% in Ersa. EnBW held a holding of 32.45%
(2) EDF holds an indirect holding of 99.7% in ECWybrzeze.
(3) EDF holds a direct holding of 94.31% in EC Krakow.
(4) As of 31 December 2011, EDF held an indirect holding of 34.41% in Kogeneracja. EnBW owns 15.59%.

framework (decree of 29 December 2011) set out acceptable remuneration conditions for the 2012 period of the 2011-2012 heating season.

Because the forced termination of long-term electricity sales contracts led to both BE ZRt and its shareholder EDF International sustaining large losses, the two companies are currently pursuing several legal and arbitral proceedings against Hungary and the European Commission, described in section 20.5 ("Legal proceedings and arbitration").

On 30 December 2011, EDF International lodged an application statement with the Permanent Court of Arbitration in The Hague against the Hungarian state with a view to compensation for the loss of its PPAs. The losses arising from the heat prices in 2011 were mentioned in this statement as a precautionary measure.

EDF Démász ZRt

EDF DEMASZ ZRt is wholly-owned by EDF and distributes and markets electricity.

Regarding its marketing activity, under the universal service concept (as defined by the Hungarian Government decree pursuant to the Hungarian Electricity Act of 2007) EDF DÉMÁSZ ZRt supplies electricity to individuals, small businesses and public institutions in the south-east region of Hungary; and since 31 December 2009, the company markets electricity and gas across Hungary to customers who opted for the open market. EDF DÉMÁSZ ZRt brings together the two commercial brands on the Hungarian market: EDF DÉMÁSZ for residential customers and EDF Energia for professional customers. In 2011, EDF DÉMÁSZ ZRt sold 4,977 GWh to 767,488 customers, of which 3,200 GWh was on the open market.

Regarding its distribution business, the company EDF DÉMÁSZ Hàlozati Elosztó Kft, a wholly-owned subsidiary of DÉMÁSZ ZRt, has operated since 1 January 2007, in response to the legal requirement that network activities be separate from generation/supply activities. It owns the electricity network assets (31,946 km of high, medium, and low-voltage lines) and operates the regulated distribution business in Hungary's south-east region (19.6% of the country), supplying power to 775,066 delivery points.

At the end of 2011, EDF DEMASZ commissioned a 1.1 MW power station fuelled by biogas from pig manure.

The Group intends to grow its share of this market and is looking into various capacity expansion projects, notably through gas-fired combined cycles.

6.3.3.1.1.3 Slovakia

The Group operates in Slovakia through a 49% holding in the distribution and marketing company Stredoslovenská Energetika, a.s. (SSE), based in the central province of Zilina, which covers about one third of the country's territory.

In accordance with the shareholders' agreement entered into on 25 June 2002 with the Slovak National Property Fund, the EDF group names three of the five members of the SSE Executive Board, including the Chairman, and has one representative among the nine members of the Supervisory Board. At the General Meeting, decisions are made unanimously by the two shareholders.

In order to be in compliance with regulatory requirements of regulated and deregulated activity separation, SSE's regulated activities have been transferred from 1 July 2007, to its 100% owned subsidiary Stredoslovenská energetika-Distribúcia a.s ("SSE-D").

At 31 December 2011, SSE-D owned around 33,400km of high, medium and low-voltage power lines and 720,600 delivery points. SSE supplied 4,852 GWh to 641,195 customers. The 10 MWe solar power plants commissioned in December 2010 ran at full capacity throughout 2011. SSE also owns three small hydroelectricity power stations of 3 MW capacity, as well as a gas turbine of 50 MW dedicated to the sale of system services to the transport network operator - SEPS.

SSE plans to launch a gas marketing business in 2012. In addition, SSE is seeking to consolidate its position and is studying projects to develop generation capacity whether through combined cycle gas in the region or renewable energy - small hydroelectricity, biomass, or micro co-generation plants.

6.3.3.1.2 Russia

The EDF group operates in Russia, providing energy services through Fenice and its Russian subsidiary Fenice Rus, which it wholly owns and which was set up in November 2009 to supply energy services to industrial companies, including energy efficiency services. Two first contracts have already been agreed by Fenice Rus with Russian companies. Fenice also owns 50% of the company InterEnergoEffect, a joint venture set up with the Russian company Inter RAO (a mostly state-owned listed company) with the objective of developing energy efficiency projects in Russia. Since its creation, Fenice Rus has completed the building phase of the first two contracts, which are now fully operational, enabling the company to make a small profit after its first year of operations. A third contract was also signed and will be operational before summer 2012. Other projects are under discussion (both for Fenice Rus and InterEnergoEffect) with industrial companies of different activities sectors.

In Russia, the Group continues working with the major players of the electricity industry: Rosatom, Gazprom, Inter RAO, MRSK or RusHydro.

The cooperation agreement that the Group signed with Rosatom on 19 June 2010, formed the basis of a strategic partnership. The areas of cooperation are: nuclear fuel, R&D, the sharing of expertise in the fields of generation and engineering (strengthened since the Fukushima accident) and possible shared projects in third-party countries. The works are coordinated by a joint steering committee that was set up in November 2010.

On 16 September 2011, EDF signed a four-party shareholders' agreement with Eni, Wintershall and Gazprom for the company South Stream Transport AG, which is responsible for developing and building the underwater section of the South Stream gas pipeline. EDF's has a 15% stake in the project.

The partnership with Inter RAO continues and has led to the signing of a memorandum of understanding on 17 June 2011, on the fringe of the Saint Petersburg Forum, which provides for several areas of application: energy efficiency, optimisation of generation or distribution assets, trading, marketing and projects in third-party countries.

In 2011, through ERDF-I and MRSK its Russian counterpart, ERDF finalised an agreement on managing the Russian electricity distribution company of the Tomsk region, TRK. After an initial agreement of 18 March 2011 covering the main terms and conditions, and after due diligence, ERDF and MRSK signed an agreement on strategic cooperation on 17 June 2011, to which are appended the final terms of the management contract. At the same time, ERDF-I started incorporating its subsidiary in Russia, ERDF Vostok, which will hold the contract and enable the operational activity to begin at the beginning of 2012, once administrative consent has been given.

6.3.3.1.3 Benelux

Benelux is a region that includes important interfaces with the Franco-German marketplace and is an important centre for the European natural gas market due to its significant import and transit infrastructures and the hub of Zeebrugge. In late 2009, the EDF group increased its presence in Benelux with the acquisition of EDF Luminus (formerly SPE).

EDF Belgium

Through a long-term cooperation agreement with Electrabel in nuclear energy, EDF holds 50% of the Tihange 1 nuclear power plant through its wholly-owned Belgian subsidiary, EDF Belgium. The capacity attributed to EDF represents 481 MW (or approximately 3% of Belgium's generation capacity). Tihange 1's generation, which is attributed to EDF Belgium, was sold to EDF Luminus through a long-term contract that will expire in 2015, during the course of which the plant will have reached its maximum lifetime of 40 years, which was set by the Belgian legislator in 2003.

EDF Belgian transferred its commercial activities to EDF Luminus in October 2010.

EDF Belgium continued with development activities for two natural gas-fired combined cycle plant projects, to obtain the necessary licenses and permits. In accordance with EDF's commitments to the European Commission as part of EDF Belgium's acquisition of a majority stake in EDF Luminus in November 2009, EDF Belgium has initiated the process of divestiture from one of these projects. Therefore, in July 2011, the CCGT project "Dils Energie" was sold to the Advanced Power/Siemens Project Ventures consortium.

CCGT's project, Nest Energie, located in Evergem obtained all the permits: environmental permits in June 2011, operating permits in August 2011 and building permits in November 2011. The "Nest Energie" project was transferred in October 2011 to EDF Luminus, which will take responsibility of the Group's commitments with regard to the European Commission.

EDF Luminus

In 2009, EDF took over the company EDF Luminus (formerly SPE), in which it has a 63.5% stake. The Belgian identity of the company was preserved, in accordance with EDF's wishes through the signing of a new agreement with the Belgian shareholders that represent different regions of the country and which chose to continue their holdings in the company (36.5% of the share capital). This takeover also enabled EDF to contribute to developing competition in the Belgian market.

In 2010, EDF and EDF Luminus teams worked together on a major integration project with the aim of sharing good practices and identifying synergies to be implemented between the two companies. The company's name was changed from SPE to EDF Luminus in November 2011. This new name clearly shows the presence and support of EDF, global leader in the electricity industry and major player in renewable energies, while consolidating the company's local base and Belgian identity.

EDF Luminus has the second largest share of the Belgian energy market. The company accounts for nearly 13% of the country's installed capacity, with 2,001 MW installed.

EDF Luminus generated 6,702 GWh of electricity in 2011. The company employs approximately 1,000 people.

EDF Luminus in Belgium

	Installed capacity		Output	
	MW	%	GWh	%
Nuclear (excluding 100 MW drawing rights on Chooz B)	418.5	22.0	3,968	59.2
Thermoelectric	1,302.7	68.5	2,396	35.8
Hydroelectric	72.6	3.9	136	2.0
Renewable energies	106.8	5.6	202	3.0
TOTAL	**1,900.6**	**100**	**6,702**	**100**

EDF Luminus owns 10.2% (418.5 MW) of the Tihange 2 and 3 nuclear plants (commissioned in 1983) and Doel 3 and 4 (commissioned in 1995), which have a lifetime of 40 years. EDF Luminus also owns drawing rights of 100 MW in Chooz B, based on a guaranteed baseload depending on the average availability of the French fleet.

EDF Luminus' generation fleet consists mainly of power stations fired by natural gas, and a few "run-of-river" hydroelectric plants. EDF Luminus operates two fossil fuel-fired plants at Monsin and Ham which operate one and two gas turbines, respectively, which are suitable for the large variations in electricity demand. EDF Luminus also operates four combined cycle power plants in Angleur, Ringvaart, Seraing and Ham. In the latter, recoverable heat from the steam turbine cycle is used for the district heating network. EDF Luminus finally has all the required permits for building gas power plants at Navagne (in Wallonia) and at Evergem (in Flanders), each of which has potential installed capacity of 890 MW.

EDF Luminus has renewable energy activities through its wholly-owned subsidiary SPE Power Company (SPEPCO), with onshore wind turbines distributed across 20 sites in Wallonia and Flanders. The company was among the leaders in wind power in Belgium, with 55 wind turbines representing an installed capacity of 106.8 MW. Under its Luminus brand, EDF Luminus delivers electricity and gas to approximately 1.69 million delivery points for business and residential customers in Belgium.

The Netherlands

Through a joint venture – Sloe Centrale B.V. – EDF and Delta own an 870 MW gas-fired power station in the south-east of the Netherlands, its two 435 MW units were commissioned in 2009. In 2011, the total output was less than in 2010, due to an unscheduled shutdown for repairs at the station in the first quarter of 2011.

On 3 November 2010, EDF and Delta signed a one-year collaboration agreement for the potential development of another nuclear power plant in Borssele, in Zeeland province in the Netherlands. This agreement expired on 2 November 2011. To promote good relations with Delta, EDF offered them help in conducting additional studies. On 23 January 2012, Delta announced it was suspending the project for a few years.

6.3.3.1.4 Switzerland

The Group is present in Switzerland through its investments in Alpiq Holding SA (25%) and in hydropower generation facilities in Châtelot (50%) and Mauvoisin (10%).

The EDF group has a 25% stake in Swiss energy company Alpiq Holding SA (Alpiq). Alpiq is a leading player in the European energy market which resulted from the merger in 2009 of Swiss utilities Atel and EOS and the contribution by EDF of its energy rights and associated capacity and loads in the Emosson dam in Switzerland. It is an integrated electricity company of significant size in the heart of the European electricity market, active across the entire business chain of energy generation, networks, trading, marketing and services, and present in more than 20 European countries.

Based on its sales revenues for 2011 as published by Alpiq (13,984 billion Swiss francs), Alpiq is Switzerland's leading electricity company (192 TWh sold in 2011, mainly on wholesale markets and to key European customers in southern Europe and in central and eastern European countries). Alpiq also supplies approximately 100,000 customers in north-west Switzerland. This business is based on major generation and transmission assets in Switzerland and in countries where Alpiq is developing its business. In 2011, Alpiq had a total installed capacity of 7,595 MW and output of 21,489 GWh (excluding long-term contracts), shown in the table below:

	Installed capacity		Output	
	MW	%	GWh	%
Nuclear	776	10	6,207	29
Thermoelectric	3,598	47	9,459	44
Hydroelectric	3,032	40	5,500	25
Renewables	189	3	323	2
TOTAL	**7,595**	**100**	**21,489**	**100**

2011 was marked by a worsening economic situation, which greatly affected Alpiq's results. Alpiq reported a loss of 1.3 billion Swiss francs after value corrections, depreciations and provisions of 1.7 billion Swiss francs charged to the 2011 financial year.

In order to tailor its strategy and organisation to the new market conditions and to re-establish its financial manoeuvrability, Alpiq adopted a global restructuring plan in November 2011 to refocus the Group on its core market (Switzerland) and profitable sectors in Europe, to simplify its organisation (in particular its activities in energy markets), to reduce its operating expenses (around 100 million Swiss francs at end-2012, including 450 lay-offs) and to reduce its debt (to between 1.5 billion to 2 billion Swiss francs) by cutting its investment programme and selling assets.

In particular, on 15 February 2012, Alpiq finalised contracts with Delmi for the sale of its 20% interest in the Italian company Edipower for around 200 million Euros. Other divestment, such as the sale of the German group of energy services Apiq Anlagentechnik (AAT), are being prepared, despite the difficult market conditions.

Following the departure of Giovanni Leonardi, Alpiq's CEO, in September 2011, the chairman of the board of directors, Hans E. Schweickardt, was appointed as interim CEO.

Furthermore, in accordance with Article 33 of The Electricity Supply Act (LApEl), Alpiq must transfer, by December 2012 at the latest, ownership of its transmission network to Swissgrid, in which it already holds a 33% interest (though Alpiq AG and Alpiq Suisse SA).

Alpiq continues to expand in Europe and Switzerland:
- 7 January 2011: commissioning of the 6.9 MW wind farm at Le Peuchapatte in the Jura, with an expected output of more than 12 GWh;
- 1 July 2011: commissioning of the 408 MW gas-fired combined cycle plant at Bayet (Allier), with an expected output of more than 1,550 GWh;
- July 2011: Nant de Drance SA, in which Alpiq holds an interest of 54%, decided to increase the capacity of the facilities of the Nant de Drance pumping-turbining project from 600 to 900 MW;
- October 2011: Alpiq won a contract of 178 million Euros for supplying the north Italian public authority (CONSIP) with electricity.

Lastly, in 2011, Alpiq commissioned an extension to the Bulgarian wind farm fleet Vetrocom with additional power of 22.5 MW, thus bringing the power of this fleet to 72.5 MW.

Following the events of Fukushima, the Swiss Confederation decided to stop the examination of nuclear new build applications. Alpiq therefore had to write off its development expenses to the amount of 35 million Swiss francs relating to the nuclear new build project in Niederamt.

6.3.3.1.5 Austria

Austria is located in the centre of electricity and, especially, gas interconnections of the European network. It is strongly integrated with the market in Germany and is therefore of interest to foreign investors. Hydropower plants represent 70% of Austria's fleet of generation facilities.

EDF International owns 25% of the holding company ESTAG (corresponding to a minority blocking interest in Austrian law). The Austrian state of Styria owns the remaining ESTAG shares and entered into a shareholders' agreement with the EDF group, giving EDF greater powers than its blocking minority. ESTAG heads a group of Austrian companies operating in the fields of energy, waste treatment and associated services. Centred around Styria, the ESTAG group is also developing its business in the other areas of Austria and some neighbouring countries. Its two main subsidiaries are Steweag-Steg, the leading electricity distributor and marketer in the state of Styria, and Steierische Gas und Wärme (STGW), which ensures the transmission, distribution and marketing of gas and heat in the same region.

6.3.3.1.6 Germany

Following the agreement signed on 6 December 2010 with the German state of Baden-Wurttemberg, EDF's 45.01% holding in EnBW was sold on 17 February 2011. This transaction meant a payment of 4.5 billion Euros on this date further to the advance of 169 million Euros received on 16 December 2010. This divestment reduced the Group's debt by a total of 7.1 billion Euros in 2011. Concerning the arbitration request received by the EDF group on 22 February 2012, see section 20.5.3 ("Litigation having arisen after the closing of the 2011 financial year")

EDF purchased minority interests of EnBW in Poland in early 2012 (see section 6.3.3.1.1.1 ("Poland")) and keeps a 50% shareholding in the company Rheinkraftwerke Iffezheim GmbH, which owns and operates the Iffeizheim hydroelectric power station on the Rhine, in Germany. It has four turbines with total installed capacity of 110 MW. A fifth turbine of 38 MW is under construction, and scheduled to be in service in 2012.

After its withdrawal from EnBW, EDF aims to maintain its presence on the German energy market. To this end, EDF set up a new company, EDF Deutschland GmbH, which has the responsibility on examining development opportunities for the Group in Germany. EDF Deutschland also has the job of representing and lobbying for the Group in Germany.

EDF also owns its own research institute, the European Institute for Energy Research (EIfER), which researches the energies of the future in cooperation with EDF R&D and the University of Karlsruhe (KIT). EIfER is located in Karlsruhe, in the south of Germany, and employs 110 researchers.

The EDF group is also present through its subsidiaries EDF Trading, which supplies nearly 20% of the import coal market for use in German thermoelectric power stations, EDF Gas Deutschland (158 million m^3 of gas storage in northern Germany) and EDF Énergies Nouvelles, which operates 7.6 MW of wind generated capacity and provides wind turbine services through its subsidiary REETEC.

In January 2012, EDF Trading bought out a German wood pellet production company, Holzkontor und Pelletierwerk Schwedt GmBH (HPS). Based in Schwedt-sur-l'Oder, on the Polish border, HPS has a generation capacity of 120,000 tonnes/year. Through this acquisition, EDF has secured biomass supplies for some of its power plants in the UK and Poland.

Finally, EDF has a 2.67% shareholding in Vereinigte-Saar-Elektrizitäts-AG (VSE), a leading energy company in Saarland.

6.3.3.2 Spain

At 31 December 2011, the EDF group owned 31.48% of Elcogas' share capital. Elcogas operates an innovative Integrated Gasification Combined Cycle ("IGCC") "clean coal" plant at Puertollano with a gross capacity of 320 MW powered in IGCC mode by the gasification of local coal and pet coke. In addition to natural gas, this installation allows the use of coal and petroleum cokes, which produce atmospheric emissions that are far below European standards. This facility is the largest solid fuel power plant of this type in the world. In 2011, Elcogas produced 1,393 GWh, including 1,160 GWh in IGCC mode. The Puertollano facility now has a pilot project for CO_2 capture and H_2 production. It is the world's first industrial-sized pilot project associated with an IGCC. With a capacity of 14 MWth, the pilot project can process 2% of the synthetic gas produced by the gasifier and produces 4.3 t/h of CO_2 and 83 kg/h of H_2. It is the process of capturing CO_2 before combustion, upstream of the combustion turbine, based on the process of the chemical absorption using activated amines.

The Group also operates in Spain through several group companies which have subsidiaries in Spain.

Fenice Iberica, the wholly-owned Spanish subsidiary of EDF Fenice SpA (see section 6.3.2.2.1 ("Fenice")), conducts cogeneration operations and provides energy efficiency services. In 2010, Fenice Ibérica acquired a 90% stake in Power Support, a Spanish company that specialises in operating and maintaining cogeneration power plants and energy facilities. This transaction increased Fenice Ibérica's 2011 sales by 66% compared with 2010 to 28.2 million Euros of sales revenues, making it a major player in industrial cogeneration and energy services in the Spanish market.

EDF Énergies Nouvelles (see section 6.4.1.2.2. ("EDF Énergies Nouvelles")) and EDF Trading, through its London trading platform (see section 6.2.1.3 ("Upstream/downstream optimisation – trading")), are also present in the Spanish market.

6.3.3.3 North America

The EDF group operates throughout the North American continent, with a strong presence in the United States.

6.3.3.3.1 North American markets

6.3.3.3.1.1 United States of America

With a total electricity generation of 4,125 TWh in 2010[(1)], the USA is the world's largest energy market. According to studies conducted by the Energy Information Administration (EIA), demand should increase by 0.8% a year between 2010 and 2035[(2)].

In 2010, the USA's energy mix comprised 45% coal, 24% natural gas, 20% nuclear, 10% renewable energy and 1% from other forms of energy. Due to the development of shale gas in the country, natural gas accounted for the largest share of new capacity obtained in 2010. According to the EIA, the USA aims to become a net exporter of liquefied natural gas in 2016, a net exporter of pipeline gas in 2025 and a net exporter of natural gas combined in 2021.

The challenges are numerous for the American electricity sector, which must invest heavily in production and transmission against a backdrop of increasingly strict environmental regulations.

The total investment needed in electric infrastructures should be in the order of between 1,500 to 2,000 billion dollars by 2030 and the EIA estimates that, given the decommissioning of 39 GW of existing capacity, expected future needs will require 223 GW of extra capacity to be created between 2012 and 2035. 320 GW of new capacity was built between 1987 and 2007.

In order to comply with increasing strict environmental regulations, the Environmental Protection Agency (EPA) should publish in the next two years a finalised version of the main new regulations on greenhouse gas, particle, mercury and coal dust emissions, as well as the environmental impact of water cooling systems. The entry into force of EPA regulations on SOx and NOx emissions, scheduled for January 2012, has been delayed by litigation. Plans to reduce carbon emissions do not currently have enough support in the USA for regulation to be passed.

The Fukushima accident in March 2011 introduced an additional element of uncertainty about nuclear development in the USA, even though the safety conditions of American nuclear power stations were satisfied according to Nuclear Regulatory Commission ("NRC") (see section 6.3.3.3.2.1. ("Existing Nuclear business unit: Constellation Energy Nuclear Group (CENG) – Production and technical performance").

Current energy prices are low due to the low prices of natural gas, which is the result of the recent increase in shale gas production and a collapse in demand due to the economic recession.

6.3.3.3.1.2 Canada

In 2010, installed generation and electricity generation in Canada totalled 130.5 GW and 589 TWh respectively. Hydroelectricity stations accounted for the largest part of electricity generated in the country (58%). Canada's and the USA's electricity networks are highly integrated. The Canadian electricity market is structured by province and relatively fragmented.

It is a reduced but solid market in which growth is governed by provincial policies on carbon emissions and renewable energies. Ontario and Québec are the two main markets. British Columbia should soon be the home of the next major growth market. Canada, due to its stability, offsets the "stop and go" development of the US market. In Ontario, energy policies have been strengthened by the election of the Liberal Party in the provincial elections.

6.3.3.3.1.3 Mexico

In Mexico, the public electricity system had an installed capacity of 51.7 GW in 2009, for a gross output of 235 TWh. The percentages of coal and natural gas in the generating mix have been reversed in the course of the last decade: in 2009, public electricity generation comprised 52% natural gas (15% in 1999), 17% oil (47% in 1999), 11% hydroelectricity, 12% coal, 4.5% nuclear, 3.0% geothermal and wind energy and 0.5% diesel. The main player in the market is the Federal Electricity Commission, a state-owned company.

The high prices of electricity for business and industrial companies, together with the favourable conditions of bank loans make wind energy competitive, without the need for subsidies. The federal government aims to increase the share of renewable energy in the energy mix to 7.5% by 2017. There is expected to have been a strong growth in wind energy in Mexico in 2011, due to several large-scale projects in the region of Oaxaca. The recent gain of 4 GW extra capacity in the region of Oaxaca and the current offers in Baja California and in the state of Taumalipas are promising signs for the sector.

6.3.3.3.2. The EDF group's activities in North America

EDF's strategy in the United States of America

The EDF group's strategy focuses on the sectors of high added value in the United States and, more generally, in North America, with the aim of reinforcing its existing positions, benefiting from the Group's expertise and resources, and boosting financial performance.

EDF's activities in North America mainly comprise:

- Nuclear power generation, through Constellation Energy Nuclear Group (CENG), 49.99% owned by EDF, which manages the operation of five nuclear power plants in the US, with a total installed capacity of

(1) Source: Energy Information Administration, Electric Power Annual, data updated in December 2011.

(2) Source: Energy Information Administration, Annual Energy Outlook early release published 23 January 2012.

4.1 GW; and UniStar, wholly-owned subsidiary of EDF, which works on new nuclear developments;
- Renewable energy, in particular wind and solar, mainly in the US (through enXco, a wholly-owned subsidiary of EDF Energies Nouvelles) and, to a lesser extent, in Canada and Mexico (through EDF Energies Nouvelles), where the Group has 1.3 GW of installed capacity and manages an additional 5 GW through operation and maintenance (O&M) contracts;
- transmission and optimisation, across the whole value chain in North American gas and electricity markets, through EDF Trading North America.

In North America, the Group's total workforce was around 3,600 employees at the end of 2011. The EDF group has more than 3 GW of installed capacity and manages 23 GW of extra installed capacity through operating and maintenance or optimisation provided to third parties.

UniStar works on the nuclear new build site Calvert Cliffs 3 in the state of Maryland, using EPR technology. UniStar has recently reviewed the project's development costs and conditions to take into account the current uncertain and unfavourable market conditions. The COLA (construction and operation licence application) for UniStar's Nine Mile Point 3 project (New York State) was accepted for review by the NRC in December 2008. The Pennsylvania Power & Light (PPL) project planned at Bell Bend in Pennsylvania was not selected by the American Department of Energy to obtain a federal loan guarantee. PPL operates two nuclear power plants (Susquehanna 1&2, in Pennsylvania); nevertheless, PPL uses UniStar in the form of a services contract to establish the construction and operation license for this project.

As at 31 December 2011, EDF group held 7.2% of CEG share capital. CEG is a Fortune 500 company based in Baltimore. It owns 50.01% of CENG in joint venture with EDF (49.99%), and supplies electricity, natural gas and energy products and services in the wholesale and retail markets. It owns a diversified fleet of generating units located in the United States and Canada, totalling approximately 11,751 MW of generating capacity at the end of 2011. The company delivers electricity and natural gas through the Baltimore Gas and Electric Company (BGE), its regulated utility in Maryland. CEG generated revenue of 13.7 billion dollars in 2011, a decrease of 4% compared with 2010. The company made a net loss of 306 million dollars for the financial year 2011.

On 28 April 2011, CEG signed a merger agreement with Exeton Corporation (Exelon). The merger was approved by the relevant authorities and has been implemented since 12 March, 2012. As of 13 March, 2012, CEG shares are no longer traded on the New York and Chicago stock exchanges, they have been cancelled and converted into Exelon shares.

6.3.3.3.2.1. Existing Nuclear business unit: Constellation Energy Nuclear Group (CENG)

Since 6 November 2009, the EDF group and CEG have jointly owned Constellation Energy Nuclear Group (CENG) with stakes of 49.99% and 50.01% respectively. Along with the inflow of capital generated by CENG, EDF's holding in CENG enables EDF to participate in the American nuclear industry and to exchange best practices.

Organisation and governance rules of CENG

On 6 November 2009, the EDF and CEG groups reached an agreement governing how CENG is operated.

CENG is governed by a Board of Directors of ten members, five of whom are appointed by the EDF group and the other five, including the Chairman, by CEG. CENG is jointly managed by CEG and the EDF group, excluding issues of safety, security and the reliability of nuclear facilities and compliance with environmental regulation, as well as the appointment of senior managers, for which CEG has a casting vote as it appoints CENG's Chairman. In addition to the Chairman, the Chief Nuclear Officer and the Chief Executive Officer of CENG are also required to be US citizens. The EDF group has the right to appoint the Vice-Chairman of the CENG Board of Directors.

Pursuant to the Operating Agreement, the CENG Board of Directors have a standing audit and finance committees, a standing nuclear safety and operations committee and a standing governance and compensation committee comprised of an equal number of CEG-appointed and EDF group-appointed directors.

Pursuant to the Operating Agreement and subject to certain exceptions and conditions, each of the parties in this agreement may transfer their interests in CENG to a third party, subject to the other party's right of first refusal.

Also, CEG requested CENG to supply various administrative services. The contract in force, which expires on 31 December 2017, comprises both a fixed part, subject to an annual increase, and a variable part based on consumption.

On 16 January 2012, Exelon, CEG, EDF and some of their subsidiaries finalised an agreement concerning a number of modifications to the CENG operating contract. The amendments to the operating contract comprise: EDF's right to appoint CENG's CFO, restrictions of EDF and Exelon concerning the payment of indemnities to certain CENG directors, the obligation for Exelon not to hire CENG and EDF employees for a period of two years from the merger's finalisation date, to answer questions concerning CENG's relations with providers of Exelon's goods and services likely to change the provisions of the operating contract relating to the commercial relations between CENG and Exelon, and finally EDF's and CENG's obtaining certain audit rights to validate the application of the provisions of the operating contract. The agreement with Exelon also includes the indexation terms of sums invoiced by CEG and Exelon to CENG for the supply of administrative assistance services.

CENG's nuclear activities (nuclear electricity generation and operation)

CENG's nuclear business is undertaken in a historically predictable regulatory environment, under the control of the American Nuclear Regulatory Commission.

Capacity

CENG owns and operates five nuclear reactors, distributed across three operating sites. The power plants, which have a combined capacity of 4,055 megawatts (MW), are shown in the table below. All CENG units' licences were extended from 40 to 60 years.

Reactors	Location	Capacity *(MW)*	% owned	Capacity Company-owned *(MW)*
Calvert Cliffs Unit 1	Calvert County (Maryland)	855	100	855
Calvert Cliffs Unit 2	Calvert County (Maryland)	850	100	850
Nine Mile Point Unit 1	Scriba (New York)	628	100	628
Nine Mile Point Unit 2	Scriba (New York)	1,141	82	936
R.E. Ginna	Ontario (New York)	581	100	581
TOTAL		**4,055**		**3,850**

In December 2010, all CENG's nuclear stations were awarded ISO 14001 certification for the Environmental Management System. The output of stations is administered by CEG's trading affiliate, Constellation Energy Commodities Group (CECG), acting as agent for CENG. CECG manages the interface between the market and the appropriate Transmission Network Operators (PJM and NYISO).

Calvert Cliffs

CENG owns 100% of Calvert Cliffs Unit 1 (855 MW) and of Unit 2 (850 MW). Unit 1 entered service in 1974 and is licensed to operate until 2034. Unit 2 entered service in 1976 and is licensed to operate until 2036. Both units are equipped with pressurised water reactors. The Calvert Cliffs' output is sold to CECG and EDF Trading North America.

Nine Mile Point

CENG owns 100% of Nine Mile Point Unit 1 (628 MW) and 82% of Unit 2 (NMP2, i.e. 936 MW of Unit 2's total 1,141 MW). The remaining 18% interest in Nine Mile Point Unit 2 that is not owned by CENG belongs to the Long Island Power Authority (LIPA). LIPA receives 18% of the capacity and power generated by the Nine Mile Point 2 unit in return for payment to CENG of its share of expenses related to the unit, and is responsible for its 18% share of the unit's decommissioning costs. CENG and LIPA are each bound to provide their own financing for Nine Mile Point 2. Unit 1 entered service in 1969 and is licensed to operate until 2029. Unit 2 entered service in 1988 and is licensed to operate until 2046. Both units are equipped with boiling water reactors ("BWRs"). CENG's share of Nine Mile Point's output is sold to CENG and to EDF Trading North America.

Along with the purchase of Nine Mile Point 2, CENG concluded a Revenue Sharing Agreement (RSA) with a ten-year term and relating to each of the units, with each of the former owners of Nine Mile Point 2. The RSA (which only applies to the 82% that CENG owns of NMP 2) came into force on 1 December 2011, when the Nine Mile Point 2 PPAs expired in November 2011, and it will expire in November 2021. By virtue of RSAs, 80% of the difference between the market price and a benchmark price specified in the RSA will be paid back to the former owners. The RSAs are linked to the operating of the units (if the output is not available insofar as the power station is not functioning, there is no obligation to supply power from other sources).

Ginna

CENG owns 100% of the Ginna nuclear facility. Ginna consists of a 581 MW reactor that entered service in 1970 and is licensed to operate until 2029. Ginna is a pressurised water reactor. Until 2014, CENG will sell 90% of the output and capacity to the site's former owners, by virtue of a PPA associated with the units. The remaining output of 10% is sold to CECG and EDF Trading North America.

Output and technical performance

CENG's stations generated 31.1 TWh of nuclear electricity in 2011[(1)].

	Output		Load factor	
TWh	2010	2011	2010	2011
Calvert Cliffs 1	6.7	7.6	90.0%	100.9%
Calvert Cliffs 2	7.2	6.8	97.2%	91.7%
Nine Mile Point	5.3	4.6	97.5%	84.0%
Nine Mile Point	7.3	7.8	89.7%	95.4%
R.E. Ginna	4.9	4.3	97.2%	84.7%

The Calvert Cliffs and Nine Mile Point units operate on 24-month refuelling outage schedules, while the Ginna plant is on an 18-month refuelling outage schedule. CENG nuclear plants had a load factor of at least 90%. CENG's technical performance is the result of sustained efforts to reduce the duration of maintenance outages, based on best US engineering practices, and on the analysis of the criticality of components and spare parts considering safety and availability.

(1) Sources : IAEA and CENG's 10- K 2011 report.

Nuclear Safety

Nuclear safety is the highest priority of the operating and maintenance of CENG's nuclear power stations. The Steering Committee, managed by the Chief Nuclear Officer, is in charge of the rules of conduct and processes necessary for the company to meet its safety targets. These measures aim to promote model behaviour, personal responsibility, problem identification and resolution, risk analysis and appropriate decision making, all to help create a safe working environment. CENG's nuclear power stations comply with the Clean Water Act.

Nuclear fuel

Supply of nuclear fuel

The supply of fuel for nuclear generating stations includes the:

- purchase of uranium (concentrates and uranium hexafluoride);
- conversion of uranium concentrates to uranium hexafluoride;
- uranium hexafluoride enrichment;
- manufacture of nuclear fuel assemblies.

CENG concluded long-term contracts for the purchase, conversion and enrichment of nuclear fuel, as well as for the building of fuel road assemblies. These commitments should enable it to have sufficient quantities to meet its estimated needs for future years. These contracts extend from 2011 to 2028. The nuclear fuel markets are competitive markets and sometimes experience volatile prices, but the Group's management do not expect any problems meeting its future supply needs.

Storage of Spent Nuclear Fuel – Federal Facilities

The Nuclear Waste Policy Act of 1982 (NWPA) required the federal government, through the Department of Energy (DOE), to develop a repository for the disposal of spent nuclear fuel and high-level radioactive waste. In accordance with the NWPA and with the standard contracts agreed between CENG and the DOE, CENG is bound to pay the DOE one thousandth (0.001) of one dollar per KWh of its net nuclear power output, to pay the costs of highly-radioactive waste (the DOE tax). This expense is recorded as "DOE tax of nuclear waste repository". However, even though the NWPA and the contracts agreed between CENG and the DOE mention that the DOE should have taken charge of the highly-radioactive nuclear waste by 31 January 1998, at the latest, this deadline was not respected. The DOE's delay has meant that CENG had to take measures with additional costs to arrange and maintain the storage of spent fuel on site at its three nuclear sites. CENG has installed or plans to install independent spent fuel storage installations (ISFSI) at each of its sites.

Each of CENG's subsidiaries that manages a power station has filed statements against the federal government following losses sustained by the DOE's delays. In 2011, CENG concluded payment agreements concerning the Calvert Cliffs and Ginna sites, under which the government accepts to compensate CENG for the costs of storing highly radioactive waste, incurred or to be incurred by 2013 due to the DOE's delays. Each payment agreement sets an initial compensation amount (the first was paid in 2011 and the other will be paid in 2012) as well as a compensation package for the following years. The first subsequent annual claim for each payment agreement was filed in 2011. CENG and the government jointly decided that these agreements could be extended to cover the costs incurred after 2013. Because of these agreements, CENG has withdrawn the statements filed against the government for these two sites, and accepts to indefinitely waive possible rights of claims deduction from the DOE for these two sites. The payment agreements do not cover the costs that will be incurred after the term of the agreement (currently 2013) and do not free the DOE of its obligation of recovering and taking charge of waste.

The claim relating to the Nine Mile Point site is currently suspended, due to disputes and negotiations linked to other related matters. However, Nine Mile Point finalised an agreement with the DOE that guarantees Nine Mile Point payment agreement general conditions (the sum to be paid is yet to be determined) that are very similar to the general conditions of the Calvert Cliffs and Ginna sites.

When the Ginna site was purchased, the former owner agreed to maintain the obligation of paying the DOE a single amount for the period preceding CEG's purchase of the plant. CEG therefore decided that the first ten million dollars received in compensation from the DOE for the Ginna site would be paid to the former owner. As part of EDF's acquisition of CENG shares, EDF and CEG decided that all the damages and interest paid by the DOE, other than those related to this debt owed to the Ginna site's former owner, concerning costs incurred by each site prior to the date of EDF's acquiring CENG, would be paid to CEG, either directly by the government or indirectly by CENG. All the other amounts received by the DOE as a reimbursement of damages lie with CENG.

Storage of spent nuclear fuel – On-site facilities

Calvert Cliffs has a license from the NRC to operate an on-site independent spent fuel storage installation that expires in 2012. Sufficient storage capacity exists within the plant and currently installed independent spent fuel storage installation modules to contain the full contents of the core until 2015. Efforts are currently under way to renew the independent spent fuel installation license and expand its capacity to accommodate operations until 2036.

The installation of an independent fuel storage unit at the Ginna plant was completed in 2010.

The installation of Nine Mile Point storage should be completed in 2012. Until then, the Nine Mile Point plant has sufficient storage capacity until the commissioning of the new independent storage unit.

Cost of decommissioning nuclear facilities

CENG is obligated to decommission its nuclear power plants after these plants cease operation. In accordance with NRC Regulations and relevant State requirements, CENG has established reserves exclusively dedicated to cover the cost of plants decommissioning. CENG's Investment Committee decides on the general investment strategy of these reserves, including the allocation between asset categories.

Decommissioning, which should be carried out over a period of around sixty years after the plants are shut down, will be completed in the 2080s. Should the return on the investments covering the costs be lower than expected, or should the costs or decommissioning times be amended, CENG must inject additional funds, which could have a negative effect on CENG's financial income and cash position. No injection of funds was made in the financial years ended 31 December 2009, 2010 and 2011. The only disbursements made from these reserves were for authorised expenses, such as tax, trust and management costs.

The NRC requires that, every two years or more often if necessary, American companies that generate nuclear energy submit a report on the state of reserves and reasonable assurance that they will be available when their plants are decommissioned. Should a financial deficit be recorded, the NRC could demand an additional financial guarantee in the form of additional payments to the reserves, letters of credit or members' guarantees. The latest report was submitted by CENG in March 2011; no additional financial guarantee was demanded by the NRC.

At 31 December 2011, the market value of the decommissioning reserves was USD1.4 billion.

6.3.3.3.2.2. EDF Trading North America

EDF Trading is a global leader in the markets of electricity, gas, coal, freight and environmental products. It is one of the largest buyers of carbon credits of international clean development mechanism (CDM) projects and owns one of the market's most successful portfolios. EDF Trading is one of the largest providers of services to North America's wholesale energy and gas industries, with a generation capacity of 18 GW under management. It also transmits about 7.5 billion cubic feet of gas a day. The company actively trades renewable energy and biogas certificates in the US, on primary and derivatives markets. In addition, the company is a leader on the international coal market, with long-term contracts for operating coal terminals and rail and river transport for its exports to the east coast and the Gulf of Mexico.

EDF Trading North America is present in the following four North American markets: electricity, environmental products, gas, coal and freight.

North American energy markets

Because of its access to wholesale energy markets, EDF Trading adds value to the assets owned or managed by EDF group companies as well as outside companies. It is a major actor on wholesale electricity markets in Europe and North America. In North America, EDF Trading is a major player on the electricity market and is, in the US, one of the main providers of energy management services for energy generation companies. It provides services of fuel shipment, planning, sourcing and management, risk management as well as nodal pricing, and participates in all North America's large electricity hubs. In 2011, EDF Trading continued consolidating its assets base and purchased its first peaking CCGT plant in the US. It also extended its energy management services to different US states. It currently manages output of some 18 GW. EDF Trading works in close cooperation with the EDF group to implement a post-2014 cover agreement for its American nuclear assets.

North American environmental products market

The company is very active in the markets for certificates of renewable energies, biogas, emissions and weather derivatives in the US. In 2011, it concluded its first biogas transaction in the US and its first contract for weather derivative products based on atmospheric precipitation. It also cooperated with the American company enXco, EDF group subsidiary, as part of different commercial development opportunities.

North American gas markets

EDF Trading is a leader of global gas and LNG wholesale markets, with geographic operations of a very large scale. In 2011, the company signed several supply agreements in the US and set up a new gas production business. It also signed a pre-agreement with GMX Resources for the payment of output of around 14.8 billion cubic feet of American natural gas.

North American carbon and freight markets

EDF Trading is a leader in global physical and financial coal markets. EDF Trading carries on a fully integrated freight and coal business, with numerous supply sources across the globe, including South Africa, Asia, the US and eastern Europe. The company sources, stores, mixes, delivers and trades coal and provides completed management of the supply chain, from the port of loading to the power plant. In the US, it continued to develop its activities on the internal market.

6.3.3.3.2.3. EDF Énergies Nouvelles in North America

United States

The Group is also present in the United States through EDF Énergies Nouvelles' wholly owned subsidiary enXco, a renewable energies independent producer. At 31 December 2011, EDF Énergies Nouvelles had 1,337.4 MW of wind, solar and biogas capacity in the US, and provided wind and solar operating and maintenance services to third parties. EnXco commissioned the wind farms of Lakefield (205.5 MW in Minnesota) and Shiloh 3 (102.5 MW in California) respectively in 2011 and in January 2012. The building of a 140 MW wind farm in California was also begun. In addition, enXco acquired the Chestnut Flat 38 MW wind farm in Pennsylvania.

The development of solar power projects also continued, with the signing of a 25-year electricity purchase contract for the 130 MWc Catalina project located in California, the commissioning of which is scheduled for 2012 and 2013. Another electricity purchase agreement was signed with the Marine Energy Authority for 31 MWc in 2011.

As part of its operating and maintenance activity, enXco manages more than 5,000 turbines for its own account and for third parties, for a total capacity of more than 5 GW at 31 December 2011.

Canada

In 2008, EDF Energies Nouvelles won a call for tenders issued by Hydro Québec for the building of five wind farms of a total capacity of 954 MW in Québec. Three of these projects of a capacity of 380 MW are under construction to be commissioned in 2012. The second phase of one of these projects, Lake Alfred, of a planned capacity of 150 MW will be completed in 2013.

Two other projects of a total capacity of 49.2 MW are under construction after winning, in December 2010, the call for tenders issued by Hydro Quebec.

EDF Énergies Nouvelles has also developed a portfolio of photovoltaic solar projects in Ontario. The 11.8 MWc St Isidore B power plant was commissioned in 2011 bringing the total installed capacity to 70.5 MWc at 31 December 2011.

Mexico

In Mexico, a country with considerable wind development potential, EDF Énergies Nouvelles built and commissioned the La Ventosa wind farm in 2010. This site of 67.5 MW is located in the very windy region of Oaxaca, in southern Mexico.

In 2011, EDF EN obtained from Eolia Renovables de Inversiones two wind energy projects under development for a total capacity of 324 MW, both of which are located in Oaxaca. The building of one of the two projects (164 MW) began at the end of 2011 and should be completed in 2012. The other project should begin in 2012 and be completed in 2013.

6.3.3.4 Asia-Pacific

The EDF group's activities led by the Asia-Pacific Division are focused on China and the fast developing countries in South and South-East Asia.

Investment in the electricity generation field in Asia and in China in particular is one of the EDF group's major industrial stakes. In nuclear power, in addition to the project to build and operate two EPR reactors, the new projects in this region are intended to give the Group access to technological innovations and, at the same time, allow it to develop its industrial expertise. EDF's goal is, thus, to maintain its competitive and technological advantages in the international arena for the global nuclear programme to equip the emerging countries and in order to renew the French fleet.

6.3.3.4.1 EDF group's Activities in China

The EDF group has been operating in China for the past 30 years through advisory services in nuclear, thermal and hydropower technologies. Today it is one of the country's largest foreign investors in power generation, with investments in coal-fired thermal plants that have a total installed capacity of 4,980 MW. With the Taishan Phase I project (2 x 1,750 MW), EDF became an investor in an electricity generation project of an EPR nuclear power plant in China. EDF has also formed partnerships offering new investment opportunities in nuclear power and the more technologically advanced coal-fired thermal facilities, as well as hydropower systems, distribution, and renewable energies including wind power.

Nuclear power generation activities

Daya Bay – Ling Ao Power Plants

After leading the design, construction and commissioning of two 1,000 MW nuclear reactors in 1994, and then helping the Chinese group China Guangdong Nuclear Power Holding Co., Ltd. ("CGNPC") with the construction of two units of the Phase I Ling Ao plant (2 x 1,000 MW), which came on line in 2002 and 2003, EDF now assists the Daya Bay Nuclear Operation and Maintenance Co. Ltd. with the operation of these facilities. The high level of performance achieved by these power plants since commissioning is one of the Group's main benchmarks in China.

EDF is currently helping one of CGNPC's subsidiaries, China Nuclear Power Engineering Company Ltd. ("CNPEC"), with Phase II of the Ling Ao project, which consists of building two additional 1,000 MW units on the site. The two Ling Ao phase II units were commissioned in September 2010 and August 2011 respectively.

As of 31 December 2011, EDF owned 30% of the shares of Taishan Nuclear Power Joint Venture Company limited (TNPJVC), the goal of which is to construct and operate two EPR technology nuclear reactors in Taishan, in the province of Guangdong. The duration of the company is set for 50 years, which is the current maximum permitted for a joint venture in nuclear power in China. Through this transaction, for the first time, the Group is an investor in nuclear power generation in this country.

Two years after the pouring of the first concrete of unit 1 for the building of the nuclear island in October 2009, the reactor dome was successfully installed on 23 October 2011. The success of the project will hinge on the complementarities between the skills of the EDF and CGNPC groups. The first unit should be commissioned in 2014 and the second in 2015.

Partnership agreements

The general partnership agreement between EDF and CGNPC signed in 2007 was completed with a memorandum of understanding on the implementation of this partnership signed on 29 April 2010. To this effect, EDF has opened an office in Shenzhen, very close to its Chinese partner.

EDF also signed a partnership framework agreement on 29 April 2010 with China National Nuclear Corporation (CNNC) to encourage cooperation on business management and certain technical areas.

Coal-fired thermal electricity generation activities

EDF has been involved in coal-fired electricity generation in China since 3 September 1997, the date on which the Laibin B power plant concession contract was signed and approved by the Guangxi government.

French Investment Guangxi Laibin Electric Power Company, Ltd. (Figlec).

At 31 December 2011, EDF owned 100% of French Investment Guangxi Laibin Electric Power Company, Ltd. (Figlec), the company that owns the Laibin B power plant (2 x 360 MW of installed capacity) in the province of Guangxi and 85% of Synergie, the company responsible for its operation and maintenance, with the remaining 15% held by local partners. Laibin B was commissioned in November 2000 as part of a Build, Operate, and Transfer (BOT) project, and will be transferred contractually to the Guangxi Government in 2015.

Shandong Zhonghua Power Company Ltd. (SZPC)

As at 31 December 2011, EDF held a 19.6% stake in Shandong Zhonghua Power Company (SZPC), which owns three coal-fired power plants in the Shandong province, with a total capacity of 3,060 MW. The other shareholders are Chinese companies including the Guodian group and the Hong Kong electric company CLP. These power plants were commissioned progressively between 1987 and 2004.

Datang Sanmenxia Power Generation Company Ltd. (DSPC)

As of 31 December 2011, the EDF group held a 35% share of DSPC, owner of the Sanmenxia 2 (Province of Henan) power plant, commissioned in 2007, with installed capacity of 2 x 600 MW, a technology known as "supercritical coal". This equity investment is made through a joint venture with a lifespan set until 2039 by the Chinese authorities. The other shareholders are two Chinese companies including Datang, the majority shareholder in DSPC.

New projects

Along with Chinese electricity generation operators, the Group is studying the opportunity of possible investments in new advanced technology coal-fired power plants known as "supercritical" or "ultra-supercritical" and possibly, in projects implementing CO_2 capture and storage solutions (CCS).

Activities in the gas sector

Beijing United Gas Engineering & Technology Company (BUGET)

As at 31 December 2011, EDF held a 20% stake in Buget, a design, construction, and consulting firm specialised in natural gas distribution. Beijing Gas Group (BGG) is majority shareholder in this company. This company will be wound up in 2014.

Hydropower electricity generation activities

Present since 1985 in this segment, EDF is a recognized player. The Group operated as consultant on several structures installed in China and is looking again at investment opportunities or service offers that will respond to the needs of the Chinese party, which is developing an ambitious hydropower programme.

6.3.3.4.2 EDF group's activities in South Asia

The EDF group's activity in South and South-East Asia is centred on the development of the electrical sector of the Grand Mékong area where Thailand and Vietnam are the economic engines and that offers "Independent Power Plants" (IPP) type opportunities, like the Nam Theun 2 complex in Laos and the combined cycle gas plant Phu My 2.2 in Vietnam. EDF is also interested in design, construction and operation projects for new power generation plants, mainly thermal and hydropower.

6.3.3.4.2.1 Vietnam

As at 31 December 2011, EDF owned 56.25% of Mekong Energy Company Ltd. (MECO), the owner of the Phu My 2.2 combined-cycle gas turbine plant. Phu My 2.2 has a generation capacity of 715 MW and was commissioned in 2005. It is the first Independent Power Producer (IPP) project financed exclusively by foreign investors in Vietnam. MECO's other owners are international subsidiaries of Sumitomo Corporation (28.125%) and Tokyo Electric Power Corporation, Inc (Tepco) (15.625%), both Japanese companies. The BOT contract (Built, Operate, and Transfer) has duration of 20 years. In 2005, EDF provided "turnkey" delivery of the power plant and today, MECO directs the operation.

With regard to an international call for tenders, on 28 July 2011, EDF submitted a tender for the development, financing, construction and operation for 25 years of the 2x560MW coal power plant of Nghi Son 2 in the north of Vietnam, using the best supercritical technology available in Vietnam, enabling the Group to develop its industrial expertise.

EDF also expressed its interest in developing combined cycle gas plants at the Omon site in South Vietnam.

6.3.3.4.2.2 Laos

As at 31 December 2011, the EDF group held 40% of Nam Theun 2 Power Company (NTPC), which owns the hydroelectric complex Nam Theun 2 with installed capacity of 1,070 MW that was built by the EDF group under a "turnkey" contract. NTPC's other shareholders are a Thai company, EGCO (Energy Generating Company) at 35%, and a Laos State company, LHSE (Lao Holding State Enterprise) at 25%. The NTPC Company will operate the plant for 25 years under a concession contract entered into with the Government of Laos. 95% of the electricity generated will be sold to Thailand and 5% to Laos.

Following the commercial commissioning of the entire hydroelectric complex on 30 April 2010 and after having obtained the non-objection for the completion certificate on 3 December 2010 from the Government of Laos, confirming that on this date the project had fulfilled its contractual environmental, social and performance obligations, on 12 July 2011, NTPC also fulfilled its contractual obligations with its lenders for the construction phase, with the declaration of the Equity Release Date. The completion of this key stage stopped any potential claims by lenders against the shareholders, and led to the payment of NTPC's first dividends to its shareholders.

6.3.3.4.2.3 Hydropower electricity generation activities

The EDF group acts as a consultant with regard to hydroelectric projects in Papua New Guinea.

The EDF group has also expressed interest in participating in hydroelectric development projects in Nepal.

6.3.3.5 Latin America, Africa and the Middle East

In Latin America, the EDF group is present in the Brazilian market.

The Group aims to develop its operating modes in Africa and the Middle East, which vary from one geographic area to another, as a vector for growth in the new markets and rapidly developing countries. Additionally, it continues its work providing access to energy.

6.3.3.5.1 Brazil

The EDF group owns 90% of UTE Norte-Fluminense, the company which built and has operated the combined-cycle gas turbine at Norte-Fluminense in the State of Rio de Janeiro since 2004. This power plant has an installed capacity of 869 MW. UTE Norte-Fluminense sells 725 MW to Light under a Power Purchase Agreement (PPA) for a period of 20 years. The balance is sold on the open electricity market. UTE Norte-Fluminense sold 6,975 GWh in 2011.

On 27 June 2011, UTE Norte-Fluminense opened its first solar power plant in the country, in Macaé, comprising 1,764 photovoltaic solar modules, which help to reduce CO_2 by around 170 tonnes a year. EDF plans to conduct other solar generation projects in Brazil.

With a focus on long-term positioning, EDF signed a five-year cooperation agreement with Brazilian companies Eletrobras and Eletronuclear on 23 December 2008, in the areas of hydropower and nuclear energy. The agreement sets the conditions for the joint conduct of feasibility studies for a new hydroelectric project in the state of Para in Brazil (a complex of five hydroelectric facilities on the river Tapojos, in Amazonia, with a total capacity of 10,682 MW), and the sharing of experience and best practice for the rollout of the new Brazilian electronuclear programme.

On 17 July 2009, a Technical Cooperation Agreement was signed in Paris between EDF, Eletrobras, Eletronorte and Camargo Correa. The agreement organizes the technical, economic and environmental feasibility studies for the hydroelectric complex in Tapajos. Specifically, it establishes the organisation and division of roles and responsibilities between

the parties and the schedule for each of the five facilities, up until the receipt of preliminary licenses prior to public auctioning.

Brazil will be the organizing country for the next Soccer World Cup in 2014 and Olympic Games in Rio in 2016. In the scope of preparing these grand sporting events, EDF and Eletrobras signed a new cooperation agreement on 22 July 2010 for preparing the joint implementation of services in the domains of energy efficiency.

6.3.3.5.2 South Africa

Due to the robust growth outlook for the South African economy, the South African Government plans to double the country's installed power generation capacity (from 44 GW to 89 GW) by 2030, with a significant portion of the increase coming from nuclear power. The South African Government remains committed to the use of nuclear power in its future energy mix. According to the energy plan for the country, the final version of which was enacted by the Energy Minister a few days after the Fukushima accident, 9.6 GW of electro-nuclear energy should be commissioned between 2023 and 2030. The aim is to have the following mix by 2030: coal (46%), gas (11%), STEP(1) (3%), hydro (5%), nuclear (13%), wind (10%), solar (11%) and other (1%).

In the field of nuclear generation, the Energy Minister announced a delay in the relaunch of the nuclear programme and requires technology of the highest level of safety possible. Furthermore, an Interministerial committee for the relaunch of this programme was set up at the end of 2011, in which all the Ministers concerned (DoE, DPE, NT, DTI) are represented, with the purpose of improved coordination prior to the call for tenders that will be issued.

The Energy Minister has, in addition, officially launched a call for tenders in the field of renewable energies (solar and wind) for the Cap region. EDF EN will bid for this tender, the second phase of which is set for 5 March 2012.

In the field of thermoelectric and renewable energy, a memorandum of understanding between Eskom and EDF to create the Eskom Power Plant Engineering Institute (EPPEI) in South Africa was signed on 2 March 2011. At first, the courses taken by the future engineers will concern generation. EPPEI then plans to broaden the courses it offers in the future to include electricity distribution and transmission. EPPEI's intake was 45 and aims at providing Eskom with 60 engineers a year after their training for at least the same period of time as their training. In addition to contributing to developing technical skills in the field of energy, EPPEI also aims to harmonise the standards of teaching in Europe and South Africa.

6.3.3.5.3 Morocco

On 11 January 2012, in Rabat, EDF and the Moroccan National Electricity Office (ONE) signed a general cooperation agreement concerning nine themes of common interest. The two operators aim to set up and develop a solid and lasting partnership in all areas of the value chain, including hydroelectric, thermal and renewable energy generation. Their partnership also includes upstream-downstream optimisation, training and regional cooperation.

6.3.3.5.4 Middle East

The Thermoelectric Engineering Generation division with the Transmission System Engineering Centre (CIST) carries out engineering and consultancy activities for building transmission infrastructures and conducting studies of networks in the United Arab Emirates with its Abu Dhabi branch. As of 2012, CIST and CIT will provide engineering services with the EDF subsidiary EDF KSA in Saudi Arabia within the fields of transmission and fossil-fuelled generation.

6.3.3.5.5 Senegal

The very grave crisis in the Senegalese energy sector led the government of this country to ask EDF to assist in diagnosing the situation to define an emergency plan to permanently re-establish the quality of service.

EDF has therefore been working since 2010 under a cooperation agreement signed on December 17, 2010 which covers all segments: generation, distribution and supply.

EDF will mainly work on renovating Senelec's generation fleet, which help to limit the use of the least well-performing producers.

EDF is also helping Senegal to define and implement an electricity demand management policy.

6.3.3.5.6 Access to Energy Mission

Since 2001, the Group has been developing a programme to provide access to energy in developing countries. In rural areas often far from electrical networks, the programme operates by setting up energy service companies that supply families and economic and administrative activities such as education, health, etc. (in Morocco, Mali and South Africa). In late 2011, six companies of this kind were created in five countries (Mali, Morocco, South Africa, Botswana and Senegal). Around 410,000 people benefit from the energy services provided by these companies.

In all of these operations, EDF acts in partnership with other industrial players such as Total, Tenesol, Nuon, Fres Calulo, BPC or Matforce and now systematically seeks to include local players capable of taking over when conditions for profitable and durable operation are met.

In South Africa, EDF currently owns a 50% interest in KES (Kwazulu Energy Services). In June 2009, a new local operator Calulo acquired 15% of the capital of KES. The remaining 35% is owned by Total. Created in 2002, KES initially developed its business through photovoltaic kits in KwaZulu-Natal. Since 2007, KES has conducted its activity on the Eastern Cape. In late 2011, KES supplied electrical energy, and also gas for cooking, to around 109,000 people with a goal of 270,000 in the next three to four years in the two provinces.

In Botswana, EDF has been chosen by BPC, the national electric operator, to assist it as strategic partner in the implementation of its decentralised electrification programme, essentially using photovoltaic systems over the entire area. It was also in July 2010 that EDF acquired 45% of a joint subsidiary with BPC. This local company – BPC Lesedi – is responsible for rolling out the programme (300,000 to 400,000 people over the next five years) relying on a network of franchises.

In Senegal, EDF has a 70% holding in the company ERA, alongside its partner Matforce. ERA operates the rural electrification concession of Kaffrine Tambacounda Kédougou, which must start its activity at the beginning of 2012 (objective: 180,000 people within three years).

(1) Energy transfer pumping station, definition in this reference document's glossary and in section 6.2.1.1.4.1 ("EDF's fleet of hydropower generation facilities").

6.4 Other activities and cross-divisional functions

6.4.1 Other activities

6.4.1.1 Optimisation of Group trading

6.4.1.1.1 Roles and missions of the Commerce Optimisation Trading Group division

To strengthen cooperation between entities of the Group with supply, optimisation and trading activities, a new division called Commerce Optimisation Trading Group (COT) was set up at the beginning of 2012. Its functions are as follows:

- to coordinate the sharing of good practices in the commerce, optimisation and trading activities and identify possible synergies;
- to pool certain specific skills within a European network, in particular analysing European energy market fundamentals;
- to host the structuring activities of the Group's gas portfolio and selling to European key accounts of the EDF group.

While strengthening the integration of the different geographic entities in the activities concerned, the EDF group ensures the entities remain decentralised and accountable for their results.

In the field of electricity, each country entity is responsible for optimising its upstream/downstream portfolio. Cooperation between the country optimisers and EDF Trading will however be reinforced in order to take greater advantage of EDF Trading's skills. The new division has the task of facilitating the strengthening of this integration, as well as identifying good practices between the geographic entities in the field of optimisation. It also has analysis skills: analysing European energy market fundamentals, producing long term scenarios of these fundamentals and characterisation the electricity risk profile of the Group's consolidated profile.

By integrating the gas structuring activity created in 2010, the COT division has the job of centralising the audited Group's gas assets in its portfolio so that EDF Trading can ensure European optimisation. All the long-term supply contracts and the portfolio of logistics assets of the different audited Group entities and subsidiaries are thus gradually transferred to the structuring entity. This entity has a risk management delegation framework in accordance with the Group risks policy, and covers, in particular, its market risks through transactions with EDF Trading, the single market interface of local entities and subsidiaries. This entity is also in charge of managing the process of structuring the Group's gas assets: it incorporates the gas needs of the different Group entities for the medium/long term, whether for selling to end customers or for electricity generation. It then structures the portfolio (contracts, energy assets, transmission capacity, etc.) to respond to these needs in optimal economic conditions. This portfolio target structure then serves to frame long-term gas supply contract negotiations and future energy asset changes or acquisitions.

As regards Commerce activity, while taking into account the activity's local dimension, the division has the task of implementing targeted cooperation projects regarding questions that have either a Group or medium/long-term dimension, for example in the areas of information systems, internet use, energy efficiency services or smart electricity systems.

6.4.1.1.2 EDF Trading

EDF Trading is the interface between the EDF group and the energy wholesale markets and provides risk management optimisation services. The company is present on the European and North American electricity markets, as well as on the markets for natural gas (including LNG), coal and products related to freight and the environment. In 2011, EDF Trading reinforced its asset-backed business model. In so doing, it closed its oil desk and fully integrated oil trading into its other activities. In 2011, EDF Trading traded around 3,957 TWh of electricity (Europe and the US), of which 566 billion therms of natural gas, 495 million tonnes of coal and 317 million tonnes of CO_2 (in emission certificates).

The trading activities of EDF Trading are integrated into DOAAT's optimisation strategy. The director of DOAAT (see section 6.2.1.3 ("Upstream/Downstream Optimisation – Trading")) chairs EDF Trading's board of directors.

EDF Trading has offices in Europe, Asia and North America. Its registered office is in London. The company has a staff of 934 employees.

A wholly-owned subsidiary of EDF, it is governed by the British financial market regulator, the Financial Services Authority.

6.4.1.1.2.1 Electricity trading

All the EDF group's subsidiaries benefit from EDF Trading's expertise on the electricity wholesale markets to draw the maximum value from energy assets. EDF Trading also provides services to outside companies. It is a pivotal player on electricity wholesale markets in Europe and North America.

EDF Trading manages EDF long-term electricity export contracts and has a major role in optimising and hedging the production and sale portfolio of EDF in Europe. EDF Trading thus has a considerable portfolio of assets and, in addition, provides risk management services, from short-term balancing to long-term to structured hedging instruments.

In 2011, EDF Trading developed its European asset portfolio, by optimising new EDF gas power plants in France and two virtual hydroelectric power plants in Norway and Spain. It agreed a certain number of long-term transactions in France, Scandinavia, Hungary, Luxembourg and Germany. It also traded commodities on the electricity spot market and derivatives market in Poland. It is also a market maker on the electricity futures market in the UK and Hungary. EDF Trading signed a market access agreement with EDF Luminus (SPE) in Belgium and set up its first structured product to monetize to a maximum the medium-term flexibility associated with EDF Luminus' CCGTs.

In North America, EDF Trading is a major player on the electricity market and is one of the main providers of energy management services for energy generation companies in the US. It provides services of programming, planning, structuring and management of fuel, and risk management as well as nodal pricing; the company is present in North America's largest electricity hubs. EDF Trading is also responsible for optimising a portion of EDF's nuclear generation in the US.

In 2011, EDF Trading continued consolidating its assets portfolio and purchased its first cutting-edge CCGT in the US (Energia, 82 MW). EDF Trading also extended it energy management services to different American states. It currently manages output of some 18 GW. EDF Trading works in close cooperation with EDF Inc. and Group Risks Management Department to implement a new post-2014 hedging risk policy for the American nuclear assets.

6.4.1.1.2.2 Environmental products

EDF Trading is present in markets of carbon, biomass, biogas and weather derivatives, which constitute its environmental products offer.

EDF Trading holds a pivotal position on the carbon emissions market. The company manages EDF's carbon fund: 192 million Euros committed for the purchase of carbon emission reduction (CER) credits (i.e. 66% of the maximum initial commitment of 290 million Euros). This fund is managed by EDF with the purpose of diversifying its sources of emissions quotas and, thereby, honouring its environmental commitments. EDF Trading is actively involved in trading emissions quotas in Europe and carbon emission reduction (CER) credits, CER production and the clean development mechanism (CDM) on a global scale.

The company is also involved in the trading of renewable energy certificates (RECs) and biogas in the US and is one of the largest biomass suppliers in the UK and Poland. As well as being leader of weather derivatives in Europe, EDF Trading is the largest importer and trader of green energy in the UK and Italy.

In 2011, EDF Trading signed a cooperation agreement with Mizuho to market carbon-related products in Japan and China. It currently manages a global portfolio of more than 350 CDM projects. It concluded its first biogas transaction in the US, its first sale of nuclear certificates in Europe, its first CDM project in the Dominican Republic, and, in Georgia, its first weather derivatives based on precipitation. EDF Trading is EDF group's sole biomass supplier and developed its upstream assets thanks to a long-term supply contract for the Polish market as well as acquiring a biomass power plant in Germany in January 2012. It also cooperated with the American company enXco, part of the EDF group, regarding different commercial development opportunities.

6.4.1.1.2.3 Gas trading

Present throughout the world, EDF Trading is a leading player on global gas and LNG wholesale markets. It has the job of optimising the EDF group's position on the European gas market. For this, it has a vast energy assets network dedicated to gas, covering production, transmission, regasification, long-term supply and storage.

In 2011, the company signed several supply agreements in the US and the Middle East. It strengthened its relations with RasGas, in Qatar, by renewing its LNG operating agreement for a further 15 years. It also acquired regasification capacity in the new Dutch port of Gate Terminal and signed an operating agreement with Woodside, an Australian oil and gas company. In November, it delivered its 150th LNG shipment. It set up a new gas production activity in the US. It also signed a contract with GMX Resources for the payment of output of around 14.8 billion cubic feet of American natural gas. For the EDF group, EDF Trading set up a platform to manage the Group's position with regard to the gas market. It also undertook the short-term optimisation of EDF's new gas power plants. A specific entity was set up within EDF Trading to improve hedging services provided to EDF group entities and to help to customise the services provided to EDF's major customers.

6.4.1.1.2.4 Coal and freight trading

EDF Trading is a leader in global physical and financial coal markets. The company is the largest importer of coal in Europe. Its assets include long-term contracts, coal terminals, a modern fleet of bulk carriers, port, rail and marine capacities, and long-term export capacity. EDF Trading is EDF's sole supplier of coal in France and has implemented supply agreements with EDF Energy, EDF Polska and other European energy companies. EDF Trading carries on a fully integrated freight and coal business, with numerous supply sources across the globe, including South Africa, Asia, the US and eastern Europe. The company sources, stores, mixes, delivers and trades coal and provides completed management of the supply chain, from the port of loading to the power plant.

In 2011, the company developed its activities for Chubu Electric Power in Japan and positioned itself in strategic assets in China. It has also taken delivery of new Capesize and Panamax vessels for its fleet of bulk carriers, including the Cape Amanda, which was delivered in April and is the most recent vessel of EDF Trading's fleet. In Europe it continued to invest in terminals in Amsterdam, including financing the building of ultra-modern rail loading facilities. It also worked in close cooperation with EDF Polska and Energokrak, a Group company, to set up a joint venture that aims to meet and optimise the needs of EDF power plants in Poland in terms of coal and biomass. In the US, it continued to develop its activities on the internal market. In Asia, EDF Trading continued to help EDF to supply Asian coal and, if EDF wins the call for tenders, will supply coal for the coal power plant project in Vietnam.

6.4.1.2 New energies

Renewable energies[1], including new branches (wind, solar, biomass, geothermal, marine energy, etc.) have undergone tremendous growth, mainly in Asia (China), Europe and the US.

The combined installed wind capacity worldwide reached 215 GW at the end of June 2011, more than 42 GW of which was in the US and around 67 GW in Asia. In the first quarter 2011, 18.4 GW of wind capacity was built worldwide, 8 GW of which was in China and 2 GW in the US[2].

As regards photovoltaic solar, total global capacity was 67.4 GW at the end of 2011, 27.7 GW of which was from new capacity built in 2011[3].

(1) Renewable energy or green energy results from the use of natural resources that are renewed quickly enough to be considered inexhaustible on a human scale.
(2) Source: World Wind Energy Association – Half-year report 2011.
(3) Source: EPIA – European Photovoltaic Industry Association – Market report 2011.

Today, it is mainly wind, biomass and solar that drives growth in renewable energies. Hydroelectric generation is, in fact, close to its maximum output potential in a lot of developed countries, even if it retains significant development potential in other regions of the globe (of the 63 GW of new renewable capacity development expected each year in the world, around 19 GW is hydroelectric capacity, according to the International Energy Agency)[1].

The EDF group is among the five global leaders in renewable energies due to its 25,3 GW of installed renewable energy capacity (mainly hydroelectric) and it aims to develop all forms of renewable energies, prioritising wind and solar power generation. EDF also intends to prioritise the emergence of new technologies in conjunction with R&D. This process is in line with the Group's sustainable development policy (see section 6.4.3.2 ("Environmental policy")).

6.4.1.2.1 Description of new energies

Wind power

The wind turbine operates through the action of the wind, which drives rotor blades attached to an electrical generator. The wind power categories are:

- onshore wind generation

  This is a mature sector, which now is close to competing with traditional sectors. It benefits from economic incentive measures in most countries. For 1 MW of installed capacity, average annual electricity generation can vary from 2 to 3 GWh, depending on the quality of the site and the type of machines used. Each wind turbine has capacity of between 2 and 3 MW.

  In 2011, France was ranked fourth in Europe in terms of installed capacity[2] (behind Germany, Spain and Italy).

  EDF Énergies Nouvelles is the vector through which the EDF group develops this energy; it draws on EDF engineering and R&D for its expertise and technical monitoring. The subsidiaries EDF Energy, EDF Luminus and Edison also have wind farms in operation and projects in development.

  The EDF group's production of wind-based electricity was 6.3 TWh in 2011.

- offshore wind generation

  Considered as a sector in full development, offshore wind power is, however, more expensive in terms of investment and the cost of network connection; it involves more difficult operation/maintenance at sea with operators lack the benefit of established expertise in this area. However, the capacity of wind generating units (3 to 6 MW) is higher and production is greater because of more regular winds (1 MW installed capacity gives output of between 3 and 4 GWh). The sector is on a learning curve that will enable it to reduce cost differential with onshore wind generation.

  The outlook for growth in offshore wind generation is considerable. Europe intends to build nearly 44 GW[3] of offshore wind generation by 2020, of which nearly 13 GW in the UK and 6 GW in France. To reach this target, the French government launched its first call for tenders in January 2011, which aims to commission 3 GW of offshore wind capacity (half the national objective) by 2020 at five sites considered suitable in the Channel and Atlantic Ocean. A second call for tenders was issued by the French government in the first six months of 2012.

  The EDF group decide to gradually increase its investment in offshore wind generation. It is already present in this sector in the UK and Belgium through facilities in operation and under construction, which are either wholly-owned or in which the company has a shareholding (see section 6.4.1.2.2 ("EDF Énergies Nouvelles")) EDF EN also aims to build offshore wind facilities as part of France's first call for tenders (see section 6.4.1.2.2 ("EDF Énergies Nouvelles")).

Solar power

Photovoltaic solar power (electricity generation) is not the same as thermal solar power (heat production).

In 2011, the photovoltaic solar power market grew sharply in France, with connected capacity rising from 1,168 MW on 31 December 2010 to 2,802 on 31 December 2011[4], French overseas departments included, i.e. a 2.4-fold increase since the beginning of 2010.

In 2011, France was ranked fourth in Europe in terms of installed capacity (behind Germany, Spain and Italy).

EDF Énergies Nouvelles is also the principal entity developing the EDF group's development strategy in solar energy. At 31 December 2011, the subsidiary had 494.1 MWc net capacity under construction, which is in line with its target of 500 MWc net installed capacity in photovoltaic solar power by the end of 2012. Also, it is involved in the decentralised photovoltaic solar sector (roof panels), through its subsidiary EDF Énergies Nouvelles Réparties (50%-owned by EDF Énergies Nouvelles and 50%-owned by EDF).

One of the major challenges in solar power research is the developing of innovative technology to greatly reduce the cost of generation. EDF R&D therefore conducts research on photovoltaic technology, including new-generation thin-film solar panels and high-yield photovoltaic generation designs, at its Chatou site, as part of the French Institute for Photovoltaic Power Research and Development (IRDEP), established in partnership with CNERS and ENSCP (the National Upper School for Chemistry in Paris).

Geothermal energy

The temperature of the rocks in the earth's crust increases with depth: on average, 3 degrees Celsius every 100 meters. In some regions of the globe, the earth's heat reaches the surface as heat sources, water or steam. Hot water is used directly as heat: central heating in dwellings or greenhouse heating.

Steam extracted from beneath the ground is also used to generate electricity: it drives a turbine, as it does in a traditional thermal power plant. It is also possible to use hot and dry rocks to produce steam and in turn electricity. To develop this activity, EDF has several partners (including Électricité de Strasbourg, EnBW and German energy companies) as part

(1) Source: International Energy Agency - World Energy Outlook 2011 - Scénario "Current Policies 2009-2035".

(2) Eurobserv'er, wind generation barometer 2011.

(3) European Environment Agency - Renewable Energy Productions as published in the National Renewable Energy Action Plans of the European Member States (February 2011).

(4) Wind-photovoltaic dashboard – fourth quarter 2011 General Commission of Renewable Energy, Corsica and departments.

of a European grouping that develops and operates a prototype geothermal electricity generation unit in hot, naturally broken crystal rocks in Soultz in Alsace.

France also has high-temperature resources located in its overseas departments. The EDF group is present in this segment, particularly through its minority interest in the company Geothermie Bouillante in Guadeloupe.

Biomass

Technologies based on biomass mainly consist of burning certain waste, in particular from the timber and farming industries, or by exploiting dedicated forests, to produce heat or electricity.

So, in addition to hydropower, wind power, solar and geothermal power, biomass is also contributes to developing renewable energies.

Through its holdings, notably in Dalkia, the EDF group owns shares in France and abroad in several dozen heating systems and small size generating facilities which are mainly fuelled with wood. EDF also has a controlling interest in the company TIRU, which uses biomass in the form of household and green waste. Its plants have a total installed capacity of 69 MW.

In Poland, EDF Polska operates several co-combustion facilities (incorporating biomass in fossil fuels) for a total capacity of 68 MW.

Finally, EDF Énergies Nouvelles owns, through its wholly-owned subsidiary SIIF Energies Iberica, a 26 MW plant in Lucena (Andalucia), which uses the waste from the production of olive oil.

Other technologies

In anticipation of, and positioning itself for, new technological solutions, the EDF group devotes significant resources to Research & Development areas which may prove to be vehicles for growth in the medium term: renewable marine energy (for example: hydropower – sub-marine turbines using the energy in marine currents) and biomass gasification, as well as areas that have already been discussed (thin film photovoltaic cells and deep geothermal).

In 2008, the EDF group selected the Irish company OpenHydro Group Ltd. to build the first tidal turbines at Paimpol-Bréhat (Côtes d'Armor) as part of its pilot project to build a tidal turbine farm to generate electricity from tidal energy. The OpenHydro partnership concerns the installation of 4 tidal turbines with a total capacity of 2 MW. The first one was installed on 22 October 2011. Fully submerged and easy to move, the turbines can be raised for maintenance operations. The test unit at Paimpol-Bréhat will enable the technology to be tested in real-life conditions and allow its impact on the marine environment to be assessed in detail during various studies. The Paimpol-Bréhat region, which has some of the most powerful tidal currents in France, could accommodate other technology tests led by EDF in the future. This project illustrates EDF group's commitment to developing marine energy, as well as its ambition to acquire expertise and develop this industry by 2020, notably alongside IFREMER, the French Research Institute for the Exploitation of the Sea.

6.4.1.2.2 EDF Énergies Nouvelles

The EDF group's involvement in renewable energies is undertaken mainly by EDF Énergies Nouvelles, whose goal is to achieve a net installed capacity of 4,200 MW at the end of 2012, including 500 MWc of photovoltaic solar energy.

EDF Énergies Nouvelles shareholding

Since EDF acquired a shareholding in EDF Énergies Nouvelles in 2000 and it was listed in 2006, the company has undergone a major transformation, becoming in just a few years a leader in renewable energy electricity generation and a benchmark player in the priority zones for operation, North America and western Europe.

EDF Énergies Nouvelles initial public offering took place in November 2006 on NYSE Euronext Paris. On this date, 50% of its capital was owned by EDF, through EDEV, 25.1% by the Mouratoglou group and 24.9% by the public (staff included).

After ten years of strategic partnership as a shareholder of EDF Énergies Nouvelles, EDF decided, on 8 April 2011, to issue a tender offer for the rest of EDF Énergies Nouvelles' capital it did not own.

As part of this simplified alternative public tender or exchange offer, the Mouratoglou group (mainly comprising Pâris Mouratoglou and the company SIIF), contributed its entire shareholding of 25.1% of EDF Energies Nouvelles, half of which to the cash offer and the other half to the shares offer. In exchange for its shares contribution, the Mouratoglou group received EDF shares representing 0.62% of EDF's capital, on the date of the offer's settlement-delivery date. As a result of these transactions, the shareholders' agreement concluded on 11 October 2010 (D&I AMF no.210C1118 of 29 October 2010) was null and void.

Because the EDF Énergies Nouvelles shares that were not contributed to the offer represented less than 5% of the company's capital and voting rights, EDF applied to the French financial market authority (AMF) for the remaining EDF Énergies Nouvelles shares to be compulsorily withdrawn, at the price of the simplified public tender offer. The compulsory withdrawal took place on 16 August 2011 and EDF Énergies Nouvelles's shares were delisted from Euronext Paris.

On the date of filing this reference document, EDF directly or indirectly held 100% of EDF Énergies Nouvelles' share capital.

EDF's increase of its stake in EDF Énergies Nouvelles marks a new step for the EDF group in renewable energies. It enables it to fully benefit from the creation of future value in this high-growth market, and to consolidate its position in this market when the renewable energy sector is undergoing a new development phase, characterised by the increase in size of units and in the complexity of projects, as well as the emergence of major global players.

EDF Énergies Nouvelles Activities

EDF Energies Nouvelles conducts several activities: development, construction and operation of power production assets from renewable energies sources, sales to third parties of electricity production assets from renewable energies sources that it has developed and built and finally, the operation and maintenance of wind farms on behalf of third parties and on its own behalf (mainly in the United States).

The following table sets forth the installed capacity of EDF Énergies Nouvelles, by segment and by country, as at 31 December 2010 and 2011.

(Installed capacity in MW)	At 31/12/2011		At 31/12/2010	
	Gross[1]	Net[2]	Gross[1]	Net[2]
Wind power				
France	389.1	365.4	389.1	355.4
Portugal	495.8	302.9	495.8	302.9
Greece	314.7	288.3	251.4	232.1
Italy	487.0	304.9	365.0	182.5
UK[3]	233.7	166.5	227.2	163.2
Turkey	219.2	89.8	128.2	51.8
Belgium	30.0	2.7	30.0	5.5
Germany	7.6	7.6	7.6	7.6
United States	1,276.9	1,193.9	961.1	878.1
Mexico	67.5	67.5	67.5	67.5
Total wind power	**3,521.5**	**2,789.5**	**2,922.9**	**2,246.7**
Solar				
Italy	122.2	92.2	90.8	70.3
France	158.4	129.1	70.2	69.4
Spain	46.0	32.3	35.3	22.7
United States	10.5	10.5	6.1	6.1
Greece	6.0	6.0	6.0	6.0
Canada	70.5	70.5	58.7	58.7
Total solar	**413.5**	**340.6**	**267.1**	**233.2**
Other Industries				
Hydroelectric	84.2	77.1	131.4	102.9
Biogas	60.3	59.5	56.0	55.5
Biomass/Cogeneration	45.2	24.9	45.2	24.9
Other industries total	**189.7**	**161.5**	**232.6**	**183.3**
TOTAL	**4,124.7**	**3,291.6**	**3,422.6**	**2,663.2**

(1) Gross capacity: total capacity of the facilities in which EDF Énergies Nouvelles has a stake.

(2) Net capacity: capacity corresponding to EDF Énergies Nouvelles' stake.

(3) EDF Énergies Nouvelles owns 50% of EDF Energy Renewables (the other 50% is owned by EDF Energy). Consequently, the net capacity shown of 166.5 MW includes only 50% of the134.5 MW wind capacity of EDF Energy Renewables.

EDF Énergies Nouvelles is present in European countries that have a strong development potential for renewable sources of energy, especially wind power (France, Portugal, Greece, the United Kingdom, Italy and Turkey), as well as in North America (United States, Canada and Mexico). EDF Énergies Nouvelles also conducts activities in Belgium, Spain, Germany and Bulgaria.

EDF Énergies Nouvelles has made solar photovoltaic power its second area of growth behind wind power (with 413.5 MWc gross installed at 31 December 2011). The company also operates small hydroelectric plants (with 84.2 MW gross installed as at 31 December 2011), biomass plants (with 26 gross MW installed as at 31 December 2011), as well as biogas plants (60.3 gross MW installed as at 31 December 2011) notably through the acquisition in June 2010 of the American specialist Beacon Landfill Gas which owns two 50 MW production units.

EDF Énergies Nouvelles had 2,263 employees (including EDF Énergies Nouvelles Réparties) at 31 December 2011.

Developments in Wind Power

Onshore wind power

In 2011, EDF Énergies Nouvelles continued its development in wind power, its primary area of growth.

EDF Énergies Nouvelles increased production capacity by 598.6 MW during 2011, reaching a total of 3,521.5 MW gross wind energy at 31 December 2011. In 2011, the Group commissioned the wind farms of Bonorva (74 MW) and Vallata (48 MW) in Italy, Lakefield (205.5 MW) and Shiloh 3 (102.5 MW) in the US, Seyitali (30 MW) and Soma 2 (60.9 MW) in Turkey, Tikorfu (24 MW) and Melissi (24 MW) in Greece, and Fairfield (6.5 MW) in the UK. In addition, EDF Energies Nouvelles purchased the Chestnut Flats wind farm in Pennsylvania in the US. With a capacity of 38 MW, this wind farm was developed and built by Gamesa Energy USA.

At 31 December 2011, EDF Energies Nouvelles had 1,490.1 MW under construction (i.e. 892.2 MW net).

Offshore wind power

In the UK, EDF Energy Renewable, a subsidiary that is 50% is owned by EDF Energy and 50% by EDF Énergies Nouvelles, owns the entire offshore wind farm on Teesside with a capacity of 62 MW, the construction of which began in 2010 for scheduled commissioning in 2012.

In Belgium since November 2011, EDF Énergies Nouvelles has had a shareholding of 9.14% in C-Power's Thornton Bank wind farm through its subsidiary EDF EN Belgium. Its first unit (30 MW) is in operation, while the second and third units (295 MW combined) are under construction.

In France, with the purpose of submitting a bid in response to the government's first call for tenders, EDF Énergies Nouvelles was set up by a consortium, the partners of which included the Danish energy company Dong Energy, which built and operates the biggest offshore wind farm in the world, and Alstom, which will be the exclusive supplier of 6 MW wind turbines for future offshore wind farms. EDF Énergies Nouvelles has submitted tenders regarding four of the five sites identified with regard to the first call for tenders.

Development of the solar photovoltaic industry

EDF Énergies Nouvelles continued development in solar photovoltaic, its second priority area of growth. At 31 December 2011, the installed solar capacity was 413.5 MWc gross. The commissioning was mainly in France (+55.6 MWc) and in Italy (+31.3 MWc), as well as in Canada, Spain and the US. In France, the Group finished building the Gabardan power plant (67.5 MWc in total), Saint-Symphorien (12 MWc) and Bouloc (10.2 MWc) power plants. In Italy, EDF Énergies Nouvelles commissioned the Augusta (6.7 MWc), Ancona (3.3 MWc) and several other power plants, totalling 21.3 MWc. At 31 December 2011, the Group had a total gross capacity of 287.1 MWc gross under construction, mainly in France. With regard to its development-sale of structure assets activity, EDF Énergies Nouvelles disposed of 91.0 MWc in France and 5.9 MWc in the US, as well as 37.3 MWc of large roof panel projects (industrial, commercial and hangars).

Other segments

The capacities in operation of other segments totalled 189.7 MW gross at the end of 2011, compared with 232.6 MW at 31 December 2010. The year was marked by the divestment of the Ogosta and Pirin-Spanchevo power plants (54 MW in total) in Bulgaria.

6.4.1.2.3 Other holdings in the renewable energies sector

EDF Énergies Nouvelles Réparties (EDF ENR)

EDF ENR, owned in equal parts by EDF and EDF Energies Nouvelles, was incorporated mid-2007, when the Grenelle environmental action plan was launched, with the objective of becoming a major player in new decentralised energies.

2011 was marked by the rationalisation of its assets portfolio:

- July 2011: sale of RIBO France's activities (heat pumps) to the Aldes group;
- October 2011: sale to the Total group of 50% of Tenesol owned by EDF ENR, the overseas departments activities having been transferred, beforehand, to a company called SUNZIL, which was owned in equal parts by EDF ENR and the Total group;
- November 2011: sale of the company Perceva Capital to the company SUPRA SA (energy wood).

Today, with nearly 10,000 domestic customers and more than 350 projects delivered to business customers and local authorities, EDF ENR is the leader in solar photovoltaic roof panels in France. The activity is performed by its subsidiaries EDF ENR Solaire in France and EDF ENR Solare in Italy.

EDF ENR also continued to develop its policy of innovation in photovoltaic generation through its various interests, including Nexcis and PV Alliance, as well as a partnerships policy for the development of new products such as Alkorsolar or the Face in Tech® facades (photovoltaic panels, mainly for business customers' roofs).

The EDF group, through its subsidiary EDF ENR, took over the activities of Photowatt on 1 March 2012, a French manufacturer of silicon-based photovoltaic cells (see section 12.1 ("Subsequent events")).

The EDF ENR group had 522 employees at 31 December 2011.

6.4.1.3 Dalkia

Dalkia, a leading European energy services provider, generated income from continuing operations of 6,908 million Euros in 2011 in its consolidated area, including Dalkia France (99.93%); Dalkia International (75.81%); Dalkia Investissement (50%) and Edenkia (50%). Dalkia offers a full range of services with excellent coverage throughout France, as well as substantial operations across Europe.

Dalkia's businesses

Dalkia's business is based on optimised energy management. Dalkia has gradually built up a variety of energy management services in areas such as heating and cooling systems, thermal and multi-technology applications, industrial utilities, installation and maintenance of generating equipment, integrated service facilities management, and electrical services for public places.

Dalkia also promotes renewable and alternative energies, including cogeneration, biomass, geothermal power, household waste incineration, and heat recovery systems from manufacturing processes.

EDF's stake in Dalkia

At 31 December 2011, EDF owned 34% of the shares and voting rights of Dalkia's holding company, which is a simplified joint-stock company. EDF acquired this stake in December 2000 through transactions including an in-kind contribution to Dalkia of some of EDF's energy services subsidiaries. Dalkia's remaining share capital is held at 66% by Veolia Environnement, a company whose shares are listed for trading on NYSE Euronext in Paris and New York. Moreover, EDF held 4.0% of Veolia Environnement as at 31 December 2011 and approximately 24% of Dalkia International.

Associate agreement

An associate agreement was concluded on 4 December 2000 between EDF and Veolia Environnement. This agreement contains a change-of-control provision under which each party has the right to purchase the other's entire stake in Dalkia if the other were to be controlled by a third party competitor. The clause also gives the parties a pre-emptive right if Dalkia shares are sold to an outside buyer.

In 2011, EDF and Veolia announced having begun negotiations on reinforcing their industrial partnership in Dalkia.

6.4.1.4 Électricité de Strasbourg

Électricité de Strasbourg is a French limited company (société anonyme); EDF owns 88.82% of its shares which are traded on NYSE and Euronext Paris. The remaining Électricité de Strasbourg shares are held by the public and staff.

Électricité de Strasbourg distributes electricity to 409 municipalities in the Bas-Rhin region and has 377 concession contracts that were renewed between 1993 and 1999 for a 40-year term; it serves approximately 80% of the population of the Bas-Rhin department. Due to its electricity distribution business, Électricité de Strasbourg is subject to legal and operating restrictions related to the opening up of the markets and therefore created an independent Distribution Network Operator on 1 January 2004.

As required by the law, in January 2009 Électricité de Strasbourg spun off its marketing activity as a subsidiary by creating the company, ÉS Énergies Strasbourg.

ÉS Énergies Strasbourg sells electricity to approximately 475,000 customers. The company sold 5.9 TWh of electricity and 0.3 TWh of gas in 2011.

ÉS Énergies Strasbourg benefits from specific purchase conditions of the sale tariff for its regulated customers. However, for the other customers, 90% of their supply is sourced through ARENH and 10% through long-term contracts of access to production or under the conditions governing the energy market (by operating on the over the counter markets and on EPEX).

On 3 November 2011, Électricité de Strasbourg began exclusive negotiations with Réseau GdS to buy its natural gas marketing subsidiary Enerest. The transaction, finalised on 15 February 2012 will enable the ES group, through a partnership with Enerest, to become the largest multi-energy supplier in the Bas-Rhin region.

Électricité de Strasbourg has also consolidated its activities in deep geothermal, by creating the company ECOGI (Exploitation of Geothermal Heat for Industry) with Caisse des Dépôts et Consignations and the industrial company Roquette Frères, which specialises in the processing of agricultural raw materials. This company plans to build a geothermal power plant in the north of Alsace with a double bore hole of 2,500 m in depth and a pipe network for a cost of 44 million Euros, to exploit underground energy, using techniques already used at Soultz (see section 6.4.1.2.1 ("Description of new energies")).

6.4.1.5 Tiru

The TIRU company is a 51%-owned subsidiary of the EDF group specialised in energy recovery from waste in the form of electricity and steam intended for district heating or for industrial uses. A pioneer in renewable energy, TIRU has always been a green energy producer. Since 1922, the Group has designed, built and operated waste recovery units.

In 2011, its 18 thermal and biological treatment units in France, England and in Canada sold close to 2.9 TWh of electricity and steam, 50% of which is green energy, from 3.1 million tons of treated waste. The material recovery units of the Group in France and abroad recover 330,000 tons of waste (sorting/recycling and composting). TIRU supplies nearly 346,000 inhabitants with heating[1] and 600,000 inhabitants with electricity[2].

TIRU helps to save 1.8 million barrels of oil per year[3].

(1) Urban heating.
(2) Excluding heating.
(3) According to France's energy observatory, the energy produced by burning one tonne of oil corresponds to 11,628 KWh on average.
Also, by convention one barrel of oil corresponds to 0.1364 tonnes equivalent of oil. So, as regards TIRU:

- *Tonnes equivalent of oil = 2,900 MWh of energy sold / 11.6 MWh = 250,000 tonnes equivalent of oil.*
- *Barrels equivalent of oil = 250,000 toe / 0.1364 = 1.8 million barrels of oil.*

6.4.1.6 Other equity interests

In addition to interests in Local Distribution Companies or LDCs (SMEG, Enercal, Électricité de Mayotte, and EDSB), the EDF group has subsidiaries and interests in industrial companies. These companies contribute to the Group's objectives in their respective business sectors (generation, fuel, and engineering) and more particularly to those of the Production and Engineering Division – to ensure the short and medium term performance of EDF's French portfolio of production assets.

These companies are notably Cofiva, a holding of the EDF group specialized in engineering; SAE, specialized in the transport and fuel trading on behalf of the EDF group; SHEMA, specialising in hydroelectric production in small power plants; and SOCODEI, a wholly-owned subsidiary of EDF specialised in the treatment of low- and intermediate-level radioactive waste. SOCODEI owns two machines that are taken to the different nuclear power plants to treat the primary circuit's resins. SOCODEI treats metallic waste by fusion and solid or liquid waste by incineration in its Centraco plant in Marcoule in the Gard region.

6.4.2 Gas Activities

The EDF group is present over the entire natural gas chain, mainly through EDF Energy (United Kingdom), Edison (Italy) and EDF Luminus (Belgium), and France(1). The Group also operates through EDF Trading, particularly in the wholesale natural gas market.

6.4.2.1 Context of the European natural gas market

After gas consumption picked up in Europe in 2010, mainly due to harsher than normal weather conditions at the beginning of the year and an improved economic climate, gas consumption fell again in 2011. This fall was due to slower than forecast economic growth, which in turn was due to the effects of the eurozone crisis, and milder than normal temperatures.

Long-term European demand for natural gas is very uncertain due to economic parameters (competitiveness of natural gas with respect to other types of energy), technological advances (like carbon capture and storage), and the implementation of European energy policies, (renewable energies, greenhouse gas emissions, energy security).

In the majority of scenarios, the dependence of European countries on gas imports will continue to grow, mainly because of the depletion of conventional national resources (the development potential of unconventional European natural gas resources remains to be evaluated).

At the same time, the United States has seen a growth in unconventional natural gas production, drastically reducing their LNG (liquefied natural gas) import needs. But the growing willingness of a number of producing countries to reserve a portion of their natural gas production for their local needs and the increasing demand in emerging countries (such as India and China) is expected to increase competition for access to natural gas (by gas pipeline or LNG).

In addition, faced with the uncertainties about the level of demand, the European Commission believes that natural gas will continue to play a key role in the energy mix of the European Union over the coming decades and will become important as the back-up fuel for variable electricity production, provided that the supply is assured. It believes that the depletion of local traditional natural gas resources necessitates diversification of imports over the medium term. The gas networks are facing demands for increased flexibility in the system and the necessity of bi-directional gas pipelines, additional storage capacities and an adaptable supply, especially in LNG.

Regulations governing the EU natural gas market are discussed in section 6.5.2, ("Legislation relating to the gas market").

6.4.2.2 The EDF group strategy for the natural gas market

For EDF, natural gas is a key component of its energy mix. The presence of EDF in the natural gas market is explained by the need to power its electrical power plants with gas and its customers who want a dual gas and electricity offer. EDF's strategy is to develop the tools that will allow it to access natural gas under competitive conditions in relation to its rivals and strengthen its position as a major European competitor in the natural gas market (see section 6.3.2.1 ("Edison"). EDF finalised an agreement in principle with Delmi that should enable EDF to take Edision over before 30 June 2012.

The EDF group intends to secure its supply through a diversified, reliable, and flexible portfolio of physical and contract assets, related both to obtaining natural gas (reserves and purchase agreements) and logistics capacity (pipelines, LNG chain and storage). The projects, some already underway and others planned for the future, are designed to allow the Group to negotiate with producers directly to make it less reliant on its rivals for supply and make its services more competitive. By integrating its positions on a European scale, EDF optimises its upstream/downstream portfolio and increases its ability to negotiate with major suppliers.

6.4.2.3 Natural gas end-market

6.4.2.3.1 End customers

In 2011, the Group's gas sales amounted to more than 100 TWh(2).

In France, the Group continued a marketing strategy designed to develop the loyalty of the most attractive customers and to grow the value of its customer portfolio, by meeting customer expectations for dual electricity-gas offers, and by capitalising on the Group's experience, particularly on EDF's "Bleu Ciel" brand for the domestic market.

In 2011, EDF's natural gas sales to its end-users in France totalled around 18 TWh (which represents a market share of 3.7%). As of 31 December 2011, approximately 713,000 customers (ranging from domestic customers to key accounts) had chosen EDF as gas supplier. In 2010, these figures amounted to 21.4 TWh and 572,000 customers, respectively. In 2012, EDF's gas sales business will be further strengthened by the inclusion in its portfolio of Enerest, the leading distributor of natural gas in Strasbourg and the Bas-Rhin region, bought in November 2011 by Électricité de Strasbourg, a fully-owned subsidiary of EDF.

In Italy, the United Kingdom and Belgium, the development of sales is based on a more aggressive approach with downstream customer portfolios composed of:

- in Italy: around 524,000 customers, 3.6 Gm^3 (around 40 TWh) or 8.4% market share;

(1) See sections 6.3.1.2 (EDF Energy), 6.3.2.1 (Edison) and 6.3.4.2 (Benelux).

(2) Sales of the EDF companies, EDF Energy, Edison, EDF Luminus, Estag (Austria) at 100%, i.e., not corrected for interest percentage (including minority interests). The gas business of EDF Trading is not taken into account in this figure.

- in the United Kingdom: around 1.9 million customers, 26 TWh, or 5.1% market share;
- in Belgium: around 540,000 customers, 16 TWh, or around 12.5% market share.

6.4.2.3.2 Electricity production

The role of natural gas in electricity generation has been growing sharply for more than ten years, and this trend could accelerate, especially with the withdrawal of fuel oil and coal from production resources in Europe by 2015 because of the tightening of emissions standards in the 2001/80 Directive (large combustion plant Directive) and between 2016 and 2023 because of the 2010/75 Directive (on industrial emissions), and Germany's withdrawal from nuclear energy.

The energy efficiency of combined cycle gas power plants, the low investment costs associated with the use of this technology, and the relatively short construction times make this industry a technology that supports transition to low carbon technologies. In fact in the medium term, combined cycle gas power plants (CCGT) will no doubt be the only technology available and rapidly deployable to achieve the CO_2 emissions reduction targets by replacing high-emission fuels (coal, lignite, fuel oil). In the longer term, the operational flexibility of this technology would offset the intermittent electricity generation from renewable energy sources. The Group already has CCGT power plants in Europe and continues to develop its fleet.

In France, EDF has a conventional gas-supplied combustion turbine fleet with a capacity of 557 MW. On 13 November 2011 the French Blénod-les-Pont-à-Mousson combined cycle plant with a capacity of 430 MW was commissioned. In 2012, the commissioning of the two units of the Martigues power plant, each with a capacity of 465 MW, resulting from the plant's transformation to fuel oil, is scheduled. In addition to the perpetuation of operations on these sites, these new facilities will improve the overall environmental performance of the EDF fossil fuel power plants. In December 2011, the Group announced a new project converting a power plant at the Bouchain site from coal to gas in partnership with General Electric. This plant, with a capacity of 510 MW, having higher than average flexibility and yield, according to the two companies, and will take over from the current coal power plant of Bouchain by 2015. Finally, the Alpiq group (of which EDF owns 25%) also develops its presence in France, with the commissioning of a CCGT power plant with a capacity of 400 MW in Bayet in June 2011.

In Belgium, the EDF Luminus power generation fleet mainly comprises gas power plants: fossil-fired facilities at Monsin and Ham, as well as four combined cycle gas (CCGT) power plants with a capacity of around 1,150 MW. Two projects to build gas power plants in Wallonia and Flanders could double the fleet's fossil-fuelled capacity. The CCGT projects at Navage in Wallonia and Evergem in Flanders, each with a capacity of 890 MW. EDF Luminus is now in charge of developing a third CCGT project (sold by EDF Belgium in October 2011): the Nest Energie project with a capacity of 920 MW. EDF Belgium sold the "Dils Energie" CCGT project to the Advanced Power/Siemens Project Ventures consortium in accordance with the commitments undertaken by EDF with regard to the European Commission as part of EDF Belgium's purchase of the majority of shares in EDF Luminus in November 2009 (see section 6.3.3.1.3 ("Benelux").

In the Netherlands, EDF jointly owns a power plant in Sloe with Delta that has a capacity of 870 MW.

In the United Kingdom, EDF Energy owns the Sutton Bridge[1] 1,819 MW capacity combined cycle power plant (approximately 2% of electricity demand in the United Kingdom). Near Nottingham, the gradual commissioning of the new West Burton B combined cycle power plant expected in 2012 will increase the capacity of the Group in the United Kingdom by 1,305 MW.

Finally, in Italy at the end of 2011, 75% of the installed capacity of the Edison generation fleet (total capacity of 6.5 GW) is composed of electrical power plants supplied by natural gas. Elpedison, 50%-owned subsidiary of Edison, operates combined cycle gas facilities with a capacity of 810 MW.

In total in 2011, the installed capacities of the Group's electrical power plants in France, the United Kingdom, Belgium and Italy amounted to around 11 GW (combustion turbines, co-generation power plants, combined cycle gas power plants) and the current developments for the gas industry in this zone area amounted to more than 3 GW of additional installed power.

6.4.2.4 Securing natural gas supplies

The distance of supply sources, the low liquidity of the short-term markets and the still limited gas transport capacities (LNG chain and gas pipeline) are pushing the Group not only to diversify its supply sources to have access to competitive offers, but also to have access to logistical infrastructures over the entire natural gas chain to ensure delivery, flexibility of use and to limit exposure to the volatile and illiquid wholesale market.

Moreover, EDF intends to propose innovative partnerships with gas producers, drawing on its expertise and know-how. It is the reasoning behind the acquisition of an interest in the company South Stream Transport AG at the head of a gas pipeline project under the Black Sea, which aims to supply Europe with Russian gas (see below section 6.4.2.4.2 ("Imports and flexibility: gas pipelines, LNG chain and storage")).

6.4.2.4.1 Supply sources: exploration – production and long-term contracts

In order to secure its supplies, EDF relies on its diversified long, medium and short-term contracts, on the production of gas and on transactions in the wholesale markets via EDF Trading.

The Group's gas supply is provided mainly through a diversified portfolio of long-term gas contracts, coming from Qatar, Russia, the North Sea and North Africa in particular. Gas is delivered near to the consumer power plants by gas pipeline in the form of LNG: around 40% of the Group's gas supply portfolio comprises LNG[2]. The adjustment transactions on the markets are executed through EDF Trading

(1) Details of the specific case of the management of Sutton Bridge in compliance with the European Commission commitments made at the time of the acquisition are shown in section 6.3.1.2.6 (Commitments under the European Commission Merger Regulation).

(2) Data is calculated on a 100% basis, i.e. not corrected for the equity percentage (therefore, including minority interests).

Over the medium and long term, EDF intends to continue the development and diversification of its gas resources in order to optimise its supply portfolio and to guarantee competitiveness.

From this perspective, the development of upstream activities (exploration, production, LNG chain, etc.) is aimed both at reducing the exposure of the Group's supplies to the volatility of market prices and at accessing LNG resources.

Edison owns reserves amounting to 49.8 Gm^3 and produced in 2011 2.2 Gm^3. The EDF group also owns a subsidiary EDF Production UK which produces gas in the North sea. At the end of 2011, its reserves were estimated at 1.45 Gm^3 and production totalled 0.23 Gm^3.

6.4.2.4.2 Imports and flexibility: gas pipelines, LNG chain and storage

EDF conducts or participates in major infrastructure development projects in the north-east and south-east of Europe.

Gas pipelines

Alongside ENI, Wintershall and Gazprom, EDF signed a four-party shareholders' agreement for the company South Stream Transport AG on 16 September 2011, which is in charge of developing and building the underwater part of the South Stream gas pipeline. Of a length of 900 km and a capacity of 63 Gm^3/year, this underwater gas pipeline is designed to link Russia directly to the European Union for the supply of Russian gas. EDF has a 15% interest in the project, while Gazprom has 50%, ENI 20% and Wintershall 15%. This interest is one of the components of the EDF-Gazprom partnership outlined in an agreement in principle signed in November 2009.

EDF, through its subsidiary Edison, is also committed to two gas pipeline projects: the Galsi pipeline between Algeria and Italy with a total annual capacity of 8 Gm^3, and the ITGI pipeline between Turkey, Greece and Italy with an annual capacity of 10 Gm^3, which will also connect Greece and Bulgaria (IGB) of 3 to 5 Gm^3 per year. ITGI would open access to the resources of the Caspian Sea and more particularly to gas from Azerbaijan.

EDF has a variety of contractual rights, directly or through EDF Trading, in planned gas pipelines (the Netherlands and Belgium, in particular) and existing infrastructures (interconnection between the United Kingdom and Belgium, for example).

LNG regasification terminals

Following approval by the Board of Directors on 24 May 2011, EDF – through its subsidiary Dunkerque LNG (65% owned by EDF, 25% by Fluxys G and 10% by Total) – took the final decision on 29 June 2011 to build a methane terminal with a capacity of 13 Gm^3/year on the land owned by Grand Port Maritime de Dunkerque in France. The terminal's commissioning is scheduled for the end of 2015 for 20 years service. With three LNG storage tanks each of a capacity of 190,000 m^3, the terminal will be able to receive around 80 methane carriers a year for a total capacity of up to 270,000 m^3. The terminal with have a low level of carbon emissions, as the cooling water of Gravelines' nuclear power plants will be used to regasify the LNG. The terminal is not only important for EDF's supply because it enables it to build a balanced and diversified natural gas portfolio, but also as it is a large-scale project for the area of north-west Europe; this terminal will be the area's first terminal connected to two markets: France and Belgium.

The Dunkirk terminal benefited from an exemption from Third parties' regulated access, given to the company Dunkerque LNG by decision of 18 February 2010 following the CRE's approval of 23 July 2009, in accordance with the European Commission's decision of 20 January 2010.

In southern Europe, Edison owns 7.3% of the capital of Adriatic LNG Terminal, the company that operates the Rovigo offshore terminal and 80% of the regasification capacity, i.e. 6.4 Gm^3/year. Finally, EDF has, directly or through EDF Trading, varied contractual rights for the unloading of LNG cargoes in the LNG terminals Zeebrugge and Fos Cavaou. The contract for a LNG supply of around 4.5 Gm^3 per year signed between EDF Trading and RasGas in October 2011, confirms the long-term cooperation between the two companies. The LNG sourced from RasGas' liquefaction trains located in Ras Laffan in Qatar will be delivered to the Zeebrugge terminal.

Storage

The distance of gas production sources limits the possibilities of profiting from production flexibility to respond to fluctuations in demand. Thus to handle variations in the level of demand of its portfolio downstream (intermittent demand from the gas-fired power plants and temperature sensitivity in the level of demand of end users), the Group continues the progressive construction of a portfolio of flexible assets, which includes storage in addition to regasification capacities.

In Germany, EDF jointly develops a salt cavity storage facility with EnBW in Etzel for a storage capacity of around 0.18 Gm^3 (for the cavities owned by EDF only). After the successful industrial commissioning of the storage site at the end of January 2012, the commercial commissioning is scheduled for April 2012.

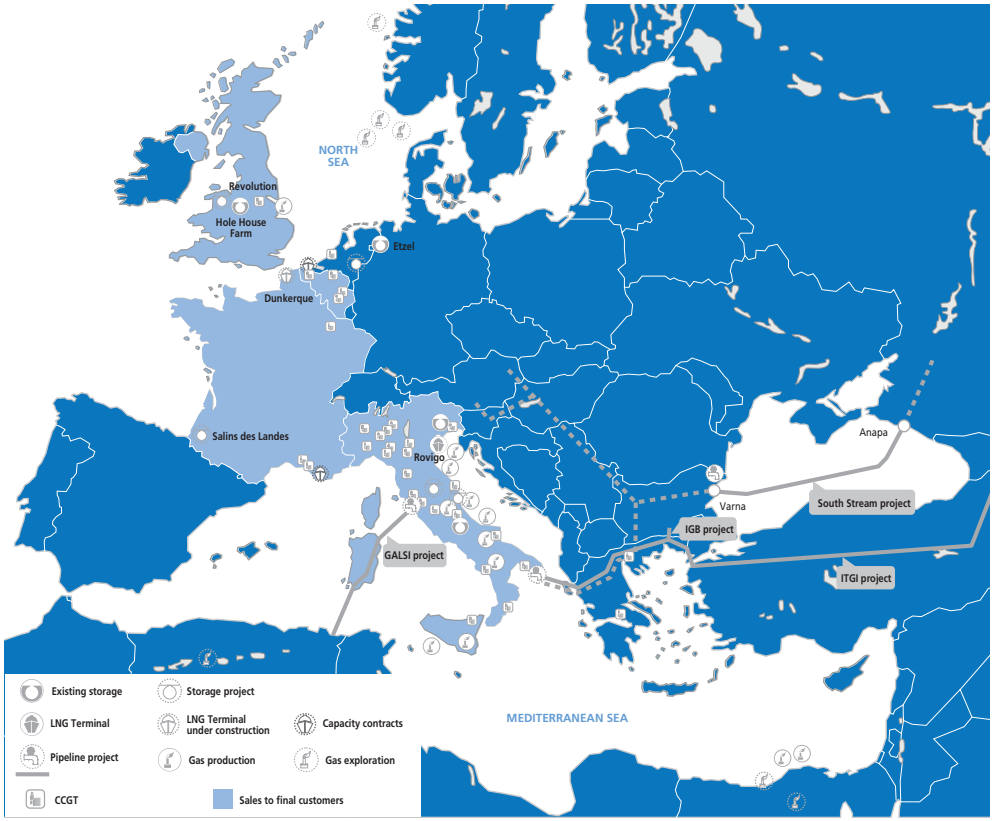
In Italy, EDF, through its subsidiary Edison, operates two storage sites (Cellino and Collalto) for a total capacity of around 520 Mm^3. Edison intends to increase its capacity, through reinforcing existing sites and developing new concessions, including Cotignola-San Potito, which is under construction, and Palazzo Moroni, which is in the process of obtaining administrative consent.

In the north of Europe, EDF Energy continues to develop its Cheshire-based Hill Top Farm salt cavity storage site in the UK with a capacity of 0.1 Gm^3. The commissioning of the first salt cavity was at the end of 2011. The site adjoins the existing storage site of Hole House, which is owned by EDF Trading. The storage is scheduled for service in 2016 and will bring the Group's total capacity in the United Kingdom to 0.16 Gm^3.

EDF also has a salt cavity storage project in France, Salins des Landes, with a storage capacity of around 0.6 Gm^3. Following fruitful initial exploratory drilling in 2011, a second drilling operation is planned in 2012. At the fringe of technical studies in progress, a public debate was held between October 2011 and January 2012. The conclusions are expected in the first semester of 2012.

EDF also owns short- and long-term rights in storage capacity sites in several countries.

Progress in implementing the gas strategy



6.4.3 Sustainable development policy and public service

The EDF group pursues a policy of a company responsibility, which includes all aspects of sustainable development: staff, social, societal and environmental, with the aim of controlling risks and redacting impacts.

EDF conducts public service and general interest assignments, in France and the world, supplying high-quality electricity, while respecting the environment and competitiveness as well as social access to the resource.

The Group formalised its commitment to sustainable development as of 2009 through a sustainable development policy, implemented tailored governance and sought dialogue with all stakeholders.

6.4.3.1 EDF's commitment to sustainable development

6.4.3.1.1 Commitments to sustainable development

In 2001, the Group launched its sustainable development action plan "Agenda 21", committing itself to respect the ten principles of human rights, the promotion of social rights, environmental protection, and the fight against corruption set out in the Global Compact initiated by the United Nations (see section 4.2.5 ("Ethics and Vigilance")).

The Group's commitment to sustainable development has been incorporated in a sustainable development policy, based on three components with the following priority objectives:

- on the environmental front, the EDF group intends to remain the lowest emitter of CO_2 and greenhouse gases among major European energy companies, to adapt its plants and its products and services to the effects of climate change, and to reduce its environmental impact, particularly on biodiversity;
- on the societal front, the Group wishes to facilitate access to energy and eco-efficiency, maintain and develop its commitments to regions where it operates, and improve the understanding and sharing of major challenges in energy, the environment and society;
- in the area of corporate governance and communication, the Group's objective is to make its dialogue with internal and external stakeholders a means of broadening and deepening the bases and criteria for its actions, and to assess and report on its activities and performance with respect to established goals and the expectations of its stakeholders, as well as contributing to the debate on sustainable development on the national and international level.

This Group sustainable development policy is also reflected in more specific commitments:

- in France, the Public Service Agreement (Contrat de service public – "CSP") summarises the commitments and goals which an energy producer, distributor, transmitter, and supplier must achieve as part of the public service obligations assigned by the Government (see section 6.4.3.5 ("Public service in France"));
- abroad, the Group's three-year Corporate Social Responsibility agreement with employee representatives worldwide, signed on 24 January 2005 is the context in which the signatory Group companies articulate goals and develop action plans for social responsibility which are monitored by the CSR Dialogue Committee (see below) bringing together the social partners; this agreement was renewed on 10 December 2008 for the period 2009-2012. The renewal of this agreement is under negotiation;
- regarding the social plan, EDF has adopted a policy of promoting diversity since 2006 and subscribed to the National Diversity Charter in September 2006. In October 2006, under its corporate social responsibility agreement, a socially responsible subcontracting agreement was signed to ensure that all purchasing complies with ethical and corporate responsibility criteria (see section 17.4 ("Subcontracting")).

6.4.3.1.2 Managing sustainable development

Implementing the commitment to Sustainable Development is a primary managerial responsibility which is met in each business sector and each business of the Group.

The governance of sustainable development is structured around the following steering organisations, systems and bodies.

- a Sustainable Development Division dedicated to stimulate, coordinate and support all actions taken by the Group's divisions and companies to implement our sustainable development policy commitments and report the results;
- a Sustainable Development Committee, which was set up at the end of 2008, comprises the sustainable development managers of the Group's principal companies. In accordance with the rules of independence of Group entities, it has the purpose of implementing the Group's policy in order to coordinate certification procedures with regard to Group ISO 14001 certification and to further the sharing of experience and good practices regarding the policies of the Group or its companies or entities;
- a Corporate Social Responsibility agreement (CSR) that is organised primarily on the basis of an annual review and a CSR Dialogue Committee (see section 17.6.3 ("Social dialogue and employee representation"));
- an environmental management system (EMS) that applies to all Group entities. In 2002 EDF was granted ISO 14001 certification; this was renewed in 2008 and again in 2011 for a further three years. The EMS is structured at Group level so that all actions, objectives and indicators are be harmonised with the Group's environmental policy commitments, guided by an Executive Committee and theme-based groups. In March 2011, the date of the certificate's renewal, nearly 80% of the Group's consolidated revenue was covered by an ISO 14001 certificate;
- screening of projects by the Commitments Committee. Before being submitted to the EDF Executive Committee's Commitments Committee (see section 16.3 ("Bodies created by Executive Management")), the Group's largest investment projects are reviewed to ensure as far as possible that they do not conflict with our sustainable development commitments.

Furthermore, 40% of the Group's contribution to profit sharing granted to EDF employees depends on reaching EMS targets, which specify 2 specific criteria for achieving environmental and social objectives.

6.4.3.1.3 Dialogue, transparency, evaluation

The implementation of various procedures to ensure exchanges and quality dialogue with all stakeholders is an essential element in the EDF group's sustainable development policy. Each of the Group's companies arranges these exchanges in the most appropriate manner, within their socioeconomic framework, for the relationships they plan to develop. In France, this dialogue takes place at different local and national levels; examples include consultation bodies within the territory of the production installations (the nuclear power plants' liaison and information committees), as well as partnerships forged with NGOs.

At a central level, in 2008 the Group continued its dialogues with outside independent experts who specialise in areas related to the Group's activities or represent the expectations and interests of civil society. The Sustainable Development panel, chaired by an outside expert, has a consulting role in Group planning and critically assesses how EDF meets its commitment to sustainable development (see section 6.4.3.4 ("Dialogue with stakeholders: Sustainable Development Panel, environmental, social, scientific and medical councils")).

The Group also has a commitment to transparency for stakeholders, which means in particular regular reporting to the Company's Board of Directors, primarily in connection with the annual business report and the sustainable development report. This reporting is based on indicators defined with reference to the criteria in the Global Reporting Initiative. The Group is now asking its Statutory Auditors to monitor the quality of these non-financial indicators. For the financial year 2011, the Auditors issued a report for the Group awarding it a "reasonable assurance" rating on two major indicators (CO_2 emissions from electricity and heat production, and "total workforce at end of period"), and a "moderate" assurance rating on a selection of environmental and staff indicators of the Group, published in the Group's annual business and sustainable development report.

The Group publishes sustainable development reports that are used as a basis for assessments by ratings agencies and non-financial analysis departments acting on behalf of investors. Since 2005 EDF has been listed on the ASPI, an ethical index prepared by the French ratings agency Vigeo that evaluates 120 corporations based on their sustainable development performance.

In March 2012, EDF was also included as a new entrant to the FTSE4Good Index. EDF is thus now one of the five worldwide nuclear operators which meet the strict criteria developed and monitored by the FTSE4Good Policy Committee.

6.4.3.2 Environmental policy

In accordance with its sustainable development policy of September 2009, the EDF group sets out its environmental policy, which is focused primarily on the fight against climate change and control of its environmental impacts, particularly on biodiversity.

The information appearing in this section may be supplemented by the EDF group's 2011 sustainable development policy (accessible at http://rapport-dd.edf.com) which presents in more detail the EDF group's sustainable development policy and achievements.

6.4.3.2.1 Contributing to the struggle against climate change

Thanks to its nuclear and renewable energy (including hydropower) power plants with low CO_2 emissions per KWh generated, the EDF group is committed to remaining the leader among electricity companies in the struggle against climate change and the reduction of greenhouse gas emissions. It has subscribed to the European objective for reducing CO_2 emissions by 2020 to at least 20% below 1990 levels, while taking into consideration the variety of local energy situations.

The commitment of the sustainable development policy to remain the lowest emitter of the large European energy providers is possible due to the optimised operation of its existing generating assets and the significant renewal of its fleet. At the same time, the Group is seeking to help its customers reduce their own CO_2 emissions by creating and promoting energy efficient product offers and providing advice on efficient use of energy. The plan to reduce emissions from EDF's buildings and vehicle fleets continues, as well as the programme to mobilise all staff in the struggle against climate change. Each of the Group's companies has its own strategy, conforming to the Group's overall strategy but adapted to its activities and the energy context in which it operates.

6.4.3.2.1.1 Reducing CO_2 emissions in the Group's industrial facilities, particularly generating plants

The EDF group generation fleet is the largest in Europe and also has one of the lowest rates of CO_2 emissions due to the high proportion of energy generated from nuclear and hydropower sources. In France, more than 96% of electricity generation emits no CO_2, keeping its specific emission rate in 2011 to 30.4g of CO_2/KWh while the European carbon factor is 337.3g of CO_2/KWh(1). The EDF group's specific emissions rate at a global level was 99.6 g of CO_2/KWh in 2011 (EDF estimates including emissions from heat generation).

In mainland France, EDF is committed to reducing absolute emissions of CO_2 (in millions of tons of CO_2) from its electricity generation facilities by 30% between 1990 and 2020.

EDF has a number of tools for reducing its greenhouse gas emissions, for example, in the short term, optimising its current plants, factoring in carbon costs when ranking generating methods, and improving the operating efficiency of its fleet. Over the longer term, the most important tools are modifications to generating equipment (modernising power plants, conserving hydroelectric potential, developing renewable energy resources and minimising the most polluting methods).

The development of renewable sources of energy is at the heart of the EDF group's strategy: the aim is to develop the renewable energy sector in a sustainable and profitable manner in Europe and worldwide. These developments include both centralised power generation projects (like the Nam Theun 2 hydroelectric power plant in Laos) and also decentralised approaches, helping customers produce energy where it is consumed. The Group is also focusing on its photovoltaic energy positions with its subsidiaries EDF Énergies Nouvelles (see section 6.4.1.2 ("EDF Énergies Nouvelles")) and EDF ENR (see section 6.4.1.2.2 ("Other holdings in the renewable energies sector")) with the construction of ground-based solar power systems, and the introduction of commercial photovoltaic offers.

Finally, EDF is actively investing in research and development of technologies for emerging industries such as marine energy (Paimpol-Bréhat tidal turbine farm) and the integration of these energy sources in the distribution and transmission networks.

(1) Source: PWC study "Climate Change and Electricity: European carbon factor Comparison of CO_2 emissions of Europe's principal electricity generators - November 2011".

6.4.3.2.1.2 Promoting energy efficiency and customers' efficient usage of electricity

EDF decided to make energy efficiency a key component of its commercial strategy.

The solutions developed and marketed by EDF are firmly based on energy-efficient equipment and the use of renewable energies in buildings, as well as encouraging efficient use of energy resources.

These solutions consist primarily of:
- offers of energy demand management services (EDM) (insulation, building upgrades);
- a concentrated effort to use new decentralised energies for heat production in buildings (heat pumps, solar water heaters, wood burning stoves and installations);
- developing decentralised electricity generation (photovoltaic energy);
- managing the load curve to cut back or limit consumption of energy from CO_2 emitting sources during "non-peak" periods;
- using smart meters to optimise the networks and perform remote measuring and remote actions to reduce greenhouse gas emissions;
- actions to inform and make domestic customers aware of energy savings;
- offering customers the option of consuming non-CO_2-emitting "green" energy or selecting "carbon" choices that are partially offset.

These offers from EDF's marketing network are tied to the supply of services delivered by the Group's specialised subsidiaries, supported by an extensive network of partners.

6.4.3.2.1.3 Reducing CO_2 emissions from our buildings and business travel

In addition to the direct emissions from its industrial facilities, EDF is committed to reducing the emissions from its service buildings, vehicle fleets, and business travel. On commercial buildings occupied by employees, the work undertaken relates to the tertiary fleet that it owns and rents. Furthermore, EDF is developing the energy management programme "Action Planet" (which became "Wattitude" in 2011) with its staff, which aims to:
- develop energy saving practices in homes;
- use means of transport that consume lower levels of CO_2;
- develop energy efficient habits.

6.4.3.2.1.4 Adapting to climate change

Since climate change has an impact on the Group's generation, distribution and transmission activities, as well as on the demand for energy, EDF group has adopted a strategy for adapting to climate change broken down into specific action plans, which help the Group to reduce its vulnerability.

The strategy covers industrial installations (present and future), customer offers, production/consumption optimisation and R&D and is organised around four areas:
- evaluating the impact of current and future climate change on installations and activities;
- modifying facilities when necessary to make them less vulnerable to extreme climates;
- taking into account future climatic conditions during the planning phase of new installations;
- improving resilience to cope with unforeseen changes and extreme situations.

6.4.3.2.2 Controlling the environmental and health impacts of the group's activities and facilities

By setting up an Environmental Management System, EDF is not only complying with regulations but also demonstrating its resolve to continually improve practice and performance so as to protect both the public and the environment.

6.4.3.2.2.1 Managing the development and operation of nuclear power plants in France

One of the challenges of the EDF group's sustainable development policy is to maintain the balance between nuclear and renewable energy sources. Faced with the major challenges of securing sources of supply, the fight against climate change and the control of energy costs, nuclear power is one of the solutions that reconciles energy requirements with the challenges of sustainable development. Nevertheless, acceptance of nuclear power varies among the countries where the Group has entities, subsidiaries and holdings. The EDF group must therefore contribute to answering questions that have been raised by public authorities about the role of nuclear power in the energy mix, while taking into consideration all the impacts of this sector, from upstream uranium extraction to waste management and decommissioning of downstream sites (see section 6.2.1.1.3 ("Nuclear generation")).

Safety is the EDF group's priority in operating these facilities. It is taken into account in structural design, and is consistently monitored with the policy of mobilising personnel and major investments programmes. The safety of nuclear facilities is supervised by the French National Safety Authority (*Autorité de Sûreté Nucléaire*).

The management of radioactive effluents (liquid and gas) from nuclear power plants is subject to strict regulation, and the Group's environmental policy expresses a firm resolve to limit the environmental and health impacts of its plants. Adjustments to the design and operation have allowed a very low level of radioactive waste to be attained.

Following this initiative, the Group is now doing the same for chemical waste for improved management. Water cooling tertiary circuits are receiving particular attention owing to the high flow rates involved. In particular, biocide treatments are proving effective in controlling microorganisms in water of these circuits.

Over and above monitoring its own plants, EDF also monitors the environment so as to measure the impact of its operations. The monitoring takes the form of radio-ecological and hydro-biological studies by independent laboratories and universities.

In order to participate in the national radioactivity measurement network of the RNME (French national network measuring environmental radioactivity) set up by the French Institute of Radiation Protection and Nuclear Safety (French IRSN), EDF has requested approval for its laboratories which were obtained by an ASN decision in June 2009. All of the results of the environmental monitoring measurements near the power plants are available on the EDF website and on the official website of the national measuring network.

6.4.3.2.2.2 Managing the development and operation of fossil-fuel fired power plants

The growth of renewable and nuclear energy in the energy generation mix of countries should allow a reduction in the use of conventional fossil-fuel fired plants and thus lower consumption of fossil fuels (coal, fuel oil and gas). However, the role of traditional plants remains significant, even in France, where nuclear energy and hydropower play a predominant role. Coal and gas-fired plants play an essential role in matching electricity generation to consumption in real time, allowing more rapid response to fluctuations in demand, unexpected peaks in consumption throughout the year and during cold spells of weather.

The environmental efficiency of the fossil-fuel fired power plants has improved steadily in response to tighter requirements arising from successive amendments to regulations. Investment programmes combine both demands for improvements in air quality and the reduction of atmospheric emissions, as well as regulations pertaining to the reduction of greenhouse gases.

The net result of the measures taken (installing gas denitrification equipment, strengthening dust filters, changing to different fuels, optimising combustion, etc.) results in a significant reduction in specific emissions and a drop in the overall volume of emissions of SO_2, NOx, and dust per unit of electricity generated, complying with the two-stage implementation of the 2001/2008/EC directive of 23 October 2001 on large combustion plants (referred to as the LCP Directive) on 1 January 2008, then on 1 January 2016 (see section 6.5.4.2.3. ("Regulations on thermoelectric power generation"). In the context of sustainable development policy, the volume of each of the pollutants SOx, NOx and dust from coal and gas fired-plants will be reduced at least by 50% between 2005 and 2020.

The Group is upgrading and adapting its existing plants with new investments, which use the best available technologies in the areas of energy efficiency, combustion, and techniques for the removal of pollutants (combined cycle gas plants in France, Italy and the United Kingdom).

6.4.3.2.2.3 Managing the development and operation of hydroelectric facilities

For many years, the EDF group has been committed to strengthening its role in water management, improving its knowledge of ecosystems, and reducing still further the impact of its activities on the environment by ensuring that ecology and sediments remain unaffected as far as possible.

The new French programme for opening hydropower schemes management concessions to competitive bidding, challenges operators, including EDF, to develop operating methods that could further improve the balance between energy generation, other uses for water and respect for the environment, particularly the coordinated management of catchment areas (coordination of the management of hydropower plants along the same watercourse).

6.4.3.2.2.4 Managing other impacts (waste, soil pollution, water)

The pollutants

The Group's industrial activities may result in soil pollution. Each of the Group's operational entities conducts a survey in four stages: making an inventory of sites, identifying which ones may potentially be polluted, soil analyses with priority being given to sensitive areas, monitored to control sources of pollution and develop a management plan; and finally their potential rehabilitation according to future use and regulatory requirements.

European directive 96/59/EC of 16 September 1996 required all member States to eliminate equipment containing PCBs or PCTs with a concentration exceeding 500 ppm by the end of 2010. The elimination plans appropriate to each company of the Group have met this deadline. Only one French distribution subsidiary remained at the end of 2010 for which the elimination plan was ended in the first quarter of 2011 (see section 6.5.4 ("Regulations on the environment nuclear facilities, health, hygiene and safety").

Conventional waste

EDF publishes an annual review of its management of conventional industrial waste resulting from production activities and research. In 2011, recycled waste accounted for 85% of the total of hazardous conventional waste and non-hazardous waste collected.

Water

The EDF group integrated water risk into its overall risks policy, in light of the importance of water to its electricity and heat generation activities. Each investment decision taken therefore undergoes a detailed risk analysis and impact analysis. In France, a strategic committee on water has designed a water policy and oversees its implementation.

This policy responds to four main challenges: "prepare for tomorrow" (EDF must meet the needs of society under complex conditions for sharing water resources); respond to regulatory and societal changes; contribute to the multi-use management of water and to local economic development; and optimise the operational management of water for energy producers.

Finally, the EDF group invests heavily in public policies and national and international thinking on water, in particular through its involvement in the World Business Council for Sustainable Development (WBCSD), in the World Energy Council and the World Water Council, and in the next Alternative World Water Forum to be held in 2012 in Marseille in France.

6.4.3.2.2.5 Managing emergency situations and environmental crises

In order to control the risk of industrial accidents and damage to the natural world or public health, each of the Group's companies identifies potential events that could have an environmental impact, manages potentially urgent situations, and carries out appropriate crisis management exercises.

A centralised organisation allows crisis situations to be managed at Group level and necessary information to be provided to governmental agencies and the media. Intervention processes are regularly reviewed and improved as a result.

6.4.3.2.3 Helping to preserve biodiversity

Like the struggle against climate change, conserving biodiversity is now seen as one of the major challenges in protecting the environment on a global level, alongside the struggle against climate change.

As a producer and distributor of energy, the EDF group is both a user of and dependent on unspoiled land and aquatic environments.

As a beneficiary of areas and resources with which it interacts, but also because of the consequences of the damage caused to its own activities by third parties, the EDF group is directly affected by the challenge of preserving biodiversity.

Since it began operating its first generation facilities, EDF has striven to better understand the impact it has and to apply measures to avoid or offset them; for example, since the beginning of the 1980s, EDF has worked to restore major fish migration routes, specifically by investing in research and design of fish ladders.

Against a backdrop of rapid regulatory change, many initiatives relating to unspoiled and wilderness areas have been implemented by all EDF group entities. To ensure consistency among these initiatives, responsibility for biodiversity preservation has been structured around the biodiversity policy signed in May 2006, included in the Group's sustainable development policy and implemented within the Group's Environmental Management System.

This biodiversity policy has three components: understanding, conservation and awareness-raising. EDF relies on its partnerships with non-governmental organisations, universities, and research laboratories.

EDF also runs biodiversity projects to raise awareness among its employees, the general public, schools and local councillors, including, for example, its commitment to the Festival of Nature since 2008.

6.4.3.2.4 Ongoing research and development

A large portion of the R&D budget is allocated to non-CO_2-emitting technologies (see section 11.2 ("R&D Priorities")).

R&D projects dedicated to the environment cover the full range of upstream and downstream issues relating to electricity, including:

- analysis of the CO_2 capture techniques, preparing for future demonstrators (prototypes that allow validation of research) (see section 11.2 ("R&D priorities");
- nuclear technologies: Generation IV reactors that will ultimately replace the EPR type, and geologic storage of radioactive waste;
- new generation technologies: micro-cogeneration, fuel cell batteries, tidal turbine system, new solar energy technologies, and biomass gasification;
- smart grid management to allow better integration of centralised and decentralised generation;
- electricity storage capacity to ensure continuity of supply at peak consumption points and cope with the intermittent output of certain renewable energies;
- efficient use of electricity and of energy in general. Work is underway on the habitat to improve the performance of technologies such as those incorporating ENR built: heat pumps, biomass, solar hybrid sensors, optimization of sanitary solar-heated hot water, and piloting of all those applications via smart meters or connecting infrastructures within the habitat. In the field of electric vehicles and plug-in hybrid vehicles, the work is organised around partnerships with car manufacturers in particular;
- recycling of conventional waste products as well as clean-up techniques for polluted land.

6.4.3.3 Social policy

6.4.3.3.1 Challenges

EDF strongly believes that improving its performance in the environmental and societal arenas is integral to its financial success.

Accordingly, in 2007 EDF introduced a new societal policy at Group level to create and enhance ties with outside stakeholders, optimise and strengthen communication with vulnerable customers, and invigorate internal communication.

This policy takes into account, supports, and reinforces existing action plans, ensuring that they are harmonised within the Group. The guidelines reflect those of the UN Global Compact and are an integral part of the EDF group's sustainable development policy in the CSR agreement and the Public Service Agreement (see section 6.4.3.5 ("Public service en France")).

6.4.3.3.2 Strategies

The EDF group's social policy takes into account the diversity of the stakeholders it deals with (vulnerable customers, jobseekers, persons with a disability, those living close to industrial facilities, local elected officials, etc.). It contributes to promoting energy efficiency. It also seeks to facilitate access to energy and improve living and working conditions, and contributes to promoting training initiatives in keeping with the needs of the Group and its partners.

The three main strategies of the EDF group's social policy are:

- to facilitate access to energy and energy efficiency by developing energy efficient solutions to the new problems of energy insecurity;
- to forge over time closer links with communities where the Group operates, by working closely with local stakeholders furthering sustainable development in their regions, by initiating and supporting local economic and social development projects, or by offering employment to vulnerable individuals in the energy, construction, technology and environmental fields;
- to contribute to educational efforts on energy issues, by helping people understand the challenges of sustainable development and climate change, and by promoting efficient uses of energy.

All personnel are informed of developments in social policies at Group level, and there is an ongoing dialogue on the subject.

6.4.3.4 Dialogue with stakeholders: sustainable development panel, environmental, societal, scientific, and medical councils

In the context of continued dialogue organised with stakeholders, EDF has established a sustainable development panel, an environmental council, a societal council, a scientific council and a medical council, open to persons from civil society who contribute their experience and expertise, in order to integrate these aspects within EDF's major strategic plans.

The Group Sustainable Development Panel is a body for dialogue made of independent, global specialists in fields relating to the Group's activities or who represent the expectations and interests of civil society. It also includes, as statutory members, the Chairmen of the environmental, company and scientific Committees, as well as the Chairman of EDF Energy's Stakeholder Advisory Panel (created in 2006). The Group Sustainable Development Panel provides advice and a critical assessment of the Group's commitments to Sustainable Development and their implementation. It meets once or twice per year with the Group's executives.

The Environmental Council is consulted to provide an outside view and a multi-disciplinary approach on the strategy, actions and environmental results of EDF. In 2011, the Environmental Council was integrated into the Council of Councils.

The Societal Council of EDF is consulted by the company on its strategy, its actions and social outcomes. It brings an outside view to the company and a multidisciplinary approach on matters submitted to it. This council is composed of experts, internal and external, representative of the various issues related to the societal approach of EDF. In 2011, it mainly debated the environmental and societal issues of sustainable cities and the changes in the public service model.

The EDF Scientific Council is a consulting organisation contributing opinions and advice to the company from well-known senior scientists on long and medium term research activities. It meets three times a year to discuss thematic issues prepared before the meetings and subject to a detailed report and recommendations to EDF's Chairman. The 2011 subjects were: chemistry of nuclear generation, "towards the uses of electricity in 2030" (new paradigms and conditions of development), and nanotechnologies: outlook for the electrical system. In 2011, the Council benefited from the participation of three members from abroad: Sir John Ball, English mathematician, Elie Saheb, Hydroquebec CTO and Dr H. Hippler, Chair of the Karlsruhe Institute für Technologie

Composed of personalities from the medical world, specialist doctors, university professors, the EDF Medical Council is a body reflecting and providing advice on a number of current topics regarding health at work, public health and environmental health in connection with EDF's activities. The Medical Council meets on average three times a year, to examine subjects such as electromagnetic fields, mental health and the risk of pandemic flu. EDF's Medical Council met three times in 2011, examining subjects that included: review of the situation concerning polychlorinated biphenyls (PCBs) (report on eliminations of contaminated transformers belonging to the EDF group) and health issues related to potential accidents and chronic pollution, results of the Gazel cohort. Finally, an inspection of the Flamanville 3 site was organised.

In 2011, following the nuclear accident of 11 March in Fukushima, EDF held a meeting of the Council of Councils "Conference for EDF group stakeholder councils on the impacts of Fukushima". This joint meeting of councils had the purpose of confronting, from the view point of recognised specialists and those with acknowledged involvement in civil society, the following themes: the Group's analysis of the Fukushima accident, its technical, health and social consequences and measures taken at Group level, and EDF's approach to safety and advances in understanding both with regard to its facilities in operation and to future projects in France and the rest of the world. This council met in November 2011.

6.4.3.5 Public service in France

Legal Definition of Public Service in France

Articles L. 121-1 *et seq.* of the French Energy Code provide the outlines of the Electricity Public Service (see section 6.5.1.2 ("French legislation: Energy Code") below for a description of this regulation).

The Public Service Agreement (CSP)

On 24 October 2005, a public service agreement was concluded between the State and EDF, in accordance with Article 1 of the law of 9 August 2004, now codified in Article L.121-46 of the French Energy Code. This agreement establishes the duties of the EDF group and the State for the period 2005-2007 and the compensation mechanisms for service commitments. This agreement remains in force pending the signing of a new agreement, in accordance with its own stipulations.

Purpose of the Public Service Agreement

This agreement is intended to provide the framework for the exercise of public service missions entrusted to EDF and its regulated subsidiaries in the open electricity market in France.

Obligations of EDF (outside network operators)

EDF's public service obligations relate to:

- access to the Public Electricity Service and supply of electricity to customers who elect to remain under regulated tariffs;
- production and marketing: these fields include the implementation of the energy policy and maintenance of safe electricity generation that safeguards the environment;
- contribution to the safety of the electricity network. EDF has undertaken to make various agreements with RTE governing the optimisation of work on generation equipment and the availability of necessary resources to keep the network in good working order.

Obligations of Network Operators

The network operators ERDF and RTE-EDF Transport have undertaken obligations in the Public Service Contract with respect to the management of the public networks and the safety of the electricity system. These obligations are financed by the network access tariff ("TURPE").

These commitments relate, in particular, to network security, quality of supply, the safety of third parties and the protection of the environment, which are four areas where the expectations of customers and local authorities are particularly high.

Services closest to needs

On 28 September 2010, the State and EDF, as well as eight other large public service operators, signed a partnership agreement "more services for the public" aimed at developing access to a group of service offers for rural populations in France (information on bill payment, information, purchasing travel tickets, etc.).

Physical reception and Internet access points, there are many resources available to users within shared premises such as Multiple Service Mediation Information Points (PIMMS), Public Services Stations (RSP) and other structures such as Town Halls. This agreement is now being rolled out in 23 French departments.

6.5 Legislative and regulatory environment

As of 31 December 2011 the State held 84.44 % of the social capital and 84.50 % of the voting rights of EDF and must, in accordance with the law of 9 August 2004 Codified at the article L.111-67 of Energy Code remain the owner of at least 70 per cent of its capital.

The French Government Holding Agency (*Agence des Participations de l'État*, or "APE"), created by French Decree 2004-963 of 9 September 2004 exercises the duties of the French State in its capacity as shareholder in the Company, and, as such, suggests and implements the decisions and strategies of the French government in cooperation with all of the Ministries involved.

In accordance with the legislation applicable to all companies in which the French State is the majority shareholder, EDF may be subject to certain government control procedures, in particular through an economic and financial control pursuant to Decree 55-733 of 26 May 1955 relating to the economic and financial verification by the French government, and Decree 53-707 of 9 August 1953 governing French government control of national public companies and certain entities with an economic or social purpose.

EDF is also subject to auditing procedures by the French General Accounting Office *(Cour des comptes)* and the French Parliament. In addition to the audit carried out by the two Statutory Auditors, the Company's financial statements and administrative management and, as appropriate, that of its direct majority subsidiaries, therefore come under the jurisdiction of the French General Accounting Officer pursuant to Articles L. 111-4, L. 133-1 and L. 133-2 of the French Code of Financial Jurisdictions.

Finally, the French Statutory Decree of 30 October 1935 organising the French State's control of companies, trade unions and associations or companies of any kind that have received the financial support of the French government, allows the Minister for economics to subject EDF to the audits of the General Finance Inspection office.

Moreover, the disposal of EDF shares by the French State, or the dilution of the state's ownership interest in EDF's capital, is subject to a specific procedure under the applicable regulation, and specifically Laws No. 86-793 of 2 July 1996, 86-912 of 6 August 1986 and 93-923 of 19 July 1993.

EDF group entities are subject to a wide variety of regulations in conducting their business activities. In particular, EDF is subject to European legislation on the electricity and gas markets, which has been transposed into French law, as well as the applicable environmental, nuclear power and safety regulations.

The following discussion of legal and regulatory provisions is not an exhaustive description of all the legal and regulatory provisions that are applicable to the EDF group.

6.5.1 Electricity market legislation

6.5.1.1 European legislation

Three European directives were successively adopted in order to lay down the common rules for the generation, transmission, distribution and supply of electricity, which form the basis for the current organisation of the electricity market in France. Directive 96/92/EC of 19 December 1996 laid the foundation for opening up the electricity market to competition.

Directive 2003/54/EC of 26 June 2003 reiterated the major principles and took an additional step on the path to opening up the market, by progressively expanding eligibility to all customers.

Directive 2009/72/EC of 13 July 2009, known as the "third directive", was adopted as part of the Third Energy Package, a term that designates a set of legislation adopted on 13 July 2009 .

This directive primarily strengthens the guarantees of the independence of transmission system operators and increases the power of the national regulatory authorities.

Regulations (EC) 1228/2003 of 26 June 2003 and 714/2009 of 13 July 2009

The conditions for access to the network for cross-border exchanges in electricity are currently defined by Regulation (EC) 714/2009 of the European Parliament and of the Council of 13 July 2009, which is part of the third Energy Package. This Regulation, inter alia, provides for a compensation mechanism between transmission systems operators for the costs incurred by hosting cross-border flows of electricity on their networks. This compensation is paid by the operators of the transmission systems from which cross-border flows originate and the systems where those flows end.

"Security of electricity supply" Directive 2005/89/EC of 18 January 2006

The "security of electricity supply" Directive 2005/89/EC, which was adopted on 18 January 2006, is intended to provide a better definition of the responsibilities of the various operators, ensure that minimum operational standards are respected, maintain balance between demand and supply, and direct investments toward the systems. The objectives of this directive have been taken into account in various laws and regulations.

6.5.1.2 French legislation: Energy Code

The various pieces of legislation on energy law (law no. 46-628 of 8 April 1946, law no. 2000-108 of 10 February 2000, law no. 2003-8 of 3 January 2003, law no. 2004-803 of 9 August 2004, law no. 2006-1537 of 7 December 2006 and law no. 2010-1488 of 7 December 2010) were codified by order no. 2011-504 of 9 May 2011 and are now part of the Energy Code, in accordance with authorisation law no. 2009-526 of 12 May 2009, with the exception of provisions on nuclear energy, which were incorporated into the Environment Code, pursuant to order no. 2012-6 of 5 January 2012.

Directive 2009/72/EC of 13 July 2009 was transposed into French law by the aforementioned order of 9 May 2011, which codified the legislative section of the Energy Code, in accordance with authorisation law no. 2011-12 of 5 January 2011.

Moreover, law no. 2005-781 of 13 July 2005, which established energy policy guidelines (*Loi de programme fixant les orientations de la politique energétique* or "LPOPE"), defined the energy policy priorities in France: supply security, reaffirmation of the role of nuclear power, competitive energy pricing, the fight against the greenhouse effect, social and national cohesion.

Public service missions

Article L. 121-1 of the Energy Code specifies that the purpose of the Electricity Public Service, inter alia, is to guarantee electricity supply throughout national territory, in keeping with the general interest.

Mission to promote balanced development of supply

The mission to promote the balanced development of electricity supply aims to achieve the objectives defined in the multi-year generation investment plan, which sets targets for allocating generation capacities by primary energy source and, where necessary, by generation technique and geographical area, as well as to guarantee supply to areas of the territory that are not interconnected to the continental metropolitan network.

At present, the multi-year investment plan is defined by an order from the Minister in charge of energy dated 15 December 2009.

As a power producer, EDF, along with the other producers, contributes to the achievement of the investment objectives defined in this programme.

Mission to develop and operate the public transmission and distribution systems

Developing and operating the public electricity transmission and distribution systems involves ensuring rational access to electricity in France through the public transmission and distribution systems, in a way that is environmentally friendly, interconnection with neighbouring countries, as well as connection and access to the public transmission and distribution systems, under non-discriminatory conditions.

The public network operators that are designated by the law are responsible for this mission, namely RTE for transmission, ERDF and the local distribution companies ("LDCs") for distribution, and EDF in the areas not interconnected to the continental metropolitan network.

Mission to supply electricity at regulated tariffs

The public service mission to supply electricity involves ensuring the supply of electricity throughout France to customers who benefit from regulated tariffs for electricity sales, the supply of electricity to low-income customers who are entitled to the "basic necessity" rate, and the supply of backup power to customers when the balance manager fails.

The conditions under which customers can benefit from regulated electricity sale tariffs are defined in Articles L. 337-7 *et seq.* of the Energy Code.

Social cohesion

Article L. 121-5 of the Energy Code provides that, as part of its mission to supply electricity at regulated tariffs, EDF contributes to social cohesion, in particular through the national equalisation of regulated electricity sale tariffs, the implementation of the special "basic necessity" rate and the continued supply of electricity pursuant to Article L.115-3 of the Social Action and Families Code. In particular, the law prohibits electricity suppliers from cutting off electricity during the winter period (1 November to 15 March) as a result of unpaid bills, for the primary residences of persons who benefit or benefited, during the previous twelve months, from a favourable decision to grant housing solidarity fund assistance.

Public service contract

Article L. 121-46 of the Energy Code provides that the objectives and conditions for carrying out the public service missions assigned to EDF are the subject of a contract signed with the French State (for a description of the Public Service Contract between the French State and EDF, see section 6.4.3.5 ("Public service in France")).

Generation facilities

Anyone can operate an electricity generation facility, subject, above a certain power threshold determined by decree, to obtaining an operating licence issued pursuant to Article L. 311-5 of the Energy Code. The powers and responsibilities of local authorities with regard to electricity generation are defined in Articles L. 2224-32 and L. 2224-33 of the Local Authorities Code.

Regulated access to electricity from the existing nuclear fleet ("ARENH")

The rules governing regulated access to electricity from the existing nuclear fleet ("ARENH"), provided for in Articles L. 336-1 *et seq.* of the Energy Code, have been implemented since 1 July 2011 (see section 6.2.1.2.1.2, "Competition") for more information on this point.

Choice of electricity supplier

All customers, without exception, have been eligible since 1 July 2007, i.e., they may freely sign a contract for the purchase of electricity with a producer or supplier of their choice that is established on the territory of the European Union or on the territory of a State that is party to an international agreement with France (Article L. 331-1 of the Energy Code).

Customers can choose to benefit from regulated electricity tariffs under the conditions set out in Articles L. 337-7 *et seq.* of the Energy Code. Pursuant to these provisions:

- household and non-household customers whose power demand is less than or equal to 36 kVA benefit from regulated tariffs, at their request and with no requirement to meet any conditions;
- this is also true for all customers in areas that are not interconnected to the continental metropolitan territory.

Household and non-household end users whose power demand is greater than 36 kVA, who had not exercised their eligibility on 7 December 2010 may, until 31 December 2015 benefit from regulated sales tariffs. If said consumers exercised their eligibility after 7 December 2010, they may once again benefit from regulated sales tariffs and switch back and forth between tariffs and new offers, subject to a one-year wait each time. After 1 January 2016, they will no longer benefit from regulated tariffs.

In addition, in order to reduce the impact of higher market prices for industrial customers, the law of 7 December 2006 temporarily instituted a "Return Tariff" for customers who exercised their eligibility: this transaction tariff system ("TaRTAM") ended on 1 July 2011, when the mechanism for regulated access to electricity from the existing nuclear fleet ("ARENH"), instituted by the NOME law, was implemented.

The compensation of the costs paid by the suppliers as a result of this system was notably ensured by a "hydro-nuclear contribution" owed by power producers that operate plants with a total installed capacity of more than 2,000 MW (mainly EDF), established on the basis of the volume of their generation of electricity from nuclear and hydropower sources over the previous year, with a limit of 3 euros per MWh (Article 30-2 of law no. 2004-803 of 9 August 2004, as amended).

Article L111-84 of the Energy Code requires internal accounts to be kept that make it possible to distinguish between supply to customers who exercised their right to eligibility and supply to customers at regulated tariffs. Member States or any other duly appointed authority will have a right of access to the electricity companies' accounts.

Third party access to networks

Article L. 111-91 of the Energy Code provides that system operators must guarantee access to the public transmission and distribution networks in order to:

- perform the public service missions to supply electricity;
- perform electricity procurement contracts;
- ensure the implementation of the electricity export agreements signed by a producer or by a supplier who is located on French national territory.

Disputes concerning third party access to networks are heard by the Settlement of Disputes and Sanctions Committee ("CoRDIS"), which is part of the Energy Regulation Commission ("CRE").

The tariffs for using the public transmission and distribution networks mentioned in Articles L. 341-2 *et seq.* of the Energy Code, which are currently in force, were established by the ministerial decision of 5 June 2009. For more details on the tariffs for using the public transmission and distribution networks, see section 6.2.2.4 ("Tariffs for using the public electricity transmission and distribution networks ("TURPE")") above.

Electricity purchase obligations

EDF is subject to electricity purchase obligations.

Articles L. 311-10 *et seq.* of the Energy Code provide that the Minister for energy may, when the generation capacity does not meet the objectives of the multi-year investment plan, launch a tendering procedure. EDF, in its capacity as a "Producer", can submit a bid in response to this tendering procedure. EDF, in its capacity as a "Buyer", is then required to enter into an agreement with the selected applicant(s) (this is a protocol in the event that EDF, in its capacity as "Producer", is the selected applicant).

Articles L. 314-1 *et seq.* moreover provides that EDF (as well as the LDCs that are responsible for supply in their service area) must sign a purchase contract, at the request of producers, for the electricity primarily generated by:

- facilities that recover household waste or that supply a heating network;
- facilities whose installed capacity does not exceed 12 MW and that use renewable energy sources (in particular photovoltaic energy) or high-performance technologies in terms of energy efficiency, such as cogeneration;
- facilities that use wind-based mechanical energy and that are located within a wind power development area or in the public maritime domain or in the economic exclusive zone;
- facilities that use energy recovery sources;
- in the overseas departments, electric facilities that generate electricity from biomass sources, including sugar cane.

These facilities may benefit only once from a purchase obligation contract, except in the specific case of certain hydroelectric plants.

Decree no. 2001-410 of 10 May 2001 provides that a producer that benefits from the purchase obligation must sell all of its production to EDF and that the purchase agreement models between EDF and the producers must be approved by the Minister for energy. Purchasing terms and conditions, specifically the electricity purchase prices, are set by order of the Minister for energy, after an opinion from the Higher Energy Council and the CRE.

A decree of 9 December 2010 suspended, for three months as from 10 December 2010, the obligation to sign a contract to purchase the energy generated by photovoltaic facilities, with the exception, however, of facilities with power less than or equal to 3 KWc, facilities with a current contract, and projects that are already well advanced.

At the end of this suspension period, a new regulatory framework became effective, which primarily comprises two orders. The new price conditions are laid down by an order of 4 March 2011, which establishes several price formulas that primarily take into consideration the integrated or non-integrated nature of the facility, its peak power and the peak power of all the other facilities connected or planned on the same building or the

same land parcel, as well as the use of the building on which the facility is located.

Purchase prices are adjusted quarterly, based on the cumulative power of the facilities for which complete connection requests were made during the previous quarter. Some facilities, especially ground facilities, are the subject of quarterly sliding scale that does not take into account the volume of the connection requests filed with the network manager in question.

Moreover, the government's intention was for the arrangement to be completed by a tendering procedure system for facilities on buildings of more than 100 kWc, and ground facilities. The conditions for holding these tendering procedures are specified by the amended decree of 4 December 2002 on the tendering procedure for electricity generation facilities. Two tendering procedures involving photovoltaic facilities are pending at the time of writing.

The additional costs resulting from contracts to purchase the energy generated by these photovoltaic facilities, paid by EDF and the LDCs tasked with supply are compensated by the CSPE received from final consumers.

Mechanism for compensating the additional costs of public service

The Contribution to Electricity Public Service Costs – CSPE

The Contribution to Electricity Public Service Costs, which is provided for by Articles L. 121-6 *et seq.* of the Energy Code, is intended to compensate the costs that are attributable to the public service missions assigned to EDF and the LDCs. The law states that in principle, the following costs are compensated in full:

- For electricity generation:
  - the additional costs that result both from electricity purchase agreements entered into after tendering procedures (Articles L. 311-10 *et seq.* of the Energy Code) and from purchase obligation agreements signed within the framework of Articles L. 314-1 *et seq.* of the Energy Code, including when the facilities concerned are operated by EDF or an LDC;
  - additional generation costs in zones not interconnected to the continental metropolitan territory, which are not covered by the part of the regulated sales tariffs that is intended to compensate generation costs.
- For the supply of electricity:
  - loss of income and the additional costs incurred in the implementation of the special "basic necessity" rate ("TPN");
  - costs incurred as a result of their participation in the plan established for low-income persons (within the limit of a percentage, which is set by order, of the cost borne by the supplier in respect of the TPN for the year in question).

The CSPE is collected in full directly from the final customer, either as an additional levy on regulated sales tariffs or on network usage tariffs or directly from power producers that produce power for their own use.

Pursuant to the budget law for 2011, Article L. 121-13 of the Energy Code provides that in the absence of ministerial order as of 31 December that sets the amount of the contribution for the following year, the amount proposed by the CRE becomes effective on 1 January, limited to a 0.003 euros/KWh increase in the amount applicable before this date(1).

Article 56 of the amended budget law for 2011 set the amount of the CSPE at 9 euros/MWh for the period from 31 July 2011 to 30 June 2012, then at 10.5 euros/MWh from 1 July to 31 December 2012.

Since 1 January 2011, the CSPE is capped at €550,000 per consumption site and per year. Starting in 2011, this limit will be updated each year in a proportion equal to the provisional rate of increase in the price index (excluding tobacco). In addition, the total amount due for this contribution by any industrial company that consumes more than 7 GWh of electricity per year is limited to a maximum of 0.5% of its added value.

The massive expansion of facilities that generate electricity using renewable energy sources (mainly wind power and photovoltaic facilities) and that benefit from the purchase obligation, has led to a significant increase in the costs to be compensated by the CSPE.

Compensation for additional distribution costs

The electricity equalisation fund (*fonds de péréquation de l'électricité* – FPE) is intended to distribute the charges incurred as a result of public service commitments assigned for managing the electricity distribution networks among the operators concerned.

Capacity guarantees

Articles L. 335-1 *et seq.* of the Energy Code, which are taken from the NOME law, obligate each electricity supplier to contribute to the security of electricity supply on continental metropolitan territory, in light of its customers' energy consumption patterns. Under penalty of an administrative sanction, each supplier must therefore provide direct or indirect guarantees of its capacities to interrupt electricity consumption and generation, which can be implemented to ensure balance between generation and consumption, in particular at peak periods. A decree issued following consultation of the French Supreme Administrative Court will specify how this system will work in practice.

Until this decree is published, and as a transitional measure, Article 7 of the NOME law provides that the RTE must hold an annual tendering procedure, under conditions approved by the CRE, in order to implement additional cut-off capacities over a three-year period, during peak consumption periods.

Electricity sector regulation

The Energy Regulation Commission

The Energy Regulation Commission ("CRE") is an independent administrative authority created by Article 28 of the law of 10 February 2000.

Articles L. 131-1 *et seq.* of the Energy Code give a general definition of the remit of the CRE, which is tasked with improving the situation of final consumers, and contributing to the correct functioning of the electricity and natural gas markets. In this respect, the CRE ensures, in particular, that the conditions for access to electricity and natural gas transmission and distribution networks do not impede the development of competition.

(1) In a decision dated 7 October 2010 published in the Official Journal on 6 January 2011, the CRE stated that, in order to completely compensate the electricity public service costs, the CSPE should amount to 12.9 euros/MWh in 2011, of which 9.3 euros/MWh will cover the provisional public service costs for 2011 and 3.6 euros/MWh in order to cover the adjustment for 2009 and the remaining balances.

The CRE has both advisory powers (power to recommend and issue an opinion), and decision-making powers (approval power and regulatory power).

The CRE makes proposals to the Minister for the economy and for industry regarding the amount of the costs that are attributable to the public service missions assigned to power producers, and the net amount of the related contributions. Starting in 2013, the price of regulated access to electricity from the existing nuclear fleet ("ARENH") will be defined on the basis of a proposal by the CRE; the same will apply as from 2016 for regulated sales tariffs and the transfer rate. Moreover, the CRE now has decision-making power to set tariffs for use of the public transmission and distribution systems: it notifies its decision, with the attendant reasons, to the administrative authority, which merely has the power to ask the CRE for a new deliberation. The CRE also has significant powers to obtain information and hold investigations, as well as authority to settle disputes and to apply penalties, through the Settlement of Disputes and Sanctions Committee ("CoRDIS").

Furthermore, Regulation (EC) 713/2009 of the European Parliament and of the Council of July 13, 2009, established an Agency for the Cooperation of Energy Regulators (ACER). The ACER will participate in the creation of network codes in the electricity and gas sector, and can make decisions relating to cross-border infrastructures (see also section 6.5.4.2.5 ("Regulations applicable to renewable energy generation")).

6.5.2 Gas market legislation

6.5.2.1 Community legislation

Directive 98/30/EC of 22 June 1998 and Directive 2003/55/EC of 26 June 2003 were the major steps towards opening up the gas market to competition.

New rules aimed at improving the functioning of the internal natural gas market were defined in Directive n°2009/73/CE of 13 July 2009, which was transposed into the Energy Code by order n°2011-504 of 9 May 2011, and by Regulation (EC) n°715/2009 of 13 July 2009 on conditions for access to the natural gas transmission networks.

6.5.2.2 French legislation: Energy Code

Directive 2009/73/EC of the European Parliament and of the Council of 13 July 2009 was transposed into French law by order no. 2011-504 of 9 May 2011, which codified the legislative section of the Energy Code. The Energy Code entered into force on 1 June 2011.

Access to natural gas networks

The Energy Code provides that customers, suppliers and their agents have a right to access natural gas transmission and distribution infrastructures, as well as LNG facilities, under the terms and conditions set forth in an agreement with the operators that run them.

Natural gas network operators must refrain from discriminating between users or categories of users in any way.

Customers

Since 1 July 2007, all customers can freely choose their supplier.

Pursuant to the provisions of Article L. 445-4 of the Energy Code, household and non-household customers who consume less than 30,000 kWh per year may benefit from regulated tariffs, at their request and without having to meet any conditions. Household customers who are entitled to the special "basic necessity" rate for electricity, may, at their request, benefit from a special solidarity rate applicable to the supply of natural gas and related services for part of their consumption. The conditions for application of this provision are fixed by decree no. 2008-778 of 13 August 2008 on the supply of natural gas at the special solidarity rate amended by the decree n°2012-309 of 6 March 2012 on the automation of procedures for the award of social tariffs for electricity and natural gas. The additional costs that result from supply at this rate are compensated by a contribution due by natural gas suppliers, based on the quantities of natural gas sold by these suppliers to final customers.

Customers whose consumption exceeds 30,000 kWh per year can only benefit from regulated gas sale tariffs for a site if no new offer has been accepted for such site, pursuant to Article L. 445-4 paragraph 2 of the Energy Code.

Suppliers

The Article L. 443-4 of the Energy Code defines suppliers as persons who (i) are established on the territory of a Member State of the European Union or on the territory of another State pursuant to international agreements, and (ii) hold a licence issued by the Minister for Energy.

EDF is authorised to supply natural gas to non-household customers that do not provide a general interest service, pursuant to an order of the Deputy Minister of Industry of 14 September 2004, and pursuant to an order of 9 August 2005, to non-household customers that provide services in the public interest, as well as to natural gas distributors and suppliers, and pursuant to an order of 15 June 2007, to household customers.

EDF only supplies its clients pursuant to a new offer and not at regulated sales prices.

Underground storage and third-party access to natural gas storage facilities

The Energy Code requires all suppliers to hold, on 31 October of each year, directly or indirectly through an agent, sufficient inventories of natural gas in France to meet its direct or indirect contractual obligations to supply household customers and other customers that provide services in the public interest or that have not contractually accepted interruptible gas supply, during the period between 1 November and 31 March.

Decree no. 2006-1034 of 21 August 2006, as amended, specifies the legal framework that applies to underground storage facilities for natural gas.

Control and penalties

The Energy Code grants authority to the Minister for energy and for the Economy, as well as the Energy Regulation Commission, power to oversee the gas market. The Minister for energy may also levy a fine, or withdraw or suspend an authorisation to supply natural gas. The CRE can carry out investigations into whether offences that breach the provisions of the Energy Code have been committed (Article L 135-13 of the Energy Code).

6.5.3 Public electricity distribution concessions

French legal system applicable to concessions

In accordance with Article 6 of the Law dated 15 June 1906 (Article L322-1 and flowing the Energy Code), public distribution of electricity is operated under a system of public service concessions. This system was maintained under the subsequent laws enacted on electricity. Pursuant to this body of law, the licensing authorities organise public electricity distribution service through concession agreements and specifications which set forth the respective rights and obligations of the licensing authority and the licensee. Currently, the licensors are most often public establishments for inter-municipal (*"commune"* level in France) cooperation, or sometimes even at the county (*"departement"* in France) level.

The unbundling of supply and network operations required under Community Directives has led to the identification of two separate public service missions: first, the supply at regulated tariffs assigned to EDF and the LDCs in their exclusive service areas and, second, the development and operation of the public electricity distribution networks assigned to ERDF and the LDC in their service areas, and to EDF for areas which are not interconnected to the continental metropolitan network. Article L. 334-3 of the Energy Code provides that the signature of new concession agreements and amendments, as well as renewals of existing concession agreements must be executed by three parties: the licensing authority, the distribution network manager (for the provisions relating to management of the public distribution network) and by EDF (or the LDC having the authority in the geographic area) for supply at regulated tariffs. The current concession agreements in force are deemed to have been signed jointly by these three entities.

Rights of the licensing authorities

The rights of the licensing authorities are detailed in section 6.2.2.2.4 ("Concessions") above.

6.5.4 Regulations applicable to the environment, nuclear facilities, health, hygiene and safety

EDF's business in France, as well as in other countries where EDF operates, is subject to regulations applicable to the environment, nuclear power, health, hygiene and safety. Compliance with these increasingly strict and continuously changing regulations exposes the Group to significant costs to ensure its business is in compliance.

6.5.4.1 Basic regulations applicable to the environment, health, hygiene and safety

Environmental regulations

Grenelle 1 Law

This Planning law No. 2009-967 dated 3 August 2009 for the implementation of the Grenelle Environmental Forum (known as "Grenelle I") sets out a number of environmental commitments and objectives for the medium and long term, including the reduction of greenhouse gas emissions, energy efficiency, the development of renewable energy sources, the protection of biodiversity and natural habitats, the prevention of risks to health and the environment and waste management. Furthermore, the law reinforces the role of not-for-profit environmental organisations and the importance of information on the environment and contains several clauses relating to corporate governance.

Grenelle 2 Law

The law No. 2010-788 dated 12 July 2010, known as "Grenelle 2", defines the national commitment to the environment and provides an operational definition of the more general commitments made in the Grenelle 1 law. A number of its provisions impact EDF's activities, including:

- The introduction of new territorial planning instruments to allow a balanced development of the different renewable energy industries. Among these instruments is the Regional Master Plan on Climate, Air and Energy ("SRCAE"). The legal system applicable to the SRCAEs was recently set down in Articles L 222-1 to L 222-3 and R 222-1 to R 222-7 of the French Environmental Code and in principle, the SRCAEs must be adopted before 30 June 2012;
- The establishment of green and blue belts designed to compensate for the loss of biodiversity by connecting protected natural areas and creating ecological corridors between these areas;
- The strengthening of the ICPE legal system with the aim of preventing industrial risks;
- The extension of the social and environmental reporting obligations of companies provided for under Article L 225-102-1 of the French Commercial Code. The scope of application of this obligation has been extended to cover certain unlisted companies based on threshold triggers (balance sheet, headcount). In addition, companies that produce consolidated financial statements will have to provide in their management report not only their own social and environmental information, but also information on all of their subsidiaries or the companies which they control. Since the enactment of law no. 2012-387 of 22 March 2012 on the simplification of the law and the streamlining of administrative procedures, the subsidiaries or controlled affiliates that exceed the aforementioned thresholds are no longer required to publish social and environmental information, provided that this information is published by the company that controls them, in detail by subsidiary or controlled affiliate, and provided that said subsidiaries state how to access this information in their own management report. In certain cases, itemised information will be required in addition to the consolidated information. For listed companies, as of the financial years ending on 31 December 2011, the verification of data supplied will be performed by third-party independent organisations which will issue an opinion. As of the filing date of this Reference Document, the Decree to implement these provisions had not yet been published.

Environmental Liability Law

The law dated 1 August 2008 on environmental liability, integrated into the French Environmental Code under Articles L.160-1 to L.165-2, was enacted for the purpose of promoting the prevention and remedying of environmental damage to water, soil and biodiversity reaching a certain level of seriousness. The remedy must be environmental only and must allow the natural environment to return to its previous state or an equivalent state.

The Law on Water and the Aquatic Environment

The law on water and the aquatic environment dated 30 December 2006 strengthened the restrictions EDF must comply with in particular as regards the minimum rate of water flow downstream of dams, the possibility of having its operating licences amended or cancelled if significant disturbances are caused to certain migrating fish by the operation of the site, changes in waterway classifications to prevent the construction of new sites and new requirements when operating licences are renewed.

However, the minimum rate flow requirement may be more flexible in certain cases, particularly for sites contributing to peak production (Decree no. 2010-1391 dated 12 November 2010). Administrative procedures have also been simplified, which will facilitate the installation of additional hydroelectric equipment.

PCBs and PCTs

The Group is subject to Regulations on polychlorobiphenyls (PCBs) and polychloroterphenyls (PCTs) in the various countries where it operates, particularly in Europe.

European Directive 96/59/EC dated 16 September 1996 required that an inventory of equipment containing PCBs and PCTs at a higher rate to 500 ppm be drawn up, together with a national plan for decontamination and the gradual disposal of these substances, which are mainly found in certain electricity transformers and condensers. Decontamination of equipment containing these substances was to be completed by 31 December 2010 at the latest. EDF had a special disposal plan and has achieved this objective (see also section 6.4.3.2.2.4 - "Managing other impacts (waste, soil pollution, water)").

Greenhouse gases

Some of the EDF group's activities are governed by European Directive 2003/87/EC dated 13 October 2003, as amended, establishing a European scheme for greenhouse gas ("GHG") emission allowance trading, for the project mechanisms set forth in the Kyoto Protocol (the ETS Directive).

In France, this Directive was transposed and integrated into Articles L. 229-5, R. 229-5 *et seq.* of the Environmental Code. Pursuant to these legal provisions, France approved its second "National Allowance Allocation Plan" ("PNAQ") for the period 2008-2012 via a Decree dated 15 May 2007. The PNAQ 2 sets the total of CO_2 allowances at 132.8 Mt CO_2, of which 25.6 Mt CO_2 allocated to the electricity sector and 16.58 Mt CO_2 per year to EDF. The Group has an annual obligation to surrender allowances equal to the level of CO_2 emitted by its facilities. In order to comply with this obligation, under certain conditions, EDF may use credits issued under projects eligible for the project mechanisms provided for under Articles 6 and 12 of the Kyoto Protocol (parties acting jointly to fulfil obligations and clean development mechanism).

The French Finance law 2011-1977 dated 28 December 2011 for the year 2012 (Article 18) created a special tax levied on the sales turnover of beneficiaries of CO_2 allowances. This tax, payable as of 1 January 2012, is due by parties who received at least 60,000 CO_2 allowances during the period running from 1 January 2008 to 31 December 2012. This tax will be levied on the basis of 2011 turnover and set at a rate (decided pursuant to Ministerial Decision) of between 0.03% and 0.07%, with a ceiling placed on the total amount of tax that can be levied. The proceeds from this tax should allow the State to finance the purchase of allowances missing for new entrants for the 2010-2012 period (estimated at 30 million allowances). The main sectors being asked to contribute are electricity and gas generation (EDF), together with the food, chemical and metal industries.

As of 2013, allowances will be auctioned and no longer allocated free of charge for the electricity sector. Therefore, EDF will have to purchase 100% of its allowances. EU Regulation No. 1031/2010 dated 12 November 2010 specifies the terms and conditions applicable to these auctions.

GHG Reporting

Pursuant to Articles L. 229-25 and R. 229-45 *et seq.* of the French Environmental Code, companies with over 500 employees must provide an annual report on their greenhouse gas emissions and a summary of the action they plan to take to reduce such emissions.

The information disclosed is made public and must be updated every three years. GHG reports must be submitted for the first time before 31 December 2012. The report must cover the activities of legal entities taxable in France. A Government Decision specifies the national atmospheric emissions inventory and reporting system, as well as information on the methodology to be used to draw up the report.

Energy savings certificates

The mechanism of energy savings certificates set forth in Articles L. 221-1 *et seq.* of the French Energy Code places energy suppliers under the obligation to save energy. Pursuant to this mechanism, a three-year objective was defined under these Articles which is shared between persons subject to an obligation to achieve energy savings (the "obligors") based on their sales volumes. For the period running from 1 January 2011 to 31 December 2013, the savings objective is 345 TWhc (compared to 54 TWhc for the first period). EDF's obligation should amount to roughly 140 TWhc (compared to 29.8 TWhc for the first period). The final amount will be decided and notified to parties no later than 31 March 2014 after a certified declaration of annual quantities sold during the period is issued by companies via a certified accountant or a Statutory Auditor. At the end of the relevant period, the "obligors" must produce energy savings certificates corresponding to the amount of the energy savings they are under the obligation to achieve, obtained either by carrying out (directly or indirectly) energy savings actions or by purchasing credits from the other "eligible" economic players through the national register of certificates. Failure to produce energy savings certificates is subject to penalties.

Natural sites and classified sites (buried lines)

The EDF group is also subject to Regulations on classified and protected sites, according to which electricity lines in France must be buried underground if they are located in classified sites or in national parks.

Protection of the environment through criminal law

Directive 2008/99/EC dated 19 November 2008 on the protection of the environment through criminal law, with the principal objective of identifying conduct leading to serious environmental damage which must be punished by all Member States. This Directive was at the origin of French Ordinance no. 2012-34 dated 11 January 2012 designed to harmonise criminal penalties laid down in the French Environmental Code.

Regulations applicable to health, hygiene and safety

Asbestos

In France, regulations require the identification of materials containing asbestos in buildings and, if necessary, monitoring procedures or asbestos removal work. EDF is also subject to regulatory obligations to inform and protect workers who may inhale asbestos dust.

Legionella

EDF operates air cooling towers needed for its electricity generation business, which are now subject to ICPE Regulations. EDF must, among other obligations, carry out a methodical analysis of the risk of proliferation of legionella in its air cooling towers and implement a preventive maintenance plan for cleaning and disinfection. EDF is also required to carry out analyses once or twice a month, depending on the type of facility involved.

Nanoparticle substances

Articles L. 523-1 and following and R. 523-12 of the French Environmental Code provide for a compulsory reporting obligation on the quantities and uses of nanoparticle substances and nanomaterials produced, distributed or imported in France. Information on these substances must be made available to the public and to inspection authorities. EDF does use nanoparticle substances and will thus likely to be subject to this reporting obligation.

Exposure to Electromagnetic Fields (EMF)

Pursuant to the Grenelle 2 Law, a Decree issued 1 December 2011 (no. 2011-1697) now requires managers of public electricity transmission networks to perform regular verifications of EMF caused by electric lines transmitting electricity.

Regulations on chemical products

EC Regulation no. 1907/2006 on the registration, evaluation and authorisation of chemicals, known as "REACH" came into force on 1 June 2007 and is designed to ensure a high level of protection of human health and the environment, as well as the free movement of substances within the internal market while improving competitiveness and innovation. EDF is affected by this Regulation as a user, but also as a manufacturer and importer of chemical products. EDF has complied with its obligation to register substances that it manufactures or imports in quantities of more than 1,000 tonnes per year with the European Chemicals Agency. For the next registration deadline in May 2013, EDF is now preparing to register monochloramine and sodium hypochlorite. A revision of the REACH Regulation is planned for 2012.

In addition, Directive 98/8/EC of the European Parliament and of the Council dated 16 February 1998 concerning the placing of biocidal products on the market[(1)] transposed into Articles L.522-1 *et seq.* of the French Environmental Code established a system of authorisations for placing on the market of biocidal products in the European Union. The Directive's main purpose is to ensure a high level of protection of humans, animals and the environment by limiting the placing on the market to those biocidal products which are effective and have acceptable risks and by encouraging the placing on the market of active substances that pose less of a risk to humans and the environment. EDF is affected by this Directive as a user of biocidal products.

6.5.4.2 Regulations applicable to EDF group facilities and activities

6.5.4.2.1 Regulations applicable to facilities classified for protection of the environment

Facilities subject to authorisation

Certain facilities operated in France by EDF, in particular coal and gas-fired power plants, are subject to Laws on Classified Facilities for the Protection of the Environment ("ICPE"). These Laws have now been incorporated into the French Environmental Code. These facilities are subject to either a prior declaration, a simplified authorisation (called registration) or to an authorisation depending on the magnitude of danger or adverse effects they may cause to the environment or public health. Applications for authorisation to operate an ICPE must include a file providing an analysis of the impact of the project on the environment, known as an "impact study". This study provides an analysis of the effects of the facilities on the environment and human health. ICPE authorisation is granted after a public inquiry has been held in accordance with the provisions of the French Environmental Code.

The Grenelle 2 Law and its implementing Decrees (nos. 2011-2019 and 2011-2018) reformed the provisions applicable to impact studies and public inquiries that apply to EDF's projects. The objective of this reform is to ensure that France complies with International conventions and Community law (Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters and Directive 85/337/EC dated 27 June 1985 on the assessment of the effects of certain public and private projects on the environment). The new system has increased the amount of information required in the impact studies (study of cumulative effects, measures in order to avoid, reduce and remedy, etc.) and modified the public inquiry procedure (duration of the inquiry, merging of inquiries, content of the inquiry, etc.). This system will become applicable as of 1 June 2012.

The ICPE Regulations also require that the site be restored when a facility is taken out of service depending on the expected future use of the land. Lodging financial guarantees is also required for certain facilities, such as quarries, waste disposal facilities, Seveso facilities and geological carbon dioxide disposal sites. Depending on the type of danger or adverse effect each category of facility could cause, these guarantees are designed to ensure the on-going surveillance of the site and safety of the facilities, potential measures that must be taken in case of an accident before or after closing of the site and restoration of the site once it has been closed. These guarantees do not cover compensation owed by the operator to third

(1) The Directive defines biocidal products as active substances and preparations containing one or more active substances, put up in the form in which they are supplied to the user, intended to destroy, deter, render harmless, prevent the action of, or otherwise exert a controlling effect on any harmful organism by chemical or biological means.

parties who may suffer damages due to pollution or an accident caused by the facilities.

ICPEs are placed under the authority of the Prefect and the Regional Departments for the Environment, Land Planning and Housing ("DREAL"), which are responsible for organising inspections of classified facilities. If the operator of an ICPE fails to comply with the conditions laid down applying to its operations, the Prefect may order administrative penalties, such as the deposit of an amount equal to the cost of the works to be performed to make the facilities compliant, court-ordered enforcement of the measures ordered per the Prefect's Decision, suspension of operations, or even a proposal to shut down or decommission the facility by way of a decree issued by the French *Conseil d'État*, in addition to potential prosecution under criminal law.

Health and safety provisions

In addition to technical requirements for the protection of health and safety, the Prefect's Decision to authorise a facility may also require the operator of that classified facility to establish an "Internal Operations Plan" (POI) to define the organisational measures, response measures and the necessary resources to protect employees, the population and the environment in the event of an accident.

Directive 2010/75/EU dated 24 November 2010 on industrial emissions ("IED") revised and recast into a single piece of legislation several existing Directives, including the IPPC, LCP, Waste Incineration Directive and VOC Directives, among others. Chapter III of this Directive affects EDF in particular as it regulates the production of electricity using thermal combustion plants. The level of requirements applicable to these plants depends on the type of facilities and fuel used and will enter into force as of 1 January 2016. This Directive has been partially transposed into French law via Ordinance no. 2012-7 dated 5 January 2012 (Chapter II of the Directive). The transposition of this Directive (added to the French Environmental Code under Articles L. 515-28 to L. 515-31) has the effect of broadening the scope of application of the IPPC Directive to include new activities, strengthening the application of the best available techniques (BAT) on which the fixed emission limit values will be based, causing a reconsideration of operating conditions within four years of BAT adoption and in certain cases, requiring a "baseline report" on the state of soil. A draft decree to implement these measures is currently being worked on.

6.5.4.2.2 Specific regulations applicable to basic nuclear facilities

EDF is subject in France to Law no. 2006-686 dated 13 June 2006 on transparency and safety in the nuclear field (the "TSN law", integrated into the French Environmental Code via Ordinance no. 2012-6 dated 5 January 2012) and to decree no. 2007-1557 of 2 November 2007 implementing this law. This legislation establishes the legal system applicable to Basic Nuclear Facilities (known as "INB" in French). The law created the Nuclear Safety Authority ("ASN"), an independent government agency, with the relevant Ministries retaining authority to issue the main authorisations and draft general regulations.

The TSN law provides that the establishment of basic nuclear facilities may be authorised after a public inquiry has been conducted by way of a Decree issued by the Prime Minister. This Decree is issued after an opinion from the French ASN has been given and is based on the report from the Ministries in charge of nuclear safety. The Decree authorising a basic nuclear facility defines the surface area of the facility, records the type and capacity of the facility, sets a time limit to commission the facility and sets the frequency of safety inspections if not equal to 10 years. Finally, the Decree also lays down requirements to ensure the protection of public health, sanitation and safety, and the protection of nature and the environment. The commissioning authorisation is granted by the ASN. Subsequent safety inspections assess the compliance of the facilities with the applicable regulations and update the assessment of the risks that the facility poses to the interests mentioned above.

In addition, the conditions applicable to pumping water, discharging liquid and gaseous wastes - whether radioactive or not - as well as the related limits placed on these activities are set pursuant to the Decree authorising the facility by way of a decision of the ASN, subject to the approval of the Minister for Energy of the decisions setting these limits.

The ASN also issues regulations pursuant to the Decree authorising the establishment of the facility in order to prevent or limit the effects of any accidents or incidents, to define measures to protect residents on an individual and collective basis, limit noise pollution and manage the waste generated by or stored at the facilities.

Rules on the safety and inspection of nuclear facilities

EDF's nuclear facilities are subject to nuclear safety regulations. Thus, the application for an authorisation includes a preliminary safety report. For an "INB" basic nuclear facility, this report constitutes a study of the dangers and lists the risks the INB is inherently exposed to. These include the appropriate measures to be taken to limit the probability of accidents occurring and their effect and to limit the consequences of a potential accident, together with an impact study of the facility on the environment and health, a decommissioning plan and a risk management study. Basic nuclear facilities must also comply with the general rules defined by Ministerial Decision to protect against risks related to safety, health and public sanitation and to protect nature and the environment. An Internal Emergency Plan ("PUI") specifying the organisation and resources to be implemented in the event of an accident must be established by the operator. In addition, the operator must also prepare an annual report, submitted to the Committee for Hygiene, Safety and Working Conditions ("CHSCT"), which is made public and which describes in particular, the measures taken in terms of nuclear safety and radiation protection. Moreover, any accident or incident, whether nuclear-related or not, which has or may have material consequences on the safety of a basic nuclear facility must be declared immediately to the ASN, among other authorities, which will ensure the adoption of appropriate measures to remedy the accident or incident and to avoid such accident or incident from occurring again.

The ASN also has the authority to issue regulatory decisions of a technical nature to complete the terms and conditions for application of the Decrees and Decisions issued in the field of nuclear safety and radiation protection. These decisions are subject to the approval of the relevant Ministers.

The TSN Law also includes provisions concerning information to be provided to the public on nuclear safety and transparency, such as the

creation of a High Committee for Transparency and Information on Nuclear Safety or the possibility given to any person to ask the operator directly for information on the safety risks involved in basic nuclear facilities.

Finally, increasingly harsher administrative and criminal law penalties have been established to punish basic nuclear facilities operators who do not comply with their legal and regulatory obligations, such as a three-year prison sentence and a €150,000 fine if a basic nuclear facility is operated without authorisation, or a one-year prison sentence and a €30,000 fine if radioactive substances are transported without authorisation.

Decommissioning of nuclear facilities

The final shutdown and decommissioning of a basic nuclear facility are authorised by way of a Decree once the ASN has issued an opinion. The ASN defines the specifications for decommissioning and the Decree defines, among other aspects, the decommissioning characteristics and execution time. Once the decommissioning has been completed, the operator must send the ASN a declassification request. Subject to the procedure provided in the INB Decree, the ASN will issue a declassification decision which will be subject to approval.

Radioactive waste

EDF's business is subject to French regulations on the handling, storage and disposal of radioactive waste. EDF bears liability for the radioactive waste resulting from its operations. In France, radioactive waste is managed by the National Agency for Radioactive Waste Management (ANDRA), a public institution of industrial and commercial nature created under French Law dated 30 December 1991.

The method of storage and disposal used for radioactive waste in France depends on its level of radioactivity and lifespan of radioactivity. In addition to certain temporary storage on EDF sites, very low-level waste produced by EDF (for example, concrete or metal waste from the decommissioning of a nuclear power plant) is disposed of on an ANDRA site opened in 2003. Short-life, low or intermediate-level radioactive waste that is produced by EDF's operations is disposed of above ground at the ANDRA storage centre in Aube County (see section 6.2.1.1.3.4 ("The nuclear fuel cycle and related issues")). Long-life, high-level waste produced from the treatment of spent fuel is vitrified and stored temporarily at the AREVA NC (formerly Cogema) centre in The Hague pending the adoption of a long-term management solution (see section 6.2.1.1.3.4 above ("The nuclear fuel cycle and related issues")). Long-life, intermediate-level waste (for example, from shells, nozzles, sheaths, etc.) is either cemented or compacted and confined in stainless steel containers. This type of waste is currently in intermediate, temporary storage pending a final decision concerning long-term management (see section 6.2.1.1.3.4 ("The nuclear fuel cycle and related issues")).

Following the adoption of Programme Law 2006-739 dated 28 June 2006 on sustainable management of radioactive materials and waste, research and studies concerning long-life high and intermediate-level waste are being carried out in the following three inter-related areas:

- separation and transformation of long-life radioactive elements, in order to obtain an evaluation of industrial prospects of related industrial sectors by 2012, and to commission a new prototype facility before 31 December 2020;
- reversible, deep geological disposal, with the choice and design of a disposal centre. It should be possible to file an application for authorisation that would be reviewed in 2015 and, subject to authorisation, the storage centre could be commissioned in 2025;
- temporary storage: in order to create new temporary storage facilities or modify the existing facilities no later than 2015.

The Programme Law dated 28 June 2006 provides for a National Management Plan for Radioactive Materials and Waste ("PNGMDR"), to be updated every three years, containing an assessment of current management methods and identifying the foreseeable needs in temporary storage and permanent disposal. It specifies that a deep geological disposal centre constitutes a "basic nuclear facility" whose creation and authorisation require a public inquiry and a Decree issued by the *Conseil d'Etat*. This Law also defines the organisation and the financing of radioactive waste management. Finally, it also provides the terms for a framework to evaluate and cover the costs to decommission basic nuclear facilities and to manage spent fuels and radioactive waste. In particular, the assets allocated to cover provisions cannot be used for any other purpose by the operator, and separate accounting procedures for these assets apply. The implementation of these provisions will be monitored by the French administrative authorities, i.e., the Minister for the economy and the Minister for energy. They themselves are further subject to a National Commission to evaluate the costs of financing the decommissioning of basic nuclear facilities and management of spent fuels and radioactive waste.

In France, the transport of radioactive waste is subject to Articles L. 1333-1 *et seq.* of the French Defence Code, governing the protection and control of nuclear materials, as well as Regulations on the national and international transport of hazardous goods, under the control of the ASN. The ASN conducts a critical analysis of the safety files submitted by applicants to obtain approval of their packaging standards. The objective of these Regulations is to prevent the loss or disappearance of packages containing nuclear materials particularly during transport, and to ensure the safety of the population and the environment by controlling the risks of contamination by packages containing nuclear materials.

Decree 2007-243 dated 23 February 2007 on securing the financing of costs in the nuclear industry sets forth the terms and conditions for implementing the Programme Law of June 2006.

Accordingly, the operator evaluates costs in five categories (costs to decommission nuclear facilities, costs to manage spent fuel, etc.) which are divided into operations defined on the basis of a nomenclature established via a decision of the administrative authorities. The costs are evaluated according to a method based on an analysis of the different options that can be reasonably contemplated to perform these operations and, on that basis, to make a cautious choice of a reference strategy.

The discount rate used to compute the amount of provisions is determined by the operator and must not exceed either the expected rate of return on the hedged assets, managed with a sufficient level of security and liquidity to serve their purpose, or a ceiling determined per decision of the administrative authorities.

Different kinds of assets may be hedged, within a certain percentage, such as bonds, debt or securities issued or guaranteed by a Member State of the European Community or the OECD, or stocks, shares or other equity securities in the capital of companies with headquarters in a Member State of the European Community or the OECD.

As the assets owned, and the instruments and securities are there to provide proof of the underlying debt, they must be deposited in an account kept or opened in France. The operator must keep a permanent inventory of the hedged assets and transmit a summary report every quarter to the administrative authorities. The operator's Board of Directors determines the framework for investing in and managing hedged assets based on the purpose of the assets and the principles of precaution and spreading of risks.

In addition, a Committee must be established by the Board of Directors to be responsible for reviewing and issuing an opinion on the framework used for the policy to invest in and manage hedged assets, as well as an on-going procedure for the internal auditing of the system used to finance the related costs and to valuate and manage the hedged assets, in particular.

Finally, a report is filed with the administrative authorities and the ASN every three years, with a copy sent to the Statutory Auditors and includes a valuation of the costs, the methods used for the calculation of provisions, and the composition of the assets. The administrative authorities may require any additional supporting documents, have an outside organisation conduct a study, or require an expert valuation of the assets at the operator's expense.

The Council Directive 2011/70/Euratom of 19 July 2011 set down a Community framework for the responsible and safe management of spent fuel and radioactive waste. This has strengthened the efforts of the Commission to regulate the use of nuclear energy in the European Union after the adoption in 2009 of the Directive on Nuclear Safety. Although the Directive 2011/70/Euratom does not contain any particularly innovative provisions from the aspect of French law, it does constitute a foundation of fundamental rules in the field of managing radioactive waste and spent fuel for a certain number of Member States in the European Union and clarifies several terms which could be potential sources of conflict. This Directive presents deep geological disposal as the safest and most sustainable option to manage long-life, high-level waste and considers the possibility of creating disposal facilities shared between several Member States, on a voluntary basis.

Regulations on radiation protection

In France, the Public Health Code states that all nuclear activities which present a risk of exposure of persons to ionising radiation fall under the authority of the Nuclear Safety Authority (ASN). The basic protection of the population against such radiation is derived mainly through the subordination of all nuclear activities to a declaration or authorisation. Authorisations granted to establish a basic nuclear facility fulfil this authorisation required under the Public Health Code. Decree 2002-460 dated 4 April 2002 sets the maximum exposure level of the general public at 1 mSv per year.

French Regulations on the protection of workers against the dangers of ionising radiation specifically set a limit on exposure of workers to ionising radiation at 20 mSv over a period of twelve consecutive months.

A Circular dated 21 April 2010 on measures to prevent the risk of exposure to ionising radiation and detailing all of the provisions applicable to workers exposed to ionising radiation was issued to inspection agents responsible for the protection of workers against radiation.

The French Health Code contains the provisions applicable to controlling high-level sealed radioactive sources and orphan sources.

Civil liability of nuclear facility operators

Several International conventions govern the civil liability of nuclear facility operators, in particular the Paris Convention of 29 July 1960 on Third-Party Liability in the Field of Nuclear Energy and the Brussels Convention of 31 January 1963, which supplements the Paris Convention. These two Conventions are applicable in the signatory countries that have ratified them, including France and the United Kingdom, countries where the Group operates nuclear facilities (in France, through EDF and in the United Kingdom, through EDF Energy). In accordance with these Conventions, nuclear civil liability in France is governed by Law 68-943 dated 30 October 1968, as amended, which was integrated into the Environmental Code via Ordinance no. 2012-6 dated 5 January 2012).

The Paris Convention established a special liability derogation system, which has the following characteristics:

- *damages covered:* all damages to persons and property must be remedied;
- *type of liability:* strict liability, i.e. even in the absence of a fault committed by the operator;
- *exemptions:* the operator is not liable for damages caused by a nuclear incident if such incident is due directly to acts of armed conflict, hostilities, civil war, insurrection or a natural disaster of an exceptional nature. Acts of terrorism do not constitute an exemption;
- *person liable:* the principle of channelling liability to a single entity: the operator of the nuclear facility where the nuclear substances that caused the damage are stored or came from;
- *limitations of liability:* the operator's liability may be limited both in terms of the amount and duration by national legislation, provided this complies with the common minimum liability amount as set under the Conventions:
  - if the facility is in France, the operator's liability is limited to approximately €91.5 million per nuclear incident at a facility and to approximately €22.9 million per nuclear incident during transport. The time limit to file a claim for compensation is 10 years from the date of the incident;
  - over and above the maximum amount for which the operator is liable, the State in which the nuclear facility of the operator liable for the incident is located and where the incident occurred is responsible for compensating victims up to a maximum of €201.4 million;
  - over and above this amount, Member States that have ratified the Brussels Convention (including France) contribute collectively to compensation up to a ceiling of €345.3 million.
- *financial security:* the operator has an obligation to contract insurance or lodge financial security up to the liability amounts established in order to guarantee the availability of funds. This insurance or financial security must be approved by the State in which the insured or guaranteed facility is located. EDF has opted for insurance and is in compliance with the current coverage requirements (see section 4.2.3 ("Insurance")).

Protocols amending the Paris Convention and the Brussels Convention were signed on 12 February 2004. They require substantially higher amounts of compensation to be available in order to cover a greater number of victims and types of collateral damage. The operator's liability is accordingly at least €700 million per nuclear incident in a facility and €80 million per nuclear incident during transport. The State in which the nuclear facility of the operator liable for causing the damages is located is liable for amounts above the €700 million for which the operator is liable, up to a maximum amount of €1,200 million. Above this amount, the Contracting States of the Brussels Convention are liable up to a maximum

amount of €1,500 million. In addition, for loss of life and personal injury only, the time limit to claim compensation has changed from 10 years to 30 years from the date of the incident. Another important change is the introduction of a detailed definition of "nuclear damage", which includes economic loss, the cost of preventive measures, the costs of measures of reinstatement of an impaired environment, and certain other losses resulting from damage to the environment. Finally, the amending Protocols provide that exemptions of an operator's liability are limited to cases of armed conflict, hostilities, civil war or insurrection (natural disasters no longer entitle the operator to an exemption).

These new provisions were transposed into French law in the above-mentioned TSN Law of 13 June 2006. However, these provisions will only be applicable when the amending Protocols come into force, i.e., when at least two-thirds of the sixteen Contracting States have ratified them. Moreover, the thirteen Member States of the European Union are required to file their ratification instruments together. As of 31 December 2011, only twelve States, of which ten from the European Union out of sixteen total have transposed the provisions of the Protocols into their national laws and are ready to file their ratification instruments. France has adopted a Law permitting ratification of both Protocols (Law 2006-786 dated 5 July 2006), but has not yet filed the corresponding ratification instruments.

Even so, at a meeting held 8 February 2012, the French Nuclear Policy Council requested that the Government present a bill to the Council of Ministers for a new law aimed at increasing the ceilings of compensation in the event of an incident, without waiting for the Protocols amending the Paris and Brussels Conventions to come into force.

6.5.4.2.3 Regulations applicable to fossil-fired energy generation

The EDF group's fossil-fired energy generation business is subject in France to the Regulations applicable to ICPEs (see section 6.5.4 ("Regulations applicable to the environment, nuclear facilities, health, hygiene and safety")). EDF's fossil-fired facilities must also comply with specific Regulations on air quality, adopted mainly as a result of European Directive 2001/81/EC of 23 October 2001 on national emission ceilings for certain atmospheric pollutants ("NEC Directive"), and European Directive 2001/80/EC of 23 October 2001 on the limitation of emissions of certain pollutants into the air from large combustion plants ("LCP Directive") (for a description of these specific regulations, see section 6.5.6 ("Main regulation projects likely to affect EDF group's businesses")).

Exemptions are possible up until 2015. As of that time, the ceilings and the exemptions originating from the IED Directive mentioned above will apply.

Fossil-fired energy production is also subject to Directive 96/82/EC on the control of major-accident hazards involving dangerous substances (called the "Seveso 2" Directive). This Directive lays down special safety measures for facilities using products considered to be particularly dangerous. In addition, these facilities are under the obligation to lodge specific financial security. These provisions have been integrated at the article L516-1 of the French Environmental Code.

6.5.4.2.4 Regulations applicable to hydropower facilities

In France, hydropower facilities are subject to the provisions contained in Articles L 511-1 *et seq.* of the Energy Code. They require a concession agreement granted by the Prime Minister (for facilities generating over 100 MW) or by the Prefect (for facilities generating between 4.5 MW and 100 MW), or an authorisation from the Prefecture (for facilities under 4.5 MW), (see section 6.2.1.1.4.4 ("Current and future hydropower generation issues") concerning hydropower concessions).

EDF's hydropower generation business is subject to water regulations. Such regulations cover in particular control over variations in water levels and flow rates, and the safety of areas in the vicinity and downstream of the hydropower facility (see section 6.5.4.1 ("Basic regulations applicable to the environment, health, hygiene and safety")).

Conditions applicable to reviewing of bids to renew hydropower concessions

Decree 94-894 of 13 October 1994, as amended, specifies the conditions for the awarding or renewal of a hydropower concession. This Decree requires that a competitive bidding procedure take place between the various candidates for public service commissioning. The former preferential right of the outgoing operator was eliminated as it was not compatible with competitive bidding.

At the time a hydropower concession is renewed, an annual concession fee indexed on the revenues generated from sales of electricity produced by the hydropower facilities under concession is levied, which is paid to the French State and allocated in part to the French "*départements*" where the waterways used flow. The Grenelle 1 Law provided for the possibility of capping the amount of the concession tax at a threshold beyond 25%. The Grenelle 2 Law provides that a ceiling be set by the licensing authority on a case-by-case basis, each time a call for tender is initiated. A portion of the proceeds of this tax would also be allocated to the counties concerned.

Decree 2008-1009 of 26 September 2008 lays down the rules and procedures for hydropower concession bids in a competitive market. It sets three criteria for the choice of the future licensee: a guarantee on the energy efficiency in the operation of the waterfall, respect for balanced management of water resources and the best economic and financial conditions for the contracting authority. The new procedure to appoint concession holders will now be for a duration of five years (compared to eleven years currently).

6.5.4.2.5 Regulations applicable to renewable energy generation

The "Climate Package" is the source of a set of measures aimed at ensuring that, by 2020, the EU will achieve the objectives of a 20% reduction of greenhouse gas emissions (GHG), a 20% improvement in energy efficiency and a 20% portion of renewable energy in energy consumption.

One of the five documents making up the Climate Package is Directive 2009/28/EC on the promotion of the use of energy from renewable sources, called the "REN Directive". The Directive divides the effort to reach the 20% EU target of energy from renewable sources among Member States, taking into account, among other aspects, the national energy mix, the potential

of each State and its GDP and requires Member States to adopt national renewable energy action plans.

France adopted its renewable energy action plan for 2009-2020. It covers the objectives contained in the Multi-annual Investment Programme ("PPI").

Within the framework of the Grenelle 1 Law, France set its goal for renewable energy production at 23% of the gross final consumption of energy.

The scheme applying to the required guarantees of the origin of the electricity generated using renewable energy sources contained under Article 15 of the REN Directive was transposed into French law under Articles L. 314-14 *et seq.* of the Energy Code. Decree no. 2006-1118 dated 5 September 2006, as amended specifies the terms and conditions to implement this scheme and appoints the organisation in charge of managing guarantees of origin (issuing, transfer, cancellation).

The Grenelle 2 Law also contains more favourable provisions for sea-based renewable energies:

- exemption from all urban planning procedures for facilities located off shore "on the public maritime domain which are underwater below the low tidemark" if they are listed in a Decree issued by the *Conseil d'Etat* (Article L. 421-5 of the Urban Planning Code);
- derogation allowing structures to connect marine facilities using renewable energies to public networks to transmit and distribute electricity along coastal areas (Article L. 146-4 of the Urban Planning Code).

6.5.4.2.6 Regulations applicable to the generation of wind power

Pursuant to Articles R. 421-1 and R. 421-2 of the Urban Planning Code, a building permit must be obtained for terrestrial wind turbines with a height equal to or greater than 12 metres. The construction of wind turbines in the maritime public domain does not require a building permit, in accordance with article R. 421-8-1 of the Urban Planning Code.

In addition, the Grenelle 2 Law provides that Terrestrial wind turbines are now subject to the nomenclature applicable to ICPEs with the legal system of authorisation or declaration (see section 6.5.4.2.1 ("Regulations applicable to facilities classified for protection of the environment")) under item 2980 "Terrestrial facilities for the generation of electricity using mechanical wind energy with one or several wind-power generators". In connection with the application for a building permit, an impact study must be done for wind power farms subject to authorisation and submitted with the authorisation file. A distance of 500 metres between the facilities and buildings used as housing, inhabited buildings and areas intended for housing is required for the operating authorisation to be issued.

The operator of a wind farm, or in the event of default, the parent company, is responsible for decommissioning the farm and site restoration, as soon as operation is terminated for any reason (Articles L.553-3 and L.553-1 of the Environmental Code). For this purpose, the operator is required to lodge financial security as of the start-up of production and for subsequent accounting periods.

6.5.5 Regulations applicable to the wholesale energy market

Inspired by the rules contained in Directive 2003/6/EC on market abuse applicable to financial markets (see section 16.5 ("Stock Exchange Ethics Charter")), Regulation (EU) no. 1227/2011, known as the "REMIT" (Regulation on wholesale energy market integrity and transparency) came into force on 28 December 2011. This regulation is aimed at preventing market abuse and manipulation on wholesale energy markets and building the confidence of consumers and other market participants.

Strengthening wholesale energy market integrity and transparency must foster open and fair competition on these markets, in particular so that prices set on these markets reflect a fair and competitive interplay between supply and demand. The regulation prohibits insider trading and market manipulation and establishes an obligation to publish inside information as defined in the REMIT.

The European Agency for the Cooperation of Energy Regulators (ACER) has a remit to monitor trading activity in wholesale energy products to detect and prevent trading based on inside information and market manipulation.

Moreover, the ACER is tasked with collecting the data required for assessing and monitoring wholesale energy markets, inasmuch as the Regulation provides that market participants, or a person who is empowered to do so on their behalf, must provide the ACER with a detailed record of transactions on the wholesale energy market.

Firms operating on the market that enter into transactions that are required to be reported to the ACER must register with the national regulatory authority in the Member State in which they are established (the Energy Regulation Commission in France) or, if they are not established in the European Union, with that of a Member State in which they are active.

6.5.6 Main regulation projects likely to affect EDF group businesses

Several future regulations, both at the European Union level and in France, are being drafted which could have a significant impact on the EDF group's business. The main regulations concerned are described below.

6.5.6.1 Future community regulation

Regulations on service concessions

The proposal for a Community Directive on the award of works and service concession contracts had been announced for some time and was finally adopted by the European Commission on 20 December 2011. The proposal took the form of a separate legal instrument from the Directives on Public Procurement, but nevertheless refers to a number of the same

concepts. Contrary to the assurances given by the Commission, this proposal goes far beyond a light approach by specifically regulating the conditions for the award and modification of concessions.

The proposal does not provide for an exemption of those sectors covered under Directives 2009/72/EC and 2009/73/EC. One of the provisions that will be worked on further should allow network concessions to be excluded from the scope of application of the future Directive. On the other hand, the future of concessions supplying utilities at regulated tariffs remains uncertain. The impact on the legal system applicable to hydropower concessions, which is already subject to a competitive bidding procedure in France should thus be limited.

The final vote on the proposal for a Community Directive has been announced for the end of the year 2012.

Environment

As recommended in the Sixth Environment Action Programme, the European Commission published a draft Directive defining a framework for the protection of soils on 22 September 2006, which was adopted by the European Parliament at its first reading on 14 November 2007. On the other hand, the EU Council of Environment Ministers, meeting on 20 December 2007, did not adopt this draft Directive. Several States opposed it, including France, on the basis of the principle of subsidiarity. The draft Directive is aimed at defining principles and action common to all Member States to actively fight soil degradation and preserve its capacity to deliver ecological, economic, social and cultural services. The draft Directive may be reintroduced at the initiative of future EU Presidencies.

The European Commission has started the process of revising the Directive on impact studies (no. 85/337/EC of 27 June 1985). The Commission will be preparing a new proposal for a Directive in 2012 in view of having it adopted in 2014.

Use of resources

On 20 September 2011, the European Commission published the "Roadmap to a Resource Efficient Europe". The objective is to make Europe less dependent on the import of strategic resources and to trace the path to a sustainable economy by 2050, with a milestone set at 2020. This Roadmap refers to several types of action: resource savings (biodiversity, soil, air, water, etc.), improvement of production methods, shifting taxation away from labour towards taxation of resources, treating waste as a resource. The energy sector is targeted. Specific figures may be put on these objectives, together with indicators in 2013.

Energy efficiency

On 22 June 2011, the European Commission published a proposal for a Directive on energy efficiency and repealed Directives 2004/8/EC (promotion of cogeneration) and 2006/32/EC (on energy efficiency in end use sectors and energy services). The objective of this proposal is to make it possible for the European Union to achieve its energy efficiency target of saving 20% of the Union's primary energy consumption by 2020, which will not be achieved unless new measures are taken.

This proposal for a Directive contains several provisions that lay down a series of stringent requirements on energy companies. This future Directive could have a heavy impact on the Group's activities. These provisions include: the obligation for energy distributors or retail energy sales companies to achieve annual energy savings at the level of end customers equal to 1.5% of their energy sales by volume; billing on a monthly basis for electricity, supply of real time pricing data, the obligation for all new (and renovated) thermal electricity generation installations with a total thermal input exceeding 20 MW to be provided with a high-efficiency cogeneration unit and that they be sited in a location where waste heat can be used by heat demand points, priority dispatch and access of electricity derived from high-efficiency cogeneration to the electricity grid, etc.

Nuclear

On 29 September 2011, the European Commission presented a proposal for a Euratom Directive laying down basic safety standards for protection against the dangers arising from exposure to ionising radiation. This proposed Directive is for the purpose of replacing and updating existing Directives by taking into account International standards developed over the last few years by experts from the International Commission on Radiological Protection and the International Atomic Energy Agency.

Exposure to Electromagnetic Fields (EMF)

The Group is subject to Directive no. 2004/40/EC dated 29 April 2004 on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (electromagnetic fields). The deadline to transpose this Directive in national laws was postponed to 30 April 2012 pursuant to Directive 2008/46/EC. This Directive lays down minimum requirements applicable to the assessment and reduction of risks, as well as in the area of information and training provided to workers. These requirements will affect RTE and ERDF due to the electromagnetic fields generated by lines and post sources when works are performed with or without live voltage. These requirements will also impact EDF's Production-Engineering Division which employs electrical maintenance personnel in the vicinity of alternators located outside generation plants.

On 14 June 2011, the European Commission adopted a proposal for a Directive aimed at providing a framework for and improving on the rules of the European Union designed to protect workers and in particular, workers responsible for repairing power lines. This draft Directive is supposed to replace Directive 2004/40/EC of 29 April 2004.

Seveso Installations

On 21 December 2010, the European Commission presented a proposal for a Directive aimed at strengthening the rules to control major-accident hazards involving dangerous substances (known as Seveso 3). These modifications will amend the Seveso 2 Directive referred to above.

This proposal for revision of Seveso 2, which should apply as of 1 June 2015, is aimed, among other things, at aligning it with the CLP Regulation dated 16 December 2008 on the classification, labelling and packaging of dangerous substances and mixtures.This modification is likely to impact the Group to the extent that certain products that were not covered by the

Seveso Regulation up until now may be included in the future when the use of the CLP list is adopted. Among other important changes proposed are a set of stricter provisions concerning access by the public to information related to safety, public participation in the decision-making process and access to justice, as well as improvements in the way information is collected, managed, made available and shared. This proposal also introduces stricter inspection standards for facilities.

Biocidal products

A proposal for a Regulation published by the European Commission in June 2009 is currently under discussion and should come into force in 2013 to replace Directive 98/8/EC mentioned above in order to simplify the current procedure for authorisation to place biocidal products on the market. EDF will mainly be affected by the expanded scope of application of this future Regulation to in situ generated active substances.

6.5.6.2 Future national regulation

Greenhouse Gases

A draft Ordinance to transpose Directive 2009/29/EC dated 23 April 2009 - which has significantly modified the ETS Directive for the third period starting as of 1 January 2013 (see above) – was published for public consultation in the beginning of January 2012. This Ordinance is designed in particular to specify the scope of application of the system, which under the current version of the draft Ordinance would cover basic nuclear facilities. The Directive must be transposed by the latest into French law on 31 December 2012. However, considering that the list of relevant facilities and the allowances allocated during the second half of 2012 will have to be established per an official Decision, transposition should take place before this date.

Decrees to implement the Grenelle 2 Law

Implementation of the Grenelle 2 Law requires that a significant number of Implementing Decrees be published. On approximately 190 decree expected, at 31 January 2012, 128 have been published.(1)

Throughout the course of 2012, the main Decrees to be published include:

- A Decree and Decisions setting the amount of financial security applicable to ICPEs pursuant to Article L 516-1 of the French Environmental Code (see section 6.5.4.2.1 ("Regulations applicable to facilities classified for protection of the environment")). This reform is aimed at expanding the obligation to lodge financial security to a greater number of facilities that are subject to authorisation (list to be set by official Decision) for the purpose of financing the measures to secure the site once the facilities are shut down and in certain cases, in order to manage pollution caused through operation after July 2012. The Group must track the impact on relevant business activities and the terms and conditions used to implement this reform as they apply to existing facilities.
- A draft Decree on information regarding the risk of soil pollution (see section 6.5.4.1 ("Basic regulations applicable to the environment, health, hygiene and safety")). This Decree issued pursuant to Articles L. 125-6 and L. 125-7 of the French Environmental Code will expand the obligation to provide information on polluted sites and soil to sectors other than sales of land where ICPEs have been operated. An inventory of the sites will place them in two categories: vigilance areas where pollution is known to exist and information areas where pollution is only probable. The Group must keep abreast of this new system as the industrial facilities it operates or formerly operated may be included in the areas identified within this framework and when it builds on this land, studies will have to be performed.
- A draft Decree to implement Article L 225-102-1 of the French Commercial Code relative to the transparency obligations of companies in the social and environmental areas (see section 6.5.4.1 ("Basic regulations applicable to the environment, health, hygiene and safety")).

Establishments classified for environmental protection

As the "industrial emissions" directive was only partially transposed into French law (see section 6.5.4.2.1 ("Regulations applicable to facilities classified for protection of the environment")), a second order will complete this transposition process, in particular as regards the provisions that are applicable to large combustion plants.

PCB

A plan to reform the regulations on PCB (see section 6.5.4.1 ("Basic regulations applicable to the environment, health, hygiene and safety")). This introduces new disposal and decontamination deadlines for devices that contain fluid with a PCB content in excess of 50 ppm and unifies the rules on holding these devices by abolishing section 1180 of the ICPE nomenclature, to which holders of devices of more than 30 litres were previously subject.

Nuclear

On 21 March 2012, a bill was presented to the French Cabinet to ratify order no. 2012-6 of 5 January 2012 and amend several codes (the Environment, Public Health and Defence Codes). The bill's measures include an increase in the compensation limits in the event of a nuclear accident (from €91.5 million to €700 million if the bill is passed).

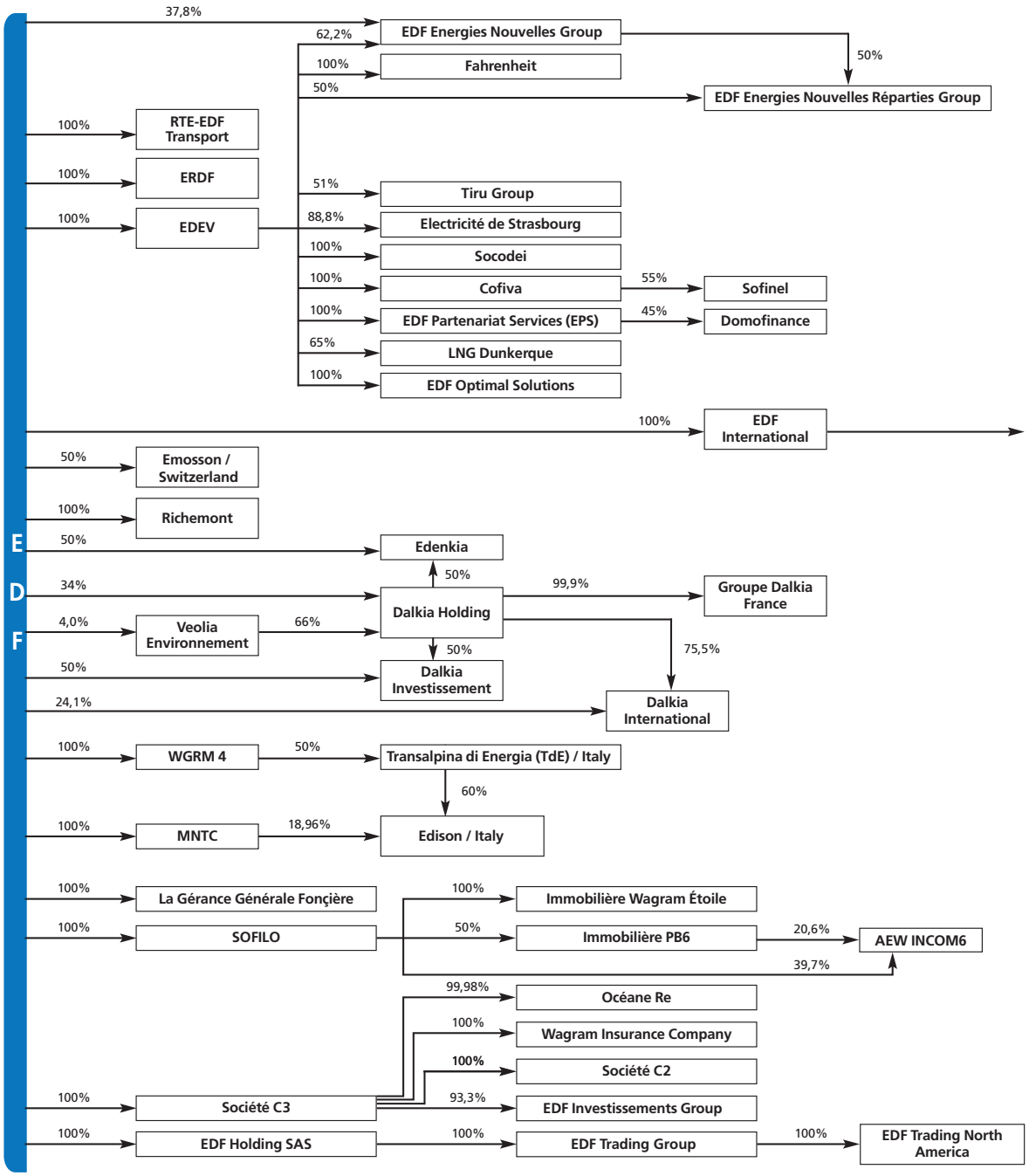
(1) Information report on the provisions of law n°2010-788 of 12 July 2010 defines national commitment to the environment n° 4340, 9 February 2012.

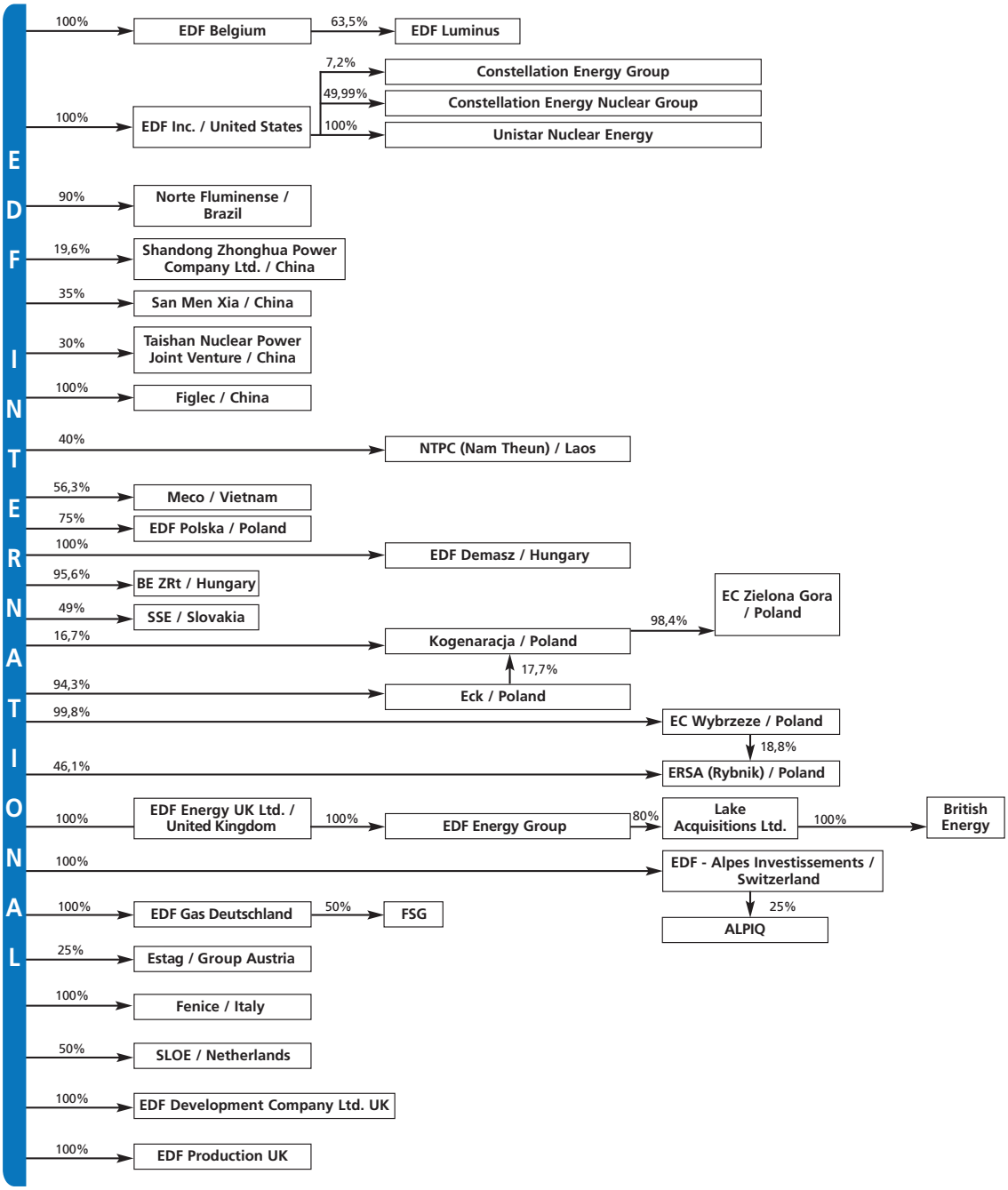
7.

Organisational charts

7. Organisational charts

A simplified organisational chart for the Group, as of 31 December 2011, is presented below. The percentages for each entity represent the ownership interest in capital.




EDF INTERNATIONAL
100%
EDF Belgium
63,5%
EDF Luminus
7,2%
Constellation Energy Group
49,99%
Constellation Energy Nuclear Group
100%
EDF Inc. / United States
100%
Unistar Nuclear Energy
90%
Norte Fluminense / Brazil
19,6%
Shandong Zhonghua Power Company Ltd. / China
35%
San Men Xia / China
30%
Taishan Nuclear Power Joint Venture / China
100%
Figlec / China
40%
NTPC (Nam Theun) / Laos
56,3%
Meco / Vietnam
75%
EDF Polska / Poland
100%
EDF Demasz / Hungary
95,6%
BE ZRt / Hungary
49%
SSE / Slovakia
16,7%
Kogenaracja / Poland
98,4%
EC Zielona Gora / Poland
17,7%
94,3%
Eck / Poland
99,8%
EC Wybrzeze / Poland
18,8%
46,1%
ERSA (Rybnik) / Poland
100%
EDF Energy UK Ltd. / United Kingdom
100%
EDF Energy Group
80%
Lake Acquisitions Ltd.
100%
British Energy
100%
EDF - Alpes Investissements / Switzerland
25%
ALPIQ
100%
EDF Gas Deutschland
50%
FSG
25%
Estag / Group Austria
100%
Fenice / Italy
50%
SLOE / Netherlands
100%
EDF Development Company Ltd. UK
100%
EDF Production UK

7. Organisational charts

All the companies within the Group's scope of consolidation are indicated in note 52 to the consolidated financial statements for the year ended 31 December 2011.

Information on subsidiaries

The presentation of the activities of the main subsidiaries of the Group, the description of their recent acquisitions, and their economic weighting in the Group appears in section 6.3 ("Presentation of the EDF group's international activity") of this reference document. In addition, note 6.1 to the consolidated financial statements for the year ended 31 December 2011, provides further financial information on the Group companies presented by operational sectors.

Offices held by EDF executives

Offices held by EDF executives within the Group's subsidiaries are indicated in section 14.1.2 ("Personal information on members of the Board of Directors").

Intra-group contracts

Cash pooling agreements entered into between EDF and its subsidiaries

The cash pooling set up by EDF centralises all the cash positions of the subsidiaries and the Group's liquidity can be optimised. This cash pooling consists in grouping all the cash balances of the subsidiaries at the level of the parent company. It includes certain French and international subsidiaries. It does not include RTE.

The system for cash pooling in place for the companies of the EDF group is defined under cash agreements. Bilateral agreements between EDF and each subsidiary define the specific conditions for each arrangement, such as remuneration of balances, etc.

On the international level, subsidiaries participating in the system enter into a framework agreement, whereby EDF serves as the Cash Center.

EDF also centralises all the currency flows from its French subsidiaries.

Financial flows between EDF and its subsidiaries

In addition to the financial flows relating to the cash pooling agreements mentioned above, financial flows between EDF and its subsidiaries are also related to distributions of dividends within the Group. A substantial portion of the dividends paid by some of the Group's subsidiaries (including EDF Energy) is exclusively paid to EDF International. Total dividends received by EDF International in 2011 came to €321.7 million (dividends received in 2011 for the year ended 31 December 2010). EDF received a total of 1,045.5 million euros in dividends in 2010 from its consolidated subsidiaries.

Other financial flows between EDF and its subsidiaries are loans, asset transfers and guarantees made by the parent company of the Group for the benefit of certain subsidiaries.

In the context of the Group's financing centralisation policy decided on in 2006, EDF centralises the financing of its subsidiaries. In this context, in 2007 EDF created a subsidiary located in Belgium, EDF Investissements Groupe, which centralises medium and long term intra group financing.

The financial flows relating to the fees or royalties paid by the subsidiaries are not significant. Indeed, the Group's subsidiaries usually have their own central services and operate under their own brands.

A description of the financial flows related to contracts between EDF and its subsidiaries is set forth in chapter 19 ("Related party transactions") hereafter.

8.

Property, plant and equipment

8.1 Service sector real estate assets 174

8.2 Employer participation in the construction effort 174

8.3 Subsidised home ownership loans 174

8. Property, plant and equipment

Service sector real estate assets

8.1 Service sector real estate assets

EDF's Real Estate Division, which includes the real estate department and its associated subsidiaries, operates in France as the Group's real estate provider by managing and optimising a real estate portfolio of nearly 4.4 million square meters of service premises, approximately 76% of which is owned outright by the Group and 24% is leased from third parties (leases and concessions).

The Real Estate Division is in charge of real estate asset management, lease management, the technical operation of building as well as the operation-maintenance of the facilities and the services provided to occupants, by offering areas through a sub-lease system for Group entities and units. By taking leases from third parties, the Real Estate Division made commitments for EDF amounting to €648 million for the period from 2012-2022.

8.2 Employer participation in the construction effort

Each year, EDF is subject to an obligation to participate in the French construction effort program. Its contribution is 0.45% of its total payroll, which represented approximately €15.6 million for 2011 (€14.8 million in 2010).

In exchange for this payment, EDF's employees benefit from services intended to facilitate their residential mobility: assistance with renting, assistance with home purchase, assistance with mobility, advice on financing.

8.3 Subsidised home ownership loans

As part of its social policy, EDF assists its employees to purchase their primary residence. Thanks to a partnership concluded with *Crédit Immobilier de France* ("CIF"), the bank manages the production, financing, and management of loans to the company's employees. EDF compensates the CIF for the difference between the subsidised rate at which CIF grants loans to EDF employees and the rate resulting from the bank survey conducted in 2005 on the basis of which the CIF was chosen.

As of 31 December 2011, the residual non-securitised balance for personal residence mortgages was €6 million on EDF's balance sheet (€6.8 million as of 31 December 2010).

9.

Operating and financial review

9.1 Key figures	178
9.2 Economic environment and significant events of 2011	180
9.3 Analysis of the business and consolidated income statements for 2011 and 2010	191
9.4 Cash flows and net financial indebtedness	199
9.5 Management and control of market risks	203

9.1 Key figures

Pursuant to European regulation 1606/2002 of 19 July 2002 on the adoption of international accounting standards, the EDF group's consolidated financial statements at 31 December 2011 are prepared under the international accounting standards published by the IASB and approved by the European Union for application at 31 December 2011. These international standards are IAS (International Accounting Standards), IFRS (International Financial Reporting Standards), and interpretations issued by the SIC and IFRIC.

The accounting and valuation methods applied by the Group are presented in note 1 to the consolidated financial statements at 31 December 2011.

Restatements

The figures presented in this document are taken from the EDF group's consolidated financial statements at 31 December 2011.
In compliance with accounting principles, the figures for 2010 have been restated for the effect of the change in presentation of the energy purchase and sales optimization activities of EDF Luminus (formerly SPE). This has no impact on EBITDA.

Adjustments

For analysis of Group results, organic growth in 2011 is measured against adjusted 2010 figures, *i.e.* on a comparable scope of consolidation: excluding EnBW, the British networks and the Eggborough plant in the UK, and including RTE *Réseau de transport et d'électricité* (RTE) under the equity method.

The table below shows details of restated and adjusted figures.

(in millions of Euros)	2010 (restated)	Impact of equity method for RTE	Impact of sale of EnBW (1)	Impact of disposals in the UK (1)	Total impacts	2010 (adjusted)
Sales	65,320	(211)	-	(1,187)	(1,398)	63,922
Operating profit before depreciation and amortization (EBITDA)	16,623	(1,525)	-	(942)	(2,467)	14,156
Operating profit (EBIT)	6,240	(886)	-	(636)	(1,522)	4,718
Income before taxes of consolidated companies (2)	1,814	(558)	39	(473)	(992)	822
EDF net income	1,020	-	(360)	(251)	(611)	409
Net income excluding non-recurring items (3)	3,961	-	(475)	(381)	(856)	3,105

(1) Including interest on net proceeds of disposals, set by convention at 1% before taxes.

(2) The income before taxes of consolidated companies corresponds to the EDF group's net income before income taxes, the share in net income of associates, net income attributable to non-controlling interests and the net income of discontinued operations.

(3) Net income excluding non-recurring items is not defined by IFRS, and is not directly visible in the consolidated income statements. It corresponds to the Group's share of net income excluding non-recurring items and the net change in fair value on Energy and Commodity derivatives, excluding trading activities, net of tax (see section 9.3.9).

Key figures for 2011 are shown in the following table. Variations in value and percentage are calculated with reference to adjusted 2010 figures.

Extract from the consolidated income statements

(in millions of Euros)	2011	2010 (adjusted)	Variation	Variation (%)	Organic growth (%)
Sales	65,307	63,922	1,385	+2.2	+2.7
Operating profit before depreciation and amortization (EBITDA)	14,824	14,156	668	+4.7	+5.4
Operating profit (EBIT)	8,286	4,718	3,568	+75.6	
Income before taxes of consolidated companies	4,506	822	3,684	+448.2	
EDF net income	3,010	409	2,601	+635.9	
Net income excluding non-recurring items	3,520	3,105	415	+13.4	+12.9

Extract from the consolidated balance sheets

(in millions of Euros)	31/12/2011	31/12/2010
Non-current assets	128,318	123,844
Inventories and trade receivables	34,489	32,209
Other assets	52,032	50,333
Cash and cash equivalents, other liquid assets and loans to RTE (1)	16,184	16,944
Assets held for sale (excluding cash)	684	17,229
TOTAL ASSETS	**231,707**	**240,559**
Equity (EDF share)	30,570	31,317
Non-controlling interests	4,337	5,586
Special concession liabilities	41,769	41,161
Provisions	55,528	54,475
Loans and other financial liabilities (2)	49,469	51,333
Other liabilities	49,897	47,320
Liabilities related to assets classified as held for sale (excluding loans and other financial liabilities)	137	9,367
TOTAL EQUITY AND LIABILITIES	**231,707**	**240,559**

(1) Including cash and cash equivalents of discontinued operations.

(2) Including hedging derivatives and the financial liabilities of discontinued operations.

Operating cash flow

(in millions of Euros)	2011	2010 (adjusted)	Variation	Variation (%)
Operating cash flow (1)	10,281	9,899	382	+3.9

(1) Operating cash flow is not an aggregate defined by IFRS as a measure of financial performance, and is not necessarily comparable with indicators of the same name reported by other companies. This indicator, also known as Funds From Operations (FFO), is equivalent to net cash flow from operating activities excluding changes in working capital, adjusted for the impact of non-recurring items, less net financial expenses disbursed and income taxes paid.

Operating cash flow for 2011 was up by +3.9% for a comparable scope of consolidation compared to adjusted operating cash flow for 2010.

Net indebtedness

(in millions of Euros)	31/12/2011	31/12/2010	Variation	Variation (%)
Loans and other financial liabilities	50,034	47,777	2,257	+4.7
Derivatives used to hedge liabilities	(834)	49	(883)	n.a.
Cash and cash equivalents	(5,743)	(4,829)	(914)	+18.9
Liquid assets	(9,024) (1)	(9,285)	261	-2.8
Loans to RTE	(1,400)	(1,914)	514	-26.9
Net indebtedness of discontinued operations	252	2,591	(2,339)	-90.3
NET INDEBTEDNESS (2)	**33,285**	**34,389**	**(1,104)**	**-3.2**

n.a. = not applicable.

(1) Including available-for-sale financial assets amounting to €9,024 million.

(2) Net indebtedness is not defined in the accounting standards and is not directly visible in the consolidated balance sheets. It comprises total loans and financial liabilities, less cash and cash equivalents and liquid assets. Liquid assets are financial assets consisting of funds or securities with initial maturity of over three months that are readily convertible into cash regardless of their maturity and are managed according to a liquidity-oriented policy. The definition of net indebtedness was revised in 2010 to include the Group's loans to RTE, which is accounted for by the equity method from 31 December 2010.

9.2 Economic environment and significant events of 2011

9.2.1 Economic environment

9.2.1.1 Trends in market prices for electricity and the principal energy sources

During 2011, energy prices in Europe were marked by three major external events that had worldwide repercussions: the political upheaval in Egypt, Libya and Tunisia, the nuclear accident at Fukushima in March, and the macroeconomic uncertainties caused by Euro-zone countries' sovereign debt throughout the second half of the year.

9.2.1.1.1 Spot electricity prices in France, the United Kingdom, Italy and Germany (1)

	France	UK	Italy	Germany
Average baseload price for 2011 (€/MWh)	48.9	55.0	72.2	51.1
Variation in average baseload prices, 2011/2010	+2.9%	+14.1%	+12.3%	+14.9%
Average peakload price for 2011 (€/MWh)	60.7	61.5	82.3	61.1
Variation in average baseload prices 2011/2010	+2.9%	+10.6%	+8.7%	+11.1%

In **France**, the rise in spot electricity prices was associated with the increase in fossil fuel prices and lower national hydropower output, down by 25.6% (2) from 2010. This rise was considerably mitigated by record low levels of domestic consumption due to mild temperatures in the early months of the year and the autumn, and good nuclear availability. As a result French spot prices were lower than in neighboring countries, and this was good for French electricity exports for much of the year.

In the **United Kingdom** and **Italy**, the upturn in gas prices caused a noticeable rise in spot electricity prices, as gas-fired plants account for an important share of the British and Italian energy mix.

In **Germany**, the energy mix lost competitivity following the moratorium on nuclear power announced in mid-March leading to the final shutdown of seven nuclear power plants, setting off a upward trend in spot prices. Germany now has to make greater use of fossil-fired generation to satisfy its demand-supply balance. This trend was further accentuated by the rise in fuel prices despite the partly moderating effect of the fall in CO_2 prices.

9.2.1.1.2 Forward electricity prices in France, the United Kingdom and Germany (3)

	France	UK	Germany
Average baseload price for 2011 (€/MWh)	56.0	62.3	56.0
Variation in average baseload prices, 2011/2010	+6.9 %	+19.8%	+12.4%
Forward baseload price at 31 December 2011	50.6	55.7	52.1
Average peakload price for 2011 (€/MWh)	70.5	70.3	69.0
Variation in average peakload prices, 2011/2010	+1.7%	+19.1%	+7.0%
Forward peakload price at 31 December 2011	63.0	63.1	63.3

European annual contract baseload prices rose on average compared to 2010, especially in the first half of the year.
In **France**, the 2011 annual contract baseload price settled at an average level that was 6.9% higher than in 2010. Early in the year, fossil fuel price movements caused a proportional rise in the costs of fossil-fired generation plants, resulting in higher French annual contract prices.

In mid-March, the accident at Fukushima, followed by the German nuclear moratorium and reconsideration of nuclear power in certain European countries, reshaped the future patterns for use of the nuclear generation fleet. Forward electricity prices in **France** rose abruptly by approximately €5/MWh in response to the prospects of structural change in the European generation fleet and rising fuel prices. From June until the end of the year, the 2012 annual contract price fell sharply in the wake of CO_2 prices and forward gas prices, and due to growing awareness of how the end of German nuclear activities would truly affect the supply-demand balance. Mild temperatures combined with good windpower and hydropower output in December led to a more relaxed supply-demand balance. This brought the annual contract price down as market players anticipated a trouble-free winter 2011-2012.

(1) • *France and Germany: Average previous day EPEX price for same-day delivery;*
• *United Kingdom: Average previous day EDF Trading OTC price for same-day delivery;*
• *Italy: Average previous day GME price for same-day delivery.*

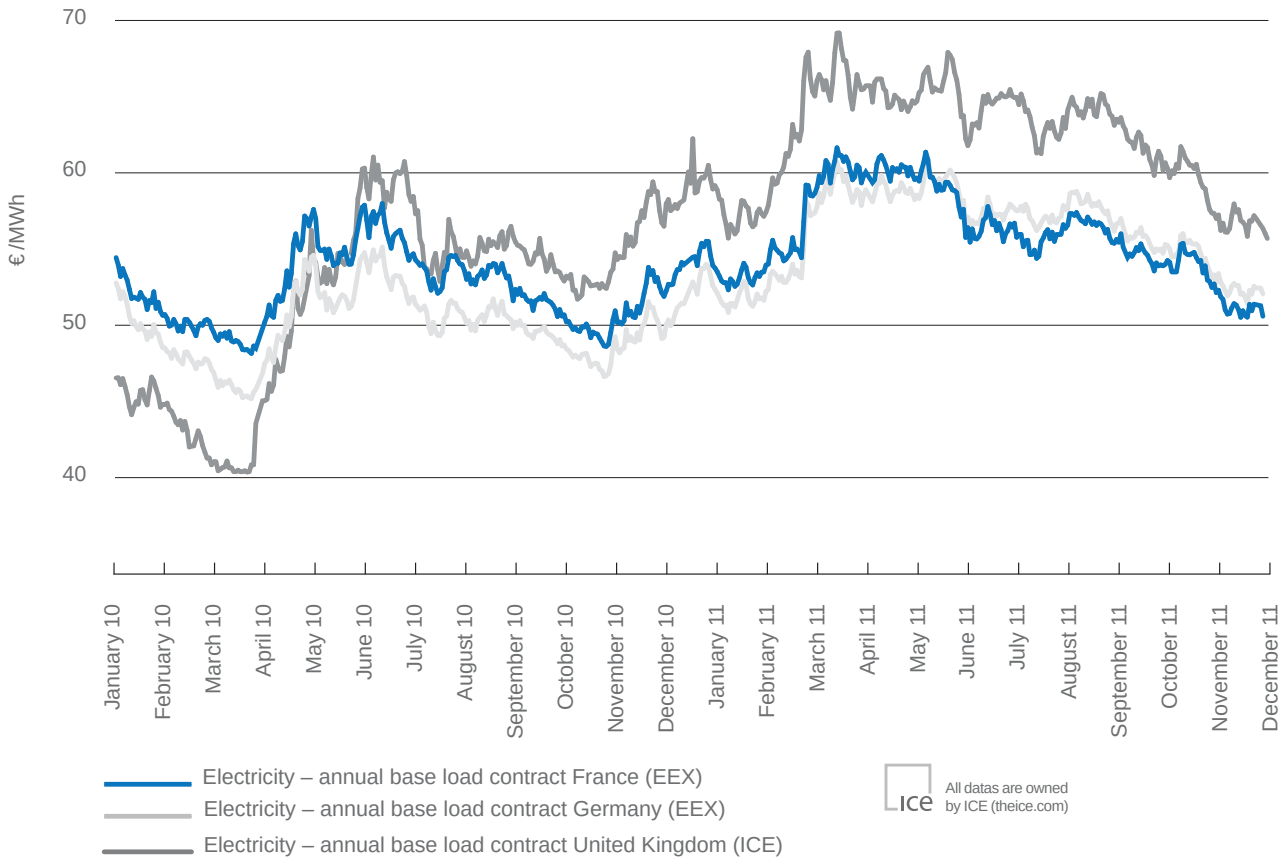
(2) Source: RTE.

(3) • *France and Germany: Average year-ahead EPD price;*
• *United Kingdom: Average ICE annual contract prices, April 2011 then April 2012 (in the UK, annual contract deliveries take place from 1 April to 31 March).*

In **Germany**, the baseload annual contract price was higher than in 2010. 2011 German prices were on average close to French prices, whereas they were €2.5/MWh lower in 2010. The nuclear moratorium announced in mid-March resulted in German prices rising faster than French prices, which reduced the price differential between the two countries. This price differential saw a long-term reversal from early June after the decision was made to shut down seven nuclear plants.

In the **United Kingdom**, the 2011 April Ahead baseload contract price followed the same pattern as forward gas prices until the early summer, then successive decreases in CO_2 prices from June onwards also brought forward prices down. This trend was accentuated from September by lower gas prices, and the April Ahead contract was trading at €63.1/MWh at peak levels at 31 December 2011.

Forward electricity prices in France, the United Kingdom and Germany



9.2.1.1.3 Use of interconnections (1)

France to :	Germany	UK	Belgium	Switzerland	Italy	Spain	Total
2011 exports, baseload (TWh)	10.8	7.7	7.9	27.6	16.9	4.5	75.4
2011 imports, baseload (TWh)	(8.4)	(2.9)	(2.1)	(2.4)	(0.8)	(3.1)	(19.7)
2011 net import/export balance (TWh) (1)	2.4	4.8	5.8	25.2	16.1	1.4	55.7
2010 net import/export balance (TWh) (1)	(6.7)	3.0	(0.9)	19.5	16.2	(1.6)	29.5
2011/2010 changes in energy exchanges, baseload (TWh)	+9.1	+1.8	+6.7	+5.7	-0.1	+3.0	+26.2

(1) Positive figures indicate net exports, negative figures net imports.

2011 saw a substantial rise in exports compared to 2010, as French spot prices were lower than in neighboring countries. Overall, the net balance in France increased by 26.2 TWh between 2010 and 2011 to reach 55.7 TWh, a level not attained since 2006. Most of this increase concerned the eastern arc: Belgium, Germany and Switzerland (+21.5 TWh).

In 2011 the balance of exchanges was highly positive with Switzerland and Italy (25.2 TWh and 16.1 TWh respectively). While the balance of volumes exchanged with Italy was stable compared to 2010 (-0.1 TWh), volumes exchanged with Switzerland grew by 5.7 TWh (+29.2%).

France was a net importer from Germany in the first quarter of 2011, then from mid-March to September, French exports to Germany rose as the German energy mix lost competitivity and French domestic demand was low. From October, the balance of exchange with Germany reversed: France was again a net importer due to high German windpower generation and growing demand in France as winter approached.

9.2.1.1.4 CO_2 emission rights prices (2)

	CO_2 (€/t)
Average price for 2011	13.3
Average price variation, 2011/2010	-8.4%
Highest price in 2011	17.4
Lowest price in 2011	6.5
Closing price, 2010	14.2
Closing price, 2011	7.3

In 2011, the price of CO_2 emission rights under Phase II (2008-2012) stood at an average €13.3/t for delivery in December 2011, down by 8.4% from its 2010 level of €14.5/t. However, this slight downturn masks the sharp drop in CO_2 prices from June.

In the first half of the year, the German nuclear moratorium caused a rise in CO_2 prices, as market actors expected the closure of several nuclear plants in Germany to lead to more extensive use of coal-fired and gas-fired plants. This brought the CO_2 price thus close to €17/t at 1 June.

During June, the European Commission proposed a directive to encourage member states to meet the target 20% improvement in energy efficiency between 2008 and 2020, given that only half this target will be achieved at the current pace of change. The directive focuses on cutting energy consumption, which will ultimately reduce CO_2 emissions. The volume of allocated quotas will remain unchanged, and the prospects of reduced CO_2 emissions led to a €4/t decline in CO_2 emission rights prices in just a few days.

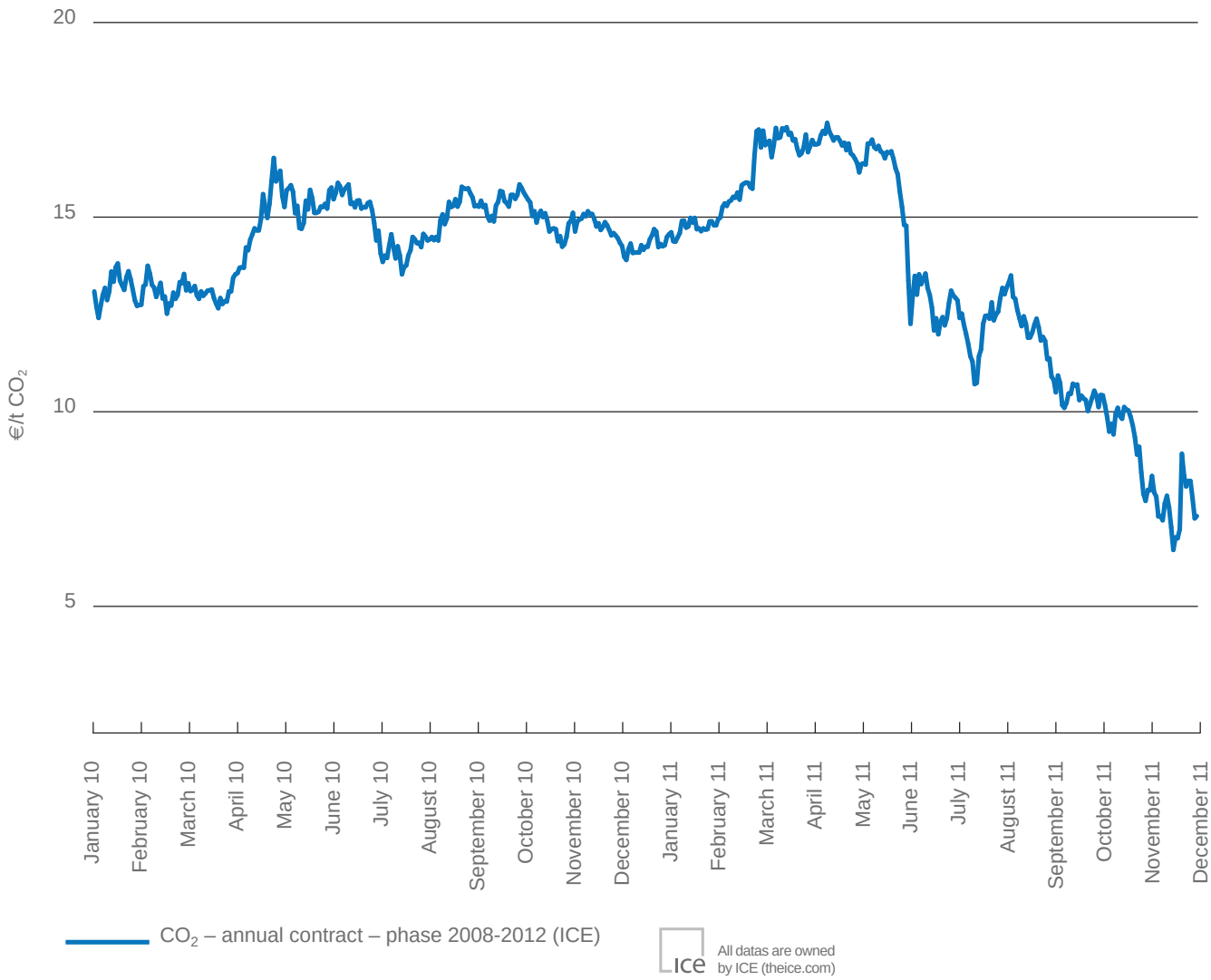
From August onwards, negative economic indicators resulted in a continuation of the downward trend. Against this background, the European Investment Bank's announcement in November that it was putting 300 million tonnes of EUAs (3) on the market – to finance CO_2 capture and storage, and innovative technologies for renewable energies – substantially increased the offering and accelerated the fall in CO_2 prices. Quota prices ended the year at €7.3/t, close to its lowest level for all of Phase II (€6.5/t).

(1) Source: RTE.

(2) Average ICE prices for the annual contract of Phase II (2008-2012). This is the price for quotas physically delivered by December 2011.

(3) EUA: European Union Allowance (carbon quota).

CO_2 emission rights prices (Phase II, 2008-2012)



9.2.1.1.5 Fossil fuel prices (1)

	Coal ($/t)	Oil ($/bl)	Natural gas (p/th)
Average price for 2011	123.8	111.0	66.4
Average price variation, 2011/2010	+24.7%	+38.2%	+38.3%
Highest price in 2011	134.5	126.7	72.9
Lowest price in 2011	111.9	93.3	56.1
Closing price, 2010	122.2	94.8	59.8
Closing price, 2011	111.9	107.4	63.1

Forward prices for coal saw an average rise from 2010, driven by forecasts of greater demand for coal in Germany (following the country's decision to close several nuclear plants ahead of schedule), and growing demand in Asia. From September, these prices fell as the Euro declined against the US dollar.

Oil prices (price per barrel of Brent) were very volatile in 2011. They continued to move upwards during the first half of the year against a background of political unrest, especially in Libya, reaching a peak of $126.7/bl in early April. In May, fears of a slowdown in demand caused oil prices to fall to almost $110/bl. Crude oil prices came under pressure during the

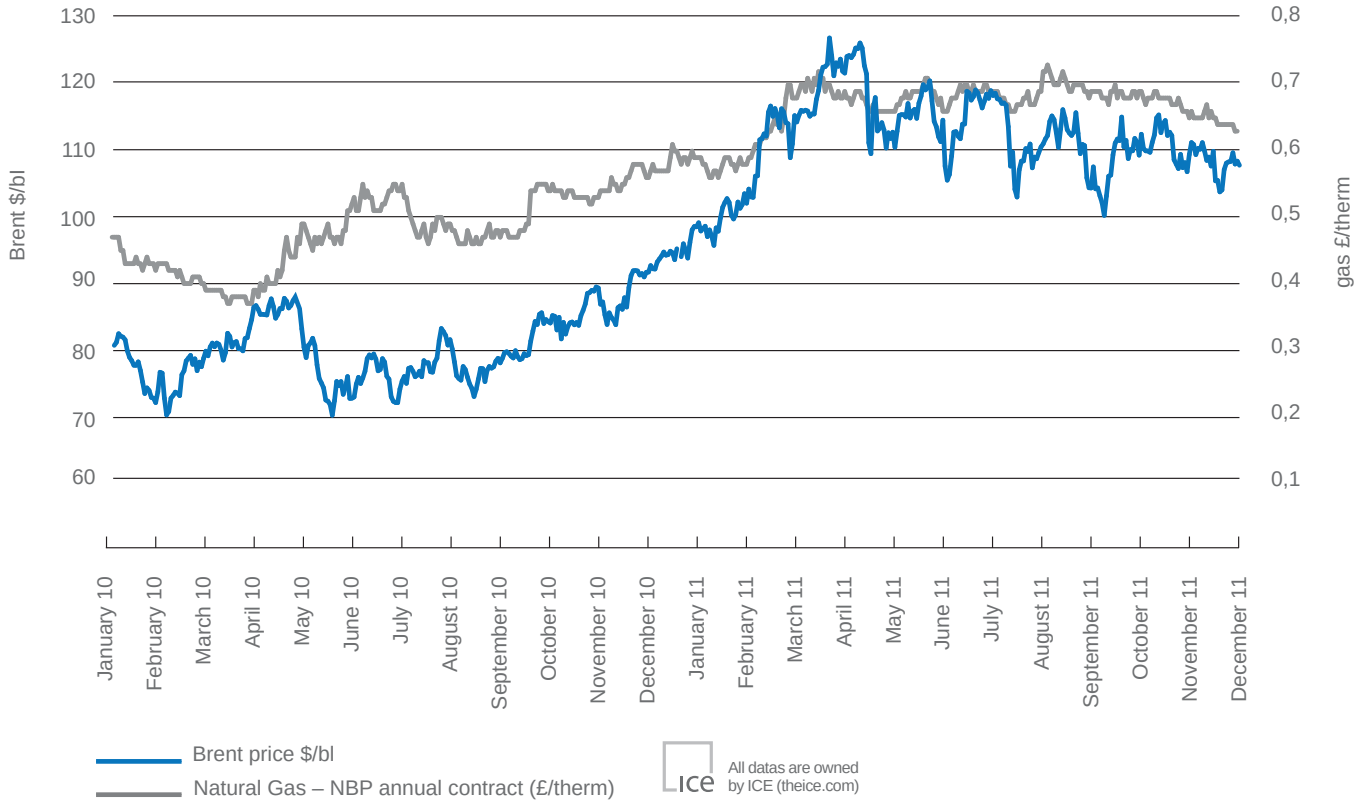
(1) • Coal: Average ICE prices for delivery in Europe (CIF ARA) for the next calendar year ($/t);
• Oil: Brent first reference crude oil barrel, IPE index (front month) ($/barrel);
• Natural gas: Average ICE OTC prices, for delivery starting from October of the following year for the UK (NBP) (p/therm).

summer from contradictory economic signals combined with the sovereign debt crisis in Europe, and to a lesser extent the United States. Market apprehensions – more pronounced for European debt than US debt – then led the Euro to decline against the US dollar, and the price of a barrel of Brent oil ended the year at $107.4/bl.

Natural gas prices under the **United Kingdom's** annual contract rose significantly over the first quarter of 2011. From February, market players feared that supplies would fall if the Libyan conflict spread to other gas-producing countries. Subsequently, the aftermath of the Fukushima accident suggested that a large amount of LNG (liquefied natural gas) would be diverted to Japan, and that demand for gas would be higher in Germany. In both these countries, combined cycle gas facilities partly compensated for the lower nuclear power output. This rise in worldwide demand pushed British gas prices upwards.

In the second quarter, large-scale LNG supplies in the United Kingdom, together with a more relaxed situation in the short term, made significant injections into inventories possible and led to a downturn in annual contract prices. Despite fears for LNG supplies after the announcement in late August that maintenance work was to take place on LNG trains in Qatar, the short-term supply-demand balance remained relaxed until the end of the year due to the mild temperatures, and drawings on inventories were low. The year-end annual contract gas price was 63.1p/th.

Natural gas and oil prices



9.2.1.2 Electricity (1) and natural gas (2) consumption

Overall electricity consumption in **France** during 2011 was 6.8% lower than in 2010. The difference is mostly explained by higher-than-normal temperatures, especially in the spring, well above the temperatures of 2010 which with 1996 is considered the coolest year in the past two decades.

After adjustment for weather effects, consumption reached 484.1 TWh, 6 TWh less than in 2010. The main explanation for this is a 6.8 TWh decrease in Eurodif consumption. The slight increase (+0.8 TWh) in consumption excluding Eurodif reflects a rising trend in the first half of 2011 followed by the reverse movement from the middle of the year.

Consumption of natural gas in **France** fell sharply (-11.6%) compared to 2010, similarly to electricity, the main reason was the effect of temperatures. After adjustment for weather effects, consumption grew by +0.9%. This slight rise in demand was chiefly associated with consumption by large industrial customers and electricity plants (+2.4%), whereas consumption by residential customers, the service sector and small industrial customers was practically stable.

Estimated domestic electricity consumption in 2011 was around 314 TWh in the **United Kingdom**, down by 2.0%. Gas consumption decreased by 10.8%, mainly due to unfavorable weather effects (2011 had a milder winter than 2010), to 535 TWh for 2011.

In **Italy**, estimated domestic electricity consumption was stable (+1%) compared to 2010.

9.2.1.3 Electricity and natural gas sales tariffs

In **France**, on 28 June 2011 the Minister for Industry, Energy and the Digital Economy raised the average "blue" tariff (for residential customers) by 1.7% and the "yellow" and "green" tariffs (for industrial and large business customers) by 3.2%. These rises have been in application since 1 July 2011.

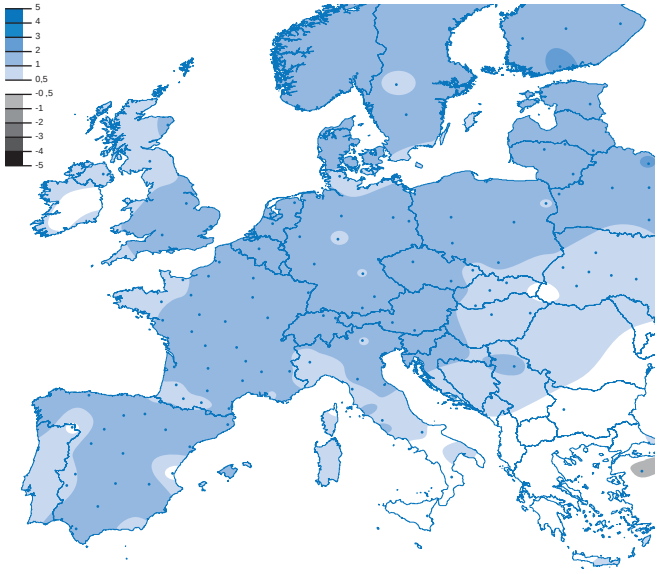
Under the indexation rules set for the TURPE 3 (3) network access tariff adopted by the French authorities on 5 June 2009, the tariffs for using the distribution and transmission networks were raised by 3.9% and 2.6% respectively from 1 August 2011.

In the **United Kingdom**, EDF Energy raised its electricity and gas tariffs for residential customers by 7.5% and 6.5% respectively on 2 March 2011, then by 4.5% and 15.4% respectively on 10 November 2011. In the previous year, electricity tariffs had been increased by 2.6% at 1 October 2010.

9.2.1.4 Weather conditions: temperatures and rainfall

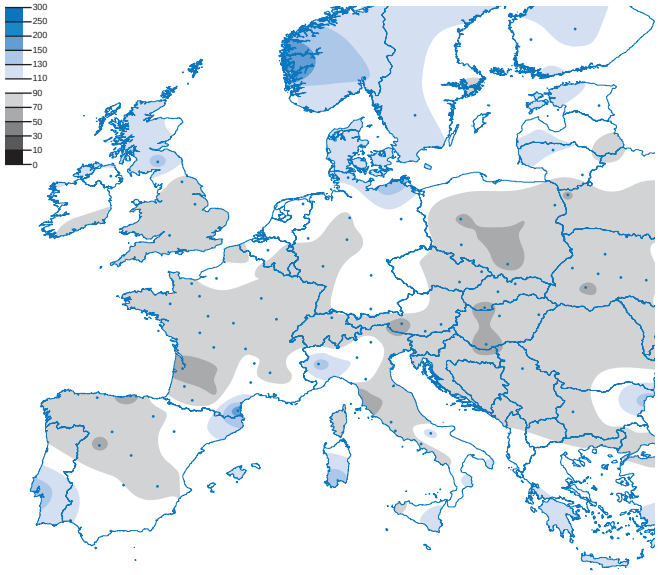
Temperature: variance from normal levels, January to December 2011 (4)

Variance from normal (°C)



Rainfall: variance from normal levels, January to December 2011 (5)

Compared to normal levels (%)



(1) Sources:
- *France: RTE, 2011 electricity report and internal data;*
- *Italie: data supplied by UCTE;*
- *United Kingdom: Department of Energy and Climate Change for the first 3 quarters, estimates for the final quarter.*

(2) Sources:
- *France: Pégase database, Ministry of Energy and Commodities for the first nine months of 2011;*
- *United Kingdom: Department of Energy and Climate Change for the first 3 quarters, estimates for the final quarter.*

(3) The Tarifs d'Utilisation du Réseau Public de distribution d'électricité, or TURPE 3 network access tariffs took effect on 1 August 2009.

(4) Map comparing average temperatures with normal levels between January and December 2011.
Normal temperatures are measured over 30 years (1971-2000 for Western Europe and 1961-1990 for Eastern Europe). Source: Base de Données Climatologiques, *Météo-France.*

(5) Map comparing average rainfall with normal levels between January and December 2011.
Normal rainfall is measured over 30 years (1971-2000 for Western Europe and 1961-1990 for Eastern Europe). Source: Base de Données Climatologiques, *Météo-France.*

France and its neighboring countries (Spain, Italy, Switzerland and Germany) experienced unusually high temperatures in the spring and autumn, particularly for November. The spring and November of 2011 were among the warmest and driest in France for more than 50 years.

For much of Europe, France in particular, 2011 was a year of significant rainfall shortages: the very wet summer was unable to make up for the year's two dry periods (January to May, then the autumn). In France, the cumulative precipitation from January to May was generally below the lowest levels recorded in more than 50 years.

As a result, hydropower capacity in France gradually deteriorated over the months to reach record lows in April/May for the whole French fleet. The shortfall continued until the autumn. The low water situation only improved at the very end of the year when high water levels were observed in several reservoirs.

For 2011 as a whole, hydropower capacity in France was the third-lowest for 60 years (just behind 1949 and 1989), close to 2005 levels.

The very low water levels of spring and autumn also affected countries bordering France (especially the Alpine basins in Switzerland, Austria and Northern Italy), where abnormally low levels of rainfall and temperature were registered.

Only the extreme south of Portugal, Turkey and more than half of Scandinavia (Norway in particular) recorded excess rainfall.

9.2.2 Significant events of 2011 (1) (2)

9.2.2.1 Partnerships and strategic investments

9.2.2.1.1 Finalization of the sale of EnBW

The Group completed the disposal of its 45.01% stake in EnBW to the Bade-Württemberg region on 17 February 2011 for the sum of €4.7 billion (€4.5 billion was paid in addition to the €169 million down payment paid on 16 December 2010), generating a gain of €253 million net of tax. This disposal reduces the Group's net indebtedness by €7.3 billion (€7.1 million of which concern the 2011 financial year).

9.2.2.1.2 Simplified alternative public cash or exchange offer for EDF Énergies Nouvelles shares

On 8 April 2011, EDF announced the launch of a simplified alternative public offer to purchase or exchange the 50% of the capital of EDF Énergies Nouvelles not held by the Group. The offer was made for cash at the price of €40 per EDF Énergies Nouvelles share (ex coupon) or for shares based on the parity of 13 new EDF shares (to be issued, with dividend rights effective from 1 January 2011) for 11 EDF Énergies Nouvelles shares (ex coupon).

On 24 May 2011, the French financial markets authority AMF officially approved this offer, which was open from 27 May to 16 June 2011 inclusive.

In compliance with the AMF's decision of 1 August 2011 approving the compulsory squeeze-out initiated by EDF for the remaining EDF Énergies Nouvelles shares, the squeeze-out took place on 16 August 2011 and the shares of EDF Énergies Nouvelles were delisted from Euronext Paris. The shareholders concerned received an indemnity of €40 per share.

EDF also carried out share repurchases amounting to €324 million in order to neutralize this operation's dilutive effect on EDF shareholders' percentage control. This neutralization became effective on 28 September 2011 after a reduction in the capital of EDF SA through cancellation of treasury shares.

The EDF group now owns 102,568,416 shares representing 100% of the capital and voting rights of EDF Énergies Nouvelles.

9.2.2.1.3 ERDF consolidates operations in Russia through signature of a delegated management contract

On 17 June 2011, at the Saint Petersburg international economic forum, ERDF and MRSK Holding signed a delegated management contract for the Russian electricity distribution company for Tomsk (TRK).

At the previous Saint Petersburg international economic forum in June 2010, the two companies had signed a Memorandum of Understanding with the main aims of developing cooperation in projects concerning delegated management for Russian electricity distributors and technical matters.

ERDF has thus become the first foreign partner to enter into a delegated management contract for energy distribution in Russia.

9.2.2.1.4 EDF and AREVA sign several technical and commercial agreements

On completion of the discussions initiated after the Nuclear Policy Council held by the French President, on 25 July 2011 EDF and AREVA signed a technical and commercial agreement covering three key aspects of the cooperation between EDF and AREVA:

- continued optimization of the EPR, drawing on experience gained at the current EPR project sites (Olkiluoto, Flamanville, Taishan 1 and 2);
- improvement in maintenance and operation of the existing nuclear fleet, to raise operating performance and prepare for the possible extension of operating lives to more than 40 years;
- management of the nuclear fuel cycle, to qualify new fuel products and reinforce industrial cooperation in radioactive waste storage.

In September 2011, EDF also placed an order with AREVA for 32 steam generators, to be installed from 2017 in the 1,300 MW nuclear power plants.

In December 2011, EDF awarded AREVA a contract to upgrade the monitoring and control systems that underpin the safety of its 1,300 MW-series power plants. The work will begin in 2015 when the third 10-year inspections of the reactors take place.

9.2.2.1.5 New shareholders join the South Stream gas pipeline

On 16 September 2011 in Sotchi, EDF, Gazprom, ENI and Wintershall signed the shareholder agreement for South Stream Transport AG, the company that will be responsible for studying, constructing and operating the undersea portion of the South Stream gas pipeline in the Black Sea. EDF will own 15% of this company: the other shareholders are Gazprom (50%), ENI (20%), and Wintershall (15%).

(1) Significant events related to litigation are described in chapter 20.5.
(2) The reference document and a full list of press releases are available from the EDF website: www.edf.com

9.2.2.1.6 Proposed reinforcement of the EDF-Veolia Environnement partnership

On 22 November 2011 EDF's Board of Directors approved the principle of continuing negotiations for a new industrial partnership between EDF and Veolia Environnement which would broaden the scope of Dalkia's activities in fast-growing areas such as energy efficiency, and increase EDF's investment in Dalkia Holding from 34% to 50%.

This change in EDF's role in the new Dalkia group would be accompanied by simplification of the company's holding structures. The Dalkia group as a whole would be owned 50/50 by EDF and Veolia Environnement.

9.2.2.1.7 Agreement for acquisition by EDF of EnBW's investments in Poland

EDF and EnBW signed an agreement on 21 December 2011 for the acquisition by EDF of investments in two Polish companies, ERSA and Kogeneracja, owned 32.45% and 15.59% respectively by the EnBW group. After completion of the transaction, the EDF group will own 97.34% of Ersa and 50% plus one share in Kogeneracja, enabling EDF to pursue its development and integration strategy in Poland.

9.2.2.1.8 Preliminary agreement for the EDF group to acquire Edison and A2A to acquire Edipower

On 26 December 2011, EDF, A2A, Delmi, Edison and Iren signed a preliminary agreement for reorganization of the shareholding structure of Edison and Edipower. The EDF group will take control of Edison by purchasing Delmi's entire investment in TDE (50%) at the negotiated price of €0.84 per Edison share or a total of €705 million.

After completion of the operation, which is subject to certain conditions particularly concerning approval by the regulatory and competition authorities, the EDF group will hold 78.96% of the capital and 80.7% of the voting rights in Edison.

This agreement also provides for a subsequent offer by the EDF group to Edison's minority shareholders, to buy out their investments at a price no higher than the price of the Edison shares acquired *via* TDE, *i.e.* €0.84 per share. When EDF takes control of Edison, Delmi will take control of Edipower by purchasing the investments in Edipower held by Edison (50%) and Alpiq (20%) for the total sum of €805 million.

In accordance with the timeline defined in the preliminary agreement, on 24 January 2012 the Boards of Directors of Edison and EDF validated the draft preliminary agreement for reorganization of the shareholding structure of Edison and Edipower. The governance bodies of the other companies concerned by the transaction also gave their approval.

The preliminary agreement of 26 December 2011 also stipulates that a long-term (6-year) gas supply contract is to be signed between Edison and Edipower to cover 50% of Edipower's gas requirements.

The final agreements were signed on 15 February 2012. Their execution is conditional upon confirmation by the Italian market regulator Consob of the price of €0.84 per share for the offer to minority shareholders, and approval of the operations by the Italian competition authorities and the European Union.

Acquisition of TDE will enable the EDF group to have exclusive control over Edison, from a date that should normally be before 30 June 2012.

9.2.2.2 Investment projects

9.2.2.2.1 Flamanville 3

In July 2011, EDF released an updated schedule for the Flamanville 3 EPR, setting 2016 as the year for the first commercial output produced at Flamanville, and revising the cost of the project to some €6 billion.

Significant milestones were reached during 2011:
- completion of construction of civil engineering structures and several buildings (pumping station, diesels for buildings 1 and 2, effluent processing building, etc);
- acceptance and installation of the main equipment in the machine room;
- electromechanical assembly in the nuclear island.

By the end of 2011, 88% of engineering work and around 20% of electromechanic assembly work had been completed.

9.2.2.2.2 Supercritical coal-fired power plant in Poland

In early December 2011, the EDF group announced that a 900 MW supercritical coal-fired power plant would be erected on the Rybnik site in Poland for an investment of approximately €1.8 billion. This project will involve replacing the four oldest units at the Rybnik plant with a single, more efficient unit. The advantage of "supercritical" technology is its capacity to achieve some of the highest net efficiencies in the market, *i.e.* 45%. Rybnik's specificity will be to combine biomass combustion with coal combustion, in order to produce up to 10% of green energy and as a result reduce CO_2 emissions by 30% compared to traditional coal-fired units. The supercritical technology used at the Rybnik power plant will thus be able to produce more competitive electricity using local coal, and cut CO_2 emissions by one million tonnes per year for an equivalent energy output.

9.2.2.2.3 Investment in the Dunkirk methane terminal

On 29 June 2011, having received the approval of the Board of Directors on 24 May 2011, EDF announced its final decision to invest in the methane terminal at Dunkirk along with Fluxys G and Total, which confirmed their respective shares of 25% and 10% in Dunkerque LNG, the company responsible for building the industrial installations for the terminal. This company is now 65%-owned by EDF.

The Dunkirk methane terminal is due to come on stream at the end of 2015. It will have an annual re-gasification capacity of 13 Gm^3 and will increase the LNG import capacity into France by some 20%.

This new terminal will enable EDF to offer a balanced and diversified supply portfolio including natural gas. The Group will be better-placed to respond to the demands of end customers through dual-energy (electricity + gas) offerings, and to optimize sourcing for its gas-fired electricity plants. Thanks to the terminal's strategic location, it will be able to supply all the markets in north-west Europe.

The total value of the investment in this national and European-scale project is €1.5 billion. There will be three project managers: Grand Port Maritime de Dunkerque, which will be in charge of port infrastructures, Dunkerque LNG for industrial installations, and GRTgaz for connections to the gas transmission networks.

9.2.2.2.4 New generation Combined Cycle Gas Turbine (CCGT) at Bouchain (north France)

EDF and GE Energy signed a partnership agreement in early December 2011 to co-develop the first next-generation combined cycle gas turbine (CCGT) featuring GE Energy's FlexEfficiency50 technology. This combined cycle gas turbine, at Bouchain in North France, is due to begin production in 2015 and will have an installed capacity of 510 MW able to provide electricity for the equivalent of 600,000 French households. The new technology will achieve 61% efficiency and reach maximum load in less than 30 minutes. More flexible and more effective, this CCGT will help respond to increasing fluctuation in production needs, in an environment where highly intermittent renewable energy solutions are becoming increasingly important in the French electric system. This new technology also offers good environmental performances, with CO_2 emissions 10% lower on average than those of a traditional CCGT.

9.2.2.2.5 Installation of the dome on unit 1 of the Taishan EPR

At the Taishan EPR nuclear power plant in China, the dome was successfully lifted onto the reactor building of unit 1 on 24 October 2011. This operation, coordinated by the project manager Taishan Nuclear Power Joint Venture Company (TNPJVC) – a joint venture owned 70% by CGNPC and 30% by EDF – took place just over two years after the first concrete was poured for the reactor building raft.

9.2.2.3 Response by the authorities to the Fukushima accident

Following the Fukushima accident, the administrative authorities of various countries where the Group operates have taken decisions concerning nuclear plants already in operation and proposed new plants.

9.2.2.3.1 Stress tests in France

In France, the Prime Minister asked the Nuclear Safety Authority (ASN) in a letter dated 23 March 2011 to conduct further assessments of the safety of France's nuclear facilities. To ensure coherence in the actions undertaken at national and European level, the ASN presented specifications for these assessments on 9 May 2011.

In parallel, EDF decided to enhance its existing crisis structure to respond to accident situations, by setting up a national unit able to provide human and material aid rapidly for a site in major difficulty. This task force, named the *Force d'Action Rapide Nucléaire* (FARN), is currently in preparation and the target start date is in 2012.

On 15 September 2011, EDF submitted its 19 additional safety assessment reports on the nuclear sites currently in operation and under construction to the ASN. This in-depth re-examination of plant design showed that safety levels are good across all of EDF's nuclear fleet. The ASN's permanent groups of experts were asked to give an opinion on the operators' reports, which they examined on 8, 9 and 10 November 2011 based on the IRSN [(1)] analysis. The ASN stressed that the additional safety assessment reports show no significant shortcomings in definition of the level of external events considered (earthquakes, floods, etc).

The ASN also acknowledged and approved EDF's proposed action, particularly the FARN task force and the concept of "core" focus on a limited number of plant buildings, systems and components that should be able to withstand stressful events. This approach goes beyond consideration of the scale of potential problems alone and ensures installations are robust to the situations studied in the assessment reports.

On 3 January 2012, the ASN released its conclusions on these assessment reports. Following these assessments of priority nuclear installations, the ASN considers that the facilities examined are sufficiently safe and there is no need to demand immediate closure for any of them. It also concludes that for ongoing operation, the plants' capacity to withstand extreme situations must be increased over and above current safety margins as soon as possible.

9.2.2.3.2 Stress tests in the United Kingdom

In the United Kingdom, at the request of the Secretary of State for Energy, the Chief Inspector of Nuclear Installations released the provisional "Weightman report" on 18 May 2011 then the final report on 11 October 2011. This report concerns the consequences of Fukushima for the British nuclear industry and considers the UK's nuclear program unaffected. It calls for the British government, the nuclear industry and the regulators to examine 38 areas in which the UK could learn from the Japanese nuclear crisis: chiefly dependence on off-site infrastructures such as the electric offering in case of extreme events, emergency response systems, plant design, flood risks, control scheduling for nuclear installations and definition of priorities in terms of safety controls.

The Office for Nuclear Regulation asked EDF Energy to take part in stress tests as requested by the European Commission, and on 31 October 2011 EDF Energy remitted its reports to the Office. These reports confirmed that the British nuclear fleet was of robust design, even in the most extreme scenarios. EDF Energy has identified new ways to increase safety, for example by investing in additional safety equipment such as cooling machines and emergency control and command systems so that control can be retained in extreme events.

EDF Energy also analysed the design of the Hinkley Point EPR project using the same criteria, and reconfirmed that it was safe. In late October, a development application was sent to the independent Infrastructure Planning Commission, which approved the application and released it publicly on 24 November.

9.2.2.3.3 Situation in other countries

- In the **United States**, the Nuclear Regulatory Commission (NRC) began a review to learn the lessons to be drawn from detailed understanding of the Fukushima accident. Prior to this, it declared that the reactors in operation in the United States were safe, and ruled out any prospect of shutdown in the absence of any proven risk. American operators added further lines of defense after the attacks of 11 September 2001 to make them highly resistant to external attacks, or after "Individual Plant Examination for External Events" conducted in the 1990s that resulted in reinforcement of installations, particularly to cope with earthquake risks.

(1) Institut de Radioprotection et de Sûreté Nucléaire *(French institute of radioprotection and nuclear safety).*

In early October 2011, following the report of an ad-hoc expert commission, the NRC defined eight short-term priorities: to reevaluate seismic and flooding risks, strengthen the plants' blackout mitigation capability, provide additional mobile onsite units, reinforce safety in the vent systems in boiling water reactors, enhance instrumentation in spent fuel pools, reinforce the organization's crisis communication resources and improve procedures for managing emergencies. In addition to these short-term actions, the NRC notes the need for reinforcement of spent fuel pool makeup capacity, vent system capacity in pressurized water reactors, and vent filtering capacity for boiling water reactors or pressurized water reactors, hydrogen control, and analysis of loss of the ultimate heat sink.

Based on these orientations, CENG has worked closely with other operators to establish and begin implementation of a 3-year action plan starting in the final quarter of 2011. In December 2011, the NRC instigated consultations with the US nuclear industry in order to define new regulatory requirements related to the Fukushima accident, to be published by March 2012. The NRC's official deadline for completing and implementing post-Fukushima measures is 2016.

- In **Belgium**, the political parties agreed during negotiations on the formation of a new government on 30 October 2011 to withdraw from nuclear power. The plan is to close the country's three oldest reactors by 2015, then the four other reactors by 2025. However, to avoid any shortages this plan will only be implemented if alternative non-nuclear power sources are available.
- In **Switzerland**, the federal government announced on 25 May 2011 that nuclear power would be phased out. Current nuclear plants will not be replaced, and will be permanently shut down after they have been in operation for 50 years, *i.e.* between 2019 and 2034. The Council of States adopted the proposal confirming this decision in September 2011.
- In **China**, the authorities decided to audit their power plants. The Chinese Council of State also decided to freeze authorizations for new nuclear reactors (in May 2011, 26 of the 34 reactors already authorized were under construction).
- In **Italy**, in a referendum held on 12 and 13 June,2011 the electors voted in favor of repealing the law of July 2009 that had initiated a return to nuclear power in the country.

9.2.2.4 Regulatory environment

9.2.2.4.1 France

9.2.2.4.1.1 "NOME" Law on the new electricity market organization

The French "NOME" law on the new electricity market organization was enacted on 7 December 2010 and the first implementation decrees were issued in April and May 2011. The basic principles of this law, which is intended to encourage greater competition on the electricity market in France, are:

- development of competition, by allowing other suppliers temporary access to a portion of EDF's baseload nuclear energy output until 2025 (no more than 100 TWh excluding network operators' losses). This is the principle of regulated access to historical nuclear energy (ARENH – *Accès Régulé à l'Électricité Nucléaire Historique*);
- contribution to security of supply, obliging every supplier to have a sufficient demand response capacity for consumption or generation to supply all customers, particularly in peak consumption periods;
- continuation of the "blue" tariff for residential and small business customers; the calculation method will be modified from 2015 to reflect the ARENH principle;
- discontinuation of the "yellow" and "green" tariffs for business customers from 2015;
- deferral by 5 years, to 29 June 2016, of the deadline for building up the dedicated assets portfolio [(1)], provided certain criteria are met.

The ARENH principle came into force on 1 July 2011. The first ARENH deliveries to EDF's competitors are for an initial annual volume of 61.3 TWh. This volume cannot exceed 100 TWh each year, to be increased from August 2013 by the quantities sold to network operators to cover technical losses.

The ARENH price has been set at €40/MWh for the second half of 2011 and €42/MWh from 1 January 2012 for the first half of 2012. This initial price will move towards the full production cost of the existing nuclear fleet, in application of a future decree defining the costs included in the ARENH.

The capacity obligation system is due to come into force from 2015.

9.2.2.4.1.2 CSPE

The Contribution to the Public Electricity Service (*Contribution au Service Public de l'Électricité* or CSPE) is intended to compensate for certain public service charges assigned to EDF in particular. This tax is collected directly from the final customer and applies to electricity consumption. It was raised by €3/MWh on 1 January 2011 to €7.5/MWh until 30 July 2011. The amended Finance Law for 2011 set the CSPE at €9 MWh from 31 July 2011 to 30 June 2012, then €10.5/MWh from 1 July 2012.

Since 2007, CSPE income has been unable to cover expenses, which have been steadily rising, primarily due to the higher level of windpower and solar power output covered by purchase obligations. The shortfall is borne solely by EDF, and amounts to €3,821 million at 31 December 2011 after deduction of CSPE income invoiced. It also generates a CSPE liability of €579 million for energy delivered but not yet billed.

The unit amount proposed by the CRE for 2012 to cover the estimated expenses for 2012 and past shortfalls for 2010 was €13.7/MWh.

To control the expenses covered by the CSPE, particularly the significant rise in the costs of purchasing photovoltaic electricity, a decree of 9 December 2010 suspended the obligation to purchase photovoltaic solar power for three months for all new projects except those concerning less than 3 kW. At the end of this photovoltaic moratorium, new rules came into force on 9 March 2011 to regulate the photovoltaic solar power sector, setting quotas for new projects and lowering the purchase tariff. The purchase tariff for photovoltaic electricity is recalculated quarterly: it was reduced on 1 July and on 1 October 2011.

(1) Financial Assets built up in compliance with the Law of June 28, 2006 to cover long-term nuclear commitments.

In July 2011, the CRE issued a call for tenders for installation of offshore windfarms. The surplus generation costs of these installations compared to market prices will be incorporated into CSPE expenses.

In October 2011, the Ministry of Energy filed a decree to make CSPE-funded social tariffs automatic in 2012. Almost 1.5 million French households are in a situation of energy precarity and should benefit from these special tariffs but only 600,000 of them have registered.

9.2.2.4.2 United Kingdom

9.2.2.4.2.1 Introduction of a carbon price floor

On 24 March 2011, the British government announced the introduction of a "carbon price floor", *i.e.* a minimum carbon price, one of the conditions necessary for the spread of low-carbon energies such as nuclear power.

This carbon price floor was set in the UK's 2011 Budget at £16/t, for application from 1 April 2013. It is expected to reach £30/t in 2020 with a long-term target of £70/t in 2030, expressed in $£_{2009}$ prices. This tax should encourage development of new low-carbon energy sources in the United Kingdom.

9.2.2.4.2.2 British Parliament ratification of the nuclear new build program

On 18 July 2011 the British Parliament voted on the National Policy Statement for Nuclear Power Generation, ratifying the program for building new nuclear power plants in the United Kingdom. This vote confirmed the government's decision to use nuclear power to meet the UK's growing need for low-carbon electricity generation capacities.

Parliament also confirmed the list of authorized sites for new nuclear plants, which includes Hinkley Point and Sizewell, the two priority sites identified by EDF for construction of its future power plants.

This vote is a major step forward for the development of nuclear power in the UK and for the EDF group. It followed the British government's announcement of 12 July 2011 confirming its decision to reform the UK electricity market.

9.2.2.4.3 Hungary

An amendment to the law on electricity adopted on 16 March 2011 ended all support for cogeneration in Hungary from July 2011, and stipulated that heat tariffs would now be regulated. The price must now be set by the government after proposal by the regulator, instead of freely negotiated between suppliers and their customers. This amendment particularly affects EDF's Hungarian subsidiary BE ZRt.

9.3 Analysis of the business and the consolidated income statements for 2011 and 2010

Presentation and analysis of the consolidated income statements for 2010 and 2011 is presented on two levels for sales and EBITDA: a first focusing on the Group, then a second examining the different business segments (France, United Kingdom, Italy, Other International and Other activities). EBIT (operating profit) and net income are analyzed from a more general standpoint.

Reminder: organic growth is measured in relation to adjusted 2010 figures.

(in millions of Euros)	2011	2010 (adjusted) [1]	2010 (restated) [2]
Sales	**65,307**	**63,922**	**65,320**
Fuel and energy purchases	(30,195)	(29,378)	(26,176)
Other external expenses	(9,931)	(9,890)	(10,582)
Personnel expenses	(10,917)	(10,418)	(11,422)
Taxes other than income taxes	(3,101)	(2,750)	(3,227)
Other operating income and expenses	3,661	3,050	3,090
Prolongation of the TaRTAM transition tariff system – laws of 7 June and 7 December 2010	-	(380)	(380)
Operating profit before depreciation and amortization (EBITDA)	**14,824**	**14,156**	**16,623**
Net changes in fair value on Energy and Commodity derivatives, excluding trading activities	(116)	15	15
Net depreciation and amortization	(6,285)	(6,434)	(7,426)
Net increases in provisions for renewal of property, plant and equipment operated under concessions	(221)	(428)	(428)
(Impairment)/reversals	(640)	(1,743)	(1,743)
Other income and expenses	724	(848)	(801)
Operating profit (EBIT)	**8,286**	**4,718**	**6,240**
Financial result	**(3,780)**	**(3,896)**	**(4,426)**
Income before taxes of consolidated companies	**4,506**	**822**	**1,814**
Income taxes	(1,305)	(682)	(1,079)
Share in income of associates	45	504	134
Net income of discontinued operations	-	-	380
GROUP NET INCOME	**3,246**	**644**	**1,249**
Net income attributable to non-controlling interests	236	235	229
EDF NET INCOME	**3,010**	**409**	**1,020**
Earnings per share *(in Euros)*	**1.63**	**0.22**	**0.55**
Diluted earnings per share *(in Euros)*	**1.63**	**0.22**	**0.55**

(1) 2010 figures are based on a comparable scope of consolidation to 2011, excluding EnBW, the networks and the Eggborough plant in the UK, with RTE accounted for under the equity method.

(2) 2010 figures have been restated in accordance with accounting principles (see 9.1).

9.3.1 Sales

Consolidated sales rose by 2.2%, with organic growth of 2.7%.

9.3.1.1 Change in Group sales

(in millions of Euros)	2011	2010 (adjusted)	Variation	Variation (%)	Organic growth (%)
Sales	65,307	63,922	1,385	+2.2	+2.7

Sales amounted to €65,307 million in 2011, up by €1,385 million (+2.2%). Excluding foreign exchange effects of -€302 million, principally resulting from the fall of the pound sterling against the Euro, and excluding changes in the scope of consolidation amounting to -€37 million, organic growth stood at +2.7%.

9.3.1.2 Change in sales by segment

(in millions of Euros)	2011	2010 (adjusted)	Variation	Variation (%)	Organic growth (%)
France	**37,171**	**35,951**	**1,220**	**+3.4**	**+3.4**
United Kingdom	8,568	9,496	(928)	-9.8	-8.0
Italy	6,552	5,647	905	+16.0	+17.5
Other International	7,501	7,033	468	+6.7	+8.9
Other activities	5,515	5,795	(280)	-4.8	-5.8
Total excluding France	**28,136**	**27,971**	**165**	**+0.6**	**+1.8**
GROUP SALES	**65,307**	**63,922**	**1,385**	**+2.2**	**+2.7**

Sales outside France for 2011 represented 43.1% of total consolidated sales compared to 43.8% for 2010 (adjusted).

9.3.1.2.1 France

Change in sales in the "France" segment

France's contribution to Group sales amounted to €37,171 million, showing organic growth of 3.4% from 2010 (adjusted).

Despite a very negative weather effect of -€1,866 million that adversely affected sales to end customers, sales progressed by €1,351 million as a result of positive price and tariff effects: the tariff increases of 15 August 2010 and 1 July 2011, and market prices that were slightly higher on average than in 2010 (+€1.4/MWh). The rest of the increase is essentially attributable to the increase in volumes sold under the ARENH system, and on the wholesale markets due to the favorable supply-demand balance.

At 31 December 2011, EDF's share of the electricity market for all end customers was 80.2%, 3.2 points lower than at 31 December 2010. EDF's share of the natural gas market was 3.6%, down by 0.4 points from 2010.

Breakdown of sales for the "France" segment between deregulated activities (1), network activities (2) and island activities (3)

(in millions of Euros)	2011	2010 (adjusted)	Variation	Variation (%)
Sales	37,171	35,951	1,220	+3.4
Deregulated activities	35,270	34,197	1,073	+3.1
Network activities (ERDF)	12,254	12,182	72	+0.6
Island activities	862	833	29	+3.5
Eliminations	(11,215)	(11,261)	46	-0.4

The 3.1% increase in **sales by the deregulated activities** is primarily attributable to the favorable impact of the 2010 and 2011 tariff rises.

Sales by the network activities saw a slight increase of 0.6% driven by tariff rises, despite the lower volumes delivered in winter 2011, which was milder than in 2010.

Electricity generation

Nuclear generation produced 421.1 TWh in 2011, compared to 407.9 TWh for 2010, a +13.2 TWh rise. This improvement, despite the nine 10-year inspections that took place (compared to five in 2010), is explained by the very good availability of the fleet: the number of unscheduled outages was significantly reduced. The availability factor was 80.7% in 2011, up by 2.2 points from 2010.

Hydropower generation produced 26.8 TWh, a noticeable downturn from 2010 (-12 TWh) caused by poor water availability (for a description of weather conditions see section 9.2.1.4.).

Fossil-fired generation produced 11.8 TWh, -5.1 TWh less than in 2010. This decline is mainly attributable to the differential between electricity and fossil fuel prices: the situation was less favorable for fossil-fired generation due to a more relaxed supply-demand balance in milder weather conditions. The fossil-fired fleet was also used less because of the nuclear fleet's good availability.

Sales volumes to end customers, including Eurodif and local distribution firms, were down by -40.5 TWh, including -26.4 TWh attributable to temperature differentials. In contrast to 2011 and its very mild weather, 2010 was marked by very cold temperatures.

(1) Generation, supply and optimization in mainland France, and sales of engineering and consulting services.

(2) Network activities only include Distribution from 2011, as a result of application of the equity method to the Transmission activity from 31 December 2010. In mainland France, network activities are regulated via *the network access tariff TURPE (*Tarifs d'Utilisation des Réseaux Publics d'Électricité*). Sales for the regulated activities include the delivery cost included in integrated Tariffs.*

(3) EDF's generation and distribution activities in the island energy systems (IES).

Electricity supplied under the NOME law in the second half of 2011 represented a volume of 30.8 TWh.

EDF was a net buyer of 7.3 TWh on the wholesale markets in 2011, corresponding to a 11.2 TWh decrease in net volumes purchased.

9.3.1.2.2 United Kingdom

Since the sale of the Networks activities to the CKI group on 29 October 2010, **EDF Energy** has comprised three operating divisions: Energy Sourcing and Customer Supply, the Nuclear Generation division, and development of the UK's Nuclear New Build project.

Sales in this segment amounted to €8,568 million in 2011, down by 9.8% compared to 2010 (adjusted), or an organic decline of 8.0%. The unfavorable foreign exchange effect of -€166 million resulted from the pound sterling's fall against the Euro between 2010 and 2011.

There was a decrease in volumes sold in 2011, which was partly offset by favorable price effects.

This downturn in volumes mainly concerned electricity sales to industrial customers which were under greater competitive pressure. Sales volumes to residential customers were also down, principally in gas sales, due to unfavorable weather effects (milder temperatures in the first and final quarters of 2011).

The overall tariff rise had a favorable impact on sales, especially the rises of 1 October 2010 (+2.6% on electricity), 2 March 2011 (+7.5% for electricity and +6.5% for gas), and to a lesser extent 10 November 2011 (+4.5% for electricity and +15.4% for gas), which compared to competitors' tariff increases was lower and introduced later.

9.3.1.2.3 Italy

Italy[1] contributed €6,552 million to consolidated sales, up by 16.0% with organic growth of 17.5%.

Sales by Edison rose by €893 million or +17.3% (organic growth of +19.0%), boosted by the electricity business which benefited from a positive price effect and a generally favorable volume effect driven by the wholesale markets, despite a downturn in volumes sold to end customers. In the hydrocarbon business, the rise in volumes sold on the wholesale and thermoelectric markets was accompanied by a rise in commodity prices.

Sales by Fenice increased by €11 million (+2.3%, corresponding to an organic change of +1.3%), primarily due to the start-up of new cogenerations in Italy and development of foreign subsidiaries. This rise was partly counterbalanced by a slowdown in sales for Fiat.

9.3.1.2.4 Other International

The Other International segment principally covers operations in Europe outside the United Kingdom and Italy, and operations in the United States, Brazil and Asia (China, Vietnam and Laos).

This segment contributed €7,501 million to Group sales in 2011, up by €468 million or +6.7% from 2010 (adjusted).

Foreign exchange effects between 2010 (adjusted) and 2011 amounted to -€107 million. The effect of changes in the scope of consolidation in this segment essentially reflects changes in the consolidation method for the Polish subsidiaries Zielona Gora and Kogeneracja[2]. Without these scope and exchange effects, sales would show organic growth of 8.9% compared to 2010 (adjusted).

Most of this increase concerns Belgium, and to a smaller extent Austria and Brazil, but sales were down in Hungary.

In **Belgium**, sales amounted to €3,595 million, registering organic growth of +17.7%. This growth chiefly results from the rise in sales of short-term electricity and gas optimization, and to a lesser extent, the higher volumes of electricity sold to end customers, combined with a favorable price effect. However, gas sales were down slightly, as the lower volumes sold due to weather effects were not partly offset by higher tariffs.

In **Austria**, sales reached €417 million corresponding to organic growth of +36.7%, reflecting an increase in electricity sales volumes due to the cold winter of early 2011, and an upturn in business with industrial customers.

Sales in **Brazil** showed organic growth of +17.2%, essentially driven by higher contractual prices and a good level of export sales, particularly to Argentina.

In **Hungary,** in contrast, sales totaled €684 million reflecting an organic decline of 9.4%, principally caused by the fall in volumes sold by EDF Demasz on the wholesale market and lower electricity prices for eligible customers, combined with a decline in purchase costs.

9.3.1.2.5 Other activities

Other activities comprise, among other entities, EDF Énergies Nouvelles, EDF Trading, Électricité de Strasbourg and the investment in Dalkia.

The contribution by the **Other activities** segment to Group sales in 2011 was €5,515 million, down by €280 million or -4.8%, with an organic decline of 5.8% from 2010 (adjusted).

EDF Énergies Nouvelles contributed €1,214 million to Group sales, an organic decline of 16.0% from 2010 (adjusted). After an exceptional year in 2010, sales by Development-Sales of Structured Assets returned to a comparable level with previous years. EDF Énergies Nouvelles' core activity of Generation registered significant growth of 24% compared to 2010 (adjusted).

EDF Trading's[3] sales saw organic growth of 5.6% from 2010 (adjusted), essentially through short-term optimization of EDF's positions in France.

Dalkia's contribution to sales reflected an organic decline of €74 million (-3.2%) due principally to the downturn in solar power activities in Spain and Italy.

(1) Edison and Fenice groups.

(2) From full consolidation to proportional consolidation in February 2011 after completion of the sale of EnBW.

(3) EDF Trading sales consist of trading margins.

9.3.2 EBITDA

EBITDA rose by 4.7%, with organic growth of 5.4%. Excluding the impact of the decision of 4 July 2011 concerning the non recurring compensation for TaRTAM transition tariff expenses (-€170 million[(1)]), organic growth in EBITDA was 6.6%, above the objectives presented in July 2011.

(in millions of Euros)	2011	2010 (adjusted)	Variation	Variation (%)	Organic growth (%)
Sales	**65,307**	**63,922**	**1,385**	**+2.2**	**+2.7**
Fuel and energy purchases	(30,195)	(29,378)	(817)	+2.8	+3.7
Other external expenses	(9,931)	(9,890)	(41)	+0.4	-0.2
Personnel expenses	(10,917)	(10,418)	(499)	+4.8	+5.1
Taxes other than income taxes	(3,101)	(2,750)	(351)	+12.8	+12.9
Other operating income and expenses	3,661	3,050	611	+20.0	+20.4
Prolongation of the TaRTAM transition tariff – laws of 7 June and 7 December 2010	-	(380)	380	n.a.	n.a.
EBITDA	**14,824**	**14,156**	**668**	**+4.7**	**+5.4**

n.a. = not applicable.

9.3.2.1 Change in consolidated EBITDA and analysis

Consolidated EBITDA for 2011 amounted to €14,824 million, up by 4.7% from 2010 (adjusted), corresponding to organic growth of 5.4%. Foreign exchange effects amounted to -€73 million, mainly reflecting the unfavorable movements by the pound sterling against the Euro.

Fuel and energy purchases amounted to €30,195 million, an increase of €817 million (+2.8%) compared to 2010 (adjusted). The organic growth in these purchases stood at +3.7%. **France** registered an organic rise of 5.4%, explained essentially by higher purchase obligations. In **Italy**, the organic growth of 24.1% was driven by both natural gas and electricity purchases. In the **Other International** segment, the 13.4% organic growth was mainly associated with the higher volumes sold in Belgium and fuel price and CO_2 cost effects in Poland. For fuel and energy purchases in the **United Kingdom**, however, the organic change was negative at -19.0% due to unfavorable developments in sales volumes combined with higher nuclear output.

The Group's **other external expenses** amounted to €9,931 million, stable compared to 2010 (adjusted) (+0.4%), corresponding to an organic change of -0.2%. Most of this variation is explained by lower external expenses at EDF Énergies Nouvelles, in keeping with the lower level of sales. This was offset by the unfavorable change, essentially in France, where the organic growth of 2.8% is chiefly attributable to the increase in maintenance expenses for the nuclear generation fleet.

The Group's **personnel expenses** totaled €10,917 million, €499 million (+4.8%) higher than in 2010 (adjusted), with organic growth of +5.1%. This change essentially related to **France**, where personnel expenses totaled €8,147 million, corresponding to organic growth of 5.6% from 2010 (adjusted). This reflects the increase in the workforce, pay measures, and pension-related expenses.

Taxes other than income taxes stood at €3,101 million for 2011, up by €351 million from 2010 (adjusted) (+12.8%, with organic growth of +12.9%). The increase was mainly located in France.

Other operating income and expenses generated a net income of €3,661 million in 2011, €611 million higher than in 2010 (adjusted), or an organic variation of +20.4%. In **France**, the organic €562 million growth in other operating income and expenses was mainly driven by the rise in CSPE. In the **United Kingdom**, other operating income and expenses showed an organic decline of €172 million due to the unfavorable effect of the fair value adjustment of various items, including electricity sale contracts, at the time of EDF's acquisition of British Energy. This effect was partly counterbalanced by positive effects in 2011 that had no equivalent in 2010, mainly gains on disposals. In **Italy,** the decrease is largely explained by the indemnity for early termination of the CIP6 system for certain plants, recorded by Edison in 2010. The organic rise of €168 million in the **Other activities** segment's contribution reflects the recognition of various gains on disposals.

A net €380 million allocation to provisions was recorded on a specific line in 2010 in connection with the **extension of the TaRTAM** transition tariff mechanism (Laws of 7 June and 7 December 2010).

(1) Net of reinvoicing to partners.

9.3.2.2 Change in consolidated EBITDA by segment and analysis

(in millions of Euros)	2011	2010 (adjusted)	Variation	Variation (%)	Organic growth (%)
France	**9,111**	**8,599**	**512**	**+6.0**	**+6.3**
United Kingdom	1,912	1,790	122	+6.8	+8.5
Italy	592	801	(209)	-26.1	-25.2
Other International	1,280	1,084	196	+18.1	+19.5
Other activities	1,929	1,882	47	+2.5	+3.3
Total excluding France	**5,713**	**5,557**	**156**	**+2.8**	**+4.0**
GROUP EBITDA	**14,824**	**14,156**	**668**	**+4.7**	**+5.4**

9.3.2.2.1 France

Change in EBITDA for the "France" segment

France contributed €9,111 million of consolidated EBITDA for 2011, 6.0% higher than in 2010 (adjusted), corresponding to organic growth of 6.3%. This contribution accounted for 61.5% of Group EBITDA, compared to 60.7% in 2010 (adjusted). The growth in EBITDA for the France segment reflects the fact that the gross margin registered a greater increase than operating expenses (+4.7%).

Breakdown (1) of EBITDA for the "France" segment between deregulated activities, network activities and island activities

(in millions of Euros)	2011	2010 (adjusted)	Variation	Variation (%)
EBITDA	9,111	8,599	512	+6.0
Deregulated activities	6,056	5,905	151	+2.6
Network activities	2,795	2,475	320	+12.9
Island activities	260	219	41	+18.7

Despite very unfavorable water availability (-€582 million) and higher maintenance costs for the nuclear fleet, EBITDA for the deregulated activities rose slightly between 2010 and 2011 (+2.6%) due to higher regulated tariffs (+€490 million) and an increase in nuclear power output (+€587 million).

2011 saw the end of the TaRTAM mechanism (at 30 June 2011) and introduction of deliveries of 30.8 TWh under the ARENH system described in section 9.2.2.4.1. This additional energy supply obligation means EDF must reduce either its market sales or purchase volumes on the market, depending on the supply-demand balance. As the ARENH sale price was lower than market prices, the system has a negative impact on EDF's financial statements in 2011.

EBITDA for the network activities registered a 12.9% increase despite the decline in volumes carried (reflecting the weather effects of 2010), due to higher TURPE tariffs and a fall in purchases to cover network losses.

EBITDA for the island activities increased by €41 million (+18.7%) due to the tariff increase and the rise in payments under the CSPE compensation system.

9.3.2.2.2 United Kingdom

The United Kingdom's contribution to Group EBITDA for 2011 was €1,912 million, up by 6.8% from 2010 (adjusted), with organic growth of 8.5%. The unfavorable foreign exchange effect (-€31 million) relates to the pound sterling's fall against the Euro between 2010 and 2011.

Operating performance was marked by nuclear power output of 55.8 TWh in 2011, a rise of 7.5 TWh (+15.5%) driven by better performances by the fleet in 2011 and unscheduled outages affecting 2010, essentially at the Sizewell B plant.

The resulting decrease in energy purchases more than offset the effect of the sales downturn described in section 9.3.1.2.2. EBITDA in the United Kingdom also benefited from the movement in wholesale prices, but was adversely affected by fair value adjustment of various items, including electricity sale contracts, at the time of EDF's acquisition of British Energy.

9.3.2.2.3 Italy

The **Italy** segment contributed €592 million to the Group's consolidated EBITDA, down by 26.1% (organic decline of -25.2%).

Edison contributed €480 million to consolidated EBITDA in 2011 against €693 million in 2010 (adjusted), corresponding to an organic decline of €206 million or -29.7%.

EBITDA for the electricity activities declined, due to the combined effect of early termination and expiry in late 2010 of the CIP6 subsidies for certain plants, and shrinking margins. The electricity segment nonetheless benefited from the positive contribution by renewable energies and business outside Italy.

The hydrocarbon activities' contribution to EBITDA was noticeably lower than in 2010 (adjusted), despite the progression of Exploration and

(1) Further details of this breakdown can be found in section 9.3.1.2.1.

Production. These activities were strongly affected by the fall in margins on gas sales to end customers, which resulted from pressure on gas sales prices in a fiercely competitive environment, as well as ongoing negotiations and arbitration procedures concerning supply costs on long-term contracts. However, the effect of shrinking margins was limited by renegotiations in February 2011 for Norwegian gas import contracts and July 2011 for Russian gas import contracts, with impacts of €26 million and €101 million respectively in 2011.

Fenice's contribution to consolidated EBITDA showed organic growth of €2 million between 2010 (adjusted) and 2011.

9.3.2.2.4 Other International

EBITDA for the **Other International** segment stood at €1,280 million in 2011, up by 18.1% compared to 2010 (adjusted), with organic growth of 19.5%.

EBITDA in **Belgium** registered organic growth of 74.4%, reflecting an increase in electricity sales volumes and better margins on electricity and gas.

In **Brazil**, EBITDA showed organic growth of 22.6%, largely associated with the favorable effects of export sales.

Poland's EBITDA saw organic growth of +10.5%, including a gain resulting from deconsolidation of Zielona Gora and Kogeneracja, which was partly counterbalanced by a fall in margins. This was explained by the increase in coal and biomass purchase prices, together with lower sales of heat due to milder weather than in 2010.

In **Hungary**, EBITDA showed organic decline (-14.3%), especially at Be ZRt where margins fell following changes in the regulatory context.

EBITDA in the **United States** saw a marked decrease (-28.0%) compared to 2010 (adjusted). The organic decline in EBITDA was -16.7% and is explained by the adverse effect of unscheduled outages at CENG, and a change in status for UniStar's new nuclear project Calvert Cliffs 3. This project has now been classified as being in the pre-development phase, the related expenses are recorded as charges and no longer capitalized (see section 9.4.1.2).

9.3.2.2.5 Other activities

Other activities contributed €1,929 million to Group EBITDA for 2011, €47 million more than in 2010 (adjusted), with organic growth of +3.3%.

EDF Énergies Nouvelles' contribution to consolidated EBITDA amounted to €540 million [1], an organic increase of 17.4% from 2010 (adjusted). The principal factor in this increase was the growth of the company's wind and solar power generation business.

EBITDA at **EDF Trading** showed organic growth of 7.2% compared to 2010 (adjusted), in line with the increase in sales [2].

Dalkia's EBITDA saw an organic decline of €124 million (-34.4%), primarily due to the gain recognized in 2010 on the sale of Usti in the Czech Republic, and lower earnings, especially in Italy.

9.3.3 EBIT

75.6% increase in EBIT.

(in millions of Euros)	2011	2010 (adjusted)	Variation	Variation (%)
EBITDA	**14,824**	**14,156**	**668**	**+4.7**
Net changes in fair value on Energy and Commodity derivatives, excluding trading activities	(116)	15	(131)	n.a.
Net depreciation and amortization	(6,285)	(6,434)	149	-2.3
Net increases in provisions for renewal of property, plant and equipment operated under concessions	(221)	(428)	207	-48.4
(Impairment)/reversals	(640)	(1,743)	1,103	-63.3
Other income and expenses	724	(848)	1,572	n.a.
OPERATING PROFIT (EBIT)	**8,286**	**4,718**	**3,568**	**+75.6**

n.a. = not applicable.

The Group's consolidated EBIT amounted to €8,286 million for 2011, €3,568 million higher than in 2010 (adjusted), chiefly as a result of changes in impairment (essentially concerning the United States and the United Kingdom in 2010, and Edison and Dalkia in 2011) and other income and expenses (the provision recorded in respect of the Group's Italian operations in 2010, changes in ERDF's provisions for renewal of property, plant and equipment operated under concessions, and the gain on disposal of EnBW in 2011).

(1) €560 million at EDF Énergies Nouvelles, before EDF group consolidation adjustments.
(2) EDF Trading's sales consist of its trading margin.

9.3.3.1 Net changes in fair value on Energy and Commodity derivatives, excluding trading activities

The net changes in fair value on Energy and Commodity derivatives, excluding trading activities, fell from €15 million in 2010 (adjusted) to -€116 million in 2011. Negative changes were mainly located in the **Other activities** segment (Belgium) and in **France**, and were partly offset by positive changes in the **United Kingdom** segment.

9.3.3.2 Net depreciation and amortization

Net depreciation and amortization was down slightly compared to 2010 (adjusted) (-2.3%).

The **United Kingdom** and **Italy** both registered lower net depreciation and amortization in 2011. In the UK, this was essentially due to extension of the operating lifetimes of the Heysham 1 and Hartlepool plants authorized by the Nuclear Installations Inspectorate (NII)[1] in 2010, while in Italy it is explained by the fact that impairment was recorded on fossil-fired assets in 2010.

France reported higher net depreciation and amortization (+€177 million) as a result of new investments. Commissioning of new facilities in the generation fleet at EDF Énergies Nouvelles also led to a €34 million increase in net depreciation and amortization.

9.3.3.3 Net increases in provisions for renewal of property, plant and equipment operated under concessions

The €207 million decline in **net increases in provisions for renewal of property, plant and equipment operated under concessions** in 2011 compared to 2010 is attributable to ERDF, and relates to the reduction in the scope of assets renewable during the term of concessions.

9.3.3.4 Impairment/reversals

The €1,743 million of impairment recorded in 2010 principally concerned the **United States**, the **United Kingdom** and to a lesser extent the **Other activities** and **Italy** segments.

In 2011, impairment of €640 million was recorded, concerning Edison in **Italy** (€320 million, including €280 million for Edipower), the **Other activities** segment (€267 million), and the **Other International** segment with BE ZRt in Hungary (€53 million).

Impairment in the **Other activities** segment concerns Dalkia (€151 million, for operations in Italy and to a lesser extent Spain) and EDF Énergies Nouvelles (€78 million, particularly for photovoltaic solar activity in France, which was affected by changes in French regulations for solar energy since late 2010).

9.3.3.5 Other income and expenses

Other income and expenses totaled a net €724 million in 2011 compared to €848 million in 2010 (adjusted).

In 2010, this item included a €750 million allocation to provisions related to operations in Italy.

In 2011, other income and expenses mainly comprise the positive €414 million impact of changes in the estimated useful lives of certain French public distribution facilities on the provision for renewal, and the €276 million gain on sale of EnBW.

9.3.4 Financial result

(in millions of Euros)	2011	2010 (adjusted)	Variation	Variation (%)
Cost of gross financial indebtedness	(2,271)	(2,424)	153	-6.3
Discount effect	(3,064)	(2,971)	(93)	+3.1
Other financial income and expenses	1,555	1,499	56	+3.7
FINANCIAL RESULT	**(3,780)**	**(3,896)**	**116**	**-3.0**

The financial result for 2011 is a financial expense of €3,780 million, down by €116 million from 2010 (adjusted) as a result of:

- a drop in interest expenses (-6.3%) due to action to optimize the structure of gross indebtedness;
- a €93 million increase in discount expenses, mainly in France;
- an increase in other financial income and expenses, principally related to optimization of cash and liquid assets.

(1) Part of the Office for Nuclear Regulation (ONR) since 1 April 2011.

9.3.5 Income taxes

Income taxes amounted to €1,305 million in 2011, corresponding to an effective tax rate of 29.0% (compared to an expense of €682 million corresponding to an effective tax rate of 83.0% for 2010 (adjusted)).

The decrease in the effective tax rate is mainly explained by the recognition in 2010 of impairment in the United States and United Kingdom, and the provision in respect of Italian operations. Excluding this provision and the impairment booked in 2010 and 2011, the effective tax rate was stable (26.6% in 2011 against 26.4% in 2010 (adjusted)).

9.3.6 Share in income of associates

The Group's share in income of associates was a positive €45 million in 2011, compared to €504 million for 2010 (adjusted). This decrease is mainly due to recognition of €320 million of impairment by Alpiq, and the decline in RTE's and Alpiq's net income between 2010 and 2011.

9.3.7 Net income attributable to non-controlling interests

Net income attributable to non-controlling interests amounted to €236 million for 2011, stable compared to 2010 (adjusted).

9.3.8 EDF net income

EDF net income for 2011 was €3,010 million, up by €2,601 million compared to 2010 (adjusted).

9.3.9 Net income excluding non-recurring items

The Group's net income excluding non-recurring items[(1)] stood at €3,520 million for 2011, €415 million (13.4%) higher than 2010 (adjusted).

Based on a constant scope of consolidation and exchange rates, the increase was 12.9%.

(1) Group net income excluding non-recurring items and net changes in fair value on Energy and Commodity derivatives, excluding trading activities, net of tax.
Non-recurring items and net changes in fair value on Energy and Commodity derivatives, excluding trading activities, net of tax amounted to (€510) million in 2011, mainly comprising:
- *€253 million for the gain on disposal of EnBW;*
- *(€320) million for the impairment on Alpiq;*
- *(€304) million for the impairment on Edison;*
- *(€135) million for the impairment on Dalkia International;*
- *(€217) million of impairment on shares in Veolia;*
- *€266 million of reversals from provisions for renewal related to the change in estimated useful lives of certain assets;*
- *(€58) million of net changes in fair value on Energy and Commodity derivatives, excluding trading activities, net of tax;*
- *€5 million of other items.*

Non-recurring items and net changes in fair value on Energy and Commodity derivatives, excluding trading activities, net of tax amounted to (€2,696) million in 2010 (adjusted), primarily including impairment and other income and expenses, particularly concerning the United States and Italy, and the TaRTAM provision in France.

9.4 Cash flows and net financial indebtedness

9.4.1 Cash flows

(in millions of Euros)	2011	2010 (restated)	Variation	Variation %
Net cash flow from operating activities	**8,497**	**11,110**	**(2,613)**	**-23.5**
Net cash flow used in investing activities	**(6,791)**	**(14,927)**	**8,136**	**-54.5**
Net cash flow from financing activities	**(1,591)**	**1,948**	**(3,539)**	**n.a.**
Cash flows from discontinued operations	**-**	**357**	**(357)**	**n.a.**
NET INCREASE/(DECREASE) IN CASH AND CASH EQUIVALENTS	**115**	**(1,512)**	**1,627**	**n.a.**
Cash and cash equivalents - opening balance	**5,567**	**6,982**	**(1,415)**	**-20.3**
Net increase/(decrease) in cash and cash equivalents	115	(1,512)	1,627	n.a.
Effect of currency fluctuations	54	76	(22)	-28.9
Financial income on cash and cash equivalents	44	29	15	51.7
Effect of reclassifications	(37)	(8)	(29)	n.a.
CASH AND CASH EQUIVALENTS – CLOSING BALANCE	**5,743**	**5,567**	**176**	**3.2**

n.a. = not applicable.

9.4.1.1 Net cash flow from operating activities

(in millions of Euros)	2011	2010 (restated)	Variation	Variation %
Income before taxes of consolidated companies	**4,506**	**1,814**	**2,692**	**148.4**
(Impairment)/Reversals	640	1,743	(1,103)	-63.3
Accumulated depreciation and impairment, provisions and change in fair value	7,325	9,858	(2,533)	-25.7
Financial income and expenses	1,117	1,918	(801)	-41.8
Dividends received from associates	334	112	222	198.2
Capital gains/losses	(686)	164	(850)	n.a.
Change in working capital	(1,785)	(335)	(1,450)	n.a.
Net cash flow from operations	**11,451**	**15,274**	**(3,823)**	**-25.0**
Net financial expenses disbursed	(1,623)	(2,197)	574	-26.1
Income taxes paid	(1,331)	(1,967)	636	-32.3
NET CASH FLOW FROM OPERATING ACTIVITIES	**8,497**	**11,110**	**(2,613)**	**-23.5**

n.a. = not applicable.

The net cash flow from operating activities amounted to €8,497 million in 2011, a €2,613 million decrease from restated 2010.

This change primarily reflects a €3,823 million decrease in the net cash flow from operations, chiefly resulting from:

- (i) the income before taxes from consolidated companies after adjustment for impairment (reversals), depreciation and amortization and changes in fair value, which amounted to €12,471 million in 2011 compared to €13,415 million in 2010 (a €994 million decrease);
- (ii) the lower financial income and expenses (-€801 million from 2010) associated partly with the reduction in average gross indebtedness and action to optimize the gross debt structure (see section 9.3.4, "Financial result"), and partly with effects of changes in the scope of consolidation (application of the equity method to RTE and sale of the networks in the United Kingdom);
- (iii) the effect of capital gains on disposals recognized in 2011, particularly the gain on sale of EnBW;
- (iv) the change in working capital of -€1,785 million in 2011 compared to -€335 million in 2010; in 2010, working capital benefited from the favorable effect of a €1,747 million advance payment under the contract with the Exeltium consortium).

The variation in the net cash flow from operating activities also reflects:
- (i) the €574 million decrease in net financial expenses disbursed, mainly due to application of the equity method to RTE and the reduction in average gross indebtedness;
- (ii) the lower amount of income taxes paid (€636 million), resulting mainly from differences on payments of the balance of taxes in France and the United Kingdom for previous years, and reimbursements of tax by RTE to EDF under the French tax consolidation system, which were higher in 2011.

9.4.1.2 Net cash flow used in investing activities

Net cash outflows for investing activities amounted to €6,791 million in 2011, compared to €14,927 million in 2010.

The following table sets forth the breakdown of net cash flow used in investing activities between purchases and disposals of property, plant and equipment and intangible assets, acquisition and disposals of companies net of cash acquired/transferred, and the change in financial assets:

(in millions of Euros)	2011	2010 (restated)	Variation	Variation %
Purchases of property, plant and equipment and intangible assets	(11,134)	(12,241)	1,107	-9.0
Net proceeds from sale of property, plant and equipment and intangible assets	497	188	309	n.a.
Net Capex (1)	**(10,637)**	**(12,053)**	**1,416**	**-11.7**
Acquisition/disposal of companies, net of cash acquired/transferred (2)	3,624	3,398	226	6.7
Changes in financial assets	222	(6,272)	6,494	n.a.
NET CASH FLOW USED IN INVESTING ACTIVITIES	**(6,791)**	**(14,927)**	**8,136**	**-54.5**

n.a. = not applicable.

(1) In managing its industrial investments, the Group uses the net Capex indicator ("Purchases of property, plant and equipment and intangible assets" net of "Disposals of property, plant and equipment and intangible assets") in order to monitor changes in its investments in tangible and intangible assets.

(2) The impact of disposal of the investment in EnBW in the first half of 2011 amounts to €3.8 billion (payment received of €4.5 billion net of €738 million cash transferred in the sale).

Purchases of property, plant and equipment and intangible assets (Gross Capex)

Operating investments (gross capital expenditure) for 2011 amounted to €11,134 million, €1,107 million lower than in 2010 (-9.0%).

Changes in the Group's gross capital expenditure over the period were as follows:

(in millions of Euros)	2011	2010 (restated)	Variation	Variation %
Network activities	2,754	3,724	(970)	-26.0
Deregulated activities	3,896	3,655	241	6.6
Island activities	728	495	233	47.1
Total France	**7,378**	**7,874**	**(496)**	**-6.3**
United Kingdom	1,179	1,871	(692)	-37.0
Italy	318	381	(63)	-16.5
Other International	436	561	(125)	-22.3
Total International	**1,933**	**2,813**	**(880)**	**-31.3**
Total Other Activities	**1,823**	**1,554**	**269**	**17.3**
OPERATING INVESTMENTS (GROSS CAPEX)	**11,134**	**12,241**	**(1,107)**	**-9.0**

Capital expenditure declined in France and internationally, but increased for Other Activities.

The €496 million decrease in **France** (-6.3%) is explained by application of the equity method to RTE from 31 December 2010. Excluding this impact, gross capital expenditure increased by €670 million or +10.0%. In the network activities, this increase was largely explained by ERDF's investments in connections for customers (€122 million) and the quality of supply (€153 million). For the deregulated activities, the increase was concentrated in nuclear maintenance (€367 million), principally for asset maintenance and extension of the plants' operating lives. For the island activities, the increase is attributable to investments in new production capacities under construction in Corsica, Guadeloupe (Pointe Jarry), Martinique (Bellefontaine) and Réunion island (Port Est).

In the **United Kingdom**, gross capital expenditure was down by €692 million (-37.0%), mainly as a result of the impact of sale of the networks (-€790 million). Excluding this impact, gross capital expenditure increased by €101 million in connection with development of the New nuclear program and renewable energies.

In **Italy**, the €63 million decline in gross capital expenditure (-16.5%) principally concerned Fenice (-€59 million).

In the **Other International** segment, gross capital expenditure was €125 million lower in 2011 than in 2010, primarily in the United States, Poland and Other Western European countries.

Gross capital expenditure in the **Other activities** was up by €269 million (17.3%). This change was mainly driven by higher investments by EDF Énergies Nouvelles (€141 million), essentially in North America, and by Dalkia (€111 million).

Acquisitions/disposals of companies, net of cash acquired

This heading comprises acquisitions and disposals of shares in consolidated companies, net of the related cash.

In 2011, it mainly included the €3.8 billion gain on the sale of EnBW.

In 2010, the principal component was the gain on disposal of the distribution networks in the United Kingdom (€3,655 million).

Changes in financial assets

The change in financial assets in 2010 was €222 million, compared to -€6,272 million in 2010. The main explanation for the decrease in 2010 was the increase in the Group's short-term financial investments as a result of debt reduction operations late in the year.

9.4.1.3 Net cash flow from financing activities

(in millions of Euros)	2011	2010 (restated)	Variation	Variation %
Transactions with non-controlling interests	(1,324)	(59)	(1,265)	
Dividends paid by the parent company	(2,122)	(2,163)	41	-1.9
Dividends paid to non-controlling interests	(261)	(190)	(71)	37.4
Treasury shares	(14)	(10)	(4)	40.0
Cash flows with shareholders	**(3,721)**	**(2,422)**	**(1,299)**	**53.6**
Issuance of borrowings	5,846	8,642	(2,796)	-32.4
Repayment of borrowings	(4,071)	(4,652)	581	-12.5
Funding contributions received for assets operated under concessions	194	231	(37)	-16.0
Investment subsidies	161	149	12	8.1
Other cash flows from financing activities	**2,130**	**4,370**	**(2,240)**	**-51.3**
NET CASH FLOW FROM FINANCING ACTIVITIES	**(1,591)**	**1,948**	**(3,539)**	**n.a.**

n.a. = not applicable.

In 2011, the cash flows related to financing activities generated a net outflow of €1,591 million, a €3,539 million decrease from the net inflow of 2010. This change primarily reflects:

- (i) The transactions with non-controlling interests in 2011, corresponding to the purchase of EDF Énergies Nouvelles shares for €1,462 million.
- (ii) Dividends paid out in cash by EDF in 2011 (amounting to €2,122 million), stable compared to the level of dividends paid in 2010.
- (iii) Issuance of borrowings net of repayment, amounting to €2,215 million. Financing of operations in 2011 benefited from the €4,500 million received in February 2011 for the sale of EnBW, such that this item was lower than in 2010.

9.4.2 Net indebtedness

Net indebtedness comprises total loans and financial liabilities, less cash and cash equivalents and liquid assets. Liquid assets are financial assets consisting of funds or securities with initial maturity of over three months that are readily convertible into cash and are managed according to a liquidity-oriented policy. The definition of net indebtedness was revised in 2010 to include the Group's loans to RTE, which is accounted for under the equity method from 31 December 2010.

Changes in the Group's net indebtedness were as follows:

(in millions of Euros)	2011	2010 (restated)	Variation	Variation %
Operating profit before depreciation and amortization (EBITDA)	**14,824**	**16,623**	**(1,799)**	**-10.8**
Cancellation of non-monetary items included in EBITDA	(1,925)	(1,165)	(760)	
Net financial expenses disbursed	(1,623)	(2,197)	574	
Income taxes paid	(1,331)	(1,967)	636	
Other items	336	152	184	
Net cash flow from operations [1]	**10,281**	**11,446**	**(1,165)**	**-10.2**
Change in working capital	(1,121)	298	(1,419)	
Net operating investments (Gross Capex less disposals)	(10,637)	(12,053)	1,416	
Free cash flow	**(1,477)**	**(309)**	**(1,168)**	
Allocation to dedicated assets, France	(315)	(1,343)	1,028	
Net financial investments	3,277	3,613	(336)	
Dividends paid	(2,383)	(2,353)	(30)	
Other changes [2]	8	(287)	295	
(Increase)/decrease in net indebtedness, excluding the impact of changes in scope of consolidation and exchange rates	**(890)**	**(679)**	**(211)**	
Effect of change in scope of consolidation	2,607	9,358	(6,751)	
Effect of change in exchange rates	(516)	(782)	266	
Effect of other non-monetary changes [3]	(97)	15	(112)	
(Increase)/Decrease in net indebtedness	**1,104**	**7,912**	**(6,808)**	
(Increase)/Decrease in net indebtedness of discontinued operations	**-**	**195**	**(195)**	
NET INDEBTEDNESS AT BEGINNING OF PERIOD	**34,389**	**42,496**		
NET INDEBTEDNESS AT END OF PERIOD	**33,285**	**34,389**		

(1) Operating cash flow is not an aggregate defined by IFRS as a measure of financial performance, and is not directly comparable with indicators of the same name reported by other companies. This indicator, also known as Funds From Operations (FFO), is equivalent to net cash flow from operating activities excluding changes in working capital after adjustment for the impact of non-recurring items, less net financial expenses disbursed and income taxes paid.

(2) Mainly the change in accrued interest on debt, contributions received on concessionary assets, investment subsidies and the payment to AREVA for decommissioning of the plant at La Hague (€664 million excluding taxes in 2011, €633 million in 2010).

(3) Mainly corresponds to changes in fair value and accounting reclassifications affecting net indebtedness.

The Group's net indebtedness stood at €33,285 million at 31 December 2011 compared to €34,389 million at 31 December 2010, a decrease of €1,104 million over the year.

The Group's free cash flow at 31 December 2011 was negative at -€1,477 million: this included net operating investments of -€10,637 million financed to the extent of €10,281 million by operating cash flow, and a variation of -€1,121 million in working capital. The allocation to dedicated assets for 2011 amounted to €315 million. This is substantially lower than in 2010 (-€1,028 million), due both to the impacts of allocation of 50% of RTE shares (€2.3 billion) to dedicated assets at the end of 2010, and article 20 of the NOME law (on France's new electricity market organization) authorizing extension of the period for building up the dedicated asset portfolio to 30 June 2016. A further factor in this decline was the suspension of allocations from August 2011 due to market conditions. 2011 was marked by a net financial divestment (excluding allocations to dedicated assets) of €3,277 million, resulting from receipt in February 2011 of €4,500 million for the sale of EnBW, and investments for external growth (-€1,996 million), mainly in France with the purchase and exchange offer for shares of EDF Energies Nouvelles (€1,462 million).

Dividends paid in cash (€2,383 million) comprise the balance of the 2010 dividends (€1,069 million), the interim dividend for 2011 (€1,053 million), and dividends paid by Group subsidiaries to their minority shareholders (€261 million), principally Centrica in the UK (€140 million).

Changes in the scope of consolidation primarily reflect the effect of deconsolidation of EnBW's financial debt, which contributed €2,591 million of the reduction in net indebtedness.

The foreign exchange effect (appreciation of the US dollar and the pound sterling against the Euro[1] had an unfavorable impact of -€516 million on the Group's net financial indebtedness.

(1) The US dollar rose by 3.3% against the Euro: 31 December 2010: $0.7484/€1; 31 December 2011: $0.7729/€1.
The pound sterling rose by 3.0% against the Euro: 31 December 2010: €1.1618/£1; 31 December 2011: €1.1972/£1.

9.5 Management and control of market risks

9.5.1 Management and control of financial risks

This chapter sets forth the policies and principles for management of the Group's financial risks (liquidity, interest rate, foreign exchange rate, equity and counterparty risks), defined in the Financial Management Framework and the Group counterparty risk management policy set up by the EDF group. These principles apply only to EDF and operationally controlled subsidiaries (*i.e.* entities other than Edison, Dalkia and CENG) or subsidiaries that do not benefit by law from specific guarantees of independent management (*i.e.* entities other than RTE and EDF Réseau Distribution France-ERDF). In compliance with IFRS 7, the following paragraphs describe the nature of risks resulting from financial instruments, based on analyses of sensitivities and credit (counterparty) risks.

In view of the Group's international development, a dedicated body was formed at the beginning of 2002 – the Financial Risks Control Division (*Département Contrôle des Risques Financiers* or DCRF) – to control financial risks at Group level by ensuring correct application of the principles of the Financial Management Framework. This body also has the task of carrying out a second-level check (methodology and organization) of EDF and operationally controlled group subsidiaries, and an operational verification of financing activities at parent company level.

The DCRF issues daily monitoring reports of risk indicators relevant to activities in EDF's trading room. Regular internal audits are carried out to ensure controls are effectively applied.

9.5.1.1 Liquidity position and management of liquidity risks

Liquidity position

At 31 December 2011, the Group's liquidities totaled €14,767 million and available credit lines amounted to €10,179 million. The Group also has access to financial resources through short-term issues and bond issue programs.

For 2012, the Group's scheduled debt repayments (principal and interest) are forecast at €9,071 million at 31 December 2011, including €2,673 million for bonds.

At 31 December 2011, no Group company was in default on any borrowing.

Management of liquidity risks

As part of its policy to manage liquidity, finance its operating investment and external growth program and reinforce long-term debt, the Group undertook bond issues during 2011 (for details see note 39.2.1 to the consolidated financial statements at 31 December 2011 "Changes in loans and other financial liabilities"). These bonds were issued as part of the EMTN program in respective amounts of €300 million and £1,250 million, plus a *schuldschein* bond for €188 million. RTE also issued a €500 million bond on 3 February 2011, followed by a further €250 million on 28 October 2011.

The average maturity of consolidated debt was thus 9.2 years at 31 December 2011 compared to 8.9 [1] years at 31 December 2010, and EDF debt now has average maturity of 10.4 years compared to 10.2 years at 31 December 2010.

At 31 December 2011, the residual maturities of financial liabilities (including interest payments) are as follows under IAS 39 (values based on exchange and interest rates at 31 December 2011):

		Hedging instruments [1]		
(in millions of Euros)	Debt	Interest rate swaps	Currency swaps	Guarantees given on bonds
2012	9,071	(44)	70	13
2013 - 2016	22,297	(171)	149	26
2017 and later	43,465	(316)	48	119
TOTAL	**74,833**	**(531)**	**267**	**158**
Debt repayment	48,947			
Interest expense	25,885			

(1) Data on hedging instruments include both assets and liabilities.

(1) Change of methodology at 30 June 2011: average maturity is calculated based on quarterly flows, instead of annual flows in 2010.

The EDF group was able to meet its financing needs by conservative liquidity management, and obtained financing on satisfactory terms.

A range of specific levers are used to manage the Group's liquidity risk:

- the Group's cash pooling system, which centralizes cash management for controlled subsidiaries. The subsidiaries' cash balances are made available to EDF in return for interest, so as to optimize the Group's cash management and provide subsidiaries with a system that guarantees them market-equivalent financial terms;
- centralization of financing for controlled subsidiaries at the level of the Group's cash management department. Changes in subsidiaries' working capital is financed by this department in the form of stand-by credit lines provided for subsidiaries, which may also receive revolving credit from the Group. In this context, EDF Energy and EDF Trading now have credit lines with EDF. The investment subsidiary EDF Investissements Groupe (EDF IG), set up in partnership with the bank Natixis Belgique Investissements, also provides medium-term financing for EDF group subsidiaries, arranged independently by EDF IG. The company sets its own terms, which are the same as the subsidiary would have in an arm's-length market transaction;
- active management and diversification of financing sources used by the Group: the Group has access to short-term resources on various markets through programs for French commercial paper (*billets de trésorerie*), US commercial paper and Euro market commercial paper. For EDF, the ceilings for these programs are €6 billion for its French commercial paper, $10 billion for its US commercial paper and $1.5 billion for its Euro market commercial paper.

At 31 December 2011 the amount of commercial paper outstanding was €1,489 million for French commercial paper, and $2,434 million for US commercial paper. No Euro market commercial paper was outstanding.

RTE has a short-term French commercial paper program for maximum amounts of €1.5 billion, with €300 million outstanding at 31 December 2011. EDF Energy no longer draws on its short-term issue program as this subsidiary is now included in the centralized financing arrangements.

EDF has access to the world's main capital markets: the Euro markets through its EMTN (Euro Medium Term Note) program, which currently has a ceiling of €20 billion, particularly for Euro and sterling issues; and the domestic markets used for stand-alone issues in US dollars (144A), yen (samurai bonds) and Swiss francs.
RTE and Edison also have their own EMTN programs, with ceilings of €7.5 billion and €3 billion respectively. EDF Energy no longer has an EMTN program.

EDF also has a €500 million credit line with the European Investment Bank. A total of €350 million was drawn on this line during 2011, in addition to the €100 million already drawn in 2010, bringing the total credit consumed to €450 million by the end of 2011.

The table below sets forth the Group's borrowings of more than €750 million or the equivalent value in other currencies by maturity at 31 December 2011:

Entity	Issue date [3]	Maturity	Nominal amount (in millions of currency units)	Currency	Rate
EDF	11/2008	01/2013	2,000	EUR [1]	5.6%
EDF	01/2009	01/2014	1,250	USD	5.5%
EDF	07/2009	07/2014	3,269	EUR	4.5%
EDF	01/2009	01/2015	2,000	EUR [1]	5.1%
EDF	10/2001	10/2016	1,100	EUR	5.5%
EDF	02/2008	02/2018	1,500	EUR	5.0%
EDF	01/2009	01/2019	2,000	USD	6.5%
EDF	01/2010	01/2020	1,400	USD	4.6%
EDF	05/2008	05/2020	1,200	EUR	5.4%
EDF	01/2009	01/2021	2,000	EUR	6.3%
EDF	09/2009	09/2024	2,500	EUR [2]	4.6%
EDF	11/2010	11/2025	750	EUR	4.0%
EDF	04/2010	04/2030	1,500	EUR [2]	4.6%
EDF	02/2003	02/2033	850	EUR	5.6%
EDF	06/2009	06/2034	1,500	GBP	6.1%
EDF	01/2009	01/2039	1,750	USD	7.0%
EDF	11/2010	11/2040	750	EUR	4.5%
EDF	10/2011	10/2041	1,250	GBP	5.5%
EDF	09/2010	09/2050	1,000	GBP [2]	5.1%

(1) These two bonds were partially redeemed after two €750 million issues in 2010.
(2) These bonds were partly redeemed in 2011.
(3) Date funds were received.

The entities with syndicated loan facilities at 31 December 2011 are EDF, Edison and RTE:

- EDF has two syndicated loans: the first for €3 billion, valid until March 2012; the second for €4 billion maturing in November 2015, extended during 2011 for a further year to November 2016, but with a reduction in the available amount for the final year to €3.879 billion. No drawings had been made on either of these facilities at 31 December 2010;
- Edison has two syndicated loans: on the first, for €1.5 billion valid until 2013, a drawing of €200 million was made in November 2011 in addition to the €850 million outstanding in the first half of 2011. The second has a ceiling of €700 million and was set up in June 2011 on a club deal basis; a drawing of €600 million was made in the second half of 2011, in addition to the €100 million drawn at 30 June 2011;
- RTE has one syndicated loan for €1 billion, valid until May 2013, comprising a €300 million swingline, and another syndicated loan for €500 million was set up in June 2010 and renewed in 2011 until 22 June 2012. No drawings had been made on these credit facilities at 31 December 2011.

9.5.1.2 Credit ratings

The financial ratings agencies Standard & Poor's, Moody's and Fitch Ratings attributed the following long-term and short-term ratings to EDF group entities at 31 December 2011:

Company	Agency	Long-term rating	Short-term rating
EDF	Standard & Poor's	AA- (1), creditwatch negative	A-1 +
	Moody's	Aa3, stable outlook	P-1
	Fitch Ratings	A+, stable outlook	F1
RTE	Standard & Poor's	AA- (2) , creditwatch negative	A-1 +
EDF Trading	Moody's	A3, stable outlook	n.a.
EDF Energy	Standard & Poor's	A, negative outlook	A-1
	Moody's	A3, stable outlook	P-2
	Fitch Ratings	n.a.	n.a.
Edison SpA	Standard & Poor's	BBB- (3), creditwatch negative	A-3
	Moody's	Baa3 (5), creditwatch negative	n.a.
	Fitch Ratings	BB- (4), creditwatch negative	B

n.a. = non applicable.

(1) On 7 July 2011, Standard & Poor's raised the long-term rating for EDF from A+ to AA- with a stable outlook, as State support was judged more likely in the event of difficulties; on 15 December 2011, Standard & Poor's placed EDF on creditwatch negative, associated with putting France on creditwatch.

(2) On 27 October 2011, Standard & Poor's raised the long-term rating for RTE from A+ to AA- with a stable outlook, as State support was judged more likely in the event of difficulties; on 8 December 2011, Standard & Poor's placed RTE creditwatch negative, associated with putting France on creditwatch.

(3) On 5 December 2011, Standard & Poor's downgraded the long-term rating for Edison from BBB to BBB- due to the negative outlook for the gas business, and the deferral of the shareholder agreement to late December 2011. This downgrade was associated with a creditwatch negative.

(4) On 23 December 2011, Fitch downgraded the long-term and short-term ratings for Edison SpA due to the deferral of the shareholder agreement.

(5) On 7 December 2011, Moody's announced that it was putting Edison SpA on creditwatch due to the shareholders' difficulty in reaching an agreement over Edison's governance strategy.

On 17 January 2012, EDF and RTE were downgraded to A+/A-1 (stable outlook) by Standard & Poor's. This decision followed the downgrade of France's credit rating.

9.5.1.3 Management of foreign exchange rate risk

Due to the diversification of its activities and geographical locations, the Group is exposed to the risk of exchange rate fluctuations, which may have an impact on the translation differences affecting balance sheet items, Group financial expenses, equity and net income.

To limit exposure to foreign exchange risks, the Group has introduced the following management principles:

- local currency financing: to the extent possible given the local financial markets' capacities, each entity finances its activities in its own accounting currency. When financing is contracted in other currencies, derivatives may be used to limit foreign exchange risks;
- association of assets and liabilities: the net assets of subsidiaries located outside the Euro zone expose the Group to a foreign exchange risk. The foreign exchange risk in the consolidated balance sheet is managed either by matching with liabilities for acquisitions in the same currency, or by market hedging involving use of financial derivatives. Hedging of net assets in foreign currencies complies with risk/return targets, and the hedging rate varies from 70% to 90% depending on the currency. If no hedging instruments are available, or if hedging costs are prohibitive, the foreign exchange positions remain open and the risk on such positions is monitored by sensitivity calculations;
- hedging of operating cash flows in foreign currencies: in general, the operating cash flows of EDF and its subsidiaries are in the relevant local currencies, with the exception of flows related to fuel purchases which are primarily in US dollars, and certain flows related to purchases of equipment, which concern lower amounts. EDF and the main subsidiaries concerned by foreign exchange risks (EDF Energy, EDF Trading, Edison, EDF Énergies Nouvelles) hedge firm or highly probable commitments related with these future operating cash flows.

After taking into account the financing and foreign exchange risk hedging policy, the Group's gross debt at 31 December 2011 breaks down as follows by currency after hedging: 53% in Euros, 29% in pounds sterling and 13% in US dollars. The balance of 6% includes the Swiss franc, the Hungarian forint, the Polish zloty, the Brazilian real and the Japanese yen.

Gross debt structure at 31 December 2011, by currency, before and after hedging

31 December 2011 *(in millions of Euros)*	Initial debt structure	Impact of hedging instruments[1]	Debt structure after hedges	% of debt
EUR	29,479	(3,129)	26,350	53%
USD	8,890	(2,401)	6,489	13%
GBP	6,822	7,559	14,381	29%
Other currencies	4,843	(2,029)	2,814	6%
TOTAL	**50,034**	**-**	**50,034**	**100%**

(1) Hedges of liabilities and net assets of foreign subsidiaries.

The table below presents the impact on equity of an unfavorable variation in exchange rates on the Group's gross debt at 31 December 2011. Sensitivity to foreign exchange risks remains stable overall compared to 2010.

Sensitivity of the Group's gross debt to foreign exchange rate risks

31 December 2011 *(in millions of Euros)*	Debt after hedging instruments converted into Euros	Impact of a 10% unfavorable variation in exchange rates	Debt after a 10% unfavorable variation in exchange rates
EUR	26,350	-	26,350
USD	6,489	649	7,138
GBP	14,381	1,438	15,819
Other currencies	2,814	281	3,095
TOTAL	**50,034**	**2,368**	**52,402**

Due to the Group's foreign exchange risk hedging policy for liabilities, the income statement for companies controlled by the Group is marginally exposed to foreign exchange rate risks.

The table below sets forth the foreign exchange position relating to net non-operating investments in foreign currency of the Group's principal subsidiaries at 31 December 2011.

Net asset position

31 December 2011 *(in millions of currency units)*	Assets	Bonds	Derivatives	US CP	Net position after management (Assets)
USD	5,248	4,000	198	502	548
CHF (Switzerland)	2,201	1,706	-	-	495
HUF (Hungary)	112,195	-	78,536	-	33,659
PLN (Poland)	2,556	-	1,789	-	767
GBP (United Kingdom)	14,262	5,285	6,124	-	2,853
BRL (Brazil)	692	-	-	-	692
CNY (China)	5,790	-	-	-	5,790

The assets in the above table are the net assets of the Group's foreign subsidiaries in foreign currencies at 30 September 2011, adjusted for changes in the fair value of cash flow hedges and available-for-sale financial assets recorded in equity, and changes in the fair value of financial instruments recorded in income at 31 December 2011. The hedges shown above are bonds, derivatives and commercial paper issues in foreign currencies outstanding at 31 December 2011.

The following table sets forth the risk of foreign exchange loss in equity on the overall net position relating to the net non-operating investments in foreign currencies of the Group's principal subsidiaries at 31 December 2011, assuming unfavorable, uniform exchange rate variations of 10% against the Euro. Net positions are converted at the closing rate and impacts are reported in absolute value.

Sensitivity of net assets to exchange rate risks

(in millions of currency units)	31/12/2011 Net position after management, in currency	31/12/2011 Net position after management, converted into Euros	31/12/2011 Impact on equity of a 10% variation in exchange rates	31/12/2010 Net position after management, in currency	31/12/2010 Net position after management, converted into Euros	31/12/2010 Impact on equity of a 10% variation in exchange rates
USD	548	424	42	1,227	918	92
CHF (Switzerland)	495	407	40	172	138	14
HUF (Hungary)	33,659	107	12	25,449	92	9
PLN (Poland)	767	172	17	566	142	14
GBP (United Kingdom)	2,853	3,416	341	2,068	2,403	240
BRL (Brazil)	692	286	29	686	288	29
CNY (China)	5,790	710	71	5,187	588	59

The foreign exchange risk on available-for-sale securities is mostly concentrated in EDF's dedicated assets portfolio, which is discussed in section 9.5.1.6., "Management of financial risk on EDF's dedicated assets portfolio".

The foreign exchange risk associated with short-term investments and operating liabilities in foreign currencies was not significant for the Group at 31 December 2011.

9.5.1.4 Management of interest rate risk

The Group's exposure to interest rate fluctuations covers two types of risk: a risk of change in the value of fixed-rate financial assets and liabilities, and a risk of change in the cash flows related to floating-rate financial assets and liabilities.

To limit exposure to interest rate risk, the Group (apart from entities it does not control operationally, notably Edison and CENG) fixes principles as part of its general risk management policy, designed to limit the risk of change in the value of assets invested or possible increases in financial expenses. Some of the debt is variabilized and the distribution of exposure between fixed and floating rates is monitored with reference to asset/liability management criteria and expected fluctuations in interest rates. This distribution may involve the use of interest rate derivatives for hedging purposes.

The Group's debt after hedging instruments at 31 December 2011 comprised 80% of debt bearing interest at fixed rates and 20% at floating rates.

A 1% uniform annual rise in interest rates would generate an approximate €100 million increase in financial expenses at 31 December 2011, based on gross floating-rate debt after hedging.

The average cost of Group debt (weighted interest rate on outstanding amounts) was 4.3% in 2011.

The table below sets forth the structure of Group debt and the impact of a 1% variation in interest rates at 31 December 2011. The impact of interest rate fluctuations remains stable compared to 2010.

Group debt structure and sensitivity to interest rates

31 December 2011 (in millions of Euros)	Initial debt structure	Impact of hedging instruments	Debt structure after hedges	Impact on income of a 1% variation in interest rates
Fixed rate	42,614	(2,630)	39,984	-
Floating rate	7,420	2,630	10,050	100
TOTAL	**50,034**	**-**	**50,034**	**100**

Interest rate variations on fixed-rate debt have no accounting impact.

Concerning financial assets, the table below presents the interest rate risk on floating-rate bonds and negotiable debt securities at EDF, and their sensitivity to interest rate risks (impact on net income).

Sensitivity of floating-rate securities to interest rate risks

31 December 2011 *(in millions of Euros)*	Value	Impact on income of a 1% variation in interest rates	Value after a 1% variation in interest rates
FLOATING-RATE SECURITIES	3,677	37	3,640

9.5.1.5 Management of equity risks

The equity risk is concentrated in the following areas:

Coverage of EDF's nuclear obligations

Analysis of the equity risk is presented in section 9.5.1.6, "Management of financial risk on EDF's dedicated assets portfolio".

Coverage of employee benefit commitments for EDF, EDF Energy and British Energy

Assets covering EDF's employee benefit liabilities are partly invested on the international and European equities markets. Market trends therefore affect the value of these assets, and a downturn in equity prices could lead EDF to recognize actuarial losses above the "corridor" in income. 26% of the assets covering EDF's employee benefit liabilities were invested in equities at 31 December 2011, amounting to €1.9 billion.

At 31 December 2011, the two pension funds sponsored by EDF Energy (*EDF Energy Pension Scheme* and *EDF Energy Group Electricity Supply Pension Scheme*) were invested to the extent of 36% in equities, representing an amount of £242 million of equities.
At 31 December 2011, the British Energy pension funds were invested to the extent of 33% in equities, representing an amount of £1,160 million of equities.

CENG fund

CENG is exposed to equity risks in the management of its funds established to cover nuclear plant decommissioning and employee benefit obligations.

EDF's long-term cash management

EDF continued to reduce the portion of equity-correlated investments in its long-term cash management instruments. At 31 December 2011, these investments amounted to a residual €2 million.

Direct investment securities

At 31 December 2011, EDF's investment in Veolia Environnement amounted to €174 million, with estimated volatility of 37.7% (annualized volatility of monthly returns observed over three years).

At 31 December 2011, EDF's investment in AREVA amounted to €164 million, with estimated volatility of 27.6% (annualized volatility of monthly returns observed over three years).

9.5.1.6 Management of financial risk on EDF's dedicated assets portfolio

The dedicated assets have been built up progressively by EDF since 1999 to cover future decommissioning expenses for the nuclear plants currently in operation, and the long-term storage of radioactive waste.

This dedicated assets portfolio, for which guiding principles were redefined in the law of 28 June 2006 on sustainable management of radioactive materials and waste, is managed under the supervision of the Board of Directors and its Committees (Nuclear Commitments Monitoring Committee, Audit Committee).

The **Nuclear Commitments Monitoring Committee (CSEN)** is a specialized Committee set up by EDF's Board of Directors when it updated its internal rules on 25 January 2007, in anticipation of the provisions of article 9 of the decree of 23 February 2007.

A **Nuclear Commitment Financial Expertise Committee (CEFEN)** exists to assist the company and its governance bodies on questions of association of assets and liabilities and asset management. The members of this Committee are independent of EDF. They are selected for their skills and diversity of experience, particularly in the fields of asset/liability management, economic and financial research, and asset management.

In 2011, **dedicated assets** received cash allocations of €315 million, compared to €3,667 million in 2010, including €2,324 million for the Group's 50% investment in RTE (see note 48 to the consolidated financial statements at 31 December 2011).
In view of the economic and financial environment as the Euro zone crisis developed, allocations were suspensed in the final quarter to allow for the changes in asset investment principles.

Disbursements for decommissioning expenses incurred in 2011 were financed by the dedicated assets portfolio to the extent of €378 million, compared to €362 million in 2010.

The governance principles set forth the decision-making and control structure for management of dedicated assets. The principles governing the assets portfolio's structure, selection of financial managers, and the legal, accounting and tax structure of the funds are also defined.

Strategic asset allocation is based on an asset/liability review carried out to define the most appropriate portfolio model for financing nuclear expenses. A benchmark index is also set for performance monitoring and control of the dedicated assets excluding RTE (the financial portfolio). Strategic allocation is regularly reviewed, in principle every three years unless circumstances require otherwise. Currently, assets are allocated as follows: 50% to RTE shares, and the rest to a financial portfolio consisting 50% of international equities and 50% of bonds.

The financial portfolio contains two sub-portfolios, "equities" and "bonds", themselves divided into "secondary asset classes" or "pockets" that correspond to specific markets. A third sub-portfolio, "cash", is used to prepare and supply the disbursements related to amounts reversed from provisions for plants currently being decommissioned.

Tactical asset management is organized around four main themes:
- supervision of exposure between the two "equities" and "bonds" classes;
- choice of exposure by geographical area;
- marginal investment in alternative vehicles to those used in the strategic allocation;
- selection of investment funds, aiming for diversification:
  - by style (growth securities, securities with below-par market value, high-return securities);
  - by capitalization (major stocks, medium and small stocks);
  - by investment process (macroeconomic and sector-based approach, selection of securities on a "quantitative" basis, etc);
  - by investment vehicle (for compliance with maximum investment ratios).

The allocation policy established by the Operational Management Committee [1] was developed on the basis of macro-economic prospects for each market and geographical area, and a review of market appreciation in different markets and market segments.

Content and performance of EDF's dedicated assets portfolio

At 31 December 2011, the total value of the portfolio was €15,659 million compared to €15,815 million in 2010.

Portfolio content under the classification from article 4, decree 2007-243 of 23 February 2007

Categories *(in millions of Euros)*	31/12/2011 Book value [1]	31/12/2011 Stock market or realizable value	31/12/2010 Book value	31/12/2010 Stock market value
1° Bonds, receivables and other securities issued or guaranteed by an EU member state or OECD country	4,168	4,448	3,040	3,342
2° Bonds, negotiable bills, etc issued by private sector entities	1,099	1,155	682	737
3° Equities, shares and other securities traded on a recognized market, giving access to the capital of companies whose head office is located in the territory of a EU member state or OECD country	65	65	117	125
4° Shares or units in funds investing in assets referred to in 1° to 3°	6,541	6,865	7,827	8,272
5° Shares or units in funds investing principally in assets other than those referred to in 1° to 3°	658	777	749	1,023
6° Real estate shares (shares in unlisted real estate companies)	-	-	-	-
7° Deposits with BNP Paribas Securities Services	0.055	0.055	0.042	0.042
Other payables and receivables (dividends receivable, management fees, currency hedges, etc)	(19)	(19)	(9)	(9)
TOTAL FINANCIAL PORTFOLIO	**12,514**	**13,291**	**12,406**	**13,491**
RTE shares allocated to dedicated assets	2,015	2,368	2,015	2,324
TOTAL DEDICATED ASSETS	**14,421**	**15,659**	**14,421**	**15,815**

(1) Sources: BNP Paribas Securities Services for the portfolio excluding RTE, net book value in EDF SA's individual accounts for 50% of RTE shares.

Breakdown by sub-portfolio and performance in 2011

The breakdown of EDF's dedicated assets portfolio at 31 December 2011 and 2010 is as follows:

	31/12/2011 Incl. RTE	31/12/2011 Excl. RTE [1]	31/12/2010
Investments in equities	36.9%	43.5%	50.5%
Investments in bonds	48.0%	56.5%	49.5%
RTE shares allocated to dedicated assets	15.1%	-	-
TOTAL	**100%**	**100%**	**100%**

(1) Relative shares of equities and bond sub-portfolios, excluding RTE shares.

(1) A permanent internal committee for evaluation, consultation and operational decision-making for management of dedicated assets.

The table below shows the performance by sub-portfolio at 31 December 2011 and at 31 December 2010.

(in millions of Euros)	31/12/2011 Stock market or realizable value	Performance for 2011		31/12/2010 Stock market value	Performance for 2010	
		Portfolio	Benchmark index[1]		Portfolio	Benchmark index
Equities sub-portfolio	5,783	-6.98%	-3.98%	6,807	+16.15%	+14.03%
Bonds sub-portfolio	6,615	+3.90%	+3.41%	6,683	+2.50%	+0.99%
Cash sub-portfolio	893	+1.11%	+0.89%	1	+0.49%	+0.44%
Total financial portfolio	**13,291**	**-1.62%**	**-0.06%**	**13,491**	**+8.79%**	**+7.60%**
RTE shares allocated to dedicated assets	2,368	-	-	2,324	-	-
TOTAL DEDICATED ASSETS	**15,659**	**-0.52%**		**15,815**		

(1) Benchmark index: 50% MSCI World DN EUR hedged for the equities sub-portfolio, Citigroup EGBI for the bonds sub-portfolio, 50% MSCI World DN EUR hedged + 50% Citigroup EGBI for the total portfolio.

As the sovereign debt crisis that had affected Europe since 2010 amplified in 2011, and oil prices rose as a result of the upheaval in North Africa and uncertainties over US budget and monetary policies, EDF adopted a prudent investment policy in 2011, particularly in the second half of the year. Exposure was reduced in countries affected by their level of sovereign debt (negligible investment in Greece, Portugal, Ireland and Spain, limited investments in Italy), positions were streamlined on the equity markets (43.5% of the financial portfolio at 31 December 2011 compared to 50.5% in 2010), and cash assets were reinforced (6.7% of the financial portfolio at the year-end).

While the portfolio performance was in line with its benchmark in early November 2011, this prudent management approach brought performance below the benchmark in a rising equity market. The RTE shares allocated to dedicated assets fully played their buffer role in the overall portfolio performance for 2011.

Against this background, the overall after-tax performance of dedicated assets (impact on reserves and net income) was -€15.2 million: -€147.9 million on the financial portfolio (-€231.5 million before tax) and +€132.8 million for the RTE shares allocated to dedicated assets).

The distribution of the portfolio between reserved funds and other financial instruments is also presented in note 48 to the consolidated financial statements at 31 December 2011.

EDF is exposed to equity risks, interest rate risks and foreign exchange risks through its dedicated assets portfolio.

The market value of the "equities" sub-portfolio in EDF's dedicated assets portfolio was €5,783 million at 31 December 2011. The volatility of the "equities" sub-portfolio can be estimated on the basis of the volatility of its benchmark index, the MSCI World index, which at 31 December 2011 was 19.06% based on 52 weekly performances, compared to 15.5% at 31 December 2010. Applying this volatility to the value of equity assets at the same date, the Group estimates the annual volatility of the equities portion of dedicated assets at €1,102 million. This volatility is likely to affect the Group's equity.

At 31 December 2011, the sensitivity of the "bonds" sub-portfolio (€6,615 million) was 4.81, *i.e.* a uniform 100 base point rise in interest rates would result in a €318 million decline in market value which would be recorded in consolidated equity. While this sensitivity was higher than in 2010 (4.65), it remained well below the sensitivity of the benchmark index (6.22).

9.5.1.7 Management of counterparty/credit risk

Counterparty risk is defined as the total loss that the EDF group would sustain on its business and market transactions if a counterparty defaulted and failed to perform its contractual obligations.

The Group has a counterparty risk management policy which applies to the parent company and all operationally controlled subsidiaries. This policy defines the organization of counterparty risk management and monitoring, and reporting procedures and circuits. It involves monthly consolidation of the exposures on financial and energy markets and half-yearly consolidation for all activities. The policy also includes close supervision of Group counterparties (daily review of alerts, special cautionary measures for certain counterparties).

These supervision procedures proved their robustness during the financial crisis, when the Group moved to a more frequent (quarterly) consolidation of all counterparty risks.

The table below gives details, by rating, of the EDF group's consolidated exposure at the end of September 2011. 85% of the main counterparties for the Group's business qualify as "investment grade", a stable proportion overall compared to the consolidated risk at 30 September 2010.

	AAA	AA	A	BBB	BB	B	CCC/C	Unrated	Total
30 September 2011	9%	20%	45%	11%	2%	0%	0%	13%	**100%**
30 September 2010	10%	23%	50%	5%	1%	0%	0%	11%	**100%**

The exposure to counterparty risk by nature of activity is distributed as follows:

	Purchases	Insurance	Distribution and sales	Cash and asset management	Fuel purchases and energy trading	Total
30 September 2011	4%	34%	7%	40%	15%	**100%**
30 September 2010	5%	45%	8%	34%	8%	**100%**

Exposure in the energy trading activities is concentrated at EDF Trading. Counterparty risk management for this subsidiary has explicit limits for each counterparty according to its financial robustness. A range of means are used to reduce counterparty risk at EDF Trading, primarily position netting agreements, cash-collateral agreements and establishment of guarantees from banks or affiliates.

Particularly for counterparties dealing with EDF's trading room, the Financial Risk Control team has drawn up a framework specifying counterparty authorization procedures and the methodology for calculation of allocated limits (which must correspond to requirements). The level of exposure can be consulted in real time and is systematically monitored on a daily basis. The suitability of limits is reviewed without delay in the event of an alert or unfavorable development concerning a counterparty.

The credit risk related to trade receivables is presented in note 26 to the 2011 consolidated financial statements ("Trade receivables").

In the context of the Euro zone's financial crisis, the prudent management policy for EDF's cash investments was continued for countries neighboring the zone. Exposure remained nil for Ireland, Portugal and Greece, and there was no longer any exposure to sovereign risk for Italy and Spain at 31 December 2011. Some exposure remains as regards the Italian and Spanish banks, but the amounts involved are relatively limited and have short maturities (no later than April 2013), and the banks are considered systemic by the Financial Stability Board, meaning they have low risk of default.

9.5.2 Management and control of energy market risks

9.5.2.1 Framework for management and control of energy market risks

In conjunction with the opening of the end customer market, development of the wholesale markets and on the international scene, the EDF group is exposed to price variations on the energy market which can have a significant impact on its financial statements.

Consequently, the Group has an energy markets risk policy (for electricity, gas, coal, oil products and CO_2 emission quotas) applicable to EDF and entities in which it has operational control.

This policy aims to:
- define the general framework in which the various Group entities carry out their operational activities (energy generation, optimization and distribution), and their interaction with EDF Trading;
- consolidate the exposure of the various entities controlled by the Group on the structured energy-related markets;
- implement a coordinated hedging policy at Group level.

At Edison, which at 31 December 2011 is not operationally controlled by EDF, the energy market risk policy and associated control process are reviewed by the company's governance bodies. CENG, which similarly is not operationally controlled by EDF at 31 December 2011, partly applies the EDF group's policy for energy market risks.

9.5.2.2 Organization of risk control

The process for controlling energy market risks for entities operationally controlled by the Group is based on:
- a governance and market risk exposure measurement system, clearly separating management and risk control responsibilities;
- an express delegation to each entity, defining hedging strategies and establishing the associated risk limits. This enables the Comex to set an annual Group risk profile consistent with the financial objectives, and thus direct operational management of energy market risks within the Group, generally over 3-year market horizons;
- a specific control process, given its close interaction with the decisions made within the generation and supply businesses. This process involves Group management and is based on a risk indicator and measurement system incorporating escalation procedures in the event risk limits are exceeded.

The Group's exposure to energy market risks through operationally controlled entities is reported to the Comex on a monthly basis. The control processes are regularly evaluated and audited.

9.5.2.3 Principles for operational management and control of energy market risk

The principles for operational management and control of energy market risks for operationally controlled entities and CENG are based on clearly-defined responsibilities for managing those risks, distinguishing between management of assets (generation and supply) and trading.

Managers of generation and supply assets are responsible for implementing a risk management strategy that minimizes the impact of energy

market risks on their financial statements (the accounting classifications of these hedges are described in note 42 to the consolidated financial statements). However, a residual risk remains that cannot be hedged on the market due to factors such as insufficient liquidity or market depth, uncertainty over volumes, etc.

For operationally controlled entities in the Group, positions on the energy markets are taken predominantly by EDF Trading, the Group's trading entity, which operates on the markets on behalf of other group entities and for the purposes of its own trading activity. As such, EDF Trading is subject to a strict governance and control framework in line with current practices in trading companies.

EDF Trading trades on organized or OTC markets in derivatives such as futures, forwards, swaps and options (regardless of the accounting classification applied at Group level). Its exposure on the energy markets is strictly controlled through daily limit monitoring overseen by the subsidiary's management and by the entity in charge of energy market risk control at Group level. Automatic escalation procedures also exist to inform members of EDF Trading's Board of Directors of any breach of risk limits (value at risk limit) or loss limits (stop-loss limits). Value At Risk (VaR) is a statistical measure of the company's potential maximum loss in market value on a portfolio in the event of unfavorable market movements, over a given time horizon and with a given confidence interval. EDF Trading assesses VaR by the Monte Carlo method, which refers to historical volatilities and correlations estimated on the basis of market prices observed over the 40 previous trading days. The stop-loss limit stipulates the acceptable risk for the trading business by setting a maximum level of loss over a rolling three-month period. If the limit is exceeded, EDF Trading's Board of Directors takes appropriate action, which may include closing certain positions.

In 2011, EDF Trading's commitment on the markets was subject to a daily VaR limit of €45 million[1] (with a daily confidence interval of 97.5%), and a stop-loss limit of €225 million[2]. VaR fluctuated between €4.3 million and €18.7 million over the year.

The table below shows the VaR and stop-loss limits for 2011 and 2010:

(in millions of Euros)	H2 2011	H1 2011	H2 2010	H1 2010
VaR limit (97.5% 1-day)	45	45	45	45
Stop-loss limit	225	225	225	-
Minimum VaR	4.3	4.7	3.8	6.9
Average VaR	6.9	10.4	7.3	14.8
Maximum VaR	10.4	18.7	11.3	23.0

In a context of low market volatility, the VaR and stop-loss limits were not exceeded in 2011 and EDF Trading's risks remained within the limits of the mandate from EDF at all times. The stop-loss has never been triggered since its introduction.

At Edison, the governance model[3] separates risk management and control from operational trading activities. For operational purposes, Edison calculates its net exposure[4] based on its entire portfolio of assets and contracts (industrial portfolio), other than those related to trading for the company's own purposes (trading portfolio).

The level of economic capital engaged in the markets, expressed in terms of Profit at Risk (PaR)[5], is then determined using this net exposure.

(1) The VaR takes into account diversification of risks between the activities of EDF Trading and the activities of EDF Trading North America. This limit does not take into account the diversification associated with the joint venture Chubu, whose VaR limit of €2 million is added to EDF Trading's VaR limit of €43 million.

(2) Five times the VaR, i.e. €225 million from 15 December 2010.

(3) This model could change in 2012 following EDF's additional investment in Edison.

(4) Net exposure is the residual exposure after using all natural hedging options provided by vertical and horizontal integration of the various techniques.

(5) Profit at Risk or PaR is a statistical measure of the maximum potential decline, related to unfavorable market movements, in the margin compared to budget for a given time horizon and confidence interval.

To meet obligations under IFRS 7, Edison measures the maximum potential decrease in the fair value of financial contracts hedging the risks on its industrial portfolio using a PaR with a confidence interval of 97.5%. For trading activities, which concern a separate portfolio distinct from the industrial portfolio, Edison sets a daily limit of 95% VaR. Like the industrial portfolio, Edison's trading portfolio was allocated an amount of economic capital(1). This allocation takes account of the risks related to the portfolio's VaR and the risks estimated through stress tests on any non-liquid structured positions(2).

For an analysis of the fair value of the Group's commodity hedging derivatives, see notes 42.4.3 and 42.5 to the consolidated financial statements for the year ended 31 December 2011. For details of commodity contracts not classified as hedges by the Group, see note 43.3 to the same consolidated financial statements.

9.5.3 Management of insurable risks

The EDF group has an extensive insurance program that covers EDF and controlled subsidiaries as they are integrated, including ERDF and RTE. The coverage, exclusions, excesses and limits are appropriate to each business and the subsidiaries' specificities.

The main insurance programs cover:

- conventional damage to Group property: EDF is a member of OIL(3). Additional insurance coverage is provided by EDF's captive insurance subsidiary Wagram Insurance Company Ltd(4), other insurers and reinsurers. RTE has taken out a conventional damages insurance program specific to its own property (substations, buildings and technical premises);
- damage to the EDF group's nuclear facilities: in addition to coverage through EDF's membership of OIL, physical damage (including following a nuclear accident) to EDF's nuclear installations in France and British Energy's nuclear facilities in the United Kingdom, and nuclear decontamination costs have been covered since March, 2010 by a Group insurance policy involving the French nuclear pool (Assuratome), the British atomic pool National Risk Insurers (NRI) and the European Mutual Association for Nuclear Insurance (EMANI).

In connection with CENG's operations in the United States, EDF Inc. became a member of NEIL(5). Once the provisions of French law 2006-686 of 13 June 2006 on nuclear transparency and safety come into force, EDF will have to adjust its insurance coverage to comply with the new guaranteed indemnity cap of €700 million for nuclear facility operator's liability. To this end, under the new legislative framework EDF will seek possible coverage solutions (nuclear insurance pools, mutual insurance, etc.) aiming to share the costs of such coverage with EDF Energy. EDF and EDF Energy are thus among the founder members of the European mutual reinsurance company Blue Re, which was formed on 17 June 2011 and specializes in insurance for this type of risk.

The provisions of French law 2006-686 of 13 June 2006 will not be applicable until the effective date of the Protocols amending the Paris and Brussels conventions on civil liability in the nuclear energy field, which require ratification by two thirds of member States.

- general civil liability: this program covers the Group against the possible financial consequences for third parties of the (non-nuclear) risks inherent to the EDF group.
- civil liability of directors and senior executives: EDF's insurance program covers the Group's directors and chief executive officers.

For construction risks, EDF takes out insurance policies covering specific worksite risks (general worksite risks/general assembly risks). These policies are not part of a Group program but are purchased on an *ad hoc* basis for major projects such as the Flamanville EPR, or construction of combined cycle power plants, dams, combustion turbines, etc.

On 11 August 2011 ERDF took out a policy with Natixis/Swiss Re to cover ERDF's aerial distribution network against the consequences of exceptional events such as storms and gales until 30 June 2016 (five storm seasons). With a maximum benefit of €150 million, payouts under this "cat-bond" depend on a parametric trigger based on wind speed. On 27 December 2011, additional coverage for €40 million was subscribed for a four-year period, to reduce the excess.

The arrangements for setting up damage insurance for the Island Energy Systems' aerial distribution networks are still under examination.

The total value of premiums for all types of coverage provided by EDF's insurance programs and Group programs managed by EDF Assurances was €100.45 million in 2011, of which €60.24 million was borne by EDF (excluding investments) and €9.4 million was for coverage of ERDF's overhead networks.

(1) Economic capital is the capital allocated to deal with market risks.
(2) Figures will be available when Edison has published its annual results.
(3) Oil Insurance Limited Mutual Insurance Company.
(4) An Irish insurance company fully-owned by EDF.
(5) Nuclear Electric Insurance Limited.

10.

Cash flows and capital

For information pertaining to capital and cash flows, see section 9.4 (“Cash Flows and financial debt”) in this reference document.

For information on to the issuer’s financing structure, see section 9.5.1.1 (“Liquidity position and management of liquidity risk”) in this reference document.

11.

Research and development, patents and licenses

11.1 R&D organisation and key figures 218

11.2 R&D priorities 219

11.2.1 Consolidate and develop a carbon-free energy mix 219

11.2.2 Promote flexible low-carbon energy demand 220

11.2.3 Adapting the electrical system to these new challenges 220

11.3 International and partnerships 220

11.4 Intellectual property policy 221

11. Research and development, patents and licenses

R&D organisation and key figures

The main goals of the EDF group's Research and Development (R&D) Division are to contribute to the improvement in the performance of the operational units, to identify and prepare mid and long-term growth vectors and to anticipate the major challenges facing the Group in the global energy context. Fossil resources are being depleted; global warming implies questioning and regulations on the rate of greenhouse gas emissions, water uses, management of the environment, etc. Rapid development of emerging countries is shifting consumption areas. The significant development of information technologies in the energy environment is offering new opportunities in electricity generation. Customers who are consumers also become producers, who want to consume better, live in buildings, neighbourhoods or towns that are more energy self-sufficient. In this context, R&D has a crucial role in finding solutions to all of these challenges.

Its research interests are organised around three main priorities:

- to consolidate a 'carbon-free' energy mix thanks to actions designed to further improve the safety and performance of the current nuclear fleet, its operating life and the development of new reactors that integrate feedback from the Fukushima accident, to increase the operational safety and performance of hydropower stations operated by EDF and to fine-tune tools and methods designed to support the development of renewable energy;
- to develop a flexible low-carbon energy demand thanks to improving knowledge about demand, promotion of new uses for electricity (heat pumps, electrical mobility, etc.), the development of technical and economic models for construction, industry and sustainable cities by promoting energy efficiency;
- to adapt the electricity system via the improvement of network asset management, optimisation models and economic scenarios for new transmission infrastructure projects, the integration of intermittent energy and the development of smart grids.

In order to meet the "3x20[(1)]" commitment by 2020, the European Union has defined a Strategic Energy Technology Plan which gives a road map of the developments and uses of key technologies concerning, in particular, solar energy, carbon capture and storage, energy efficiency and sustainable cities. To achieve this goal, it depends on public-private partnerships in which EDF actively participates to share the risks.

11.1 R&D organisation and key figures

EDF's R&D is integrated and multidisciplinary in order to facilitate synergies and transfers of processes between business lines and between companies of the Group.

In 2011, EDF's total research and development budget was €518 million. It is one of the highest R&D budgets among the largest electricity players. About 70% of the budget is allocated to programs developed annually with the EDF operational departments and subsidiaries. The remaining 30% is dedicated to medium and long- term anticipatory programs which are in line with the priorities of the Group's R&D.

In 2011, around 20% of this budget was dedicated to environmental protection. These expenses specifically cover research on energy efficiency, the uses of electricity as a substitution for fossil energy, renewable energy and its integration within the electricity network, sustainable cities, the local impacts of global warming and other environmental issues such as biodiversity, water quality or reduction of pollution.

EDF's R&D has more than 2,000 employees, 80% of whom are managers, more than 370 PhDs and nearly 200 PhD candidates. There are 200 researchers teaching in universities and major graduate schools. Each year, it hires about 100 people. The R&D division has 15 departments. Its expertise covers all Group activities. They represent disciplines, businesses, projects and integrated over major systems. The development of skills and staff is managed over a rolling three-year period.

In November 2010, EDF's Board of Directors approved the plan to establish EDF's main R&D centre on the campus at Paris-Saclay. This centre is intended to accommodate up to 1,500 people, including Group researchers and doctoral candidates. EDF thus gives new ambition to its R&D and puts innovation and scientific and industrial research at the heart of its priorities. This positions EDF as a leading player on the Paris-Saclay campus and will allow it to profit from a dynamic and enhanced cooperation with higher education institutions and public and private research centres established nearby.

R&D is currently organised around seven sites: three are located in the Paris region, one in Germany, one in the United Kingdom, one in Poland and one in China.

The Chatou and Renardières centres near Fontainebleau have around 500 people each. The Clamart centre is larger with nearly 1,000 people. These sites house two combined CNRS research units: the Mechanical Laboratory of Industrial Sustainable Structures and the Research and Development Institute on Photovoltaic Energy and two international R&D centres: the Materials Aging Institute and the European Centre Laboratories for Energy Efficiency Research.

In Germany, the European Institute for Energy Research (EIfER),a joint institute created in 2002 between EDF and the University of Karlsruhe, brings together more than 100 people. Since 2010, three new R&D units have been created: a joint team with EDF Polska in Krakow in Poland, a joint centre with EDF Energy in London and a centre in Beijing linked to EDF's Asia-Pacific Division. This centre was inaugurated in June 2011. Its aim is to be in contact with the major energy partners in China when this develops and modernises its infrastructures, in terms of both production and grids.

In the United States, energy is an important R&D field, particularly in the areas of the environment, and the independence and security of supply. Its development is supported by American legislation. In electricity, the Electric Power Research Institute (EPRI) is one of the key R&D partners. It supplies technologies and economic and strategic analyses to its members which represent more than 90% of the electricity generated in the United States and bring together around 40 countries. For several years, a team of R&D researchers has been sent to the United States and works in close collaboration with the EPRI and EDF Inc. The partnership with the EPRI covers multiple domains such as nuclear energy, renewable energy, smart networks, energy efficiency and the capture and storage of CO_2. The team also develops partnerships with academic or industrial partners chosen for their expertise.

(1) 20% reduction in greenhouse gas emissions, 20% increase in energy efficiency and a 20% portion of renewable energy in energy consumption by 2020.

In order to achieve its goals, EDF continues to invest in powerful and reliable digital simulation equipment. It develops calculation codes and leading calculation methods.

Furthermore, the Group has unique experimental resources like specific analytical loops (chemistry-corrosion, rupture, aero-acoustics, etc.), loops centred on components or processes, on-site trials of response resources, or resources means dedicated to the characterization of materials and their aging.

11.2 R&D priorities

R&D reinforces its ability to develop internal innovation and develop an opening for external innovation. It aims to integrate the innovations in the industrial processes of the Group. The approach is organised around two actions: on the one hand to create better value for internal innovation and to accelerate the "time to business" through actions in collaboration with the business lines to reduce brakes on industrialisation (a dedicated team selects projects, organises and directs industrialisation, protects and creates value for intellectual property and the expertise potential) and, on the other, to develop an opening on external innovations, by analysing, choosing and, as needed, demonstrating external innovations and building growth vectors in the business lines. The acquisition of stakes in investment funds dedicated to innovation is also included in this strategy.

EDF's R&D works for all the businesses of the Group. It provides technological solutions or innovative and economic business models that improve the performance of the businesses and prepares the long-term future of the Group through medium and long-term anticipatory programs. It contributes to making EDF a worldwide industrial group of carbon-free electrical systems.

The ambition of EDF's R&D in the context of profound energy changes falls within three categories:
- to consolidate and develop a range of carbon-free energy;
- to encourage flexible and low-carbon energy demand;
- to adapt the electricity network to these new challenges.

11.2.1 Consolidate and develop a carbon-free energy mix

In nuclear power generation, hydropower and fossil-fired power, EDF's R&D develops tools and methods to improve the safety of generation methods, to optimise their operating life and to increase their generation and environmental performance. Three major goals are priorities: to perpetuate the Group's nuclear power advantage, develop renewable energy sources, and study the industrial feasibility of carbon capture and storage.

In order to reinforce and perpetuate the Group's nuclear power advantage, R&D works to protect EDF assets by improving the safety of facilities, developing their performance and lifespan by dealing with difficulties linked to the fuel cycle, and by assessing the design of new power plants, in particular those of the fourth generation. This also requires working to minimise the impact of the facilities on the environment and in parallel to take account of environmental risks on industrial tools. The questions posed by the above topics require a sound understanding of the phenomena in play. In support of these programmes, R&D thus develops digital simulation tools and experimental test methods, as well as the tools capable of managing the new challenges faced by the growth in mass of digital data, computer security and new information and communication technologies. The events at Fukushima in 2011 have led research to be focused around safety, the environment (external attacks) and lifespan, as well as looking into new fields such as the rehabilitation of an inhabited area that is evacuated after a nuclear accident.

The second priority is support for the development of renewable energies. These play a growing role in the European energy landscape and EDF, an already significant participant, wants to continue to grow its positions in this domain.

R&D's objective for renewable energy is to identify technological breakthroughs with significant competitive implications and contribute to the development of the most promising technologies. In order to support the operational development of the Group, R&D acquires the technological skills so that it can take advantage of opportunities in partnership with the academic and industrial world (hydropower, photovoltaic energy, land-and sea-based wind farming, solar thermal power, biomass, sea energies, geothermal, etc.). R&D also works on the development of performance for EDF, a developer operating electricity generation systems based on renewable energies integrated within electricity networks, intended to (i) reduce investment risks (for instance, improving the wind-power generation forecast), (ii) improve the operating performance (optimisation of maintenance), (iii) manage the technical and economic impact on the electricity network and (iv) ensure a balance in the electricity network while integrating renewable energy.

Lastly, R&D prepares for changes to the electricity network and its components and causes technological breakthroughs to reduce costs for the networks. The works deal with the definition of integration methods for renewable energies in the energy mix. This assumes the analysis of various solutions, especially storage, to allow the integration of intermittent renewable energy and an assessment of the limits and costs of integration in large networks. storage, super grids, smart grids, demand management etc.

The third priority is carbon capture and storage. In order to limit the environmental of fossil-fired plants, the capture of CO_2 by processing exhaust gases is adapted to the renovation of existing power plants. With the support of the ADEME and its partners, EDF is installing a CO_2 capture research test unit on the EDF carbon electricity generation power plant in Le Havre. The technology, which will be tested on the CO_2 present in the exhaust gases coming from carbon combustion, is known as "post-combustion amine capture". The purpose of this research test unit will be to reduce the facility's energy consumption and will allow verification of the performance of this technology in an industrial environment and an analysis of its flexibility in operation. It is an indispensable step in the development of efficient industrial energy solutions for the capture and storage of CO_2. However, in the current market conditions, it is apparent that the first generations of CO_2 capture and storage do not provide sufficient breakthroughs to markedly reduce costs and make the technology economically acceptable. It is thus necessary to prepare for the emergence of a second generation of CO_2 capture and storage technologies, with low energy penalty, which EDF's R&D will oversee (see section 6.2.1.1.5.2 ("Issues relating to fossil-fuel fired generation").

11.2.2 Promote flexible low-carbon energy demand

The development of Energy efficiency and distributed renewable energy, regulatory and technological changes, as well as the opening up to competition, give customers the possibility of being participants in their energy consumption or production. To meet these expectations, EDF:

- proposes efficient energy solutions within the new regulatory framework;
- modernises its customer relationship through new information technologies;
- develops new tariff approaches encouraging dynamic management of demand to meet new requirements in terms of the flexibility of the electricity network (upstream-downstream optimisation and intermittent nature of renewable energies);
- tests downstream smart grids and prepares for the development of new uses, such as electric vehicles;
- develops a service offer for sustainable cities and territories.

In this context, R&D is positioned on several priority areas. First, the integration of new information technologies in the networks and in the home, making the customer a participant in the system and allowing him to manage his energy flows locally. Thus, the first step is to prove knowledge of customers and their demands in order to make innovations in the methods and tools of the customer relationship as well as in supply offers, and allow EDF customers to be energy players. These works are specifically carried out via smart grid test units, in which R&D researches and examines new models surrounding the aggregation of different flexible demand models (interruptibility, own consumption, renewable energies, local energy optimisation).

Developing low-carbon demand also involves the design and approval of reference energy solutions. So the second component is innovation on new uses for electricity, for electrical mobility, the heat pump and on more economical buildings.

Finally, to achieve sustainable development, cities are locally optimising infrastructures and their management (transportation, waste treatment, buildings, energy generation, networks) and are becoming smart or "sustainable" cities.

Electrical mobility is an important aspect of the sustainable city: electrical transportation is one possibility for profound transformation in transportation methods. Battery storage is the key technology in electrical transportation. R&D action in this area consists firstly of characterising battery security and performance in the laboratory and secondly, of innovating in terms of breakthrough technology that may highly improve their autonomy or cost reductions. R&D also considers stationary applications of these battery technologies (coupling with renewable energy, system services, etc.)

The other essential theme of electrical mobility is the issue of infrastructures and recharge strategies adapted to this new method of consumption. R&D develops charge strategies and tests their validity in the field. R&D thus takes part in operating the KLEBER test unit in Strasbourg (85 rechargeable hybrid vehicles, 130 charging terminals located at home, at car parks, by the roadside, etc.) and is preparing to participate in other test unit projects in France. Studies to integrate mobility in territorial coherency plans and in local urban planning are also being conducted in France (Nice, Mulhouse) and in Germany (Karlsruhe).

11.2.3 Adapting the electrical system to these new challenges

The transition toward a carbon-free energy economy in Europe implies meeting new challenges: how to better manage the intermittent nature of renewable energy generation sources; how to integrate new uses of electricity by optimising the means of production and network needs; how to develop the systems to manage energy locally; and on a larger scale, where to develop the network infrastructures and how to optimise electricity flows in Europe?

The evolution toward smarter electrical networks, known as «smart grids», is one of the pivotal points of the transition to a carbon-free energy economy in Europe. The major challenges are technical, economic and regulatory and are related, beyond the integration of renewable energy and new uses, to the management of information for the different network users and the need to control costs.

In order to meet these challenges, R&D has set several priorities. First, to anticipate the arrival of new technologies and changes in the energy landscape, it establishes forward-looking scenarios, modelling and optimising energy savings (global macro-economic environment and energy policies, competitive and regulatory environment). In order to anticipate the consequences of the development new generation resources or new uses, it is developing models of the energy system that provide better management of the balance between supply and demand.

The second priority is to help the integration of decentralised intermittent generation by contributing innovative solutions to resolve operating and connection problems (maintaining the voltage, etc.).

The third priority is to improve the management of network assets (aging, automation, metering solutions). This work implements the laboratory tests on modelling material aging. R&D is also working to expand grid automation to optimise quality and costs.

Finally, the work includes electrical systems and super grids. The insertion of renewable energy may profoundly change the technical-economic fundamentals and contribute to the development of large continuous direct current grids in Europe and elsewhere in the world.

Technological innovations impact the businesses of sales, networks and power production from renewable energy. They lead to profound changes in local electrical and energy systems. They also have an impact on the technical-economic fundamentals of the European power system. The three areas of smart grids, smart cities and super grids, are transversal and require systemic coherency in research strategies of the businesses and interaction between the businesses. In this context, it is important for R&D to develop its capacity to manage complex systems by reinforcing its integration expertise on areas at the crossroads of different businesses to support the strategy.

11.3 International and partnerships

To conduct its research and development programs, EDF develops numerous partnerships in the world. These partnerships aim to maintain its expertise at the highest level, worldwide, in the disciplines at the heart of EDF's challenges and to complete our internal areas of expertise. The partnership policy of R&D takes various forms both nationally and internationally.

Several years ago, in France, R&D set up 12 joint laboratories with academic partners and technical or industrial centres and participates with them in collaborative research projects financed by national agencies like the National Research Agency, the ADEME or the Fonds Unique Interministériel through competitiveness zones. The R&D has also submitted nominations for projects of institutes of excellence in low-carbon energy under Investment in the Future. Each joint laboratory is an opportunity to create a joint team around a shared scientific and technical problem, in order to create value, expertise and knowledge for all the partners, and constitutes an asset for participating in cooperative projects. R&D also supports four targeted research and teaching chairs, within the framework of the Foundation for the Energy of Tomorrow.

In Europe, R&D takes part in around thirty European projects. Through collaboration with the Energy Technology Institute, the Engineering and Physical Sciences Research Council and with various British universities, it is expanding its presence in the British research partnership. In 2010, two R&D units were created, one in Poland and the other in the United Kingdom. The British centre consolidates the positions of the Group in the ecosystem of British research. It is particularly involved in tidal wind energy and nuclear power development in the United Kingdom. The research team within EDF Polska is dedicated to carbon thermal questions and biomass co-combustion.

In the United States, the R&D and innovation sector is one of the largest and most dynamic in the world. This sector has some 1.3 million researchers. For several years, EDF has had R&D and Innovation teams established at the premises of the Electric Power Research Institute (EPRI)[1] in Palo Alto, California, and in Charlotte, North Carolina. Its objectives are to optimise the collaboration between EDF and EPRI in many areas, such as nuclear energy, renewable energy, smart grids, energy efficiency, carbon capture and storage etc., to set up partnerships between the EDF group and American research bodies (universities, national laboratories, industry, etc.) selected for their know-how or their facilities, and finally to assess the opportunities of new models of activity for EDF in the United States.

In 2011, R&D's internationalisation continued with the setting-up of an R&D team in China. This centre, based in Beijing will be an advantage so as to participate in large-scale Chinese test units focusing on smart grids, smart cities, CO_2 capture and storage and some renewable energy technologies. The centre, which will also be used at the appropriate time to support the implementation of the nuclear contract in China, was officially inaugurated on 7 June 2011. The creation of the centre is accompanied by development focusing on academic and industrial partnerships in China.

Furthermore, to pave the way for the future, R&D participates in two Knowledge and Innovation Communities ("KIC[2]"). The specific fields covered by the first, called KIC Climate are climate change, smart cities, water management and carbon-free generation. Those of the second, called KIC InnoEnergy are based on smart grids and storage, bio-fuels, renewable energy, CO_2 capture and storage and nuclear power.

11.4 Intellectual property policy

Industrial property plays a major role in protecting the EDF group's technologies and know-how against competition, as well as in the capitalisation of these assets through licensing.

EDF wants to strengthen its intellectual property portfolio intended to make the most of its capacities for innovation and its technological expertise. This portfolio will be made up of patents, trademarked software and formalised know-how.

Patents allow not only technological inventions to be protected, but also processes (subject to their having a technical effect) and inventions implemented in the form of software can also be patented.

Patents

At the end of 2011, EDF's portfolio included 470 patented inventions protected by 1,470 intellectual property titles in France and abroad.

Strengthening of the patent portfolio is a top priority. It is intended to facilitate R&D cooperation, to provide protection in the development of EDF's activities, to contribute to the external image of EDF, to reinforce researchers' motivation and to focus fully on inventions.

In 2011, EDF lodged 50 patent applications, which significantly increases the number of patents lodged compared to 2010.

Trademarks

"EDF" is a trademark registered in more than 60 countries. The name of the Group is an essential element of its image and its assets: thus, this brand name, the Internet domain names and the EDF logos are monitored constantly, in order to protect them against any fraudulent use which could hurt the Group's image. The Group has also registered various other trademarks, in particular, those related to the business of its various subsidiaries.

The trademark portfolio of the EDF group at the end of 2011 included some 400 names protected by over 1,100 intellectual property titles.

(1) The Electric Power Research Institute is one of the key R&D players in the field of electricity in the United States. This non-profit body provides technologies and economic analyses and develops strategies for its funding members, which in the United States represent more than 90% of the electricity generated in the United States.

(2) The KIC are European initiatives to set up European university training and research/innovation projects responding to the needs of the market both in skills and innovation through the filing of patents and the creation of start-ups.

12.

Information on trends

12.1 Subsequent events 224

12.2 Development of electricity prices in France in January and February 2012 225

12.1 Subsequent events

Report on additional safety assessments carried out following the Fukushima accident by the French Nuclear Safety Authority (ASN).

On 3 January 2012, after additional security assessments had been carried out at priority nuclear facilities, the ASN announced that the facilities examined were sufficiently secure, and that it did not require the immediate closure of any of them. At the same time, the ASN considered that the continued operation of the facilities required an increase to their robustness as soon as possible, beyond the safety margins they already have, in order to deal with extreme situations. As such, the ASN is set to impose a range of provisions on operators and to strengthen its safety requirements relating to the prevention of natural risks (earthquakes and flooding), the prevention of risks linked to other industrial activities, the supervision of sub-contractors and the processing of non-compliant items. Operators must provide the ASN with the content and specifications of the "hard core" specific to each facility before 30 June 2012. From this year, the ASN will gradually implement a "rapid response nuclear task force", known as FARN, put forward by EDF - a national emergency system bringing together specialized teams and equipment enabling intervention in under 24 hours at an accident hotspot, and the setting-up of strengthened provisions designed to reduce risks of fuel "dewatering" during in-pool storage at various facilities. The Chairman of the ASN did state that the timeframe was a long one, however, and that full feedback from the Fukushima accident may take up to 10 years.

Bond issue for €2 billion over 10 years

On 11 January 2012, EDF launched a 10-year euro-denominated bond issue worth a total of €2 billion, and with an annual coupon of 3.875%. Likewise, the annual coupon of 3.875% compares favorably with the current average annual coupon of 4.3% (at 31 December 2011).

EDF Énergies Nouvelles appointments

On 12 January 2012, EDF announced that a new board will be set up at the head of the renewable energies subsidiary, following the successful and full integration of EDF Énergies Nouvelles within the EDF group. Jean-Louis Mathias, the Group Executive Vice-President in charge of the coordination of French activities, Gas Activities and Renewable Energy within the EDF group and Director of EDF Énergies Nouvelles, has taken over on 13 February 2012 from Pâris Mouratoglou, the founder of EDF Énergies Nouvelles. Meanwhile, Antoine Cahuzac replaced David Corchia as CEO on 4 April 2012.

Publication of the report by the Court of Auditors on the cost of nuclear energy

On 31 January 2012, the Court of Auditors published its report on the items making up the past, present and future costs of nuclear electricity production in France. As a result, past expenditure is relatively well identified, standing at $€_{2010}$96 billion. To this initial investment must be added $€_{2010}$6 billion to cover the cost of first-generation building. The same goes for current operating costs which stood at $€_{2010}$8.9 billion, producing 407.9 terawatt-hours (TWh) in 2010. These charges are clearly identified and their quantification does not pose any major problems. Finally, the Court of Auditors noted that future charges were uncertain by their nature. The total of said charges at the end of 2010 is estimated at $€_{2010}$79.4 billion, of which $€_{2010}$62 billion for EDF. Among these costs, dismantling expenses, that is to say charges for the "demolition" of power plants, are estimated to stand today at $€_{2010}$18.4 billion, in gross charges, for the dismantling of 58 reactors in the existing fleet. The Court considers that the methods used by EDF to make this calculation are relevant but cannot validate the technical parameters, in the absence of in-depth studies carried out by experts. Another significant future cost is long-term waste management, with an estimated cost of $€_{2010}$28.4 billion for the operators. The Court considers that this estimate is fragile, since the project under consideration for long-life waste storage, that is to say deep disposal, is not yet final.

The Court stresses that the possible developments in future expenses are as yet uncertain and are based on two parameters: the creation of a 4th generation subsidiary and the operating life of the power plants. In relation to this second point, the Court refers to the assessment made by EDF of capital works in the region of $€_{2010}$50 billion, scheduled for the fleet over the coming 15 years, an order of magnitude re-assessed at $€_{2010}$55 billion in light of those investments that may result directly from the implementation of the ASN recommendations, as set down in its report on the initial additional safety assessments. The Court also makes clear that these orders of magnitude may cover a broader scope than simple expenses to extend the operating life of the current power plants, since it is difficult if not impossible to assess these in isolation, and that furthermore, they may only be supported once the safety objectives are set out by the ASN.

Lastly, the Court estimates the MWh output average cost amounts to €49.5 with 2010 figures, considering the return on the capital invested, on the basis of the economic current cost method. This method outlines all the costs related to the operating life of the fleet and enables to compare with other generation methods.

EDF and AREVA strengthen their long-term partnership in natural uranium

On 10 February 2012, EDF and AREVA agreed on the principles of a long-term partnership to supply natural uranium over the period 2014-2030, supporting supply security and competitiveness of the French nuclear power fleet. This partnership is aligned with the decisions of the Council on Nuclear Policy of 21 February 2011. It strengthens the historical collaboration between AREVA and EDF in the supply of nuclear fuel and AREVA's desire to build up its links with its main clients. Covering an overall volume that may reach over 20,000 tons, the principles agreed upon schedule the extension of the supply agreement, based on existing AREVA mines, and pave the way for EDF's participation in financing the development of a new mining project, in return for a share in its future production. These principles will be reflected in a series of agreements that will be submitted for approval to the governance bodies of both Groups. This new industrial and financial partnership strengthens AREVA's position as a reference partner for EDF in terms of its natural uranium supply, with the group providing nearly 40% of its annual requirements.

Report from the "Energies 2050" Commission

On 13 February 2012, the "Energies 2050" Commission published its conclusions regarding various scenarios in the run-up to 2030 by comparing their impact on the price of electricity, on greenhouse gas emissions, and on our supply security in France:

- The scenario of an acceleration in the switch from second to third generation nuclear reactors, with the early closure of part of the current fleet, mainly affects the price, which jumps from €40 to €60 per megawatt-hour.
- The scenario of an extension to operations of the current nuclear power fleet, with reinforced safety and maintenance investments, returns a very competitive price, going from €40 to €50 per megawatt-hour. This scenario conserves all the advantages of the French nuclear power fleet: energy independence, absence of greenhouse gas emissions, price competitiveness.

- The scenario of a 75% to 50% drop in 2030 in the share of our nuclear-origin electricity would entail an increase from €40 to €70 per mega-watt-hour in the price of electricity, i.e. a 75% increase. It also represents a 50% increase in greenhouse gas emissions by the French electricity fleet, and a substantial increase in imports of fossil fuels. It would be the end of energy independence in France as regards electricity production.
- Full withdrawal from nuclear energy by 2030 would mean doubling the price of electricity, massive use of fossil fuel imports, and the risk of a fivefold increase in greenhouse gas emissions in France.

Repurchase of EnBW investments in Poland

On 16 February 2012, EDF acquired from EnBW its respective stakes of 32.45% and 15.59% in the Polish companies ERSA and KOGENERACJA, as scheduled in the investment sale agreement entered into by EDF in respect of EnBW in Baden-Württemberg on 6 December 2010. Upon completion of this transaction, the EDF group holds a 97.34% stake in ERSA (the remaining 2.66% is held by the company's employees) and 50% as well as one share in KOGENERACJA. The indirect acquisition of shares in KOGENERACJA will not entail any Public Purchase Offering on this company, which is listed on the Warsaw stock exchange. The transaction, for a total of €301 million with an inferred ratio of around 5 times the EBITDA, is part of the financial strategy outlined by the Group at the end of July 2011.

Takeover of Photowatt, photovoltaic panel manufacturer

On 10 February 2012, via its subsidiary EDF Energies Nouvelles Réparties (EDF ENR), EDF made an offer to take over the business of Photowatt, the sole French manufacturer of silicon-based photovoltaic cells, which went into receivership in November 2011. Photowatt holds a 40% stake in PV Alliance, a research and development company in the photovoltaic technology domain and in which EDF ENR already holds a 40% stake alongside CEA (20%). Photowatt, EDF ENR and the CEA have invested in PV Alliance since 2008, whose objective is to develop two silicon technologies: homojunction, the most widely-used classic technology in the world, and heterojunction, a technology currently in development enabling the manufacture of high output silicon cells (above 20%). On 27 February 2012, the Commercial Court in Vienna selected the offer made by the EDF group to take over Photowatt's business. EDF took possession of Photowatt's assets from 1 March 2012. This operation means the Group can take over Photowatt's assets, as well as 100% of its subsidiary PV Alliance, and obtain a worldwide exclusivity license for heterojunction technology, currently in development. Of the 425 people currently employed by Photowatt, 345 staff and 10 apprentices were offered the opportunity to continue their work within the company by EDF. The other 70 employees will be offered a job within the EDF group. On 5 March 2012, the European Commission sent the French authorities a request for information regarding the takeover of Photowatt's activities. It wished to obtain clarification about the financial conditions of the takeover, and if appropriate, its qualification for government assistance.

Bond issue in two tranches €1 billion 15-year and £500 million 25-year

On 20 March 2012, EDF launched a bond issue in two tranches, one amounting €1 billion with a 15-year maturity and a 4.125% coupon, the other £500 million with a 25-year maturity and a 5.5% coupon. This issue is part of the active financial policy initiated by EDF with a view to lengthening the average maturity of the Group's gross debt. This stands at 9.4 years after this issue against 9.2 years as of 31 December 2011, while maintaining unchanged the Group's average cost of debt at 4.3%.

Reorganisation of Edison's shareholder structure

On 16 March 2012, Edison and Edipower signed a contract for the supply of natural gas, in accordance with the terms authorized by the Board of Directors on 13 February 2012. This contract, in compliance with market conditions, will last six years (72 months) and concerns a total volume estimated at about 1 billion standard cubic meters of gas, which covers 50% of the requirements of Edipower's thermoelectric power plants.

On 4 April 2012, CONSOB, the Italian market authority, issued a letter in which it recommended a price higher than €0.84 and within the range of €0.84 and €0.95 per ordinary share in the context of the EDF mandatory offer to be launched on Edison, following Edison's shareholder reorganisation announced on 27 December 2011. Since the acquisition of control of Edison by EDF is subject to confirmation by CONSOB that the price of EDF's mandatory offer for the shares held by Edison's minority shareholders would not exceed €0.84 per share, the CONSOB's letter does not permit this condition precedent to be satisfied at the date upon which this document is filed.

French offshore wind energy call for tenders: The European Consortium led by the EDF group wins 3 projects

On 6 April 2012, the European Consortium led by the EDF group has won the French offshore wind energy call for tenders for the Saint-Nazaire, Courseulles-sur-Mer and Fécamp projects. These projects, corresponding up to 1,500 MW of new installed capacity, go hand in hand with an ambitious industrial plan which should create about 7,500 direct and indirect jobs, notably with the manufacturing of Alstom's Haliade 150 wind turbine.

12.2 Development of electricity prices in France in January and February 2012

The price of crude oil rose sharply (to $115.30 per barrel on average, up 14.7% from January-February 2011) in a context of high tensions between Europe and Iran, which threatens to stop exporting to France and England and to close the Strait of Hormuz down.

Gas prices rose at the end of January, due to the fall in temperatures on the short term and to the soliciting of long-term storage sites, averaging £64.8/therm, up +10.6% compared to the first two months of 2011).

CO_2 prices were also affected by the decline in temperatures: they increase in the beginning of this year and amount to €7.90/ton, in relation to the soliciting of fossil-fired generation. However, they are down 46.4% compared to the beginning of 2011.

Coal prices stayed feeble in the first two months of the year, averaging $114.80/t, down by 3.1%.

In the first two months of 2012, spot prices for baseload power traded at an average of €61.50 /MWh in France (up €9.1/MWh compared to the same period in 2011), €47.2/MWh in Germany (down €3.3/MWh), and €53.9/MWh in England (down €2.1/MWh).

French consumption of electricity rose compared to the first two months of 2011 due to particularly mild temperatures in the first half of February. Cheaper coal and CO_2 drive prices down in Germany and England. Furthermore, Germany benefitted from higher wind generation in the first two months of 2012.

13.

Financial outlook

The beginning of 2012 was characterised by uncertain economic conditions in Europe, moderate inflation and dollar and pound sterling volatility against the euro, economic policies marked by increased emphasis on controlling public spending and expectations of a gradual tightening of monetary policies and lastly by steady commodity prices.

In this context, electricity demand is also expected to rise moderately, with wholesale prices up slightly in France and the United Kingdom. Activity should be fairly stable in the other international markets.

Considering the activities' growth expectations, combined with a firm and more selective program of investments in the next four years and with the implementation of the Group Synergies and Transformation programme, the Group has set the following financial objectives[1] for 2015:

- an average yearly growth[2] of EBITDA between 4 and 6%.
- an average yearly growth[2] of Net income excluding non-recurring items between 5 and 10% for the 2012-2015 time period.

In France, nuclear production should be between 420 and 425 TWh in 2012. As of today, the regulatory aftermath of the Fukushima accident does not question the objective of a 85% availability factor (Kd) in 2015 in France, which is made possible thanks to the improving of industrial performance (regarding the Kd target value, see also section 6.2.1.1.3.2 ("Operation and performance of the nuclear fleet" – "Generation and technical performance")).

Similarly, the UK nuclear output in the next few years should reach over 55 TWh yearly. At the end of 2012, the Group should as well be able to decide to invest in the Nuclear New Build on the Hinkley Point site.

The achievement of these growth objectives should generate substantial operating cash flow to finance operational investments. This investment program should stay below €15Bn by 2015, under similar scope and exchange rate and excluding the Linky implementation program. It essentially covers the fleet's industrial maintenance in order to sustain its level of performance in the long-term. Remaining investments contribute to the development of new production capacities that generate EBITDA and cash flows and are located in the regulated activities.

The Group also set the following objectives:

- to have a payout ratio between 55 and 65% of the Net income excluding non-recurring items, with a dividend at least stable compared with the one of 2011.
- to maintain at its best the Group's rating adapted to its profile and ambition, in a cautious management of its balance sheet.
- to maintain the net debt/EBITDA ratio by 2015 below 2.5x.

These objectives are based on figures, assumptions and estimates, which are considered as reasonable. However, they are likely to change or to be modified because of uncertainties related particularly to the economic, financial, competitive, and regulatory and climate environment or subsequent to the nuclear accident in Japan in 2011. In addition, the occurrence of certain risks described in Chapter 4 ("Risk factors") of this reference document would have an impact on the Group's activities and its ability to achieve its objectives.

The achievement of the objectives also assumes the successful implementation of the strategy presented in section 6.1 ("Strategy") of this reference document. Thus, EDF makes no commitment or guarantee as to the achievement of the objectives and the forward-looking information in this chapter may not be used to establish forecasts of results.

(1) Excluding possible impact of PPA Edison.

(2) Growth at constant scope and exchange rate and excluding non recurring items.

14.

Administrative, management and supervisory bodies and Executive Management

14.1 Board of Directors 230
- 14.1.1 Members of the Board of Directors 230
- 14.1.2 Personal information on members of the Board of Directors 236

14.2 Executive Committee 239
- 14.2.1 Members of the Executive Committee 239
- 14.2.2 Personal information on members of the Executive Committee 239

14.3 Absence of family ties, convictions and conflicts of interest among members of the administrative bodies and Executive Management 241
- 14.3.1 Absence of family ties 241
- 14.3.2 Absence of convictions for fraud 241
- 14.3.3 Conflicts of interest 241

14. Administrative, management and supervisory bodies and Executive Management

Board of Directors

14.1 Board of Directors

14.1.1 Members of the Board of Directors

In accordance with article 6 of French law no. 83-675 of 26 July 1983 relating to the democratisation of the public sector, the Company's Board of Directors consists of eighteen members, one third of whom are elected by the employees and two thirds are appointed by the Shareholders' Meeting on recommendation from the Board of Directors, with the exception of the representatives of the French State who are appointed by decree.

In the course of the 2011 fiscal year, Mr. Julien Dubertret, Budget Director at the Ministry for the Budget, Public Accounts and State Reform, was appointed director representing the French State by decree of 21 June 2011, replacing Mr. Philippe Josse.

On 1 September 2011, Mrs. Marie-Hélène Meyling became a member of EDF's Board of Directors as a director elected by the employees, replacing Mr. Philippe Pesteil.

Finally, Mr. François Loos, Chairman of the French Environment and Energy Management Agency (ADEME – *Agence de l'Environnement et de la Maîtrise de l'Energie*) was appointed director representing the French State by decree of 13 February 2012, replacing Mr. Philippe Van de Maele.

On the filing date of this reference document, the Board of Directors consists of 6 directors elected by employees, 6 directors appointed by the French State and 6 directors elected by the Shareholders' Meeting, whose terms of office will expire at midnight on 22 November 2014.

The table below shows, on the filing date of this reference document, the names of the members of the Board, their dates of birth, principal positions held within or outside the Company, as well as the offices held and expired outside the Company over the past five years.

Directors named by the Shareholders' Meeting

Name, date of birth, office or position held within the Company	Current offices / Principal position held outside the Company	Expired offices held outside the Company over the past five years
Henri PROGLIO(1) Born 29 June 1949 Chairman and Chief Executive Officer since 25 November 2009 Director since 23 November 2004(2) Last re-elected: 23 November 2009 Term expires: 22 November 2014 Chairman of the Strategy Committee	Chairman of the Board of Directors of EDF Energy Holdings Chairman of the Board of Directors of Transalpina di Energia Chairman of the EDF Diversiterre Foundation Chairman of the Electra Association Director of EDF Énergies Nouvelles Director of EDF International (SAS) Director of Edison Director of CNP Assurances Director of Dassault Aviation Director of Fomento di Construcciones y Contratas Director of Natixis Director of Veolia Propreté Director of Veolia Environnement Member of the Supervisory Board of Veolia Eau Deputy Chairman of the Strategic Nuclear Energy Committee Member of the Atomic Energy Committee Member of the High Committee for Transparency and Information on Nuclear Safety Director of the Fondation Européenne pour les Énergies de Demain (European Foundation for Tomorrow's Energies) Member of the National Committee on Sectors of Vital Importance	Chairman of EDF Energy UK Director of EDF International (SA) Chairman and Chief Executive Officer of Veolia Environnement Chairman of the Board of Directors of Veolia Water Chairman of the Board of Directors of Veolia Environnement Chairman of the Board of Directors of Veolia Propreté Chairman of the Board of Directors of Veolia Transport Chairman of the Supervisory Board of Eolfi Chairman of the Supervisory Board of Dalkia France Director of Veolia Environmental Services Asia Director of Veolia Environmental Services UK Director of Veolia Transport Australasia Director of Veolia Transport Northern Europe Director of Veolia Environmental Services Australia Director of Veolia Environmental Services North America Director of Dalkia International Director of SARP Industries Director of Siram Director of Société des Eaux de Marseille Director of Veolia Environnement North America Operations Member of the Supervisory Boards A and B of Dalkia Manager of Veolia Eau

(1) In accordance with article L. 225-21 of the French Commercial Code, an individual cannot simultaneously hold more than 5 directorships in French public limited companies ("sociétés anonymes"), whose registered head-offices are located in France (subject to applicable exceptions in particular in respect of directorships held in controlled companies). The APEF-MEDEF consolidated code states that, if performing executive duties, a director should not, in principle, agree to hold more than 4 other directorships in listed corporations, including foreign corporations, not affiliated with his group. In addition to his directorships as Chairman and Chief executive Officer of EDF, Henri Proglio presently holds 5 directorships in listed companies (including a foreign company).

(2) Henri Proglio had been director of the French State-owned industrial and commercial institution (établissement public industriel et commercial - EPIC) EDF since 14 September 2004.

Name, date of birth, office or position held within the Company	Current offices / Principal position held outside the Company	Expired offices held outside the Company over the past five years
		Director of Thales Director of Casino Guichard Perrachon Member of the Supervisory Board of Lagardère Member of the Supervisory Board of Elior Member of the Supervisory Board of CNP Assurances Non-voting member *(censeur)* of the Supervisory Board of Caisse Nationale des Caisses d'Épargne
Philippe CROUZET Born 18 October 1956 Director since 23 November 2009 Term expires: 22 November 2014 Chairman of the Nuclear Commitments Monitoring Committee	**Principal position held outside the Company:** Chairman of the Management Board of Vallourec	Director of Vallourec
Mireille FAUGÈRE Born 12 August 1956 Director since 23 November 2009 Term expires: 22 November 2014 Chairman of the Ethics Committee	**Principal position held outside the Company:** Chief Executive Officer of Assistance Publique – Hôpitaux de Paris **Other offices and positions held:** Director of Essilor	Chairman of SNCF Voyages Développement Chairman of Voyages-SNCF.com Chief Executive Officer of SNCF Voyages Director of SNCF Participations
Michael JAY Born 19 June 1946 Director since 23 November 2009 Term expires: 22 November 2014 Member of the Strategy Committee and the Nominations and Compensation Committee	**Principal positions held outside the Company:** Crossbench member of the British House of Lords Chairman of the Nominations Committee of the British House of Lord Member of the Foreign Affairs, Defence and Development Sub-Committee of the House of Lords' European Union Committee **Other offices and positions held:** Director of Associated British Foods Director of Candover Investments Director of Valeo SA Chairman of Merlin (international medical NGO)	Secretary General of the Foreign and Commonwealth Office Trustee at the British Council Director of Crédit Agricole SA

14. Administrative, management and supervisory bodies and Executive Management

Board of Directors

Name, date of birth, office or position held within the Company	Current offices / Principal position held outside the Company	Expired offices held outside the Company over the past five years
Bruno LAFONT Born 8 June 1956 Director since 20 May 2008 Last re-elected: 23 November 2009 Term expires: 22 November 2014 Chairman of the Nominations and Compensation Committee	**Principal position held outside the Company:** Chairman and Chief Executive Officer of Lafarge **Other offices and positions held:** *In France:* Chairman of the Entreprises pour l'Environnement association Director of ArcelorMittal Director of HEC *Abroad:* Advisor to the Mayor of the City of Chongqing (China)	Co-Chairman of the Cement Sustainability Initiative at the World Business Council for Sustainable Development
Pierre MARIANI Born 6 April 1956 Director since 23 November 2009 Term expires: 22 November 2014 Chairman of the Audit Committee	**Principal position held outside the Company:** Executive Director and Chairman of the Executive Committee of Dexia **Other offices and positions held:** Chairman of the Board of Directors of Deniz Bank Director of Dexia Crédit Local Director of Dexia Banque Internationale in Luxembourg Director of the Etablissement Public de la Réunion des Musées Nationaux et du Grand Palais	Director of Dexia Banque Belgique

Directors appointed by the French State

Name, date of birth, office or position held within the Company	Current offices / Principal position held outside the Company	Expired offices held outside the Company over the past five years
Pierre-Marie ABADIE Born 13 July 1969 Director since 29 August 2007 Last re-elected: 23 November 2009 Term expires: 22 November 2014 Member of the Nuclear Commitments Monitoring Committee and the Strategy Committee	**Principal position held outside the Company:** Director of Energy at the General Directorate for Energy and Climate reporting to the Minister for Ecology, Sustainable Development, Transport and Housing, the Minister for the Economy, Finance and Industry and the Minister for Industry, Energy and the Digital Economy **Other offices and positions held:** Government Commissioner to the French National Radioactive Waste Management Agency (ANDRA) Member of the Board of Governors of the International Energy Agency (IEA)	Director of the French Environment and Energy Management Agency (ADEME) Alternate Government Commissioner to AREVA NC

Administrative, management and supervisory bodies and Executive Management

Board of Directors

Name, date of birth, office or position held within the Company	Current offices / Principal position held outside the Company	Expired offices held outside the Company over the past five years
Jean-Dominique COMOLLI Born 25 April 1948 Director since 29 September 2010 Term expires: 22 November 2014 Member of the Audit Committee, Strategy Committee and Nominations and Compensation Committee	**Principal position held outside the Company:** Commissioner for State holdings at the Ministry for the Economy, Finance and Industry in charge of the French State Holdings Agency (Agence des Participations de l'État - APE) **Other offices and positions held:** Member of the Supervisory Board of AREVA Director of the *Fonds Stratégique d'Investissement* (French Strategic Investment Fund) Director of France Télécom Director of SNCF Director of Air France-KLM Director of Établissement Public de l'Opéra Comique	Chairman of the Board of Directors of Altadis Non-Executive Vice President of Imperial Tobacco Director of Crédit Agricole Corporate and Investment Bank Director of Calyon Bank Director of Pernod Ricard Director of Casino Guichard Perrachon
Yannick d'ESCATHA Born 18 March 1948 Director since 23 November 2004 Last re-elected: 23 November 2009 Term expires: 22 November 2014 Member of the Audit Committee and the Nuclear Commitments Monitoring Committee	**Principal position held outside the Company:** Chairman of the Centre National d'Études Spatiales (CNES – French national space agency) **Other offices and positions held:** Chairman of the Board of Directors of the Université de Technologie in Troyes Permanent CNES representative to the Board of Directors of Arianespace SA Permanent CNES representative to the Board of Directors of Arianespace Participation Director of Thales Member of the Academy of Technologies	Chairman of the Board of Directors of École Polytechnique Director of RATP
Julien DUBERTRET Born 9 June 1966 Director since 21 June 2011 Term expires: 22 November 2014	**Principal position held outside the Company:** Budget Director at the Ministry for the Budget, Public Accounts and State Reform **Other offices and positions held:** Director of SNCF	None
François LOOS Born 24 December 1953 Director since 13 February 2012 Term expires: 22 November 2014	**Principal position held outside the Company:** Chairman of the French Environment and Energy Management Agency (ADEME) **Other offices and positions held:** None	None

14. Administrative, management and supervisory bodies and Executive Management

Board of Directors

Name, date of birth, office or position held within the Company	Current offices / Principal position held outside the Company	Expired offices held outside the Company over the past five years
Pierre SELLAL Born 13 February 1952 Director since 1 April 2009 Last re-elected: 23 November 2009 Term expires: 22 November 2014 Member of the Strategy Committee	**Principal position held outside the Company:** Ambassador of France, General Secretary of the Ministry for Foreign and European Affairs **Other offices and positions held:** Member of the Supervisory Board of AREVA Member of the Atomic Energy Committee Member of the High Council of the Institut du Monde Arabe Member of the Board of Directors of the École Nationale d'Administration (French National School of Administration) Member of the Board of Directors of Audiovisuel Extérieur de la France (French international audiovisual holding company) Member of the Board of Directors of Cultures France Member of the Board of Directors of the Agence Nationale des Titres Sécurisés (French national secure identity document agency) Member of the Board of Directors of the Commission for the Verification of the Registration of Works of Art (Commission de récolement des dépôts d'œuvres d'art) Member of the Board of Directors of the French national health emergency preparation and response body (Établissement de préparation et de réponse aux urgences sanitaires)	Permanent representative of France to the European Union in Brussels

Directors elected by employees:

Name, date of birth, office or position held within the Company	Current offices / Principal position held outside the Company	Expired offices held outside the Company over the past five years
Christine CHABAUTY Born 19 July 1971 Commercial *Attaché*, Key Accounts, Trade Division Director since 23 November 2009 Term expires: 22 November 2014 Member of the Ethics Committee	Member of an elected industrial tribunal (*conseiller prud'hommal*)	None

Name, date of birth, office or position held within the Company	Current offices / Principal position held outside the Company	Expired offices held outside the Company over the past five years
Alexandre GRILLAT Born 8 December 1971 Representative of the Manager of ERDF in the Alsace Franche Comté region Director since 23 November 2004[1] Last re-elected: 23 November 2009 Term expires: 22 November 2014 Member of the Audit Committee, Strategy Committee and Ethics Committee	None	None
Philippe MAÏSSA Born 21 November 1949 Engineer at the Centre for Thermal Engineering (Centre d'Ingénierie Thermique) Director since 23 November 2009 Term expires: 22 November 2014 Member of the Ethics Committee	None	None
Marie-Hèlène MEYLING Born 30 October 1960 *Attaché* to the EDF Upstream-Downstream Optimisation and Trading Division Director since 1 September 2011 Term expires: 22 November 2014 Member of the Audit Committee, Nuclear Commitments Monitoring Committee, Strategy Committee and Ethics Committee	None	None

(1) Alexandre Grillat had been director of the French State-owned industrial and commercial institution (établissement public industriel et commercial - EPIC) EDF since 14 September 2004.

Name, date of birth, office or position held within the Company	Current offices / Principal position held outside the Company	Expired offices held outside the Company over the past five years
Jean-Paul RIGNAC Born 13 May 1962 Research engineer at the Research & Development Division Director since 7 November 2007 Last re-elected: 23 November 2009 Term expires: 22 November 2014 Member of the Strategy Committee	None	None
Maxime VILLOTA Born 25 November 1959 Purchasing Policy Coordinator for the Finance and Industrial Relations Department at the Tricastin nuclear power plant Director since 13 December 2006 Last re-elected: 23 November 2009 Term expires: 22 November 2014 Member of the Audit Committee and the Nuclear Commitments Monitoring Committee	None	None

14.1.2 Personal information on members of the Board of Directors

Directors appointed by the shareholders' meeting:

Henri Proglio. Born on 29 June 1949 in Antibes (France), Henri Proglio is a graduate of the École des Hautes Études Commerciales (HEC). He joined Compagnie Générale des Eaux in 1972 and was appointed Chairman and Chief Executive Officer of Compagnie Générales d'Entreprises Automobiles (CGEA) in 1990. In 1999, he was appointed Vice President of Vivendi, Manager of Compagnie Générale des Eaux and Chief Executive Officer of Vivendi Water. He became Chairman of the Management Board of Veolia Environnement in 2000, then Chairman and Chief Executive Officer from 2003 to November 2009. Henri Proglio has been Chairman and Chief Executive Officer of EDF since 25 November 2009. He was appointed director of EDF, which was then a state-owned industrial and commercial institution (*établissement public industriel et commercial* - EPIC), in September 2004. Within the EDF group, he is Chairman of the Boards of Directors of EDF Energy Holdings and Transalpina di Energia. He is a director of EDF Énergies Nouvelles, EDF International (SAS) and Edison. He is also Chairman of the EDF Diversiterre Foundation and the Electra association. In addition, he is director of CNP Assurances, Dassault Aviation, Fomento di Contrucciones y Contratas, Natixis, Veolia Environnement and Veolia Propreté, and member of the Supervisory Board of Veolia Eau. He is deputy Chairman of the Strategic Nuclear Energy Committee, member of the French Atomic Energy Committee, the High Committee for Transparency and Information on Nuclear Safety, the French National Committee on Sectors of Vital Importance and director of the Fondation Européenne pour les Énergies de Demain.

Philippe Crouzet. Born on 18 October 1956 in Neuilly-sur-Seine (France), Philippe Crouzet is a graduate of the Institut d'Études Politiques (IEP - Institute of Political Studies) in Paris and a former student of the École Nationale d'Administration (ENA - National School of Administration). From 1981 until 1986, he was auditor and then Counsel (*Maître des Requêtes*) at the French Council of State (*Conseil d'État*). He joined the Saint-Gobain Group in 1986 as Head of Corporate Planning. Within this Group, he served successively as Chief Executive Officer of Papeteries de Condat (1989-1992), General Manager for Spain and Portugal (1992-1996), Head of the Building Glazing Division (1996), Head of the Ceramics and Plastics Division (1996-2000), Vice-President for Finance, Information Systems and Purchasing (2000-2005) and then Vice President and Chief Executive Officer for the Building Distribution Division (2005 to 2009). Since April 2009, Philippe Crouzet has been Chairman of the Management Board of Vallourec. He has been a director of EDF since November 2009.

Mireille Faugère. Born on 12 August 1956 in Tulle (France), Mireille Faugère is a graduate of the École des Hautes Études Commerciales (HEC). She began her career at SNCF in 1979, where she first held a range of railway operational positions before joining the Research Department (*Direction des études*). In 1989, she was entrusted with the mission of developing the TGV Méditerranée railway network. In 1991, she was appointed Manager of the Montparnasse railway station in Paris. In 1993, Mireille Faugère was appointed manager of the Strategy Department at the Economy, Strategy and Investment Division. From 1996 until 2001, she served as head of the sales and marketing department at the Mainline Division. From 2001 until 2003, she was Chief Executive Officer of SNCF Participations. From 2003 until 2010, she was a member of the Executive Committee of SNCF and Chief Executive Officer of the SNCF Voyages branch. In September 2010, Mireille Faugère was appointed Chief Executive Officer of Assistance Publique - Hôpitaux de Paris. Since May 2010, she has also been a director of Essilor. She has been a director of EDF since November 2009.

Michael Jay. Born on 19 June 1946 in Shawford (United Kingdom), Michael Jay is a graduate of the University of Oxford (Magdalen College) and the School of Oriental and African Studies at the University of London (SOAS). Following a career with the Foreign Office (British Ministry of Foreign Affairs), he served as British Ambassador in Paris from 1996 to 2001, Permanent Under-Secretary at the Foreign Office and Head of the Diplomatic Service from 2002 to 2006. He was the British Prime Minister's representative at the G8 in 2005 and 2006. He has been a Crossbench Member of the House of Lords since 2006. He was appointed Chairman of the House of Lords Appointments Commission in 2008. He is a member of the Foreign Affairs, Defence and Development Sub-Committee of the House of Lords' European Union Committee. He has been a director of Associated British Foods since 2006, Valeo since 2007 and Candover Investments since 2008. He is Chairman of Merlin, an international medical NGO. He has been a director of EDF since November 2009.

Bruno Lafont. Born on 8 June 1956 in Boulogne-Billancourt (France), Bruno Lafont is a graduate of the École des Hautes Études Commerciales (HEC) and a former student of the École Nationale d'Administration (ENA). He began his career with the Lafarge Group in 1983, serving in several positions in the Corporate Finance Division and internationally. In 1994, he became Group Vice President Finance and joined the Executive Committee. In 1998, he became Chairman of the plaster business. In May 2003 he was appointed Group Deputy Chief Executive Officer and then director on 25 May 2005. Appointed Chief Executive Officer in January 2006, he became Chairman and Chief Executive Officer of Lafarge in May 2007. He has also been a director of ArcelorMittal and HEC since May 2011. He has been a director of EDF since May 2008.

Pierre Mariani. Born on 6 April 1956 in Rabat (Morocco), Pierre Mariani is a graduate of the École des Hautes Études Commerciales (HEC) and a former student of the École Nationale d'Administration (ENA), as well as a graduate in law. From 1982 until 1986, he was Financial Inspector at the General Inspection Department of the Ministry for the Economy and Finance. From 1986 until 1988, he was responsible for the transportation sector at the Budget Office of the Ministry for the Economy and Finance and then, from 1988 until 1992, Head of the Department for Synthesis and Budget Policy at the Ministry for the Economy and Finance. From 1992 to 1993, he was Deputy Manager of the labour, employment, health and social security department at the Ministry for the Economy and Finance. From 1993 until 1995, he was Private Secretary to Nicolas Sarkozy, then the Budget Minister, and Government spokesman, head of communication. From 1995 until 1996, he was Chief Executive Officer of Société Française d'Investissements Immobiliers et de Gestion (SEFIMEG). From 1996 to 1997, he was Chief Executive Officer and member of the Management Board of Banque pour l'Expansion Industrielle (Banexi). He was Chairman of this Management Board from 1997 to 1999. From 1999 to 2003, he was Manager of the International Retail Banking Department of the BNP Paribas Group. From 2003 to 2008, he was Manager of the International Retail Banking and Financial Services Department. Early in 2008, he was appointed Deputy Chief Executive Officer and Deputy Manager of Retail Banking, in charge of the International Retail Banking Services Department of BNP Paribas. Since October 2008, he has been executive director and Chairman of the Management Committee of Dexia. He is director of Dexia Crédit Local and Dexia Banque Internationale in Luxembourg and Chairman of the Board of Directors of Deniz Bank (Turkey). He has also been director of the Etablissement Public de la Réunion des Musées Nationaux et du Grand Palais since 2011. He has been a director of EDF since November 2009.

Directors appointed by the French State :

Pierre-Marie Abadie. Born on 13 July 1969 in Brest (France), Pierre-Marie Abadie is a former student of the École Polytechnique and a graduate of the École Nationale Supérieure des Mines de Paris, and is a Corps des Mines engineer. He began his career as quality engineer at the Peugeot Automobiles production centre in Sochaux, then in Prague as engineer with the maintenance division of the company CSA (Air France). He was Head of the Regional Industrial Environment Department, Deputy Manager of the Regional Directorate for Industry, Research and Environment (DRIRE) in Lorraine, then deputy manager of the "Company Financing and Competitiveness" Department before being appointed head of the "Housing and Decentralised Authorities Financing" department at the Treasury Division. He then became consultant for Industrial Affairs at the office of the Minister for Defence from May 2002 to May 2007. From July 2007 to July 2008, he was Demand and Energy Markets Manager at the General Energy and Raw Materials Division (DGEMP). Since July 2008, he has been Energy Manager at the General Directorate for Energy and Climate (DGEC), reporting to the Minister for Ecology, Sustainable Development, Transport and Housing, the Minister for the Economy, Finance and Industry, and the Minister for Industry, Energy and the Digital Economy. He is also Government Commissioner to the National Agency for the Management of Radioactive Waste (ANDRA) and sits on the Board of Governors of the International Energy Agency (IEA). He served as a director of the French Environment and Energy Management Agency in 2007 and 2008. He has been a director of EDF since August 2007.

14. Administrative, management and supervisory bodies and Executive Management

Board of Directors

Jean-Dominique Comolli. Born on 25 April 1948, Jean-Dominique Comolli is a former student of the École Nationale d'Administration (ENA), a graduate of the Institut d'Études Politiques in Paris and holds a graduate degree in economics. In 1977, he joined the Budget Division. A technical advisor to the office of Laurent Fabius at the Budget Ministry from 1981 to 1983, he was then assigned to the office of Pierre Mauroy at Matignon until 1984. From 1984 to 1986, Jean-Dominique Comolli was technical advisor to the office of Laurent Fabius at Matignon, then until 1988, Deputy Manager for Public Authorities, International Relations and Public Administrative Institutions at the Budget Office. In May and June 1988, he was Deputy Private Secretary to Pierre Bérégovoy at the Ministry for the Economy, Finance and Budget, then Private Secretary to Michel Charasse at the Ministry for the Budget. In 1989 he was appointed General Manager of Customs and Indirect Taxes at the Ministry for the Budget. As Chairman and Chief Executive Officer of Société Nationale d'Exploitation Industrielle des Tabacs et Allumettes (SEITA) since 1993, he was appointed in 1999 as co-Chairman and Chief Executive Officer and Chairman of the Executive Committee of Altadis, before being appointed Chairman of the Board of Directors of Altadis in 2005. He was Non-Executive Vice President of Imperial Tobacco from 2008 to 2010. Since 15 September 2010, Jean-Dominique Comolli has been Commissioner for French State holdings at the Ministry for the Economy, Finance and Industry. He is a member of the Supervisory Board of AREVA. He is also a director of France Télécom, SNCF, the Fonds Stratégique d'Investissement, Air France–KLM and the Établissement Public de l'Opéra Comique. He has been a director of EDF since September 2010.

Yannick d'Escatha. Born on 18 March 1948 in Paris (France), Yannick d'Escatha is a former student of the École Polytechnique and a Corps des Mines engineer. He is a teacher-researcher at the École Polytechnique, the École Nationale Supérieure des Mines de Paris and the École Nationale Supérieure des Techniques Avancées, a specialist researcher in ground, structural and fracture mechanics and was appointed in 1978 as head of the department for the supervision of nuclear construction where he was in charge of the technical inspection of the French nuclear power program by the French State. In 1982, he was seconded to Technicatome, a subsidiary of the Atomic Energy Committee (CEA), specialising in nuclear engineering and specifically in nuclear naval propulsion, where he became Senior-Executive Vice-President in 1987. He was appointed Director of the CEA Advanced Technology Division in 1990, then deputy general director in 1992 and general director in 1995. In 1999, he was appointed Chairman of CEA Industrie. He was appointed Deputy Chief Executive Officer of EDF in 2000. In 2003, he was appointed Chairman of the Centre National d'Études Spatiales (CNES - French National Space Agency). He is also a member of the Académie des Technologies and Chairman of the Board of Directors of the Université de Technologies in Troyes. He is a permanent representative of CNES on the Board of Directors of Arianespace SA and Arianespace Participation and a director of Thalès. He has been a director of EDF since November 2004.

Julien Dubertret. Born on 9 June 1966 in Paris (France), Julien Dubertret is a graduate of the Institut d'Études Politiques in Paris and a former student of the École Nationale d'Administration (ENA). He began his career in 1992 as a civil administrator, at the Budget Directorate, and then continued, from 1996 to 1998, at the European Bank for Reconstruction and Development (EBRD) as an Associate Banker. Since 1999, he has held several positions within the Budget Directorate, and particularly as assistant director of budget synthesis and public finance (*sous-Directeur de la synthèse budgétaire et des finances publiques*) from 2003 to 2007. From May 2007 to April 2011, he was advisor to the office of the Prime Minister, François Fillon, firstly in charge of the budget and then the budget, public sector and state reform. Budget Director at the Ministry for the Budget, Public Accounts and State Reform. Since 1 May 2011, he has been a director of SNCF since 24 May 2011 and of EDF since 21 June 2011.

François Loos. Born on 24 December 1953 in Strasbourg (France), François Loos is a former student of the École Polytechnique and a Corps des Mines engineer. He began his career as an engineer for several companies, in both France and Germany. From 1984, he worked as technical advisor to the President of the European Parliament, Pierre Pfimlin, and to the Minister for Research and Technology, Hubert Curien, from 1984 to 1985. In 1985, he joined Rhône-Poulenc to manage the Thann plant from 1986 to 1987, and then he was in charge of the general secretariat of the group's scientific division from 1987 to 1989. He then became Chief Executive Officer of the Lohr Group from 1990 to 1993. François Loos became involved in local political life from 1992. He was elected regional councillor for Alsace from 1992 to today, then member of the French parliament for the Bas-Rhin *département* from 1993 to 2011. After the AZF disaster, he chaired the investigatory committee on industrial risks in France in 2001. In 2002, he was appointed Minister delegate for Higher Education and Research, then Minister for External Trade and finally Minister for Industry from 2005 to 2007. First appointed director by decree of 28 November 2011, François Loos has been Chairman of the French Environment and Energy Management Agency (ADEME) since 21 December 2011. He has been a director of EDF since 13 February 2012.

Pierre Sellal. Born on 13 February 1952 in Mulhouse (France), Pierre Sellal is a graduate of the Faculty of Law and Economic Sciences in Strasbourg and a former student of the École Nationale d'Administration (ENA). He began his career with the Ministry for Foreign Affairs at the Directorate of the United Nations from 1977 to 1980, then became technical advisor to the Office of the Minister for External Trade (1980-1981). Adviser to the Permanent Representative of France to the European Communities in Brussels from 1981 to 1984, he then served as Head of International Relations at the Ministry of Industrial Redeployment and External Trade (Oil Directorate) until 1985. At that time, he was appointed by the Prime Minister as Deputy Secretary General of the Inter-Ministerial Committee (SGCI) for issues of European economic cooperation, a position he held until 1990. A member of the working group entrusted with developing a future outlook for all the consequences of introducing the European single market from 1988 to 1990, he became Minister-Counsellor at the French Embassy in Rome in 1990, then Minister-Counsellor, Deputy Permanent Representative of France to the European Union in Brussels from 1992 to 1997. In 1997, he was appointed Director of European Cooperation at the Ministry for Foreign Affairs before being appointed Private Secretary to the Minister for Foreign Affairs from 1997 to 2002. As Ambassador and Permanent Representative of France to the European Union in Brussels from 2002 to 2009, he was named Ambassador of France in November 2008. Pierre Sellal has been the Secretary General of the Ministry for Foreign and European Affairs since 14 April 2009. He is a member of the Atomic Energy Committee and the Supervisory Board of AREVA. Pierre Sellal is also director of Audiovisuel Extérieur de la France (AEF), École Nationale d'Administration and the Institut du Monde Arabe. He has been a director of EDF since April 2009.

Directors elected by employees:

Christine Chabauty. Born on 19 July 1971 in Maisons-Laffitte (France), Christine Chabauty is a graduate in law. She gained professional experience in a legal environment and in 2000 joined EDF's Trading Department as commercial attaché to the Key Accounts department. She now works for the Key Accounts Division's Marketing and Trading Department. Since December 2008, she has also served as a member of an elected industrial tribunal (*conseiller prud'homal*). Sponsored by the CGT union, elected in May 2009, she has been a director of EDF since November 2009.

Alexandre Grillat. Born on 8 December 1971 in Béthune (France), Alexandre Grillat is a graduate of the École Supérieure d'Électricité and is the holder of an advanced degree (*diplôme d'études approfondies*) in electrical engineering. He began his career at EDF in 1996, first at EDF Gaz de France Distribution, where he held various technical management, customer relations and sales positions, and then at the Strategy Division of the EDF group. He then joined the office of the Deputy Chief Executive Officer of Électricité de Strasbourg before becoming Director of Research for the Networks Department of EDF Strategy Division. Alexandre Grillat is now representative (*chargé de mission*) of the Manager of ERDF in Alsace Franche-Comté. Sponsored by the CFE-CGC union, re-elected in May 2009, he has been a director of EDF since September 2004, when EDF was still a French State-owned industrial and commercial institution (EPIC).

Philippe Maïssa. Born on 21 November 1949 in Nice (France), Philippe Maïssa is a graduate of the École Nationale Supérieure des Industries Chimiques in Nancy. After holding positions in the chemical industry, then at the Charbonnages de France Studies and Research Centre, he joined EDF in 1994. He is currently an engineer in the field of combustion and boilers at EDF's Thermal Engineering Centre. Sponsored by the CGT union, elected in May 2009, he has been a director of EDF since November 2009.

Marie-Hélène Meyling. Born on 30 October 1960 in Fontainebleau (France), Marie-Hélène Meyling is a graduate in communication (Université Paris-V). She joined EDF in 1982 where she has held a range of communication positions. She then focused on activities relating to the opening of the electricity market as well as support for renewable energy. She is currently Attaché to the EDF Upstream/Downstream Optimisation and Trading Division. Having sat for four years on the EDF Central Works Council, she has been a director of EDF, sponsored by the CFDT union, since 1 September 2011.

Jean-Paul Rignac. Born on 13 May 1962 in Rodez (France), Jean-Paul Rignac is the holder of a doctorate in energy from the Institut National Polytechnique in Toulouse. He served as secretary of EDF Research and Development's joint generation committee for five years. Since March 1991, he has been a research engineer at EDF's Research and Development Division (Renardières Centre), and currently works on energy efficiency in industrial buildings. Sponsored by the CGT union, re-elected in May 2009, he has been a director of EDF since November 2007.

Maxime Villota. Born on 25 November 1959 in Joeuf (France), Maxime Villota joined EDF in 1981. He began his career at the Dampierre-en-Burly nuclear power plant, before joining the Tricastin nuclear power plant in 1987, where he is currently coordinator Purchasing Policy. He is a member of the Fédération CGT Mines Énergie trade union. Sponsored by the CGT union, re-elected in May 2009, he has been a director of EDF since December 2006.

14.2 Executive Committee

14.2.1 Members of the Executive Committee

The Chairman and Chief Executive Officer chose to surround himself with an Executive Committee within which all the Group's lines of business are represented, as are finance, legal affairs and human resources (see section 16.3 ("Bodies created by Executive Management")).
On the filing date of this reference document, the members of the Executive Committee were as follows:

Names	Position
Henri Proglio	Chairman and Chief Executive Officer
Vincent de Rivaz	Chief Executive Officer of EDF Energy
Marianne Laigneau	EDF group Senior Executive Vice President, Human Resources
Pierre Lederer	Group Senior Executive Vice President, Customers, Optimisation and Trading
Hervé Machenaud	Group Senior Executive Vice President, Generation and Engineering
Jean-Louis Mathias	Group Senior Executive Vice President, Activities Coordination in France, IT, Gas and Renewable Energies
Thomas Piquemal	Group Senior Executive Vice President, Finance
Alain Tchernonog	General Secretary

Denis Lépée, Advisor to the Chairman, is Secretary of the Executive Committee.

14.2.2 Personal information on members of the Executive Committee

Marianne Laigneau. 47 years old, a former student of École Normale Supérieure de Sèvres and of the École Nationale d'Administration (ENA), holder of the *Agrégation* degree in classics and a graduate of the Institut d'Études Politiques in Paris, Marianne Laigneau is a member of the French Council of State. After leaving ENA, Marianne Laigneau joined the Conseil d'État and serves as a legal advisor to the Ministry for Cooperation, project director for international cooperation at the State Reform Commission, a reporter for the Ethics and Budgetary and Financial Discipline Commission, and a member of the United Nations electoral mission to Mozambique and the EU electoral mission to Gaza. In 1997, she was assigned to the Ministry for Foreign Affairs and served as First Councillor to the French Embassy in Tunis, where she was in charge of negotiations, political, community and legal affairs and communications. From 2000 to 2002, as a member of the French Council of State, she was

specifically responsible for the mission to the Director of ENA, legal advisor to the Ministry for Culture, and senior lecturer in public law at ENA. In 2003, Marianne Laigneau joined Gaz de France as Head of the Institutional Affairs Department at Headquarters, and then in September 2004 became Representative for Public Affairs. She joined the EDF group in 2005 as Legal Counsel, then served as Deputy General Secretary, and in 2007 became General Secretary and member of the Executive Committee. Appointed Executive Vice President, Human Resources, in January 2010, Marianne Laigneau has been a member of the EDF Executive Committee since 1 December 2010 and is currently Group Senior Executive Vice President, Human Resources.

Pierre Lederer. 63 years old, graduate in Physical Science and Mathematics. Pierre Lederer joined EDF in 1974, where he has held a variety of positions in the General Economic Studies Department, the Energy Transmission Department and the Fossil Fuel Generation Department. He was appointed Head of the General Economic Studies Department in 1992, Head of Corporate Strategy in 1996 and then Head of the Group's Industry Unit in 1999. In 2000, he joined the Executive Board of EnBW, the third largest German energy company, then 45% owned by EDF, and became Deputy Chairman of the Management Board in 2007. As Chief Operating Officer, he was instrumental in developing sales processes for the opening of the energy markets. He also implemented the optimisation of the value chain and the management of market risks and launched the replacement of the company's entire generation fleet. In February 2009, Pierre Lederer was appointed Senior Executive Vice President of EDF, in charge of Customers. He works to redefine the strategic objectives of the Customers Division: satisfying customers, positioning energy efficiency at the heart of the business, supporting customers in reducing CO_2 emissions and developing remote energy services. Pierre Lederer is currently Group Senior Executive Vice President, Customers, Optimisation and Trading.

Hervé Machenaud. 64 years old, a former student of the École Polytechnique (1968), engineer of the École des Ponts et Chaussées (civil engineering school) and a graduate of the Institut d'Études Politiques in Paris (1973). Hervé Machenaud began his career as Director of the Urban Planning Division at the Ivory Coast Ministry of Planning in 1973, and then undertook a variety of assignments on the African continent for the World Bank before returning to France in 1978 as a civil engineer in Ille-et-Vilaine. Hervé Machenaud joined the EDF group in 1982 as Deputy Director of Development at the Paluel Nuclear Power Plant. From 1984 to 1989, he took charge of the Group's expansion into China, in particular the construction and commissioning of the Daya Bay nuclear power plant. Between 1990 and 1995, Hervé Machenaud held the position of Director of the French National Nuclear Infrastructure Centre (CNEN), responsible for the Group's French and international nuclear programs. In this context, he coordinated the design, construction and commissioning of the N4 series (nuclear plants in Chooz and Civaux), currently the world's most advanced reactors, equipped with a computer-assisted control system which remains unique. From 1995 to 1998, he was EDF's Deputy Director of Infrastructure, responsible for Resources, Management and International Development. From 1998 to 2002, he served as EDF's Director of Generation and Transmission, then Deputy Director of the Industry Branch. From 2002 to 2010, he was based in Beijing as Executive Vice President, Asia, where his role was to enhance the Group's industrial expertise, particularly nuclear, and to ensure it had access to technological innovations in China, Japan, India and the Great Mekong region. In particular, he spearheaded the joint venture projects in the following sectors: nuclear (Taishan), thermal (Sanmenxia), hydraulic and wind generation in China, Vietnam (Phu My plant) and Laos (Nam Theun dam). Hervé Machenaud is currently Group Senior Executive Vice President, Generation and Engineering and Director, Asia-Pacific.

Jean-Louis Mathias. 64 years old, graduate of the École Polytechnique, the École Nationale de la Statistique et de l'Administration Économique (ENSAE) and the Centre de Perfectionnement aux Affaires (CPA), as well as holding a degree in sociology. After serving from June 2002 as Deputy Chief Executive of the Gaz de France group, he joined EDF in September 2004 as advisor to the Chairman. In November 2004, he was appointed Chief Operating Officer. Jean-Louis Mathias is currently Group Senior Executive Vice President, Activities Coordination in France, IT, Gas and Renewable Energies.

Thomas Piquemal. 42 years old, graduate of the École Supérieure des Sciences Économiques et Commerciales (ESSEC). Thomas Piquemal began his career in 1991 with the audit firm Arthur Andersen. In 1995, he joined the Mergers and Acquisitions Department at the Lazard Frères bank. In this context, he was involved in the major financial and strategic transactions of Veolia, in particular the company's capital restructuring and the EDF/Dalkia partnership. In 2008, he took over responsibility in London for the strategic partnership signed between Lazard and the American investment fund Apollo. In January 2009, Thomas Piquemal joined Veolia Environnement as Vice President for Finance and was appointed to the Group's Executive Committee. In this position, he devoted his efforts to debt reduction, in particular through an asset disposal program. In addition, in conjunction with the Caisse des Dépôts (French bank for official deposits), he managed the merger of their respective subsidiaries, Transdev and Veolia Transport, to create a world leader in collective passenger transportation and sustainable mobility. In 2008, together with three-time world boxing champion Christophe Tiozzo, Thomas Piquemal founded the "Académie Christophe Tiozzo", which aims to promote the social and professional integration of young people from so-called "sensitive" areas. Thomas Piquemal is currently Group Senior Executive Vice President, Finance.

Vincent de Rivaz. 58 years old, graduate in Engineering from the École Nationale Supérieure d'Hydraulique in Grenoble. Vincent de Rivaz began his career with the EDF group in 1977 as hydraulic engineer in the External Engineering Department, participating in the building of hydroelectric works in Africa, Guyana and New Caledonia. From 1985 to 1991 he was responsible for the Far East Region at the International Division and contributed to the Group's development in China in the nuclear, thermal, hydraulic and distribution sectors. From 1991 to 1994 he was Director of the EDF National Centre for Hydraulic Equipment, responsible for engineering on the EDF group's hydraulic projects, in France and abroad, and specifically managed the launch of the Nam Theun Il project in Laos. In 1995 he was appointed Deputy Director of the International Division, and then became Director of Major Projects. In this capacity, he contributed to the development of EDF's investment projects in the IPPs, specifically in China, Egypt, Mexico, Vietnam and Laos, as well as acquisitions of companies in Poland, Switzerland and England, including London Electricity in 1998. In 1999 Vincent de Rivaz was appointed Vice President of the Corporate Finance Division and in 2000 became Director of Strategy and Financial Operations. Appointed Chairman and Chief Executive Officer of the Group in England in February 2002, he directed the acquisition and integration operations of Seaboard, with the former London Electricity and the grids of eastern England, creating EDF Energy in 2003. Since 2007, he has led the development of the new EDF nuclear plant in

Great Britain. In 2008 and 2009, the acquisition then integration of British Energy, the largest British nuclear plant operator, made EDF Energy the leader in the British electricity market. In 2010, he led the implementation of the disposal of EDF Energy's distribution network activity. Vincent de Rivaz is currently Chief Executive Officer of EDF Energy.

Alain Tchernonog. 67 years old, holder of a PhD in law, is a graduate of the Institut d'Administration d'Entreprises. Alain Tchernonog started his career in 1972 as a lawyer specialising in international law at the Centre National d'Études Spatiales (French national space agency) before becoming head of the Legal Department of ANVAR (French national technology transfer agency) in 1974. From 1979 to 1990, he was Director of the Contracts Department at Roussel-UCLAF. From 1990, he held the position of General Counsel for the Pierre Fabre Group (1990-1995), then the Compagnie Générale d'Entreprises Automobiles (1995-2000). In 2001, he joined the Veolia Environnement Group as General Counsel then as General Secretary in January 2007. Alain Tchernonog is currently Group General Secretary.

Denis Lépée. 43 years old, graduate from the Institut d'Études Politiques in Paris, graduate in history. Denis Lépée served as adviser to the Secretary General of the Rassemblement Pour la République political party from 1995 to 1997, then as Private Secretary to the President of the General Council of the Oise *département* from 1998 to 2003. He then joined Veolia Environnement before becoming in 2007 special advisor to Henri Proglio, Chairman and Chief Executive Officer. Denis Lépée joined EDF on 25 November 2009 as advisor to the Chairman. He is also the author of four novels and several biographies. Denis Lépée is currently Advisor to the Chairman and Secretary of the Group Executive Committee.

14.3 Absence of family ties, convictions and conflicts of interest among members of the administrative bodies and Executive Management

14.3.1 Absence of family ties

To EDF's knowledge, there are no family relationships among members of the administrative bodies or Executive Management.

14.3.2 Absence of convictions for fraud

To EDF's knowledge, within at least the past five years, no member of the EDF Board of Directors or Executive Management has been subject to: (i) a conviction for fraud, (ii) bankruptcy, receivership or liquidation, or (iii) conviction and/or official public sanction issued by the statutory or regulatory authorities.

Moreover, to EDF's knowledge, no member of the EDF Board of Directors or Executive Management has been prevented by a court from serving as a member of an administrative, management or supervisory body of an issuer or from participating in the management or direction of an issuer's affairs during at least the past five years.

14.3.3 Conflicts of interest

To the Company's knowledge, on the date of filing of this reference document, there are no potential conflicts of interest involving EDF between the duties of the members of the Company's Board of Directors and Executive Management and their private interests or other duties.

Subject to the specific legal and regulatory provisions applicable to the members of the Company's Board of Directors (see section 16.2.1.1 ("Members of the Board"), to the Company's knowledge, no arrangements or agreements have been entered into with shareholders, clients, suppliers or others under which a member of the Board of Directors or Executive Management has been appointed in this capacity.

To the Company's knowledge, no member of the Board of Directors has agreed to restrict for a fixed period of time his ability to sell his holdings in the Company's capital, except for the restrictions resulting from the Stock Exchange Ethics Code described in section 16.5 ("Stock Exchange Ethics Code").

In addition, corporate officers holding shares in mutual funds through an EDF Group Company Savings Plan invested in EDF shares, or who has acquired shares from the French State within the legal framework of the privatisation, are subject to the lock-in and non-transferability rules resulting from the provisions applicable to these transactions.

15.

Compensation and benefits

15.1 Compensation of corporate officers **244**

15.1.1 Total compensation of the Chairman and Chief Executive Officer **244**

15.1.1.1 Terms and conditions for the setting of compensation 244

15.1.1.2 Setting of fixed and variable compensation for the 2010 and 2011 fiscal years 244

15.1.1.3 Other items of compensation 245

15.1.2 Total compensation of directors **245**

Budget and distribution of directors' fees **245**

15.2 Provisions for pensions, retirement and other benefits **246**

15.3 Stock options – Bonus shares **246**

15.1 Compensation of corporate officers

The compensation and benefits of all kinds paid in the 2011 fiscal year to corporate officers by the Company and the companies it controls are listed below.

The tables below were drawn up in accordance with the format recommended by the AFEP-MEDEF Consolidated Code of Corporate Governance and the AMF Recommendation of 22 December 2008.

15.1.1 Total compensation of the Chairman and Chief Executive Officer

The table below presents the compensation of all kinds owed and paid to the Chairman and Chief Executive Officer for the 2010 and 2011 fiscal years.

The variable portion of the Chairman and Chief Executive Officer's compensation for the fiscal year 2009, paid in 2010, has been determined prorata temporis as from the date of appointment of Mr. Proglio as Chairman and Chief Executive Officer on 25 November 2009.

The variable portion of the Chairman and Chief Executive Officer's compensation for the fiscal year 2010, paid in 2011 has been calculated on the basis of a full calendar year.

As stated in section 15.3, the Chairman and Chief Executive Officer receives no stock options or performance stock.

Summary table of the compensation of the chairman and chief executive officer(1)

	2011 fiscal year		2010 fiscal year	
(in euros)	Amounts due for the fiscal year	Amounts paid during the fiscal year	Amounts due for the fiscal year	Amounts paid during the fiscal year
Henri Proglio, Chairman and Chief Executive Officer				
Fixed compensation	1,000,000	1 ,000,000	1,000,000	1,101,370
Variable compensation	588,000(2)	555,708	555,708	52,307(3)
Exceptional compensation	none	none	none	none
Directors' fees	n/a	n/a	n/a	10,000(4)
Benefits in kind(5)	4,820	4,820	4,820	5,187
TOTAL	**1,592,820**	**1,560,528**	**1,560,528**	**1,168,864**

n/a: not applicable

(1) Table no. 2 of the AMF Recommendation of 22 December 2008.

(2) The variable portion of the compensation for the fiscal year 2011, as set by the Board of Directors on 5 April 2012, will be paid during 2012.

(3) Variable portion of the compensation for the fiscal year 2009 (as from the date of appointment of Mr. Proglio as Chairman and Chief Executive Officer) paid in 2010.

(4) Directors' fees due for the 2009 fiscal year (up to the appointment of Mr. Henri Proglio as Chairman and Chief Executive Officer) paid in 2010.

(5) The benefits in kind consist of a company car and the energy benefit in kind.

15.1.1.1 Terms and conditions for the setting of compensation

In accordance with article 3 of decree no. 53-707 of 9 August 1953 and article L. 225-47 of the French Commercial Code, the components of Mr. Henri Proglio's compensation are set by the Company's Board of Directors, on proposal from the Nominations and Compensation Committee, as approved by the Minister in charge of economy and the Minister for Energy.

15.1.1.2 Setting of fixed and variable compensation for the 2010 and 2011 fiscal years

Compensation for the 2010 fiscal year

On recommendation from the Nominations and Compensation Committee as approved by the Minister in charge of economy and the Minister in charge of energy, the Board of Directors, meeting on 10 February 2010, set the fixed portion of the Chairman and Chief Executive Officer's annual gross compensation at €1 million for the 2010 fiscal year.

A variable portion could be added to this fixed portion, capped at 60% of the fixed amount, consisting of a quantitative portion of 70% and a qualitative portion of 30%, subject to the meeting of objectives set by the Board of Directors. The Board of Directors met on 18 May 2010 and decided to make the quantitative component of the variable portion of the Chairman and Chief Executive Officer's compensation contingent on the meeting of quantitative objectives based specifically on EBITDA, the debt management ratio, free cash flow less financial investments net of disposals and the nuclear fleet availability factor (Kd), according to the weightings set by the Board of Directors. In accordance with these criteria, the Board of Directors' meeting of 24 May 2011 set, on proposal from the Nominations and Compensation Committee as approved by the Minister in charge of economy and the Minister in charge of energy on 2 May 2011, the variable portion of the Chairman and Chief Executive Officer's 2010 compensation at €555,708.

Compensation for the 2011 fiscal year

On proposal from the Nominations and Compensation Committee on 14 March 2011 as approved by the Minister in charge of economy and the Minister in charge of energy on 2 May 2011, the Board of Directors, meeting on 24 May 2011, set the fixed portion of the Chairman and Chief Executive Officer's annual gross compensation at €1 million for the 2011 fiscal year.

A variable portion could be added to this fixed portion, capped at 60% of the fixed amount, consisting of a quantitative portion of 70% and a qualitative portion of 30%, subject to the meeting of objectives set by the Board of Directors. In accordance with the decision of the Board of 24 May 2011, the payment of the quantitative portion of the variable portion of the Chairman and Chief Executive Officer's compensation was contingent on the meeting of quantitative objectives based specifically on EBITDA, free cash flow, net debt/EBITDA ratio and the nuclear fleet availability factor (Kd), according to the weightings set by the Board of Directors. In accordance with these criteria, the Board of Directors' meeting of 5 April 2012 set, on proposal from the Nominations and Compensation Committee as approved by the Minister in charge of economy on 23 March 2012, the variable portion of the Chairman and Chief Executive Officer's 2011 Compensation at €588,000.

15.1.1.3 Other items of compensation

The Chairman of the Board of Directors receives no directors' fees.

The Company granted no stock options to the Chairman and Chief Executive Officer in 2011 and he exercised no options during the fiscal year.

Similarly, no performance stock was granted to the Chairman and Chief Executive Officer during the past fiscal year, and no performance stock became available.

Moreover, Mr. Henri Proglio has no special EDF retirement plan, has received no hiring bonus and does not benefit from any severance payment for the termination of his duties within the Company.

Finally, Mr. Henri Proglio has no employment contract with the Company.

15.1.2 Total compensation of directors

The table, below, shows the amount of directors' fees paid in 2010 and 2011 to the members of the Board of Directors.

The amounts paid during the fiscal year correspond to the amounts owed for the first half of that fiscal year and for the second half of the previous fiscal year.

Table of directors' fees paid to directors

	2011	2010
Philippe Crouzet	32,000	16,000
Mireille Faugère	34,000	18,000
Michael Jay	29,000	17,000
Bruno Lafont	20,000	26,000
Pierre Mariani	32,000	20,000
Henri Proglio(1)	n/a	10,000
TOTAL (IN EUROS)	**147,000**	**107,000**

(1) Up to his appointment as Chairman and Chief Executive Officer on 25 November 2009.

Furthermore, Messrs. Dangeard, Foundoulis and Moreau, directors until 22 November 2009, received at the start of 2010 directors' fees respectively amounting to 15,250 euros, 13,000 euros and 11,750 euros.

Budget and distribution of directors' fees

The directors representing the French State as well as those representing the employees hold office without fees in accordance with law no. 83-675 of 26 July 1983 concerning the democratisation of the public sector, and the Chairman of the Board of Directors receives no directors' fees.

The Board of Directors submits for the approval of the Shareholders' Meeting the budget for the directors' fees to be allocated to directors based on the distribution approved by the Board of Directors.

The Shareholders' Meeting held on 24 May 2011, on proposal from the Board of Directors, approved the amount of 200,000 euros for the annual budget for the directors' fees for the 2011 fiscal year and the subsequent fiscal years, until a new decision is made by the Meeting.

Since 2005, the amount of directors' fees paid has been tied to attendance at the meetings of the Board of Directors and the specialised committees. The Board of Directors on 22 June 2011, on proposal from the Nominations and Compensation Committee, set the new rules for the distribution of the annual budget for directors' fees applicable from the 2011 fiscal year. The total budget is split up between a fixed portion and a variable portion of 100,000 euros each, distributed as follows:

- the fixed portion of 100,000 euros is shared in equal parts between the directors, i.e. the sum of 20,000 euros each;
- the distribution of the variable portion of 100,000 euros between the directors is set by applying a coefficient varying based on the type of meetings (Board or Committee) and based on the specific positions held by each director (Committee member or chairman): a coefficient 2 for presence at a meeting of the Board of Directors; a coefficient 2 for the presence of a Chairman at a Committee meeting and, finally, a coefficient 1 for the presence of a director as a member at a Committee meeting. The variable portion is divided by the total of the coefficients for the fiscal year in order to set the unit value of the coefficient.

15.2 Provisions for pensions, retirement and other benefits

The Company's corporate officers as well as members of the Executive Committee do not benefit from a special retirement plan.

15.3 Stock options – Bonus shares

The Company has not implemented any stock options plans and the corporate officers receive no allocation of bonus shares[1] (or "performance stock").

(1) With the exception of any directors elected by the employees who may benefit from the systems implemented by the Company for the benefit of all its employees.

16.

Functioning of administrative and management bodies

16.1 Corporate Governance Code 250

16.2 Functioning of the Board of Directors 250

16.2.1 Composition and functioning of the Board of Directors 250

16.2.1.1 Members of the Board 250

16.2.1.2 Term of office of directors 250

16.2.1.3 Obligations and duties of directors 251

16.2.1.4 Method of Executive Management and powers of the Chairman and Chief Executive Officer 251

16.2.1.5 Powers and duties of the Board of Directors 251

16.2.1.6 Evaluation of director independence 252

16.2.1.7 Assessment of the functioning of the Board of Directors 252

16.2.1.8 Information and training of directors 252

16.2.1.9 Compensation 252

16.2.2 Activities of the Board of Directors in 2011 252

16.2.3 Board of Directors' Committees 253

16.2.3.1 Audit Committee 253

16.2.3.2 Nuclear Commitments Monitoring Committee 254

16.2.3.3 Strategy Committee 254

16.2.3.4 Ethics Committee 254

16.2.3.5 Nominations and Compensation Committee 255

16.3 Bodies created by Executive Management 255

16.4 Ethical approach 255

16.5 Stock Exchange Ethics Code 256

16.6 Report prepared by the Chairman of the Board of Directors in accordance with article L.225-37 of the French Commercial Code 256

16. Functioning of administrative and management bodies

Corporate Governance Code

16.1 Corporate Governance Code

EDF adheres to the consolidated AFEP-MEDEF Code as revised in April 2010, which is the corporate governance code to which the Company refers, in accordance with article L. 225-37 of the French Commercial Code[1], subject to the specific laws and regulations applicable to EDF.

These specific laws and regulations, which result from EDF's status as a state-owned company and in particular the application to the Company of law no. 83-675 of 26 July 1983 relating to the democratisation of the public sector and decree no. 53-707 of 9 August 1953, relate specifically to the division of the Board of Directors into three groups (see sections 14.1.1 ("Members of the Board of Directors") and 16.2.1.1 ("Members of the Board")), its impact on the proportion of independent directors of the board (see section 16.2.1.6 ("Evaluation of director independence")), the terms and conditions for the setting of the compensation of the Chairman and Chief Executive Officer (see section 15.1.1.1 ("Terms and conditions for the setting of compensation")), the 5-year length of the terms of the directors and the re-election of the entire Board of Directors (see section 16.2.1.2 ("Term of office of the directors' terms")) or otherwise the terms and conditions for the appointment of the Chairman and Chief Executive Officer of EDF and the method of executive management (see section 16.2.1.4 ("Method of Executive Management and powers of the Chairman and Chief Executive Officer")).

16.2 Functioning of the Board of Directors

The Board's internal rules of procedure set the principles of its functioning and the terms and conditions according to which the Board and its specialised committees fulfil their duties. It also defines the role and powers of the Chairman and Chief Executive Officer. These internal rules of procedure are reviewed, as needed, in particular to take into account legal and regulatory changes.

16.2.1 Composition and functioning of the Board of Directors

16.2.1.1 Members of the Board

In accordance with article 6 of law no. 83-675 of 26 July 1983 relating to the democratisation of the public sector, the Company's Board of Directors is comprised of eighteen members, one third of whom are elected by the employees and two-thirds appointed by the Shareholders' Meeting on recommendation from the Board of Directors, with the exception of the French State representatives who are appointed by decree.

On the filing date of this reference document, the Board of Directors consists of 6 directors elected by employees, 6 directors representing the French State and 6 directors named by the Shareholders' Meeting.

The list of directors and their personal information appear in section 14.1 ("Board of Directors").

The Head of the French State's Economic and Financial General Supervisory Mission at the Company as well as the Secretary of the Central Works Council also attend the meetings of the Board of Directors without right to vote.

A decree of 23 March 2012 provided that the Minister in charge of energy would assign a Government Commissioner to EDF. The Government Commissioner attends meetings of the Company Board of Directors and committees in an advisory capacity. He may make observations to general meetings.

Balanced representation of men and women on Boards of Directors

In accordance with law no. 2011-103 of 27 January 2011 relating to the balanced representation of women and men on Boards of Directors and Supervisory Boards, and equal access to employment, EDF, as a French public limited company ("*société anonyme*") listed on the stock exchange and a state-owned company, is subject (a) to the provisions applicable to listed companies (with regard to directors elected by the Shareholders' Meeting) and (b) to the provisions applicable to state-owned companies (for the directors appointed by decree).

In accordance with the aforementioned law, the proportion of directors of each gender appointed by the Shareholders' Meeting may not be less than 20% from 2014[2], then 40% from 2017[3].

Moreover, the proportion of directors of each gender appointed by decree shall not be less than 20% after the first re-election of the Board of Directors following publication of the law, i.e. in 2014 for EDF, and shall not be less than 40% after the second re-election of the Board of Directors, i.e. in 2019.

On the date of filing of this reference document, the EDF Board of Directors included three women, one of which is a director appointed by the Shareholders' Meeting and the other two directors representing the employees.

16.2.1.2 Term of office of directors

In accordance with article 11 of the law of 26 July 1983 relating to the democratisation of the public sector, the term of office of members of the Board of Directors is five years. They remain in office until the first meeting of the new Board of Directors. The Board is re-elected as a whole after 5 years. Therefore, the terms of office of the current directors will expire on 22 November 2014 at midnight.

In the event of vacancy of the seat of a member of the Board of Directors for any reason whatsoever, his/her replacement will hold office only for the remaining duration of the term until the re-election of the full Board of Directors.

(1) After having considered the AFEP-MEDEF recommendations of October 2008 on the compensation of corporate officers and directors of companies, the Company's Board of Directors met as soon as 17 December 2008 to approve these recommendations, deeming that they are in line with EDF's corporate governance approach, and that they had already been implemented by the Company.

(2) i.e. at the end of the first Shareholders' Meeting held after 1 January of the 3rd year after the year of publication of the aforementioned law.

(3) i.e. at the end of the first Shareholders' Meeting held after 1 January of the 6th year after the year of publication of the aforementioned law.

In the event of vacancy of the seat of a director elected by the Shareholders' Meeting, a Shareholders' Meeting must be convened in order to hold a new election on recommendation from the Board of Directors: co-option is not authorised for EDF.

In accordance with article 12 of the law on the democratisation of the public sector, directors representing the French State may be dismissed at any time by decree, the directors appointed by the Shareholders' Meeting may be dismissed at any time by the Shareholder's Meeting and, finally, the directors elected by employees may be dismissed individually for serious negligence in the performance of their duties upon decision of the President of the District Court, delivered in the form of an emergency ruling at the request of the majority of members of the Board.

16.2.1.3 Obligations and duties of directors

The internal rules of procedure of the Board of Directors state that its members are subject to obligations such as: acting in the corporate interest of the Company, informing the Board of situations of conflict of interest, and refraining from voting in any decision in which there might be a conflict of interest, fulfilling the obligation of confidentiality and complying with the EDF Stock Exchange Ethics Charter. Members of the Board and the Chairman and Chief Executive Officer are required to immediately inform the Board of any agreement entered into by the Company in which they hold a direct or indirect interest, or which might be entered into through an intermediary.

Each director receives a directors' guide, regularly updated, which specifically contains the following documents: the Company's articles of association, the internal rules of procedure of the Board of Directors and its Committees, the Stock Exchange Ethics Charter (see section 16.5 ("Stock Exchange Ethics Code")) and the AFEP-MEDEF code of corporate governance.

16.2.1.4 Method of Executive Management and powers of the Chairman and Chief Executive Officer

The EDF articles of association state that the Chairman of the Board of Directors is the Executive Manager of the Company and holds the title of Chairman and Chief Executive Officer. He is appointed by decree of the President of the Republic, upon proposal from the Board of Directors, and may be dismissed by decree in accordance with article 10 of the law on democratisation of the public sector.

In accordance with article 13 of the Constitution, the Chairman is appointed based on the candidates' interviews and the opinion of the permanent committees of the French National Assembly and Senate. Mr. Henri Proglio was appointed EDF Chairman and Chief Executive Officer by decree of 25 November 2009.

Subject to the specific legal provisions governing public sector companies and the powers specifically reserved by law or by the articles of association to the Board of Directors or to Shareholders' Meetings, the Chairman and Chief Executive Officer is vested with the most extensive powers to act on behalf of the Company under all circumstances, within the limits of the corporate purpose.

The Chairman and Chief Executive Officer organises and supervises the work of the Board of Directors and reports to the Shareholders' Meeting. He oversees the proper running of the bodies of the Company and, in particular, ensures that the directors are in a position to fulfil their duties.

Moreover, as an internal rule of procedure, the Chairman and Chief Executive Officer exercises his powers within the limits stipulated by the internal rules of procedure of the Board of Directors (see section 16.2.1.5, below).

16.2.1.5 Powers and duties of the Board of Directors

In accordance with the law, the Board of Directors sets the strategies for the Company's activities and oversees their implementation. Subject to powers expressly attributed to the Shareholders' Meetings and as limited by the Company's corporate purpose, the Board may consider any question relating to the proper running of the Company and acts, through its deliberations, on any such issue.

Moreover, in accordance with article 7 of the French law on the democratisation of the public sector, the Board deliberates on all strategic, economic, financial and technological strategies of the Company and the Group and on the matters specifically assigned to the Board by law, or which the Board retains.

In accordance with its internal rules of procedure, the Board of Directors alone is competent to authorise the following transactions:

- transactions of external or internal growth or disposals involving a financial exposure for the Company exceeding €200 million; this threshold falls to €50 million for acquisitions not in line with the Company's strategic objectives;
- real estate transactions exceeding €200 million;
- certain financial transactions, whenever their amount exceeds a value set each year by special decision of the Board; in 2011, the Board set: (i) at €500 million, the total authorised budget for sureties, endorsements or guarantees (the Chairman and Chief Executive Officer reports to the Board on any transaction of this kind that exceeds €100 million, granted on behalf of the Company or by a company controlled by the Company) and (ii) at €5 billion, the individual unit amount of certain financial transactions;
- contracts (supplies, work or services with or without financial commitment) involving amounts, including any necessary subsequent amendments signed during the same year, equal to or exceeding €200 million, or between €100 million and €200 million if these contracts relate to a new strategic direction or a new business line for the Group;
- long-term contracts for the purchase or sale of energy, CO_2 emission credits and quotas, by the Company or by a company it exclusively controls, for annual volumes or amounts in excess of: 10 TWh for electricity, 20 TWh for gas (detailed information must also be provided on long-term gas purchase or sale agreements greater than 5 TWh and less than 20 TWh at the meeting of the Board of Directors following their signing) and €250 million for coal and carbon dioxide;
- nuclear fuel cycle operations, and in particular, strategies relating to upstream and downstream operations of the nuclear fuel cycle;
- operations involving the transfer of obligations relating to decommissioning or downstream processes of the nuclear fuel cycle.

The Board of Directors sets the framework of the policy for the collection and management of assets for hedging nuclear commitments, specifically ruling on asset/liability management, asset allocation strategy, asset quality and the method of selecting any financial intermediaries. It set limits on market, counterparty and liquidity risks.

Finally, in accordance with the law of 27 January 2011 relating to the balanced representation of women and men on boards of directors and supervisory boards and equal access to employment, the Board of Directors must annually approve the Company's policy with regard to equal access to employment and equal pay.

16.2.1.6 Evaluation of director independence

The AFEP-MEDEF Corporate Governance Code recommends that, in companies with a controlling shareholder, the proportion of independent directors should be at least one third of the Board of Directors. Given the specific legal framework applicable to the Company, the Board of Directors has among its 18 members, 12 directors, 6 of whom represent the French State and 6 represent employees, who may not meet the independence criteria defined by the AFEP-MEDEF code.

At a joint meeting on 9 January 2012, the Ethics Committee and the Nominations and Compensation Committee examined the individual situations of directors. Upon recommendation from these Committees, at its meeting on 24 January 2012, the Board of Directors evaluated the independence of the directors based on the criteria defined by the AFEP-MEDEF corporate governance code, and confirmed the classification as independent directors of Mrs. Faugère and Messrs. Crouzet, Jay, Lafont and Mariani as these directors had no relations with the Company, its Group or its Management that might compromise the exercise of their freedom of judgment.

On the date of filing of this reference document, the Company's Board of Directors, therefore, had 5 independent directors out of a total of 18 members.

16.2.1.7 Assessment of the functioning of the Board of Directors

In accordance with the AFEP-MEDEF code, the Board's internal rules of procedure state that the Ethics Committee will report annually on the functioning of the Board of Directors and propose areas for improvement. Once a year, therefore, the Board dedicates one point on its agenda to this evaluation and holds a discussion on its functioning in order to improve its efficiency and ensure that important issues are appropriately prepared and discussed by the Board. Furthermore, every three years, this evaluation is conducted by an external consultant under the supervision of the Ethics Committee.

In 2010, a specialist external firm was hired to perform this evaluation: the results were reviewed by the Ethics Committee and presented to the Board of Directors at its meeting held on 21 January 2011.

In 2011, the annual evaluation was conducted internally using a questionnaire, approved by the Board of Directors upon recommendation from the Ethics Committee. The results of this evaluation reviewed by the Ethics Committee and presented to the Board of Directors on 24 January 2012 revealed an increased level of satisfaction among directors regarding the implementation of good governance rules by the Company. The quality of the contribution of the full Board of Directors to the Group's strategic reflection was again saluted, as was the coordination of the roles between the specialist Committees and the Board.

16.2.1.8 Information and training of directors

Under the terms of the Board's internal rules of procedure, the Board periodically receives information on the financial, treasury and commitments position of the Company and the Group, as well as information such as the financial balance sheet for agreements approved by the Company for the purchase of nuclear fuels, a performance review of the Company's principal subsidiaries on the occasion of the presentation of the annual and semi-annual financial statements, sales policy, purchasing and subcontracting policy and human resources policy.

A document reviewing the Group's current major sectors of business and the market trends, as well as the economic, financial and institutional context is prepared for each meeting of the Board of Directors.

The principal events relating to the Company occurring between two meetings of the Board are reported to the directors.

The directors can add to this information by meeting with the principal managers of the Company or Group.

In addition, information meetings are organised on complex matters and major strategic importance issues, together with any training requested by members.

16.2.1.9 Compensation

The principles and rules adopted by the Board of Directors in order to set the compensation of the Chairman & Chief Executive Officer and the terms and conditions for the distribution of the directors' fees, as well as the amounts paid to directors in 2011, appear in section 15 of this reference document.

16.2.2 Activities of the Board of Directors in 2011

The Board of Directors meets as often as the interest of the Company requires in accordance with applicable legislative and regulatory provisions.

Over the 2011 fiscal year, the Board of Directors met 11 times and 31 Committee meetings were held to prepare for these meetings. Board meetings lasted an average of 3 hours, allowing for an in-depth review and discussion of the items on the agenda.

The average attendance rate for directors at the meetings of the Board was 85.4% for 2011.

In 2011, the Board of Directors reviewed and authorised, in addition to numerous issues relating to the Company's current activity, major issues such as the proposal to the Shareholders' Meeting for the appointment of the Company's statutory and alternate auditors for the period 2011-2016, on recommendation from the Audit Committee, the EDF equal access to employment and equal pay policy, the simplified alternative public offering for the purchase or exchange of EDF Énergies Nouvelles shares not held by EDF, the Austro wind turbine project (324 MW) in Mexico and Spinning Spur wind turbine project (161 MW) in the United States, managed by EDF

Énergies Nouvelles, the implementation of a methane terminal project in Dunkirk by Dunkerque LNG and EDF's commitment as a subscriber to capacities in the terminal, the disposal by EDF International of its shareholding in Constellation Energy Group, the partnership agreed with General Electric relating to the development of a next generation gas combined cycle, the construction in Poland of a high-yield supercritical coal-fired power station (900 MW) and the acquisition of the shareholdings of EnBW in the Polish companies Ersa and Kogeneracja.

16.2.3 Board of Directors' Committees

To perform its missions, the Board of Directors has created five committees to review and prepare certain projects before they are presented to the whole Board. These Committees are: the Audit Committee, the Nuclear Commitments Monitoring Committee, the Strategy Committee, the Ethics Committee and the Nominations and Compensation Committee.

The members, functioning and duties of the committees are governed by the internal rules of procedure of the Board of Directors.

Directors who are members of these committees are appointed by the Board of Directors. The Chairman of each committee is appointed by the Board on proposal from the members of the committee.

The Chairmen of the Board committees are the following, on the date of filing of this reference document:
- Mr. Pierre Mariani for the Audit Committee;
- Mr. Philippe Crouzet for the Nuclear Commitments Monitoring Committee;
- Mr. Henri Proglio for the Strategy Committee;
- Mrs. Mireille Faugère for the Ethics Committee;
- Mr. Bruno Lafont for the Nominations and Compensation Committee.

The Head of the French State General Economic and Financial Supervisory Mission to the Company is invited to attend the meetings of these committees.

The work of the committees is organised within a program prepared for the year. Meetings are recorded in the form of written minutes and reports, which are submitted by the Committee Chairman to the Board of Directors.

16.2.3.1 Audit Committee

Functioning and members

The Audit Committee performs the duties assigned to it in accordance with the provisions of order no. 2008-1278 of 8 December 2008, which transposed into French law the Eighth European Directive of 17 May 2006 on statutory audits of accounts.

Article L. 823-19 of the French Commercial Code states that at least one member of the Committee must have specific skills in financial or accounting matters and be independent based on the criteria defined and made public by the Board of Directors.

At a joint meeting held on 14 January 2011, the Ethics Committee and the Nominations and Compensation Committee reviewed the situation of Mr. Mariani and issued a notice to the Board of Directors. The Board of Directors, meeting on 21 January 2011, found that Mr. Mariani has the specific financial and accounting skills based on the criteria recommended by the AMF in its report on the Audit Committee dated 22 July 2010, and that he therefore meets the criteria of both expertise and independence (see section 16.2.1.6 above), in accordance with article L.823-19 of the French Commercial Code. On 24 January 2012, the Board of Directors confirmed Mr. Mariani's capacity as an independent director.

The Audit Committee is chaired by Mr. Mariani, an independent director appointed by the Shareholders' Meeting and an individual outside the EDF group. The other members of the committee are Messrs. Comolli and d'Escatha, directors representing the French State, as well as Mrs. Meyling and Messrs. Grillat and Villota, directors elected by the employees.

The Board of Directors meeting on 28 September 2011 appointed Mrs. Meyling as a member of the Audit Committee, replacing Mr. Pesteil.

The Chairman and Chief Executive Officer attends the Committee meetings intended to examine the annual and half-yearly financial statements and the budget.

The Audit Committee met 7 times in 2011. The average attendance rate for its members was 81% .

Duties

The Committee reviews and gives its opinion, before examination by the Board, on:
- the Company's financial position;
- the medium-term plan and the budget;
- the preliminary financial reports prepared by the Corporate Finance Division (Company financial statements and the Group's consolidated financial statements and management report);
- the monitoring of the Company's risks (specifically, the review every six months of the Group's risk mapping and risk management methods),
- audit and internal control: organisation, deployment and evaluation of the system of internal controls, semi-annual audit programs, main findings and the resulting corrective actions, monitoring of their implementation, as well as the draft annual report by the Chairman of the Board of Directors on corporate governance, internal control and risk management procedures;
- the insurance strategy;
- the choice of Statutory Auditors, ensuring their independence, and the fees paid to them,
- the review of the financial aspects of external growth or disposal activities that are particularly significant (see section 16.2.1.5 ("Powers and duties of the Board of Directors") above).

Within the context of its work, the Committee regularly meets with the Statutory Auditors, Executive Management, the Corporate Finance Division and the Group Audit and Risk Management Director.

Activity in 2011

In 2011, the Audit Committee reviewed the items that fell specifically within its duties (semi-annual and annual financial statements, related press releases, quarterly revenue statements, risk mapping, summary of internal audits and audit program). It also examined the first data analysing the impact for EDF of the nuclear accident in Japan in March 2011.

16.2.3.2 Nuclear Commitments Monitoring Committee

Functioning and members

The Nuclear Commitments Monitoring Committee is chaired by Mr. Crouzet, an independent director appointed by the Shareholders' Meeting and an individual outside the Group. The other members of the committee are Messrs. Abadie and d'Escatha, directors representing the French State, as well as Mrs. Meyling and Mr. Villota, directors elected by the employees.

The Board of Directors meeting on 28 September 2011 appointed Mrs. Meyling as member of the Nuclear Commitments Monitoring Committee, replacing Mr. Pesteil.

The Nuclear Commitments Monitoring Committee met 3 times in 2011. The average attendance rate for its members was 86.7% .

Duties

The Nuclear Commitments Monitoring Committee is tasked with monitoring changes in nuclear provisions, issuing an opinion on issues relating to governance of dedicated assets, the rules for asset-liability matching and on strategic allocation, and ensuring the compliance of the management of the assets implemented by EDF in accordance with the policy for constituting and managing the dedicated assets. For this purpose, it may be supported by the Nuclear Commitments Financial Expertise Committee which is comprised of six[(1)] independent experts, whose duty it is to assist the Company and its corporate bodies in such matters.

Activity in 2011

In 2011, the Committee specifically reviewed the framework of the policy for constituting and managing dedicated assets, the state of progress of the plan for the storage of long-life medium- and high-activity waste and the 2011 update letter of the second three-yearly report on the securing of the financing of nuclear expenses.

16.2.3.3 Strategy Committee

Functioning and members

The Strategy Committee is chaired by Mr. Proglio, Chairman and Chief Executive Officer. The other members of the Committee are Mr. Jay, an independent director appointed by the Shareholders' Meeting and an individual outside the EDF group, Messrs. Abadie, Comolli and Sellal, directors representing the French State, as well as Mrs. Meyling and Messrs. Grillat and Rignac, directors elected by the employees.

Mrs. Meyling was appointed member of the Strategy Committee by the Board of Directors on 28 September 2011, replacing Mr. Pesteil.

Since 2010, the Chairman has invited non-member directors to meetings of the Strategy Committee.

The Strategy Committee met 8 times in 2011. The average attendance rate for its members was 84.4% .

Duties

The Strategy Committee issues an opinion to the Board of Directors on the Company's major strategic decisions and, specifically, the strategic referencing system, industrial and commercial policy, the public service contract, strategic agreements, alliances and partnerships, research and development policy, and internal and external growth or disposals projects requiring approval from the Board of Directors.

Activity in 2011

In 2011, the Committee specifically reviewed the Group's strategy in the nuclear, thermal and hydraulic sectors, in terms of renewable energy and gas, the strategic aims of EDF's Trading Division faced with the competitive and environmental challenges of the electricity market and the Group's 2010-2011 achievements in terms of research and development.

16.2.3.4 Ethics Committee

Functioning and members

The Ethics Committee is chaired by Mrs. Faugère, an independent director appointed by the Shareholders' Meeting and an individual outside the Group. The other members of the Committee are Mrs. Chabauty and Mrs. Meyling as well as Messrs. Maïssa and Grillat, directors elected by the employees.

The Board of Directors meeting on 28 September 2011 appointed Mrs. Meyling as member of the Ethics Committee, replacing Mr. Pesteil. Mr. Van de Maele, the director representing the French State, was a member of the Committee until February 2012.

The Ethics Committee met 8 times in 2011. The average attendance rate for its members was 81.3% .

Duties

The Ethics Committee ensures that ethical considerations are taken into account in the work of the Board of Directors and in the management of the Company. It reviews the reports from the Mediator, the General Inspector for nuclear safety and radiation protection, the Inspector for hydropower safety and the General Inspector for the regulated sector governance.

Moreover, each year the Ethics Committee conducts an assessment of the running of the Board and its committees, and every three years oversees a formal assessment of the work of the Board and its committees entrusted to an external consultant (see section 16.2.1.7 ("Assessment of the functioning of the Board of Directors") above).

(1) appointed on 26 October 2010 by the Board of Directors for 3 years.

Activity in 2011

In 2011, the Ethics Committee specifically reviewed EDF's equal access to employment and equal pay policy, the Group's skills policy and EDF's policy for low-income clients. The Committee also periodically visits operating sites in order to ensure the implementation of the socially responsible subcontracting agreement.

16.2.3.5 Nominations and Compensation Committee

Functioning and members

The Nominations and Compensation Committee is chaired by Mr. Lafont, independent director appointed by the Shareholders' Meeting and an individual outside the Group. The other members of the Committee are Mr. Jay, an independent director appointed by the Shareholders' Meeting and an individual outside the Group, and Mr. Comolli, a director representing the French State.

The Nominations and Compensation Committee met 5 times in 2011. The average attendance rate for its members was 86.7%.

Duties

The Nominations and Compensation Committee submits proposals to the Board of Directors regarding the appointment of directors by the Shareholders' Meeting. It submits for approval, to the Minister for the Economy and for Energy, an opinion on the compensation of the Chairman and Chief Executive Officer regarding the salary, variable portion (including the criteria for the setting of the variable portion and assessment of the results achieved based on the objectives set) and peripheral compensation of the Chairman and Chief Executive Officer. It also submits this opinion to the Board of Directors for deliberation and the setting of this compensation.

If necessary, it discusses the salaries of the Chief Operating Officers and issues an opinion on the compensation proposals that the Chairman and Chief Executive Officer submits regarding the salary, variable portion and peripheral remuneration of each Chief Operating Officer. It submits its proposals and its opinion for approval to the Minister for the Economy and Energy, and also submits it to the Board of Directors for deliberation and setting of this compensation.

The Committee submits to the Board of Directors its opinion on the conditions for the setting of the compensation of the principal managers (fixed and variable portions, calculation method and indexing), as well as the amount and terms and conditions for the distribution of the directors' fees. It ensures the existence of succession plan charts for Executive Committee positions.

Activity in 2011

In 2011, the Committee specifically reviewed the variable portion of the compensation of the Chairman and Chief Executive Officer for 2010, as well as his gross annual compensation and the criteria for calculating his variable compensation for 2011. It also examined the budget for the directors' fees for 2011 and proposed the new terms and conditions for their distribution applicable from 2011 (see section 15.1 ("Compensation of corporate officers") above).

16.3 Bodies created by Executive Management

The Chairman and Chief Executive Officer chose to surround himself with an Executive Committee, whose members were reshuffled in the course of 2010, within which all the Group's lines of business were represented, as were finance, legal affairs and human resources.

This Committee is a body enabling study, strategic discussion and cooperation in the Group's cross-disciplinary activities. It examines all the Group's significant underlying and current issues, tracks the operating objectives and results and contributes to the management and forecasting of the EDF group's major challenges. It reviews and authorises significant projects, specifically the Group's investment or disinvestment projects for amounts which exceed certain thresholds. The Executive Committee meets each week.

To further strengthen the examination and monitoring of projects, in April 2010 the Chairman and Chief Executive Officer created a Commitments Committee under the Executive Committee, which conducts an in-depth review of projects being positively considered by the Executive Committee before the Executive Committee makes a final decision. No investment project by the Company may be proposed for review by the Board of Directors without having first been approved by this committee.

On the date of filing of this reference document, the Executive Committee had eight members and a Secretary. The list of members and their personal information appears in section 14.2 ("Executive Committee").

The organisation of the Executive Management was supplemented in April 2010 by the creation of a Management Committee comprised of the members of the Executive Committee, as well as the Group's senior international executives and managers of the geographic regions, as well as the Company's administrative officers.

In November 2010, the EDF Chairman and Chief Executive Officer announced a change in the organisation of EDF's Executive Management in order to accelerate the generation of synergies at Group level. The three core businesses (production, downstream and grids) were given an expanded mission in directing the activity and synergies at global level, covering all geographic activities.

16.4 Ethical approach

EDF's ethical approach, presented to the Board of Directors on 26 March 2003 and coordinated by the Ethics and Compliance Officer, consists of distributing and applying a code of conduct, the Ethics Guide, based on five values: respect for individuals, environmental responsibility, a quest for performance, commitment to solidarity and demand for integrity.

The Ethics Guide develops the Group's ethical commitments towards stakeholders as well as those expected of employees. EDF's ethical values are the basis for the company's corporate, "societal" and environmental politics, particularly its adherence to the UN Global Compact, its reference to fundamental international commitments, as well as the international EDF Corporate Social Responsibility Agreement. The approach is applied by management to all the Group's Divisions and companies.

An ethical whistleblower procedure was launched in January 2004, making it possible to question the Ethics Officer on any issue, warning or complaint of an ethical nature, through secure e-mail.

More recently, in October 2011, a new Group Ethics Guide was ratified by the Group Management Committee following work with each of EDF's subsidiaries. This Code is currently being translated into the languages of each relevant country and shall then be distributed and deployed in the whole group (see section 4.2.5 ("Ethics and oversight")).

16.5 Stock Exchange Ethics Code

In 2006, the EDF group adopted a set of principles and rules applicable to trades in shares in EDF or listed EDF group subsidiaries. These rules were combined into an Ethics Code, updated in March 2011, in order to take account of the AMF recommendations of November 2010 and presented to EDF's Executive Committee on 4 April 2011. At the same time as this Charter was distributed, awareness campaigns on stock exchange rules were launched for Group employees, specifically regarding precautions and obligations relating to the holding of inside information and the black-out periods during which permanent insiders and Group staff with precise knowledge of the Company's financial statements prior to publication are required to abstain from trading Company securities.

The Code also notes the obligations imposed on executives to declare to the AMF and to the Company trades in EDF securities (see section 17.7 ("Shareholding by directors and trading in EDF securities by corporate officers and executives")).

16.6 Report prepared by the Chairman of the Board of Directors in accordance with article L.225-37 of the French Commercial Code

In accordance with article L. 225-37 of the French Commercial Code, the Chairman of the Board of Directors must describe, in a report attached to the management report, the members, conditions of preparation and organisation of the work of the Board, as well as the internal control and risk management procedures implemented by the Company. This report is provided in Appendix A of this reference document.

The Statutory Auditors' report, prepared in accordance with the final paragraph of article L.225-235 of the French Commercial Code, on the report prepared by the Chairman of the Board of Directors of EDF, regarding the internal control procedures for the preparation and treatment of accounting and financial information, is provided in Appendix B.

17.

Employees – Human Resources

17.1 Skill development 260
- 17.1.1 Group workforce 260
- 17.1.2 Training and mobility policy 261

17.2 Equal opportunity 264
- 17.2.1 Work-study programs 264
- 17.2.2 Senior employees 264
- 17.2.3 Diversity / Non-discrimination 264

17.3 Health and safety – Quality of working life 265
- 17.3.1 Health and safety policy 265
- 17.3.2 Quality of working life 266

17.4 Subcontracting 267

17.5 Global compensation policy 267
- 17.5.1 Salary policy 267
- 17.5.2 Profit-sharing and shareholding 268
- 17.5.3 Group Corporate Savings Plan 268
- 17.5.4 Collective Retirement Savings Plan 268
- 17.5.5 Time Savings account 268
- 17.5.6 Employee shareholding 268
- 17.5.7 Stock options 268
- 17.5.8 Bonus share issues 268

17.6 Social welfare policy 269
- 17.6.1 Status of employees in the Electricity and Gas Industries (EGI) 269
- 17.6.2 Supplemental social welfare 270
- 17.6.3 Social dialogue and employee representation 270

17.7 Shareholding by directors and trading in EDF securities by corporate officers and executives 272
- 17.7.1 Shareholding by directors 272
- 17.7.2 Trading of Company securities 272

EDF clearly expressed its human goal based on a combined economic and social plan, in which absolute priority is given to skills development.

A human resources (HR) strategy centred around three major priorities, shared with all the Group's lines of business and companies, has reflected this goal since 2010:

- developing expertise and placing individuals once more at the heart of the industrial project by re-launching the "social elevator" through a dynamic hiring and training policy;
- making recognition, quality of working life and health and safety vectors for commitment by everyone to sustainable performance, maintaining EDF's commitment to the quality of working life, work-life balance and diversity;
- introducing greater diversity and strengthening a common culture, particularly among managers and experts, in order to build an integrated Group, in France and abroad, on a solid existing social basis.

RTE, which was previously fully consolidated in EDF's consolidated financial statements, has been, since 31 December 2010, consolidated by the equity method following the changes made to the company's governance (see section 6.2.2.1 ("Transport – RTE Réseau de Transport et d'Électricité")). Therefore, unless otherwise stated, the data included in this section does not include data on RTE.

17.1 Skill development

17.1.1 Group workforce

The EDF group's consolidated workforce totalled 156,168 staff on 31 December 2011, including 103,954 for EDF and ERDF and 52,214 for its other subsidiaries and shareholdings in France and abroad, which are included in the consolidation scope.

The table, below, shows the changes in the workforces for each of the Group's subsidiaries and shareholdings, weighted by the financial consolidation percentage over the last three fiscal years:

	31 December					
	2009(1)		2010(2)		2011(3)	
	Number	%	Number	%	Number	%
EDF and ERDF(1)	96,220	64	96,571	64	103,954	67
Subsidiaries (France and international)	54,278	36	53,449	36	52,214	33
GROUP TOTAL	**150,498**	**100**	**150,020**	**100**	**156,168**	**100**

(1) The workforces of EDF and ERDF include employees not employed under EGI status by EDF and ERDF. ERDF's workforce includes, in addition to its own employees, those whose services are shared, including 100% electricity employees (27,872), and a proportion of employees assigned to combined gas and electricity activities (8,898), divided between electricity/gas on an approx. 75/25 basis.

(2) Excluding EnBW and RTE (N.B. RTE's workforce in 2009 was 8,809 employees and in 2010 8,822 employees; in 2011, RTE had approximately 8,348 employees).

(3) The workforce for 2011 included for the first time, occupational physicians, staff employed as part of various social measures (apprentices, professional training contracts) as well as staff seconded to external bodies (AMADOE), i.e. on 31 December 2011, 3,574 EDF staff and 1,955 ERDF staff.

Group workforce in France

For the Group's two principal companies (EDF and ERDF), the overall workforces stabilised in 2010, following a down-turn since the start of the 90s. For 2011, there was a more significant increase, particularly in the deregulated sector. This increase in staff numbers was supported by a high level of hiring, far exceeding the number of retirements: with more than 5,700 recruitments and 3,500 retirements, EDF and ERDF are net recruiters.

The table, below, shows the breakdown of Group employees in France (Group share for the subsidiaries in France) during the last three fiscal years:

	31 December		
	2009	2010	2011[1]
EDF – deregulated sector:	61,439	62,201	67,184
Generation and Engineering	33,976	35,173	36,569
Trade	11,858	11,627	11,633
Corporate	11,537	11,590	11,624
Island Energy Systems	3,224	3,224	3,183
CDI (open ended contract) and CDD (temporary contract) not employed under EGI status	844	587	4,175
ERDF – regulated sector	34,781	34,370	36,770
Other subsidiaries in France:	22,923	23,710	23,312
Électricité de Strasbourg, TIRU, EDF EN, SOCODEI, Fahrenheit, PEI (in 2011 only)	5,526	6,134	5,331
Dalkia International	17,397	17,576	17,981
TOTAL FRANCE	**119,143**	**120,281**	**127,266**

(1) The workforces for 2011 included for the first time, occupational physicians, staff employed as part of various social measures (apprentices, professional training contracts) as well as staff seconded to external bodies (AMADOE), i.e. on 31 December 2011, 3,574 EDF staff and 1,955 ERDF staff.

International Group workforces (consolidated subsidiaries)

The table, below, shows the breakdown of the workforces (Group share) in the international subsidiaries and shareholdings included in the consolidation scope during the last three fiscal years:

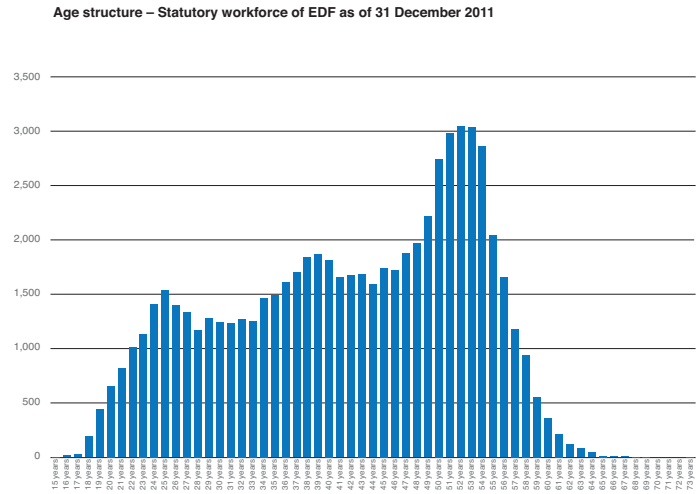
	Employees 31 December		
	2009	2010	2011
EDF Energy (United Kingdom)	20,077	15,441	15,536
EDF Trading (United Kingdom)	822	888	904
Edison (Italy)	1,921	1,929	1,843
Other foreign subsidiaries:	8,535	11,481	10,619
Eastern Europe	6,491	6,421	5,606
Western and Mediterranean Europe and Africa	1,878	3,553	3,518
Asia Pacific	76	76	75
Americas	90	1,431	1,420
INTERNATIONAL TOTAL	**31,355**	**29,739**	**28,902**

17.1.2 Training and mobility policy

The EDF group is now facing new challenges:

- the lines of business are evolving, together with the technological, economic and environmental challenges in the energy sector, and with the growth ambitions of the EDF group in France and abroad;
- the resumption of industrial investments in all business lines and the development of the Group's activities internationally are intensifying the need for skills;
- more than 20% of the EDF and ERDF workforce in France could retire between 2012 and 2016, including a significant proportion of the maintenance and operating staff in generation, engineering and distribution activities. EDF and ERDF are taking steps to meet this challenge:
  - by significantly increasing its recruitments, which should continue over the next 5 years in order to face up to the high number of retirements;
  - with the creation of 13 Skills Academies, which focus closely on the Group's major lines of business (nuclear, thermal and hydraulic generation, nuclear engineering, trading and upstream-downstream optimisation, electricity distribution, etc.);
  - by boosting internal mobility within EDF via the Skills Adaptation and Renewal project (ARC - *Adaptation et Renouvellement des Compétences*).

The graph, below, presents EDF's age structure on 31 December 2011



Recruitment and mobility

Recruitment and mobility within the Group are crucial vectors to ensure the renewal of these skills and support the Group's development projects in France and internationally. In 2011, the site edfrecrute.com began publishing offers from EDF Energy and will publish offers from other European countries in 2012.
In 2011, EDF and ERDF hired more than 5,700 employees on a highly competitive labour market.

These new hires joined all the Group's major lines of business, mainly electricity generation (see the table "Recruitments in the Nuclear Sector" below) and distribution, but also our marketing and R&D activities. Recruitment was split fairly equally between the three categories of employee (managers, supervisors and labourers). The new recruits are mostly young graduates, however EDF also recruits more experienced profiles.

Recruitment in the nuclear sector

EDF/France	2008	2009	2010	2011
Nuclear Generation Division	797	906	1,294	1,082
Nuclear Engineering Division	236	291	398	455
Nuclear Fuel Division	4	6	11	20
TOTAL	**1,037**	**1,203**	**1,703**	**1,557**

Including the above recruitments in France, more than 12,700 new employees joined the Group worldwide.

In terms of mobility, EDF and ERDF put in place the following schemes promoting career development for employees:

- an intranet site was launched at the start of 2011 to make it easier for employees to access information on career paths and information on EDF, ERDF and RTE;
- job and employee skills offers have been displayed since 2007 in an Employment-Mobility Information System, which is used to inform recruiters of skills offers (mobile employee career plans) and let employees know about offers for positions available in the short- or medium-term. At the end of December 2011, 774 call for expertise were online (up 53% on the end of 2010) and 1,135 job qualifications were proposed (down 3% on 2010);
- throughout their entire careers, employees can be assisted with developing their career plans: career advisors are available to managers and their employees. The number of these advisors increases year on year, and has now become a genuine line of business, which will soon be professionalised at Group level;
- the coordination of regional mobility is a crucial vector for the success of employees' plans: approximately three quarters of mobility is regional. Seven Regional Employment Directors head up committees featuring the HR managers in charge of regional mobility and organise careers fairs: employees are regularly invited to them to discover the company's lines of business and the positions available in the short- and medium-term.

Finally, the implementation of an international mobility policy makes it possible to mobilise the skills necessary for the projects developed in thirty or so countries. A special international extranet site accessible to all group employees allows both employees who want to work internationally to be seen by recruiters and recruiters to pinpoint candidates on top of the short lists drawn up from each line of business.

Training

The Group, which operates in highly-technical lines of business, has always allocated a significant budget to employee training. The table, below, illustrates this effort by the Group:

	2011	2010
Group		
% of the payroll allocated for training	7.0	6.4
Average number of training hours per employee	47	45
Including France		
% of the payroll allocated for training	7.5	7.3
Average number of training hours per employee	50	45

Throughout EDF, the level of access to training, like the amount of training per employee, is high: 83% of employees attended at least one training course in 2011, lasting an average of 70 hours.

The Group's managers in France benefited from this increased training effort via the courses proposed by the Group Management University. Three training courses help them to take responsibility: 940 of them attended these courses in 2011 and 1,500 shall do so in 2012.

9,000 managers in France have had access since December 2011 to a distance training platform, where they can complete online e-learning modules to receive basic professional management training: annual review, delegation, staff development and time management. These training schemes shall be rolled out from 2012 for Polish, Chinese and Belgian managers.

In France, the "Training Challenge" agreement signed on 10 September 2010 by all EDF, ERDF and RTE's union organisations also gives a new dynamism to the Group's training policy. This agreement aims to re-launch the EDF "social elevator" (particularly by boosting promotional training and work-study programs) and put in place, with the objective of ensuring effective and innovative training and skills development, 13 Skills Academies.

Skills Academies are coordinated by each line of business and organised into a network, the objective being to aim for a high level of operational and technical expertise and take account of the challenges of each line of business in the training courses as well as possible. The Academies specifically cover each of the Group's principal professional groups: technical positions and support positions. These Skills Academies all received seals of approval in 2011 and were certified by a jury of leading experts (including non-EDF experts) specialising in the area covered by the training course.

The training centres are developing through a network of new and existing Campuses:
- a "flagship" Campus for the entire EDF group, currently based in Les Mureaux and then from 2015 in Saclay;
- three "skills" Campuses focusing on generation, transport and distribution of electricity, consisting of 35 sites spread throughout the French territory;
- one Campus currently under construction in the United Kingdom, on the Bridgewater site.

The promotional training courses promote the renewal of skills but also social cohesion and the diversification of profiles within the Group. Within the framework of the new social elevator approach, practical measures have been developed in 2011 in order to offer every employee the opportunity to progress throughout their whole career with the Group.

Every employee changing category now receives systematic assistance through a new specific scheme introduced in order to simplify the taking of responsibility and internal professional mobility. These schemes should therefore respectively assist 1,000 to 1,300 employees every year from 2012.

Every employee can also attend qualifying promotional training courses: they are genuine career accelerators and allow employees access to positions with greater responsibility and therefore progress professionally. In 2011, new long qualifying training schemes, principally based on employee recommendations, were added to the existing courses. They make it possible to progress more rapidly to a new category.

The Training Challenge agreement is gradually being extended to the Group's companies worldwide, specifically through the internationalisation of certain Skills Academies (law, HR), the scheduled opening of a Campus in the United Kingdom or even the "People Development Programme". From 2012, this programme aims to implement, in all the Group's companies worldwide, six commitments to employees focusing on:
- the annual review, which should specifically include a performance section and a career development section;
- support from a HR representative during the key stages of their career;
- access to appropriate training programmes in order to be able to receive professional training for their current and future employment;
- visibility regarding job and mobility opportunities within their company/country and the Group/worldwide;
- information on changes to their line of business in order to be able to think ahead;
- the transfer of skills to young people and new recruits (work-study programs, placements, etc.).

17.2 Equal opportunity

17.2.1 Work-study programs

An excellent path for training, professionalisation and occupational integration for young people and individuals experiencing difficulties finding employment, the work-study program is a key element of EDF's identity.

In the "Training Challenge" agreement, EDF, ERDF and RTE made eight commitments, including the following:

- Maintenance of the current trend, with over 4% of the Group's workforce in work-study programs at all levels of training (i.e. surpassing the goals set by the law of 2006): in 2011 over 3,000 trainees joined EDF and ERDF under apprenticeship or professional training agreements to prepare for all levels of degrees or professional qualifications, from vocational training certificates to Masters degrees, raising to nearly 5,000 the number of trainees on 31 December 2011, i.e. 5% of the Group's workforce. They are issued with a welcome booklet when they join to make their training easier;
- Allocation of a significant number of positions to trainees trained by the Group in its hiring (at least 25% of operating and supervisory recruitments and 4% of management and engineering recruitments): in 2011, the rates achieved were respectively 27% and 8% for EDF and ERDF;
- Better assistance for the employment of trainees not hired through external EDF group partnerships, and encouragement of employees to voluntarily assist these young people: EDF, ERDF and RTE launched pilot schemes, working on drawing up a short-list of potential candidates, refining knowledge of their profiles, increasing contact with qualified employment partners (Pôle Emploi, Missions Locales, Écoles de la 2e chance, AFPA, AGEFOS-PME) as well as with associations such as PACTE PME, offering interview preparation and CV writing workshops. Current feedback should make it possible to roll out a wider scheme from 2012;
- The extension of assistance measures directed towards trainees that are more favourable than required by regulation, such as supplemental health coverage.

Overall worldwide, the Group took on 5,656 work-study trainees in 2011.

The work-study program relies on the commitment of more than 4,000 tutors throughout EDF and ERDF, whose mission is to assist work-study trainees in their professional training on a daily basis. Leadership, training and experience-sharing schemes aimed at them were launched in 2011, such as the publication of the Tutor Referencing System and the publication of a Tutor Guide.

The work-study program is also based on high-quality partnerships with several training organisations. These include an Apprentice Training Centre (*Centre de Formation des Apprentis* - CFA) dedicated to Energy Professions, which opened its doors in the Île-de-France region in September 2011 on the initiative of EDF, ERDF and RTE.

17.2.2 Senior employees

In France, the Group is committed to a new approach to senior employees, with the roll-out of the senior action plan submitted to the Central Works Council in December 2009, in accordance with the decrees of 20 May 2009. The number of employees aged 56 and over is increasing; they currently represent 9% of the workforce (8% in 2010), while employees aged 50 and over represent 33% of EDF's workforce (34% in 2010) and there are now more than 800 employees aged 60 and over (nearly 500 in 2010).

The Group is committed to encouraging the continued employment of employees aged 55 and over, and to improving the working conditions of senior employees. This specifically means improving the presence of senior employees, encouraging career advancement throughout their entire professional lives, with specific preparation for the second half of the career, provision of easier access to training for senior employees and better preparation for the transition from the end of professional activity to retirement.

Mid-career interviews are gradually being introduced: they are conducted by HR managers, in collaboration with managers, and are aimed at employees from all categories at around the age of 45.

An end of career interview is conducted by the manager as part of the annual review, at the earliest 5 years and no later than 2 years before the employee's pension eligibility date. The gradual implementation of this interview in all lines of business has been launched since the last quarter of 2011. These interviews shall be systematised in 2012 throughout EDF.

Since the end of 2010 and during 2011, approximately 200 HR managers have been trained to conduct mid-career interviews in order to enable the gradual implementation of these interviews for all relevant employees. At the end of 2011, more than 500 employees attended a half-day course on mid-career interviews, and more than 550 interviews have been conducted, meeting the aim set by EDF.

17.2.3 Diversity / Non-discrimination

On 1 June 2006, EDF signed a commitment to encourage diversity and equal opportunity and to prevent discrimination. This commitment, applied via action plans to each of EDF's lines of business, is now being implemented and followed up via a special annual review.

Manager and employee awareness to diversity issues

Since 2008, the EDF group, which also signed the Diversity Charter on 22 September 2006, has organised a "Diversity Day" in May each year. This event allows each of the Group's entities or subsidiaries to showcase the initiatives it has taken to promote diversity and prevent discrimination. In 2011, the company initiatives organised for Diversity Day involved around 40,000 employees.

In France, EDF's commitments on diversity have resulted in the creation of a training program for managers, HR managers and employees on the images and stereotypes linked to diversity. More than 6,500 staff have been trained in France since 2007. Training modules have been added to the professional management training courses.

Equal opportunity

EDF and ERDF respectively signed in 2009 for 4 years a new agreement for the integration of disabled people covering the period 2009-2012. These agreements each include goals in terms of the recruitment of disabled people. Accordingly, 94 disabled employees were recruited in 2011 by EDF and 54 by ERDF. In addition, both companies are leading a voluntary effort to welcome young disabled people each year as part of work-study programs (trainee or professional contracts): EDF and ERDF took on 44 staff in 2011.

After an initial agreement signed in July 2004, then a second in December 2007, the third agreement on professional equality between men and women was signed on 8 February 2012 by the CGT, CFDT, CFE-CGC and FO trade unions. The signatories made commitments in six areas: lasting change in mentalities, diversity in employment and recruitments, career path equality, equal opportunities in access to vocational training, awareness of working time and conditions, and work-life balance. The signatories also committed to maintaining equal pay between women and men for principal remuneration and performance pay, a target that has been met since 2010 (at the end of 2010 and 2011, the wage gap was 0.6% and 0.4% respectively in favour of men, as they benefit from average length of service that is slightly higher; when corrected for the impact of length of service, there is no wage gap).

In 2011, EDF extended the Fem Energia Prize, in partnership with the WIN (Women in Nuclear) association, which promotes and awards the careers of young female students or women involved in the nuclear industry, by opening an international category this year. On 17 March 2011, EDF signed a partnership agreement with the "Elles Bougent" association, which promotes technical and scientific careers for young female secondary school pupils and students. Twenty or so EDF "godmothers" volunteered to give occasional presentations at the meetings organised by "Elles Bougent". The first event, "Elles bougent pour l'énergie", was held on 8 December 2011 at the Cité des Sciences et de l'Industrie and saw EDF named as Honorary Chairman of the association.

EDF is one of the rare major companies to have received the "equal access to employment" seal of approval in 2006, and again in 2008 and 2011. This seal of approval, created in 2005 at the initiative of the public authorities with social partners, is a sign of the exemplary nature of an organisation, of any legal structure, that is working effectively and continuously to achieve equal access to employment and professional gender diversity.

Non-discrimination

As part of the scheme for the prevention of discriminatory practices put in place in 2009 by EDF after discussions with the union organisations, and whose roll-out shall be the subject of an annual review with the stakeholders, a framework for the prevention of discrimination was developed at the Group level in March 2010. It unites the companies around three principles, which are gradually implemented throughout each company. Accordingly, in 2011, initial reports were issued to the Group's companies on the practical implementation of the principles of non-discrimination in HR practices and business.

Finally, a partnership agreement was signed on 24 November 2011 with the "L'Autre Cercle" association, which fights against discrimination based on sexual orientation and homophobia at work, which shall result in the launch of awareness campaigns from 2012.

17.3 Health and safety – Quality of working life

17.3.1 Health and safety policy

The Group operates in a high-technology, high-risk sector. The health and safety of its employees and its external service providers is therefore a major imperative for the Company.

EDF's health and safety policy, signed by the Chairman in March 2009, takes into account developments in the professional environment, new types of work or even longer careers, which have given rise to new concerns requiring a reorientation of the policy. This new policy is the result of broad multidisciplinary dialogue among the various departments (management, experts, doctors, employee representatives). It reflects the values of respect for the individual, which it places at the heart of the organisations, and extends the common principles of health and safety defined in 2008 at Group level.

Since 2008, six common health and safety indicators have been shared by all of the Group's companies. The results are the subject of a Group Committee report.

A Group-wide review of health and safety results is conducted annually by the EDF Executive Committee. The Human Resources Management Committee, comprised of EDF's operational divisions, also conducts an annual review of EDF health at work policy in order to ensure its implementation, analyse the associated results indicators, check the effectiveness of the retained provisions and suggest improvements.

In November 2011, the first meeting of the Central Works Council (CWC) was held, focusing exclusively on the issue of health and safety, practically implementing the multidisciplinary approach to health issues adopted by the company. At the Group level, an annual presentation of preventive measures is made to the Health and Safety Committee of the European Works Council (EWC).

National Health at Work Group

A collective agreement relating to social dialogue on health at work was signed in November 2010.In accordance with this agreement, 8 doctors were appointed by their peers to participate in the National Health at Work Group, created in 2011, which met twice in the second half of the fiscal year.

Occupational accidents

10 years of prevention and training efforts have made it possible to significantly reduce the number of accidents in the work place that result in absence from work at both EDF and the Group's companies. The Group has recorded an improvement in the frequency rate (number of accidents at work having resulted in more than one day of absence from work, recorded over the current year and per million hours worked), which was 4.5 in 2010 and in 2009. The 2011 result was 3.9, confirming this improvement.

EDF's gravity ratio (number of days during the current year of sick leave related to accidents, including those resulting from accidents in previous years, per thousand hours worked) for 2011 was 0.14, compared to 0.16 in 2010. A Group-wide approach was launched in 2011 in order to calculate this ratio in each consolidated subsidiary; it shall be effective in 2012.

The principal causes of deadly accidents throughout the Group were high falls, dizzy turns and road accidents on the way to/from work. The introduction since 2011 of a scheme for the sharing of the causes of significant events throughout the Group should make it possible to make progress in this field, specifically on the management of "core business" risks, such as the risk of high falls, electrical risks and road risks.

Asbestos

In the past, the EDF group has used products, materials and facilities containing asbestos. In accordance with current regulations, the replacement of materials containing asbestos in EDF establishments and facilities began in the late 1980s, with all materials containing asbestos being treated, and EDF set up reporting measures and procedures to protect employees and third parties working at the Company.

In July 1998, EDF signed an agreement (revised in June 2002) with all trade union federations, for the prevention of and compensation for exposure to asbestos. Following this agreement, EDF introduced an early retirement plan for workers who are duly recognised as suffering from an occupational disease associated with asbestos, established voluntary financial assistance and a pension supplement both financed by EDF and provided social assistance to sick workers and their families with information and support during the compensation process.

See section 20.5 ("Legal proceedings and arbitration"), below, for a description of current procedures.

17.3.2 Quality of working life

In 2007, EDF created a "National Quality of Working Life Monitoring Organisation", reinforcing its ethics plan and simplifying its procedures to encourage local management. The Monitoring Organisation provides an opportunity for dialogue between doctors, managers, social partners and external experts. It monitors working conditions, orders studies and makes recommendations.

In 2008, it recommended the implementation of the EVREST (Changes and Relations in Health at Work) plan, which provides the company with a system of intersecting health/work indicators. This plan was implemented in 2009 by occupational physicians on a voluntary basis. In the electricity and gas industries, in October 2011, 98 doctors were registered and 72 had already filled in 4,808 questionnaires (1,135 at the end of 2010). The results of the 1,676 first questionnaires over the period 2009-2010 were presented in June 2011 at the EDF and EGI "health at work" days.

In 2009 and 2011, the Monitoring Organisation issued other recommendations for the promotion of work-life balance for employees and cooperation at work between generations. The implementation of these different recommendations made to management was assessed for the first time in 2011.

The discussions held by the Monitoring Organisation in 2011 notably included a presentation by the French National Agency for the Improvement of Working Conditions (ANACT – *Agence Nationale pour l'Amélioration des Conditions de Travail*) on the challenges of the extension of working life. This presentation allowed the different stakeholders to reflect on how preserving skills and health contributes to employee commitment.

Finally, an experimental cooperative "Quality of Working Life – QWL" – Web 2.0 space was launched in 2011, enabling managers and HR staff to promote and share good practice, receive expert advice and build a QWL community.

At the Group level, the priority placed on improving quality of working life and health resulted in the implementation of exchanges of experience, comparison of data or observation of practices in the lines of business or companies upon request. These exchanges regularly took place within the "Health and Safety" community, covering health and safety at work, during the "learning expeditions" organised in November 2010 and October 2011 in France and England.

Psychosocial risks

Each entity has designated an ethics correspondent and a national toll-free telephone number is available for all employees in case of serious difficulties at work.

Since 2008, the support of specialist doctors has been available to management 24 hours a day, 7 days a week in case of a traumatic event in their unit, to advise them and organise all necessary assistance for the relatives of the victims and the work teams.

The "Preventing psychosocial risks and improving quality of working life" collective agreement signed in November 2010 by EDF provides for various multi-disciplinary dialogue projects closely focusing on situations at work and the training of participants.

The principal measures taken in 2011 focused on:
- the widespread introduction of multidisciplinary groups and joint training of the participants in these groups;
- the listing of psychosocial risks in the unique document required by the regulations (a guide was published in order to take into account and list these risks in the assessment);
- the gradual integration of QWL aspects into impact studies before the organisational changes are made.

Organisation and working hours

Since 1 October 1999, the duration of the working week in France has been 35 hours, with services available for a minimum of five days.

At the end of December 2011, 12.8% of EDF and ERDF's personnel opted for a collective or individual reduction in working hours with partial compensation for salary loss. Group-wide, 9.8% of employees work part-time.

In addition, in order to ensure the continuous operation of EDF and ERDF's facilities or to re-establish electricity supply in the shortest time possible in the event of a technical failure, a portion of EDF's personnel provides a continuous service 365 days-a-year and another portion is on call outside of regular working hours.

17.4 Subcontracting

The EDF group's subcontracting policy focuses on three major themes:

- its first aim is for EDF to give its service providers medium-term visibility and select partner suppliers, taking account of the Group's industrial challenges and specifically the characteristics of its plant assets;
- EDF also wants to make progress in its subcontracting practices by benefiting from operational experience and the transfer of best subcontracting practices between lines of business;
- EDF has confirmed its commitment to the development of socially responsible subcontracting practices by signing or extending Agreements on Socially Responsible Subcontracting with union organisations.

The major areas in which EDF employed subcontracting in 2011 included both industrial and sales activities.

The EPR reactor construction project in Flamanville has employed up to 3,400 subcontracted employees at any one time.Since the opening of the local branch of the Pôle Emploi national employment agency at the end of 2007, 2,547 job offers have been submitted by companies and 95% of them have been filled.Furthermore, at the end of December 2011, approximately 78,100 hours of training had been provided to service providers, principally in the electro-mechanical sector.Finally, for the purposes of forecasting the consequences on employment of the end of the building work, an Employment and Skill Development Commitment framework agreement (EDEC – *Engagement de Développement de l'Emploi et des Compétences*) was signed on July 2010 by the Prefect, Presidents of the Regional and General Councils, union organisations, financing bodies, EDF, etc. The action plan was officialised in October 2011.

There were no changes to subcontracting in the generation fleet maintenance sector in 2011 compared to past years for both nuclear and conventional operations. Subcontracted activities specifically include cutting-edge or rare skills, which may only be offered and maintained on a constant basis by specialist firms which also work for other companies.

The highly seasonal variations in stoppages of generation facilities and, accordingly, the need to absorb peaks in demand also lead to a certain amount of use of subcontracting.

Finally, EDF uses subcontracting in order to benefit from specialist labour.

Use of subcontracting is therefore part of an industrial policy aiming to permanently guarantee the best possible performance in all sectors, both in terms of skills and organisation.

Customer relations activities also require use of subcontracting, in order to absorb the surplus activity generated by major conversion projects (specifically IS). In 2011, no major changes were recorded in this sector either.

On the theme of Socially Responsible Subcontracting (SRS), EDF has continued its work in collaboration with the union organisations that signed the SRS agreement.

Different operational issues were explored or implemented in 2011: e.g. on a pilot basis, tertiary buildings were cleaned in the daytime this year and this scheme could be rolled out more widely depending on feedback. The first Trading sector "Service Provider Survey" was carried out, in the same way as the surveys that have been conducted for several years in the nuclear sector. These surveys help to pinpoint the concerns of the employees of subcontracting companies and to provide highly-operational responses. Finally, work has been carried out within the framework of the Employment and Skills Development Commitment agreement for the Flamanville site. An SRS agreement was also signed in 2011 by ERDF.

The year 2011 was marked by the nuclear accident at the Fukushima power plant in Japan. The consequences of a natural disaster of this type on the Group's facilities are currently being analysed and the final results of this work are not yet known. The measures which shall be taken as a result will undoubtedly have an impact on subcontractors.

17.5 Global compensation policy

In order to attract, encourage and retain the skills that will allow the Group to face its industrial and commercial challenges, EDF is developing a global compensation policy that brings the company into line with the best practices observed in comparable sectors.

This global compensation policy covers:

- the recognition of the level of responsibility and results achieved through the wage policy;
- the recognition of collective performance through profit-sharing;
- the employee savings scheme and the company's contribution to these savings;
- employee shareholding; and
- social benefits.

Since 2008, EDF has offered every one of its employees a full individual review of their compensation and its components. A employee savings scheme booklet was also distributed to all EDF and ERDF employees.

17.5.1 Salary policy

Salary policy is aimed at equitably recognising the contribution of each individual to EDF's success.

For managers, fixed annual compensation is supplemented by a variable portion based on individual performance. Since 2011, all EDF's staff in the Labourers, Employees, Technicians and Supervisors category have also received individual variable compensation, based on individual and collective performances.

In 2011, for EDF and ERDF, the average annual gross salary was €38,800 (based on 13 months) and €25,500 for operating staff, €33,300 for supervisors and €55,500 for management (compared to €25,400, €33,000 and €54,900 respectively in 2010).

17.5.2 Profit-sharing and shareholding

In France, EDF has had a profit-sharing scheme for its employees for more than 20 years. Employees can choose either to receive payment and/or to invest it into either the Group Corporate Savings Plan or the Group Collective Retirement Saving Plan.

Following their conversion to subsidiaries, RTE and ERDF have also negotiated their own profit-sharing agreements. Similar measures exist among most of the Group's European subsidiaries.

The EDF and ERDF profit-sharing agreements are three-yearly and state that the profit-sharing amount to be paid shall be set based on the meeting of national objectives reflecting the different components of the companies' performances (economic, businesses, social and environmental). For EDF, the agreement signed on 30 June 2011 for the period 2011-2013 included five national performance criteria: Group EBITDA, power production, customer satisfaction rate, employee training rate and reprocessed waste percentage.

In 2011, these agreements allowed the payment of €164.5 million to employees of EDF and ERDF for the 2010 fiscal year.

EDF, ERDF and RTE are not eligible for the shareholding scheme.

17.5.3 Group Corporate Savings Plan

The Group Corporate Savings Plan is open to employees of EDF and of the Group's French companies in which EDF owns directly or indirectly at least 40% of the share capital and which have signed up for the Group Corporate Savings Plan.

Six varied mutual funds, including a socially-responsible investment fund, a solidarity mutual fund and the "EDF Share" fund, are open to subscriptions. In 2009, employees were able to subscribe to the bond issue launched by EDF via the 2014 Bond Fund created for this purpose. The EDF Group Corporate Savings Plan totalled €3.2 billion at the end of 2011.

Profit-sharing, as well as individual payments and transfers from the Time Savings Accounts that employees make to the Group Corporate Savings Plan, are matched by the company under conditions negotiated within each company.

In 2011, the total gross amount contributed to the Group Corporate Savings Plan by EDF and ERDF was €115.2 million.

17.5.4 Collective Retirement Savings Plan

The EDF Group Collective Retirement Savings Plan is open to employees of EDF and the Group's French companies in which EDF owns directly or indirectly at least 40% of the share capital and which have signed up for the Group Collective Retirement Savings Plan.

Two mutual investment funds are offered to employees: a collective mutual fund and the "CAP HORIZONS" umbrella fund, offering targeted management of the savings invested depending on retirement age.

The Collective Retirement Savings Plan totalled approximately €176.1 million for EDF and ERDF at the end of 2011. Profit-sharing, as well as individual payments and transfers from the Time Savings Account that employees make to the Collective Retirement Savings Plan, are matched by the company under conditions negotiated within each company.

For 2011, the total gross amount paid by EDF and ERDF to the Collective Retirement Savings Plan was approximately €28.7 million.

17.5.5 Time Savings Account

Time Savings Account agreements have been signed within the Group's principal French companies, specifically EDF, ERDF and RTE.

On 31 December 2011, the total number of hours saved in the time savings account by employees of EDF and ERDF was €509.6 million.

17.5.6 Employee shareholding

At the time of the Company's public offering in the framework of the Offering Reserved to Employees in accordance with law no. 2004-803 of 9 August 2004 and law no. 86-912 of 6 August 1986, 130,000 current and retired employees of the group became shareholders of the Company. In connection with the sale of 2.5% of EDF's capital on 3 December 2007, in accordance with the aforementioned laws, a new Offering Reserved to Current and Former Employees was proposed from 12 September to 22 September 2008. There were no reserved offerings in 2009, 2010 and 2011.

On 30 June 2011, the leverage formula put in place during the Offering Reserved to Employees in 2005 was settled. Accordingly, the "EDF Share" fund returned 9.2 million EDF shares to the arranging bank. In addition, in accordance with the aforementioned law of 6 August 1986, the French State issued, on 31 October 2011, approximately 731,000 bonus shares as part of the Offering Reserved to Employees in 2008.

On 31 December 2011, current and former employees of the EDF group held a total of 34 million EDF shares, i.e. 1.84% of share capital. Most of the shares held by employees are held via the Group Corporate Savings Plan.

17.5.7 Stock options

The Company has not implemented any stock option plan.

17.5.8 Bonus share issues

The bonus stock allotment plan implemented in August 2007, known as ACT 2007, involved the allotment of 2,883,183 shares to all Group employees[(1)], i.e. approximately 150,000 beneficiaries in 22 countries.

More than 2.7 million shares were issued to beneficiary employees on 31 August 2009. The registered shares became available on 30 August 2011. The shares held via the Group Corporate Savings Plan will become available on 30 August 2014.

The Company has not made any new allocations of bonus stock since August 2007.

(1) With the exception of Edison and EnBW employees mainly.

17.6 Social welfare policy

17.6.1 Status of employees in the Electricity and Gas Industries (EGI)

On 31 December 2011, almost all employees of EDF, ERDF, Électricité de Strasbourg and some employees of TIRU, held the status of employees in the Electricity and Gas Industries[1] (EGI). EGI status was introduced by the French decree of 22 June 1946 adopted in accordance with the French law of 8 April 1946, which nationalised the electricity and gas industries. It covers the current and retired staff of companies in the Electricity and Gas Industries.

In accordance with the provisions of articles L. 2233-1 and L. 2233-2 of the French Labour Code, the provisions of this status may be amended and the terms and conditions for their application set contractually through company-wide agreements, within the limits established by the status and, since French law no. 2000-108 of 10 February 2000 on the modernisation and expansion of the Electricity Public Service, by industry-wide agreements (articles L. 713-1 and L. 713-2 of the French Labour Code).

The status, in its main provisions, has evolved as follows: the special health & maternity insurance plan reformed by the decree of 30 March 2007 is now managed by the EGI Health Insurance Fund (*Caisse d'Assurance Maladie des IEG*, or CAMIEG) and the system of institutions representing personnel (IRP) was reformed by the law of 9 August 2004, adapting it to the rules of the French Labour Code. This reform resulted in amendment of the status by decree of 11 April 2007.

Furthermore, the special pension plan was reformed in 2008 and in 2010: the first time, within the context of the reform of special plans, and the second time within the context of the law of 9 November 2010 specifically reforming pensions under the general plan and the public sector.

For the rest, the status includes a set of provisions relating to areas similar to those of other industry-wide collective agreements (classification, compensation, hiring, discipline, paid vacation days, etc.).

17.6.1.1 Special pension plan

The pension plan for the electricity and gas industries is a special social security system. Defined within the framework of the EGI employee status, the special system applies to all employees in the EGI sector. It was first reformed by the law of 9 August 2004 concerning both the financing and management of the plan. Accordingly, the special pension plan has been managed by the Caisse Nationale des IEG (CNIEG), since 1 January 2005. This fund is now responsible for managing not only the age risk, but also for the risks of occupational accidents, occupational diseases, disability and death as well as family benefits for inactive people.

The French law of 9 August 2004 and its implementing decrees set the principles for financing the EGI special pension plan from 1 January 2005. The single pension paid by the CNIEG to each EGI retiree is financed:

- partly by CNAVTS, AGIRC and ARRCO under financing agreements which set the conditions for affiliation of the EGI special plan with the standard mandatory plans. CNIEG pays to the standard mandatory plans the contributions paid by employees and employers in the EGI sector. In exchange, CNIEG receives from those plans the benefits that they would have paid to former employees (inactive) of EGI companies if they had been affiliated with the standard mandatory plans, called basic plans. In accordance with agreements signed in 2005 with ARRCO and AGIRC for the affiliation of the EGI special pension plans with supplementary pension plans, the parties to both agreements negotiated in 2010 the final setting of the rate of validation of the rights acquired before 1 January 2005 as a result of the affiliation of the plan;
- partly by the CTA levy (*Contribution Tarifaire d'Acheminement,* or "CTA") received from gas and electricity transmission and distribution services;
- the remainder, corresponding to specific EGI retirement rights, is financed by employers.

The reform of the financing of pensions instituted by the law of 9 August 2004 has had no effect at all on the standard plans, energy consumers or the French State budget.

Without challenging the new terms and conditions for the funding and management of the special EGI pension plan, a reform of pension rights came into force on 1 July 2008. It primarily introduced, as in the plan for public employees (law of 21 August 2003), the following elements:

- a gradual extension of the insurance period in order to benefit from a full pension;
- discount and premium plans depending on the total insured period (all plans combined) by the insured;
- a rule to revalue pensions now linked to price changes rather than wage changes;
- new conditions, which are identical for men and women, in order to qualify for family benefits under pension plans.

These changes, as well as the removal of the 15 years' service requirement to benefit from the special pension plan, were introduced in appendix 3 of the national EGI personnel status by decree no. 2008-627 of 27 June 2008. This decree also amended the EGI special disability plan.

In addition, decree no. 2008-653 of 2 July 2008, which removes age and nationality conditions in hiring, has introduced various changes to the national status of employees and, in particular, an age limit of 65 years. The decree on forced retirement was repealed by decree no. 2008-1072 of 20 October 2008.

Decree no. 2008-1514 of 30 December 2008 issued the following provisions applicable from 1 January 2009:

- implementation of an early retirement program for long careers;
- revaluation of retirement and disability pensions on 1 April each year under the same conditions as those applicable to the general plan and the public sector plan;
- increase in the premium rate as for other pension plans;
- removal of the limit on total employment/retirement pension under the same conditions applicable to the general plan.

(1) Personnel in other French subsidiaries of the Group do not fall under EGI status.

As a result of law no. 2010-1330 of 9 November 2010 reforming pensions, the regulations of the special plan were modified by decree no. 2011-290 of 18 March 2011, which provides specifically for the gradual increase in the pension eligibility age by two years, including for early retirement. This provision will not enter into force until 2017, to take into account the schedule for implementing the 2008 reform. As in the public sector, retirement provisions relating to children will be eliminated and service time required to benefit from early retirement relating to active service will also be gradually raised by two years.

In accordance with this amendment, decree no. 2011-289 of 18 March 2011 gradually raised by two years the age limit for the employer to terminate the employment contract. From 2017, this limit shall be gradually increased from the age of 65 to 67.

17.6.1.2 EGI supplemental health plan

EGI status introduced a special health insurance plan and a mandatory social security plan for working and non-working employees in the industry. The plan is managed by the elected representatives of EGI employees and pensioners. It is managed by the CAMIEG. The system is supervised by the French State, which ensures compliance with the statutory documents and sets out the regulations and the level of contributions and services.

17.6.2 Supplemental social welfare

Since 2008, employees with EGI status working for the Group's companies in France have benefited from supplemental social welfare measures covering:

- the disability supplement (industry agreement of 24 April 2008), applicable since 1 July 2008;
- provident coverage: death and education allowances (industry agreement of 27 November 2008), applicable since 1 January 2009;
- the supplemental pension plan (industry agreement of 21 February 2008 and Group agreement of 12 December 2008), supplemented by company provisions, applicable since 1 January 2009 (for ERDF, 1 October 2010);
- supplemental health coverage (industry agreement of 4 June 2010), applicable since 1 January 2011.

In order to take account of new provisions introduced by the law of 9 November 2010, an amendment to the Group agreement on supplemental pensions, dated 10 October 2011, now authorises employees of companies adhering to this agreement to make optional individual payments to their individual supplemental pension account. The Group agreement is applicable to EDF, EDF PEI, Électricité de Strasbourg and TIRU.

In addition, EDF signed on 10 October 2011 an amendment to the company agreement on Time Savings Accounts, in order to enable employees who so wish to make transfers of TSA entitlements to their individual supplemental pension accounts. This was also the case for EDF PEI and negotiations have begun with TIRU to this end.

Negotiations regarding the funding of the existing supplemental pension plan are also ongoing with ERDF and TIRU.

17.6.3 Social dialogue and employee representation

17.6.3.1 Social dialogue in France

Company elections held in November 2010 partially structured social dialogue in 2011 for two reasons: firstly, the CFTC union lost its representation at company level, meaning that EDF now only has representatives from the CFDT, CFE-CGC, CGT and CGT-FO unions and, secondly, in order to take account of the results of these elections, several collective negotiations were held in 2011 in order to redefine the operating resources and terms and conditions granted to the union organisations.

Accordingly, the following were negotiated during the fiscal year:

- amendment no. 2 to the agreement of 18 January 2008, relating to the putting in place of union delegates and the exercise of the union right within EDF signed on 13 May 2011 by the CFDT, CFE-CGC and CGT unions;
- amendment no. 2 to the agreement of 7 March 2008 relating to the operating procedures of the EDF CWC signed on 26 July 2011 by the CFDT, CFE-CGC and CGT-FO unions;
- the NICT (New Information and Communications Technologies) agreement was signed on 9 December 2011 by the CGT and CGT-FO unions.

In terms of global compensation, 2011 was covered by a salary agreement signed at the end of 2010 by the CFDT and CFE-CGC unions, which set the individual merit measures applicable to company employees.

Two other significant agreements were also negotiated: the first, relating to profit-sharing, significantly modified the structure of the profit-sharing scheme implemented for the period 2011-2013 (see section 17.5.2 ("Profit-sharing and shareholding")); the second, covering the period 2012-2014, focused on the terms and conditions for the company contribution applied by the company to the payments made by employees to the Group Corporate Savings Plan and Collective Retirement Savings Plan. These two agreements were signed on 30 June 2011 by the CFDT, CFE-CGC and CGT-FO unions.

Negotiations relating to the integration of the special French overseas department compensation into the assessment base of article 83 of EGI status (supplemental pension), in order to improve the return for beneficiaries, were held in October 2011. Following consultation of the CWC, this agreement was signed on 2 December 2011 by the CFDT and CFE-CGC unions.

Another event with an impact on the fiscal year was the holding of discussions organised in accordance with the decree of 23 September 2011 relating to the classification of active service or unhealthy jobs in the special pension plan for EGI personnel. These discussions led to strong involvement of all the divisions affected by the issue of active services. In accordance with the provisions set out in the decree, the discussions held firstly with all the EGI companies shall be extended at the start of 2012 to the EGI sector.

17.6.3.2 Employee representation in France

In accordance with the law of 9 August 2004 on the Electricity and Gas Public Service, new institutions representing personnel (IRP) were created through company elections on 29 November 2007, and statutory

bodies were replaced by ordinary law entities (works councils, Central Works Council, staff representatives) in companies in the EGI sector.

At EDF level, there are currently 56 works councils, one Central Works Council and 113 employee representative councils.

The terms of office of the employee representatives last 3 years in the EGI sector and were renewed on 25 November 2010. Following the vote which, for the first time, was held in accordance with the law of 20 August 2008 relating to the renewal of social democracy, which significantly reformed the rules for trade union representation, four union organisations still have representatives at EDF level (CGT, CFDT, CFE-CGC and CGT-FO).

Central Social Activities Fund (Caisse Centrale d'Activités Sociales - CCAS)

Unlike the common practice in French law, the management of social and cultural activities is delegated to specific organisations in the EGI sector:

- the CCAS, which manages activities at the national level;
- the Additional Mutual Social Activity Funds (*Caisses Mutuelles Complémentaires et d'Action Sociales* - CASs) which manage local or decentralised social and cultural activities;
- CAS Coordination Committee: it represents the CASs on a national level. It is responsible for distributing resources between the CCAS and the CASs.

Following the EGI sector negotiations and the creation on 1 April 2007 of the EGI Health Insurance Fund (*Caisse d'Assurance Maladie des IEG* or CAMIEG) dedicated to managing the special EGI health insurance plan, the CCAS and the CASs are now responsible for the management of social activities only.

A new organisation to manage social activities is gradually being implemented, leading to a decrease in the number of organisations and pooling of the management of certain areas (real estate, accounting, etc.). New management arrangements for staff working in these organisations are also under consideration. The financing of social activities in the EGI is provided by a deduction of 1% from the operating income of the companies distributing gas and electricity, principally EDF, GDF SUEZ and local distribution companies. In 2011, the amount recorded by EDF and ERDF for this 1% was €307 million. In addition, in accordance with the provisions of article R. 2323-20 of the French Labour Code, expenses related to catering amounted to 36 million euros in 2011 for EDF and ERDF.

The CCAS, the CASs and the CAS Coordination Committee are legal entities and are fully independent. The CCAS is administered exclusively by employee representatives and is supervised by the public authorities. Neither EDF nor any other company in the EGI sector is represented on it.

17.6.3.3. Social dialogue bodies within EDF group

In the Group's other companies, mainly abroad, employee representation is organised in accordance with applicable local laws and regulations.

European Works Council

At the end of 2001, the Group created a European Works Council (EWC), which is consulted on the Group's major policies. In May 2005, a revision of the agreement brought new provisions relating to the running of this body. Through its task forces, the EWC initiated numerous discussions on human resources policies at an international level, notably concerning health and safety within the Group's different companies in Europe or covering the opening of negotiations on the EDF group's social responsibility agreement.

The EDF group's EWC is now comprised of 33 permanent members and is informed of the Group's economic, financial and social strategies. At the end of the three year term set out in the agreement, the members of the EWC elected a new secretary of the Council in May 2011, and more than half of its members were renewed at this time. The EWC, which met twice over the past year, celebrated its 10th anniversary on 30 November 2011.

France Group Committee

An agreement relating to the creation of the France Group Committee was signed on 1 September 2008 by the 5 trade unions represented. In accordance with the legal criteria, 14 EDF group companies (including RTE and ERDF) have been included within the scope of the Group Committee, which is comprised of 28 permanent members. The Group Committee met 3 times in 2011.

Framework agreement on Corporate Social Responsibility (CSR)

The EDF CSR framework agreement was negotiated and signed on 24 January 2005 by all the employee representatives and trade unions of the Group's principal companies, as well as four international trade union federations for the industry.

This agreement provides the Group with a basis for shared commitments and common goals, which apply to EDF and to all the companies it controls in accordance with the principle of subsidiarity. For the Group, this agreement contributes to the long-term improvement of its performance, the construction of a Group identity, and the renewal and broadening of the subjects of social dialogue.

In accordance with this agreement, social dialogue started within all the Group's signing companies in order to jointly identify the terms and conditions for local implementation and the measures to be taken as a priority.

An implementation report is drafted and presented each year to a body specifically created at Group level: the Dialogue Committee on the Group's Social Responsibility (DCSR).

Highlighting the progress made, the signing parties renegotiated a new agreement in the same spirit as the first one. Signed in January 2009 for a period of 4 years, this second agreement strengthens the Group's commitments, particularly on topics such as subcontracting, the fight against climate change and biodiversity.

In 2011, the DCSR decided to select one of the 20 articles of the agreement each year to be specially highlighted during the current year and assessed in greater depth by the next review. For 2011, the signatories chose article 3 relating to the "The ability of employees to adapt during their career: training, mobility".

17.7 Shareholding by directors and trading of EDF securities by corporate officers and executives

17.7.1 Shareholding by directors

On 31 December 2011, the members of the Company's Board of Directors held a total of 1,179 shares. The table, below, breaks down the number of EDF shares held individually by directors on 31 December 2011 and 31 December 2010:

	Numbers of EDF shares held on 31/12/2011	Numbers of EDF shares held on 31/12/2010
Henri PROGLIO (1)	51	51
Christine CHABAUTY (2)	50	135
Philippe CROUZET (1)	200	200
Mireille FAUGÈRE (1)	106	106
Alexandre GRILLAT (2)	328	307
Michael JAY (1)	200	100
Bruno LAFONT (1)	150	150
Philippe MAISSA (1)	39	39
Pierre MARIANI (1)	1	1
Marie-Hélène MEYLING (1) (3)	28	n/a
Maxime VILLOTA (2)	26	25
TOTAL	**1,179**	**1,114**

n/a: not applicable
(1) Shares held directly.
(2) Shares held through a mutual fund.
(3) Director from 1 September 2011.

Messrs. Abadie, Comolli, d'Escatha, Dubertret, Rignac, Sellal and Van de Maele(3) held no shares in EDF on 31 December 2011.

17.7.2 Trading of Company securities

Under the terms of article L. 621-18-2 of the French Monetary and Financial Code, the executives of companies with shares listed for trading on a regulated market must declare trades in company securities to the AMF and to the company within five trading days of their completion.

The AMF General Regulations(1) also state that the EDF Board of Directors must mention in its annual report to the Shareholders' Meeting trades that have been declared by executives and similar employees(2) during the past fiscal year.

No trades involving EDF shares were declared to the AMF or to the Company during the 2011 fiscal year by members of the Company's Board of Directors and Executive Committee.

(1) Article 223-26 of the AMF General Regulations.
(2) EDF's staff "similar to executives" are the members of the Company's Executive Committee.
(3) M. Van de Maele is no longer director as of the date of the filing of this reference document.

18.

Major Shareholders

18.1 Breakdown of share capital and voting rights 276

18.2 Agreements which could lead to a change of control 276

18. Major Shareholders

Breakdown of share capital and voting rights

18.1 Breakdown of share capital and voting rights

During the last three fiscal years, the breakdown of EDF's share capital as of 31 December was as follows:

	Position as of 31/12/2011			Position as of 31/12/2010			Position as of 31/12/2009		
	Number of shares	% of share capital	% voting rights	Number of shares	% of share capital	% voting rights	Number of shares	% of share capital	% voting rights
French State	1,561,222,705	84.44	84.50	1,561,973,336	84.48	84.51	1,561,973,336	84.48	84.49
Institutions and individuals	252,420,651	13.65	13.10	242,118,351	13.10	13.10	241,815,830	13.08	13.08
Employee	34,047,712(1)	1.84	2.39	44,226,374(2)	2.39	2.39	44,841,827(3)	2.43	2.43
Treasury shares	1,175,594	0.07	–	548,601	0.03	–	235,669	0.1	–
TOTAL	**1,848,866,662**	**100**	**100**	**1,848,866,662**	**100**	**100**	**1,848,866,662**	**100**	**100**

(1) This figure includes 28,785,426 shares (representing 1.56% of capital) on the basis of the definition of employee share ownership as defined by Article L.225-102 of the French Commercial Code (including shares owned by EDF's current and former employees through the "Actions EDF" FCPE of the EDF group savings plan and EDF International group savings plan. This figure also includes 5.3 million shares representing 0.28% of the capital held in direct registered form or administered, without a lock-in period or after lock-in periods, by current employee shareholders and former employees.

(2) This figure includes 39,875,700 shares (representing 2.16% of capital) on the basis of the definition of employee share ownership as defined by Article L.225-102 of the French Commercial Code (including 38,838,151 shares owned by EDF's current and former employees through the "Actions EDF) FCPE of the EDF group savings plan and EDF International group savings plan. This figure also includes 4.3 million shares representing 0.23% stake held in direct registered form or administered, without lock-in period or after lock-in periods, by employee shareholders and former employees.

(3) This figure includes 40,251,843 shares (representing 2.18% of capital) on the basis of the definition of employee share ownership as defined by Article L.225-102 of the French Commercial Code (including 38,816,525 shares owned by EDF's current and former employees through the "Actions EDF" FCPE of the EDF group savings plan and EDF International group savings plan. This figure also includes 4.6 million shares representing 0.25% stake held in direct registered form or administered, without lock-in period or after the lock-in period, by employee shareholders and former employees.

To EDF's knowledge, no shareholder other than the French State holds directly or indirectly more than 5% of a capital and voting rights.

The Company has completed a study on the identifiable holders of bearer shares as of 31 December 2011, which has been used to analyse the distribution of the share capital and its breakdown by geographical area:

	Number of shares held	% of capital
French government	1,561,222,705	84.44
Institutional investors Europe excluding France	86,958,349	4.70
Institutional investors rest of the world	56,525,378	3.06
Institutional investors France	56,721,741	3.07
Retail investors	52,215,183	2.82
Employee shareholding	34,047,712	1.84
Treasury shares	1,175,594	0.07
TOTAL	**1,848,866,662**	**100**

18.2 Agreements which could lead to a change of control

To EDF's knowledge, there is no agreement which could subsequently lead to a change of control.

19.

Related party transactions

19 Related party transactions **279**

Relations with the French State 280

Relations with GDF Suez 280

Relations with the AREVA group 280

Relations with other companies in the consolidation scope 280

19. Related party transactions

In addition to the information set out below, the details of the transactions concluded by the Company with related parties, as defined by the IFRS, in respect of the 2011 financial year, are contained in note 49 to the consolidated financial statements for the financial year ended 31 December 2011.

The information on the regulated agreements referred to in Article L. 225-38 of the French Commercial Code is contained in the Statutory Auditors' special report, which is reproduced in Appendix C to this reference document.

Relations with the French State

As of 31 December 2011, the French State held 84.44 % of the share capital and 84.50% of the voting rights in EDF. Pursuant to the law of 9 August 2004, the state must remain the owner of at least 70% of its capital. The French State thus has the option, as the majority shareholder, of reviewing corporate decisions that require the approval of the shareholders and, in particular, of determining the result of the shareholders' vote for all issues over which general meetings have authority.

The regulations applicable to EDF, as a result of its majority ownership by the French State, are described in section 6.5 ("Legislative and regulatory environment").

The relations with the French State are also described in note 49 to the consolidated financial statements for the financial year ended 31 December 2011.

Relations with GDF Suez

The law of 7 December 2006 on the energy sector required the creation of a service, which does not exist as a legal entity in its own right, that is common to the two subsidiaries of the EDF and Gaz de France groups, which are respectively tasked with the distribution of electricity and gas. In accordance with this legal framework, the two subsidiaries of EDF and GDF Suez, ERDF and GrDF, share a common service for which the organisational and functional rules are described in section 6.2.2.2.1 ("ERDF Organisation").

Relations with the AREVA group

Relations with the AREVA group are primarily described in sections 4.3 ("Dependency factors"), 6.2.1.1.3.4 ("The nuclear fuel cycle and related issues"), 6.2.1.1.3.5 ("Preparing for the future of nuclear fleet in France" – "Operating period of the EDF PWR plants" and "the European Pressurised water Reactor ("EPR") and the other reactors"), 6.2.1.1.3.6 ("Decommissioning of nuclear power plants"), 9.2.2.1.4 ("EDF and AREVA sign several technical and commercial agreements") and lastly 12.1 ("Subsequent events").

Relations with other companies in the consolidation scope

The transactions entered into with RTE are described in note 24.1 to the consolidated financial statements for the financial year ended 31 December 2011.

The other transactions with companies that are proportionally consolidated and affiliated companies are comprised of energy purchases and sales.

20.

Financial information on assets, the financial statements and results of the Company

20.1 Historical financial information 285
- **Consolidated financial statements at 31 December 2011** 286
- Consolidated Income Statements 286
- Statement of net income and gains and losses recorded directly in equity 287
- Consolidated Balance Sheets 288
- Consolidated Cash Flow Statements 290
- Changes in Consolidated Equity 292
- Notes to the consolidated financial statements 293

20.2 Statutory Auditors' Report on the consolidated financial statements 382

20.3 Fees paid by the Group to Statutory Auditors 384

20.4 Dividend policy 385
- 20.4.1 Dividends and interim dividends paid within the last three fiscal years 385
- 20.4.2 Dividend distribution policy 385
- 20.4.3 Prescription 385

20.5 Legal proceedings and arbitration 386
- 20.5.1 Legal proceedings concerning EDF 386
- 20.5.2 Legal proceedings concerning EDF's subsidiaries 389
- 20.5.3 Litigation having arisen after the closing of the 2011 financial year 392

20.6 Significant change in the Company's financial or trading position 392

20. Financial information on assets, the financial statements and results of the company

Historical financial information

20.1 Historical financial information

Pursuant to article 28 of the European Commission Regulation 809/2004 of 29 April 2004, the following information is included by reference in this reference document:

- the consolidated financial statements of the EDF group for the year ended 31 December 2010 (prepared in accordance with international accounting standards), as well as the associated Statutory Auditors' reports, set forth respectively in section 20.1 (pages 258 to 371) and section 20.2 (pages 372 and 373) of the EDF group's 2010 reference document;
- the consolidated financial statements at 31 December 2009 (prepared under international accounting standards), as well as the associated Statutory Auditors' report, which are mentioned in section 20.1 (pages 234 to 362) and 20.2 (page 363 and 364) of EDF's 2009 reference document.

The consolidated financial statements at 31 December 2011 (established under IAS-IFRS standards) are set forth below. These financial statements will be submitted for approval by the General Shareholders' Meeting of 24 May 2012.

Consolidated Income Statements

(in millions of Euros)	Notes	2011	2010[1]
Sales	7	65,307	65,320
Fuel and energy purchases	8	(30,195)	(26,176)
Other external expenses	9	(9,931)	(10,582)
Personnel expenses	10	(10,917)	(11,422)
Taxes other than income taxes	11	(3,101)	(3,227)
Other operating income and expenses	12	3,661	3,090
Prolongation of the transition tariff system (TaRTAM) – laws of 7 June and 7 December 2010	13	-	(380)
Operating profit before depreciation and amortization		**14,824**	**16,623**
Net changes in fair value on Energy and Commodity derivatives, excluding trading activities		(116)	15
Net depreciation and amortization		(6,285)	(7,426)
Net increases in provisions for renewal of property, plant and equipment operated under concessions		(221)	(428)
(Impairment)/reversals	14	(640)	(1,743)
Other income and expenses	15	724	(801)
Operating profit		**8,286**	**6,240**
Cost of gross financial indebtedness	16.1	(2,271)	(2,754)
Discount effect	16.2	(3,064)	(3,134)
Other financial income and expenses	16.3	1,555	1,462
Financial result	16	**(3,780)**	**(4,426)**
Income before taxes of consolidated companies		**4,506**	**1,814**
Income taxes	17	(1,305)	(1,079)
Share in income of associates	24	45	134
Net income of discontinued operations		-	380
GROUP NET INCOME		**3,246**	**1,249**
EDF net income		**3,010**	**1,020**
Net income of continuing operations		3,010	634
Net income of discontinued operations		-	386
Net income attributable to non-controlling interests		**236**	**229**
Net income of continuing operations		236	235
Net income of discontinued operations		-	(6)
Earnings per shares in Euros:	**18**		
Net earnings per share		1.63	0.55
Diluted earnings per share		1.63	0.55
Net earnings per share of continuing operations		1.63	0.34
Diluted earnings per share of continuing operations		1.63	0.34

(1) Figures for 2010 have been restated for the impact of the change in presentation of EDF Luminus' optimization activities (see note 2).

Statement of net income and gains and losses recorded directly in equity

(in millions of Euros)	Notes	2011	2010
Group net income		**3,246**	**1,249**
Changes in the fair value of available-for-sale financial assets [1]	37.2.2	(740)	816
Changes in the fair value of available-for-sale financial assets transferred to income on sale [2]		80	131
Changes in the fair value of hedging instruments [3]	42.4	(1,637)	24
Changes in the fair value of hedging instruments transferred to income on sale		377	296
Translation adjustments [4]		676	2,013
Taxes [5]		437	(521)
Gains and losses recorded directly in equity		**(807)**	**2,759**
NET INCOME AND GAINS AND LOSSES RECORDED DIRECTLY IN EQUITY		**2,439**	**4,008**
EDF net income		**2,130**	**3,679**
EDF net income, continuing operations		2,130	3,212
EDF net income, discontinued operations		-	467
Net income attributable to non-controlling interests		**309**	**329**
Net income attributable to non-controlling interests, continuing operations		309	332
Net income attributable to non-controlling interests, discontinued operations		-	(3)

(1) EDF's share amounts to €(740) million for 2011 (€818 million for 2010).
(2) Including €(147) million attributable to the sale of EnBW in 2011.
(3) EDF's share amounts to €(1,680) million for 2011 (€41 million for 2010).
(4) EDF's share amounts to €632 million for 2011 (€1,894 million for 2010).
(5) Taxes break down as follows:

(in millions of Euros)	2011	2010
Taxes on changes in the fair value of available-for-sale financial assets	176	(319)
Taxes on changes in the fair value of hedging instruments	261	(202)
TOTAL	**437**	**(521)**

Consolidated Balance Sheets

ASSETS *(in millions of Euros)*	Notes	31/12/2011	31/12/2010
Goodwill	19	11,648	12,028
Other intangible assets	20	4,702	4,616
Property, plant and equipment operated under French public electricity distribution concessions	21	45,501	43,905
Property, plant and equipment operated under concessions for other activities	22	6,022	6,027
Property, plant and equipment used in generation and other tangible assets owned by the Group	23	60,445	57,268
Investments in associates	24	7,684	7,854
Non-current financial assets	37	24,517	24,921
Deferred tax assets	17.3	2,507	2,125
Non-current assets		**163,026**	**158,744**
Inventories	25	13,581	12,685
Trade receivables	26	20,908	19,524
Current financial assets	37	16,980	16,788
Current tax assets		459	525
Other receivables	27	10,309	9,319
Cash and cash equivalents	38	5,743	4,829
Current assets		**67,980**	**63,670**
Assets classified as held for sale	46	**701**	**18,145**
TOTAL ASSETS		**231,707**	**240,559**

EQUITY AND LIABILITIES *(in millions of Euros)*	Notes	31/12/2011	31/12/2010
Capital	28	924	924
EDF net income and consolidated reserves		29,646	30,393
Equity (EDF share)		**30,570**	**31,317**
Equity (non-controlling interests)		4,337	5,586
Total equity	28	**34,907**	**36,903**
Provisions related to nuclear generation – Back-end nuclear cycle, plant decommissioning and last cores	30	37,198	35,630
Provisions for decommissioning of non-nuclear facilities	31	809	753
Provisions for employee benefits	32	12,215	11,745
Other provisions	33	1,338	1,337
Non-current provisions	29	**51,560**	**49,465**
Special French public electricity distribution concession liabilities for existing assets and assets to be replaced	34	41,769	41,161
Non-current financial liabilities	39.1	42,688	40,646
Other liabilities	36	4,989	4,965
Deferred tax liabilities	17.3	4,479	4,894
Non-current liabilities		**145,485**	**141,131**
Provisions	29	3,968	5,010
Trade payables	35	13,681	12,805
Current financial liabilities	39.1	12,789	12,766
Current tax liabilities		571	396
Other liabilities	36	19,900	18,674
Current liabilities		**50,909**	**49,651**
Liabilities related to assets classified as held for sale	46	**406**	**12,874**
TOTAL EQUITY AND LIABILITIES		**231,707**	**240,559**

Consolidated Cash Flow Statements

(in millions of Euros)	Notes	2011	2010[1]
Operating activities:			
Income before taxes of consolidated companies		**4,506**	**1,814**
Impairment		640	1,743
Accumulated depreciation and amortization, provisions and change in fair value		7,325	9,858
Financial income and expenses		1,117	1,918
Dividends received from associates		334	112
Capital gains/losses		(686)	164
Change in working capital		(1,785)	(335)
Net cash flow from operations		***11,451***	**15,274**
Net financial expenses disbursed		(1,623)	(2,197)
Income taxes paid		(1,331)	(1,967)
Net cash flow from operating activities		**8,497**	**11,110**
Investing activities:			
Acquisition/disposal of companies, net of cash acquired/transferred [2]		3,624	3,398
Purchases of property, plant and equipment and intangible assets		(11,134)	(12,241)
Net proceeds from sale of property, plant and equipment and intangible assets		497	188
Changes in financial assets		222	(6,272)
Net cash flow used in investing activities		**(6,791)**	**(14,927)**
Financing activities:			
Transactions with non-controlling interests [3]		(1,324)	(59)
Dividends paid by parent company	28.3	(2,122)	(2,163)
Dividends paid to non-controlling interests		(261)	(190)
Treasury shares		(14)	(10)
Cash flows with shareholders		***(3,721)***	***(2,422)***
Issuance of borrowings		5,846	8,642
Repayment of borrowings		(4,071)	(4,652)
Funding contributions received for assets operated under concessions		194	231
Investment subsidies		161	149
Other cash flows from financing activities		***2,130***	***4,370***
Net cash flow from financing activities		**(1,591)**	**1,948**
Cash flows from continuing operations		**115**	**(1,869)**
Cash flows from discontinued operations [4]		**-**	**357**
Net increase/(decrease) in cash and cash equivalents		**115**	**(1,512)**
Cash and cash equivalents – opening balance [4]		**5,567**	**6,982**
Net increase/(decrease) in cash and cash equivalents		115	(1,512)
Effect of currency fluctuations		54	76
Financial income on cash and cash equivalents		44	29
Effect of reclassifications		(37)	(8)
CASH AND CASH EQUIVALENTS – CLOSING BALANCE [4]		**5,743**	**5,567**

(1) In application of IFRS 5, the net change in cash flows from discontinued operations (concerning EnBW in 2010) is reported on a separate line in the cash flow statements for the years presented.

(2) The impact of disposal of the investment in EnBW in the first half of 2011 amounts to €3.8 billion (payment received of €4.5 billion net of €738 million cash transferred in the sale).

(3) Contributions via capital increases or reductions and acquisitions of additional interests in controlled companies. In 2011, the acquisition of additional interests of EDF Énergies Nouvelles shares accounts for €(1,462) million (see notes 3.2 and 28.2).

(4) The net change in cash and cash equivalents breaks down as follows:

(in millions of Euros)	Continuing operations	Discontinued operations	Total
Cash and cash equivalents - opening balance 2010	**6,429**	**553**	**6,982**
Net cash flow from operating activities	11,110	1,072	12,182
Net cash flow used in investing activities	(14,927)	(673)	(15,600)
Net cash flow from financing activities	1,948	(42)	1,906
Net increase/(decrease) in cash and cash equivalents	**(1,869)**	**357**	**(1,512)**
Effect of currency fluctuations	70	6	76
Financial income on cash and cash equivalents	23	6	29
Effect of reclassifications	6	(14)	(8)
Dividends paid by discontinued operations	170	(170)	-
Cash and cash equivalents - opening balance 2011	**4,829**	**738**	**5,567**
Net cash flow from operating activities	8,497	-	8,497
Net cash flow used in investing activities	(6,791)	-	(6,791)
Net cash flow from financing activities	(1,591)	-	(1,591)
Net increase/(decrease) in cash and cash equivalents	**115**	**-**	**115**
Effect of currency fluctuations	54	-	54
Financial income on cash and cash equivalents	44	-	44
Effect of reclassifications	(37)	-	(37)
Cash transferred in the sale of discontinued operations	738	(738)	-
CASH AND CASH EQUIVALENTS - CLOSING BALANCE 2011	**5,743**	**-**	**5,743**

Changes in Consolidated Equity

(in millions of Euros)	Capital	Consolidated reserves and net income	Treasury shares	Translation adjustments	Impact of fair value adjustment of financial instruments [1]	Equity (EDF share)	Equity (non-controlling interests)	Total equity
Equity at 31/12/2009	**924**	**30,627**	**26**	**(1,320)**	**(366)**	**29,891**	**4,776**	**34,667**
Gains and losses recorded directly in equity [2]	-	-	-	1,894	765	2,659	100	2,759
Net income	-	1,020	-	-	-	1,020	229	1,249
Net income and gains and losses recorded directly in equity	**-**	**1,020**	**-**	**1,894**	**765**	**3,679**	**329**	**4,008**
Dividends paid	-	(2,163)	-	-	-	(2,163)	(208)	(2,371)
Purchases/sales of treasury shares	-	-	(9)	-	-	(9)	-	(9)
Other changes [3]	-	(15)	(36)	(31)	1	(81)	689	608
Equity at 31/12/2010	**924**	**29,469**	**(19)**	**543**	**400**	**31,317**	**5,586**	**36,903**
Gains and losses recorded directly in equity	-	-	-	632	(1,512)	(880)	73	(807)
Net income	-	3,010	-	-	-	3,010	236	3,246
Net income and gains and losses recorded directly in equity	**-**	**3,010**	**-**	**632**	**(1,512)**	**2,130**	**309**	**2,439**
EDF capital increase [4]	6	300	(324)	-	-	(18)	-	(18)
EDF capital reduction [4]	(6)	(318)	324	-	-	-	-	-
Dividends paid [5]	-	(2,122)	-	-	-	(2,122)	(262)	(2,384)
Purchases/sales of treasury shares	-	-	(7)	-	-	(7)	-	(7)
Other changes [6]	-	(769)	-	-	39	(730)	(1,296)	(2,026)
EQUITY AT 31/12/2011	**924**	**29,570**	**(26)**	**1,175**	**(1,073)**	**30,570**	**4,337**	**34,907**

(1) These changes correspond to the effects of fair value adjustment of available-for-sale assets and amounts transferred to income following changes in their fair value, and the effects of fair value adjustment of hedging instruments and amounts transferred to income in respect of terminated contracts. For details see the statement of net income and gains and losses recorded directly in equity.

(2) Following the sale of the network activities in the United Kingdom, income and expenses recorded in equity in 2010 incorporate a positive €395 million effect (€732 million in translation adjustments and €(337) million for fair value adjustment of financial instruments) resulting from the transfer to income of translation adjustments net of hedges of net investments.

(3) Other changes attributable to non-controlling interests include in 2010 an amount of €658 million relating to minority shareholdings in EDF Luminus.

(4) EDF's capital increase and reduction operations are associated with the simplified alternative public cash or exchange offer for EDF Énergies Nouvelles shares (see notes 3.2 and 28.2).

(5) Including 2011 interim dividends of €1,053 million and the balance of the 2010 dividends amounting to €1,069 million.

(6) Other changes (EDF's share and the share attributable to non-controlling interests) include €(716) million and €(764) million respectively reflecting the effects of acquisition of minority shareholdings in EDF Énergies Nouvelles. Other changes in equity attributable to non-controlling interests also include the effects of deconsolidation of EnBW, amounting to €(519) million.

Contents

Notes to the consolidated financial statements

Note 1 Group accounting standards 297
- 1.1 Declaration of conformity and Group accounting policies 297
- 1.2 Changes in accounting methods at 1 January 2011 297
- 1.3 Summary of the principal accounting and valuation methods 297

Note 2 Comparability 312
- 2.1 Presentation of EDF Luminus' energy sale and purchase optimization activities 312
- 2.2 Impact on the consolidated income statement for 2010 312

Note 3 Significant events and transactions 313
- 3.1 Group operations in Italy 313
- 3.2 Simplified alternative public cash or exchange offer for EDF Énergies Nouvelles 313
- 3.3 Sale of the investment in EnBW 314
- 3.4 Nuclear accident in the Fukushima plant in Japan 314
- 3.5 Significant events and transactions of 2010 314

Note 4 Regulatory events in France 315
- 4.1 "NOME" law on the new electricity market organization 315
- 4.2 CSPE 315

Note 5 Changes in the scope of consolidation 316
- 5.1 Changes in the scope of consolidation during 2011 316
- 5.2 Changes in the scope of consolidation during 2010 316

Note 6 Segment reporting 317
- 6.1 Reporting by operating segment 317
- 6.2 Sales to external customers, by product and service group 318

INCOME STATEMENTS 319

Note 7 Sales 319

Note 8 Fuel and energy purchases 319

Note 9 Other external expenses 320

Note 10 Personnel expenses 320
- 10.1 Personnel expenses 320
- 10.2 Average workforce 320

Note 11 Taxes other than income taxes 321

Note 12 Other operating income and expenses 321
- 12.1 Operating subsidies 321
- 12.2 Net expense associated with the TaRTAM transition tariff system 321
- 12.3 Net income on deconsolidation 322
- 12.4 Gains on disposal of property, plant and equipment 322
- 12.5 Net increase in provisions for operating contingencies and losses 322

Note 13 Prolongation of the transition tariff system (TaRTAM) – laws of 7 june and 7 december 2010 322

Note 14 Impairment/reversals 322
- 14.1 Impairment by category of asset 322
- 14.2 Impairment tests on goodwill and other assets and recognition of impairment 323

Note 15 Other income and expenses 325

Note 16 Financial result 325
- 16.1 Cost of gross financial indebtedness 325
- 16.2 Discount effect 325
- 16.3 Other financial income and expenses 326

Note 17 Income taxes 326
- 17.1 Breakdown of tax expense 326
- 17.2 Reconciliation of the theoretical and effective tax expense (tax proof) 326
- 17.3 Change in deferred tax assets and liabilities 327
- 17.4 breakdown of deferred tax assets and liabilities by nature 327

Note 18 Basic earnings per share and diluted earnings per share 328

OPERATING ASSETS AND LIABILITIES, EQUITY 329

Note 19 Goodwill 329
- 19.1 Changes in goodwill 329
- 19.2 Goodwill by operating segment 329

Note 20 Other intangible assets 330

Note 21 Property, plant and equipment operated under French public electricity distribution concessions 330
- 21.1 Net value of property, plant and equipment operated under French public electricity distribution concessions 330
- 21.2 Movements in property, plant and equipment operated under French public electricity distribution concessions (excluding assets in progress) 331

Note 22 Property, plant and equipment operated under concessions for other activities 331
- 22.1 Net value of property, plant and equipment operated under concessions for other activities 331
- 22.2 Movements in property, plant and equipment operated under concessions for other activities (excluding assets in progress) 332

Note 23 Property, plant and equipment used in generation and other tangible assets owned by the Group 332
- 23.1 Net value of property, plant and equipment used in generation and other tangible assets owned by the Group 332
- 23.2 Movements in property, plant and equipment used in generation and other tangible assets owned by the Group (excluding assets in progress and finance-leased assets) 333
- 23.3 Finance lease contracts 333

Note 24 Investments in associates 334
- 24.1 RTE 334
- 24.2 Alpiq 334

20. Financial information on assets, the financial statements and results of the company

Notes to the consolidated financial statements

Note 25 Inventories 335

Note 26 Trade receivables 335

Note 27 Other receivables 336

Note 28 Equity 336
28.1 Share capital 336
28.2 Treasury shares 336
28.3 Dividends 336

Note 29 Provisions 337

Note 30 Provisions related to nuclear generation – Back-end nuclear cycle, plant decommissioning and last cores 337
30.1 Nuclear provisions in France 338
30.2 EDF Energy's nuclear provisions 341
30.3 CENG's nuclear provisions 342
30.4 Other subsidiaries' nuclear provisions 342

Note 31 Provisions for decommissioning of non-nuclear facilities 343

Note 32 Provisions for employee benefits 343
32.1 EDF group 343
32.2 France 345
32.3 United Kingdom 348

Note 33 Other provisions 349
33.1 Provisions for contingencies related to investments 350
33.2 Provisions for litigation 350
33.3 Provisions for onerous contracts 350
33.4 Other provisions 350

Note 34 Special French public electricity distribution concession liabilities for existing assets and assets to be replaced 350

Note 35 Trade payables 350

Note 36 Other liabilities 351
36.1 Advances and progress payments received 351
36.2 Tax and social charges 351
36.3 Deferred income 351

FINANCIAL ASSETS AND LIABILITIES 352

Note 37 Current and non-current financial assets 352
37.1 Breakdown between current and non-current financial assets 352
37.2 Details of financial assets 352
37.3 Fair value of financial assets recorded at amortized cost 353
37.4 Change in financial assets other than derivatives 354

Note 38 Cash and cash equivalents 354

Note 39 Current and non-current financial liabilities 355
39.1 Breakdown between current and non-current financial liabilities 355
39.2 Loans and other financial liabilities 355
39.3 Net indebtedness 358

Note 40 Fair value of financial instruments 358

Note 41 Management of financial risks 359

Note 42 Derivatives and hedge accounting 360
42.1 Fair value hedges 360
42.2 Cash flow hedges 360
42.3 Hedges of net investment in foreign entities 360
42.4 Impact of hedging derivatives on equity 361
42.5 Commodity-related fair value hedges 363

Note 43 Derivatives not classified as hedges 364
43.1 Interest rate derivatives held for trading 364
43.2 Currency derivatives held for trading 364
43.3 Commodity derivatives not classified as hedges 365

OTHER INFORMATION 366

Note 44 Off-balance sheet commitments 366
44.1 Commitments given 366
44.2 Commitments received 370

Note 45 Contingent liabilities 371
45.1 General Network – European Commission's decision of 16 December 2003 371
45.2 Tax inspections 371
45.3 Labor litigation 371
45.4 ERDF – dispute with photovoltaic producers 371
45.5 Edipower 372
45.6 EDF Énergies Nouvelles – Silpro 372

Note 46 Held-for-sale assets and liabilities 372

Note 47 Contribution of joint ventures 373

Note 48 Dedicated assets 374
48.1 Regulations 374
48.2 Portfolio contents and measurement 374
48.3 Valuation of EDF's dedicated asset portfolio and present cost of the associated long-term nuclear obligations 375
48.4 Evolution of the dedicated asset portfolio in 2011 375
48.5 Present cost of long-term nuclear obligations to be covered 375

Note 49 Related parties 376
49.1 Transactions with entities included in the scope of consolidation 376
49.2 Relations with the French State and State-owned entities 376
49.3 Management compensation 377

Note 50 Environment 378
50.1 Greenhouse gas emission rights 378
50.2 Energy savings certificates 378
50.3 Renewable energy certificates 378

Note 51 Subsequent events 379
51.1 Bond issue 379
51.2 Offer to take over Photowatt 379
51.3 Long-term partnership for natural uranium with AREVA 379

Note 52 Scope of consolidation 380

Notes to the consolidated financial statements

Électricité de France (EDF or the "Company") is a French s*ociété anonyme* governed by French law, and registered in France.

The Company's consolidated financial statements include the accounts of companies directly or indirectly under the exclusive control of the Company and its subsidiaries, which are fully consolidated, the accounts of jointly-controlled companies (joint ventures), which are proportionally consolidated, and the accounts of companies in which the Company exercises significant influence (associates), which are accounted for under the equity method. All these economic entities are collectively referred to as the "Group".

The Group is an integrated energy company engaged in all aspects of the energy business: generation, transmission, distribution, supply and trading of energies.

The Group's consolidated financial statements at 31 December 2011 were prepared under the responsibility of the Board of Directors and approved by the Directors at the Board meeting held on 15 February 2012. They will become final after approval at the General Shareholders' Meeting to be held on 24 May 2012.

Three major operations of 2010 concerning the Group's scope of activity affect the comparability of the financial statements presented in this report:

- the sale of the British regulated and deregulated distribution networks on 29 October 2010;
- the sale of EnBW, approved by the Board of Directors on 6 December 2010 and finalized on 17 February 2011;
- application of the equity method for *RTE Réseau de Transport d'Électricité* (RTE) from 31 December 2010.

Note 1. Group accounting standards

1.1 Declaration of conformity and Group accounting policies

Pursuant to European regulation 1606/2002 of 19 July 2002 on the adoption of international accounting standards, the EDF group's consolidated financial statements for the year ended 31 December 2011 are prepared under the international accounting standards published by the IASB and approved by the European Union for application at 31 December 2011. These international standards are IAS (International Accounting Standards), IFRS (International Financial Reporting Standards), and interpretations (SIC and IFRIC).

The comparative information presented in the notes to the 2010 consolidated financial statements has been restated for the impact of changes in presentation applied to EDF Luminus' optimization activities (see note 2).

1.2 Changes in accounting methods at 1 January 2011

The accounting and valuation methods applied by the Group in the consolidated financial statements for the year ended 31 December 2011 are identical to those used in the consolidated financial statements for the year ended 31 December 2010, with the exception of standards endorsed by the European Union in 2009, 2010 and 2011 that became mandatory on or after 1 January 2011.

The following standards and interpretations have been endorsed by the European Union and their application is mandatory as of 1 January 2011:
- revised IAS 24, "Related Party Disclosures";
- IFRIC 19, "Extinguishing Financial Liabilities with Equity Instruments";
- amendment on "Classification of Rights Issues" to IAS 32, "Financial Instruments: Presentation";
- amendments on "Limited Exemption from Comparative IFRS 7 Disclosures for First-time Adopters" to IFRS 1;
- amendments on "Prepayments of a minimum funding requirement" to IFRIC 14;
- annual improvements to IFRS (2008-2010).

Application of these standards, interpretations and amendments has not had a significant impact on the EDF group's consolidated financial statements.

The Group has decided against early application of the amendments to IFRS 7, "Financial instruments: disclosures – Transfers of financial assets" adopted by the European Union in 2011, which are not yet mandatory.

The potential impact of these amendments is currently being evaluated by the Group.

The Group has not applied the following standards, amendments and interpretations, which are expected to be approved by the European Union in 2012 at the earliest:
- standards concerning consolidation adopted by the IASB in 2011, namely:
  - IFRS 10 "Consolidated financial statements",
  - IFRS 11 "Joint arrangements",
  - IFRS 12 "Disclosure of interests in other entities",
  - IAS 27 (2011) "Separate financial statements",
  - IAS 28 (2011) "Investments in associates and joint ventures",
- IFRS 13 "Fair value measurement";
- IFRIC 20 "Stripping Costs in the Production Phase of a Surface Mine";
- amendments to IAS 1 entitled "Presentation of items of other comprehensive income (OCI)";
- amendments to IAS 12 entitled "Deferred Tax: Recovery of Underlying Assets";
- amendments to IAS 19 "Employee benefits" on defined-benefit plans;
- amendments to IFRS 1 entitled "Severe hyperinflation and removal of fixed dates for first-time adopters";
- amendments to IAS 32 on Offsetting Financial Assets and Financial Liabilities;
- amendments to IFRS 7 on disclosures concerning offsetting of financial assets and financial liabilities.

The potential impact of all of these standards, amendments and interpretations is under assessment.

Finally, as part of the ongoing overhaul of IAS 39, the IASB adopted a new standard, IFRS 9, "Financial instruments – Phase 1, Classification and Measurement" in November 2009. Under current regulations, as this standard has not yet been adopted by the European Union, it cannot be applied early for the year ended 31 December 2011.

1.3 Summary of the principal accounting and valuation methods

The following accounting methods have been applied consistently through all the periods presented in the consolidated financial statements.

1.3.1 Valuation

The consolidated financial statements are based on historical cost valuation, with the exception of certain financial instruments, which are stated at fair value.
The methods used to determine the fair value of these instruments are presented in note 1.3.17.

1.3.2 Management judgments and estimates

The preparation of the financial statements requires the use of judgments, best estimates and assumptions in determining the value of assets and liabilities, income and expenses recorded for the period, and positive and negative contingencies existing at year-end. The figures in future financial statements may differ from current estimates due to changes in these assumptions or economic conditions.

The principal sensitive accounting methods involving use of estimates and judgments are described below. Given their importance in the EDF group's financial statements, the impact of any change in assumption in these areas could be significant.
In the current context characterized by financial market volatility, especially on commodity prices, the parameters used to prepare estimates are based on macro-economic assumptions appropriate to the very long-term cycle of Group assets.

To date, reflection on the consequences of the Fukushima nuclear accident has not led the Group to change its main assumptions concerning operation and development of its nuclear generation fleet, particularly as regards their operating lifetimes.

1.3.2.1 Nuclear provisions

The measurement of provisions for the back-end of the nuclear cycle, decommissioning and last cores is sensitive to assumptions concerning costs, inflation rate, long-term discount rate, and disbursement schedules. A revised estimate is therefore established at each closing date to ensure that the amounts accrued correspond to the best estimate of the costs eventually to be borne by the Group. Any significant differences resulting from these revised estimates could entail changes in the amounts accrued.

The main assumptions and sensitivity analyses are presented in note 30.1.5.

1.3.2.2 Pensions and other long-term and post-employment benefits

The value of pensions and other long-term and post-employment benefit obligations is based on actuarial valuations that are sensitive to all the actuarial assumptions used, particularly concerning discount rates and wage increase rates.

The principal actuarial assumptions used to calculate these post-employment and long-term benefits at 31 December 2011 are presented in note 32. These assumptions are updated annually. The Group considers the actuarial assumptions used at 31 December 2011 appropriate and well-founded, but future changes in these assumptions could have a significant effect on the amount of the obligations and the Group's net income, and sensitivity analyses are therefore presented for France and the United Kingdom in notes 32.2.6 et 32.3.5 respectively.

1.3.2.3 Impairment of goodwill and long-term assets

Impairment tests on goodwill and long-term assets are sensitive to the macro-economic and segment assumptions used – particularly concerning electricity price movements and medium-term financial forecasts. The Group therefore revises the underlying estimates and assumptions based on regularly updated information.
These assumptions, which are specific to the Group, are presented in note 14.

1.3.2.4 Financial instruments

In measuring the fair value of unlisted financial instruments (essentially energy contracts), the Group uses valuation models based on a certain number of assumptions subject to unforeseeable developments.

1.3.2.5 Energy and delivery not yet metered

As explained in note 1.3.7, the quantities of energy delivered but not yet measured and billed are calculated at the reporting date based on consumption statistics and selling price estimates. Determination of the unbilled portion of sales revenues at the year-end is sensitive to the assumptions used to prepare these statistics and estimates.

1.3.2.6 Obligations concerning French public distribution concession assets to be replaced

In view of the specific nature of French public electricity distribution concessions, the Group has opted to present its obligation to renew concession assets in the balance sheet at a value corresponding to the amount of contractual commitments as calculated and disclosed to the grantors in the annual business reports. An alternative approach would be to value the obligations based on the discounted value of future payments necessary to replace these assets at the end of their industrial useful life. The impacts this alternative approach would have had on the accounts are shown in note 1.3.26 for information. Whatever valuation method is used, measurement of the concession liability concerning assets to be replaced is notably subject to uncertainty in terms of cost and disbursement dates.

1.3.2.7 Transition tariff system (*Tarif réglementé transitoire d'ajustement du marché* or TaRTAM)

The TaRTAM transition tariff system ended on 30 June 2011. To assess its own contribution due under this system for the periods concerned, the Group has used various assumptions based on the best available information and forecasts to estimate the volume of electricity eligible for this special tariff, changes in electricity prices on the market and the supply costs of the suppliers it is intended to compensate.

1.3.2.8 Deferred tax assets

The use of estimates and assumptions over recovery horizons is particularly important in the recognition of deferred tax assets.

1.3.2.9 Other judgments

When there is no standard or interpretation applicable to a specific transaction, the Group exercises judgment to define and apply accounting methods that will supply relevant and reliable information for preparation of its financial statements.

1.3.3 Consolidation methods

Subsidiaries are companies in which the Group has exclusive control and are fully consolidated. Exclusive control means the power to govern the enterprise's financial and operating policies either directly or indirectly so as to obtain benefit from its activities. Exclusive control is presumed when EDF directly or indirectly holds more than 50% of the voting rights. Voting rights that are potentially exercisable at the closing date, even by another party, are taken into consideration in determining the level of control over a subsidiary.

Joint ventures are companies that the Group jointly controls, and are proportionally consolidated on the basis of the Group's percentage interest. Joint control is the contractually agreed sharing of control over a company run jointly by a limited number of partners or shareholders, such that the financial and operating policies require their unanimous consent.

Associates are entities in which the Group exercises significant influence over financial and operating policies, without having exclusive or joint control. The Group is considered to exercise significant influence when it holds at least 20% of the consolidated company. Associates are accounted for under the equity method. They are carried in the balance sheet at historical cost adjusted for the share of net assets generated after acquisition, less any impairment. The Group's share in net income for the period is reported under the income statement heading "Share in income of associates".

All internal transactions between consolidated companies, including realized internal profits, are eliminated.
A list of subsidiaries, joint ventures and associates is presented in note 52.

1.3.4 Financial statement presentation rules

Assets and liabilities of dissimilar natures or functions are disclosed separately.

Assets and liabilities contributing to working capital used in the entity's normal operating cycle are classified as current. Other assets and liabilities are classified as current if they mature within one year of the closing date, and non-current if they mature more than one year after the closing date.

Commitments given by the Group to purchase minority interests in Group-controlled companies are included in liabilities. For commitments of this kind given since 1 January 2010, the differential between the value of the minority interests and the liability corresponding to the commitment is recorded in equity.

The income statement presents items by nature. The heading "Other income and expenses" presented below the operating profit before depreciation and amortization comprises items of an unusual nature or amount.

1.3.5 Translation methods

1.3.5.1 Reporting currency

The Group's financial statements are presented in Euros, which is also the parent company's functional currency. All financial data are rounded up or down to the nearest million.

1.3.5.2 Functional currency

An entity's functional currency is the currency of the economic environment in which it primarily operates. In most cases, the local currency is the functional currency, but for some entities, a functional currency other than the local currency may be used provided it reflects the currency used in the principal transactions.

1.3.5.3 Translation of the financial statements of foreign companies whose functional currency is not the Euro

The financial statements of foreign companies whose functional currency is not the Euro are translated as follows:

- balance sheets are translated into Euros at the closing rate;
- income statements and cash flows are translated at the average rate for the period;
- resulting differences are recognized in equity under the heading "Translation adjustments".

Translation adjustments affecting a monetary item that is an integral part of the Group's net investment in a consolidated foreign company are included in consolidated equity until the disposal or liquidation of the net investment, at which date they are recognized as income or expenses in the income statement, in the same way as other exchange differences concerning the company.

1.3.5.4 Translation of transactions in foreign currencies

In application of IAS 21, transactions expressed in foreign currencies are initially translated and recorded in the functional currency of the entity concerned, using the rate in force at the transaction date.

At each reporting date, monetary assets and liabilities expressed in foreign currencies are translated at the closing rate. The resulting foreign exchange differences are taken to the income statement.

1.3.6 Related parties

Related parties include the French State, companies in which the State holds majority ownership and certain of their subsidiaries, and companies in which EDF exercises joint control or significant influence. They also include members of the Group's management and governance bodies.

1.3.7 Sales

Sales essentially comprise income from energy sales, connections and other services, which mainly include energy transmission and distribution, and capacity and interconnection auctions.

The Group accounts for sales when:
- there is a proven contractual relationship;
- delivery has taken place (or the service has been completed);
- a quantifiable price has been established or can be determined;
- and the receivables are likely to be recovered.

Delivery takes place when the risks and benefits associated with ownership are transferred to the buyer.
Energy delivered but not yet measured and billed is calculated based on consumption statistics and selling price estimates.

Sales of goods and revenues on services not completed at the balance sheet date are valued by reference to the stage of completion at that date.

Energy trading operations are recognized net of purchases.

1.3.8 Income taxes

Income taxes include the current tax expense (income) and the deferred tax expense (income), calculated under the tax legislation in force in the countries where earnings are taxable.

Current and deferred taxes are recorded in the income statement or in equity if they concern items directly allocated to equity.

The current tax expense (income) is the estimated amount of tax due on the taxable income for the period, calculated using the tax rates adopted at the year-end.

Deferred taxes result from temporary differences between the book value of assets and liabilities and their tax basis. No deferred taxes are recognized for temporary differences generated by:
- goodwill which is not tax deductible;
- the initial recognition of an asset or liability in a transaction which is not a business combination and does not affect the accounting profit or taxable profit (tax loss) at the transaction date;
- investments in subsidiaries, joint ventures and associates, when the Group controls the timing of reversal of the temporary differences, and it is probable that the temporary differences will not reverse in the foreseeable future.

Deferred tax assets and liabilities are valued at the expected tax rate for the period in which the asset will be realized or the liability settled, based on tax rates adopted at the year-end. If the tax rate changes, deferred taxes are adjusted to the new rate and the adjustment is recorded in the income statement, unless it relates to an underlying for which changes in value are recorded in equity, for example hedging instruments and available-for-sale financial assets.

Deferred taxes are reviewed at each closing date, to take into account changes in tax legislation and the prospects for recovery of deductible temporary differences. Deferred tax assets are only recognized when it is probable that the Group will have sufficient taxable profit to utilize the benefit of the asset in the foreseeable future, or beyond that horizon, if there are deferred tax liabilities with the same maturity.

1.3.9 Earnings per share and diluted earnings per share

Earnings per share is calculated by dividing the Group's share of net income by the weighted average number of shares outstanding over the period. This weighted average number of shares outstanding is the number of ordinary shares at the start of the year, adjusted by the number of shares redeemed or issued during the year.

This number, and the earnings per share, is adjusted whenever necessary to reflect the impact of translation or exercise of dilutive potential shares (options, subscription warrants and convertible bonds issued, etc.).

1.3.10 Business combinations

The Group has applied revised IFRS 3 since 1 January 2010, and accordingly business combinations arising since that date are recorded under the new acquisition method.

At the date of acquisition, the identifiable assets acquired and liabilities assumed, measured at fair value, and any non-controlling interests in the company acquired (minority interests) are recorded separately from goodwill.

Non-controlling interests may be valued either at fair value (total goodwill method) or their share in the fair value of the net assets of the acquired company (partial goodwill method). The choice is made individually for each transaction.

Any acquisition or disposal of an investment that does not affect control and takes place after the business combination is considered as a transaction between shareholders and must be recorded directly in equity in application of amended IAS 27.

If additional interests in an associate are acquired without resulting in acquisition of control, the value of previously acquired assets and liabilities remains unchanged in the consolidated financial statements.

If control is acquired in stages, the cost of the business combination includes the fair value at the date control is acquired, of the purchaser's previously-held interest in the purchased company.

Related costs directly attributable to an acquisition leading to control are treated as expenses for the periods in which they were incurred, except for issuance costs for debt securities or equity instruments, which must be recorded in compliance with IAS 32 and IAS 39.

Revised IFRS 3 does not apply to common control business combinations, which are examined on a case-by-case basis to determine the appropriate accounting treatment.

1.3.11 Goodwill and other intangible assets

1.3.11.1 Goodwill

1.3.11.1.1 Determination of goodwill

Goodwill corresponds to the difference between the cost of a business combination and the Group's share in the fair value of the identifiable assets, liabilities and contingent liabilities of the company acquired on the date control is transferred. When the difference is negative, it is immediately included in the income statement.

The fair values of assets and liabilities and the resulting goodwill are finalized within 12 months of the acquisition.

1.3.11.1.2 Measurement and presentation of goodwill

Goodwill on acquisition of subsidiaries or joint ventures is disclosed separately in the balance sheet. Impairment on this goodwill is reported under the heading "Impairment" in the income statement.

Goodwill on acquisition of associates is included in the investment's net book value. Impairment on this goodwill is included under the heading "Share in income of associates".

Goodwill is not amortized, but impairment tests are carried out as soon as there is an indication of possible loss of value, and at least annually, as described in note 1.3.16.

After initial recognition, goodwill is carried at cost less any impairment recognized.

1.3.11.2 Other intangible assets

1.3.11.2.1 Research and development expenses

Research expenses are recognized as expenses in the financial period incurred.
Development expenses are capitalized as an intangible asset if the Group can demonstrate:

- the technical feasibility of making the intangible asset ready for commissioning or sale;
- its intention to complete the intangible asset and use or sell it;
- its ability to use or sell the intangible asset;
- how the intangible asset will generate likely future economic benefits;
- the availability of the appropriate resources (technical, financial or other) to complete development and use or sell the intangible asset;
- its ability to provide a reliable estimate of expenses attributable to the intangible asset during its development.

1.3.11.2.2 Other self-produced or purchased intangible assets

Other intangible assets mainly comprise:

- software and brands, which are amortized on a straight-line basis over their useful life;
- operating or usage rights for power plants, which are amortized on a straight-line basis over the useful life of the underlying asset;
- rights or licenses relating to hydrocarbon concessions, which are amortized under the unit of production (UOP) method;
- intangible assets related to environmental regulations (greenhouse gas emission rights and renewable energy certificates acquired for a consideration – see note 1.3.29);
- the positive value of energy purchase/sale contracts stated at fair value as part of a business combination governed by revised IFRS 3: this value is amortized as the contractual deliveries take place.

1.3.12 Hydrocarbon prospecting, exploration and generation

The Group applies IFRS 6, "Exploration for and Evaluation of Mineral Resources".

Prospection and exploration costs and costs incurred in connection with geological surveys, exploratory testing, geological and geophysical mapping and exploratory drilling are recognized as intangible assets and fully amortized in the year they are incurred.

Development costs related to commercially viable mineral wells and production costs incurred to build facilities to extract and store hydrocarbons are recognized as "Property, plant and equipment used in generation and other tangible assets owned by the Group" or "Property, plant and equipment operated under concessions for other activities" as appropriate.

They are amortized under the UOP ("Unit Of Production") method.

1.3.13 Concession assets, generation assets and other property, plant and equipment

The Group's property, plant and equipment are reported under three balance sheet headings, as appropriate to the business and contractual circumstances of their use:

- property, plant and equipment operated under French public electricity distribution concessions;
- property, plant and equipment operated under concessions for other activities;
- property, plant and equipment used in generation and other tangible assets owned by the Group.

1.3.13.1 Initial measurement

Property, plant and equipment are recorded at acquisition or production cost.

The cost of facilities developed in-house includes all labor and materials costs, and all other production costs attributable to the construction cost of the asset.

The Group capitalizes safety expenses incurred as a result of legal and regulatory obligations sanctioning non-compliance by an administrative ban from operation.

The cost of property, plant and equipment also includes decommissioning costs for generation plants, and last core costs for nuclear facilities. These assets are associated with the provisions recorded to cover these obligations. At the date of commissioning, they are measured and recorded in the same way as the corresponding provision (see note 1.3.23).

The following components are thus included in the balance sheet value of property, plant and equipment:
- the discounted cost of decommissioning the facilities;
- for nuclear facilities, the discounted cost of last core nuclear fuel, including depreciation of residual reactor fuel that will not be fully irradiated when production shuts down, the cost of nuclear fuel processing and the cost of removing and storing waste from these operations.

Strategic safety spare parts for nuclear facilities are treated as property, plant and equipment, and depreciated over the useful life of the facilities to which they are assigned.

When a part of an asset has a different useful life from the overall asset's useful life, it is identified as an asset component and depreciated over a specific period. This mainly concerns the costs of scheduled major services, which are amortized over a period corresponding to the time elapsing between two services.

Borrowing costs attributable to the financing of an asset incurred during the construction period are included in the value of the asset provided it is a "qualifying asset" as defined by IAS 23.

1.3.13.2 Depreciation

Property, plant and equipment are depreciated on a straight-line basis over their useful life, defined as the period during which the Group expects to draw future economic benefits from their use.

Depending on each country's specific regulations and contractual arrangements, useful lives for the main facilities are as follows:

Hydroelectric dams	75 years
Electromechanical equipment used in hydropower plants	50 years
Fossil-fired power plants	30 to 45 years
Nuclear generation facilities	40 to 60 years
Transmission and distribution installations (lines, substations):	20 to 50 years
Windfarm and photovoltaic facilities:	20 to 25 years.

1.3.14 Concession agreements

1.3.14.1 Accounting treatment

The EDF group records public/private agreements in compliance with standards and interpretations IAS 16, IAS 17, IAS 18, IAS 37, IFRS 6 and IFRIC 4 as appropriate to the specific features of those agreements.
IFRIC 12, "Service concession arrangements", applied by the EDF group since 1 January 2010, has a limited impact on the consolidated balance sheet and income statement in view of the features of the Group's concession agreements.
For most of its concessions, the Group considers that in substance the grantors do not have the characteristic features of control over infrastructures as defined in IFRIC 12.

1.3.14.2 French concessions

In France, the Group is the operator for three types of public service concessions:
- public electricity distribution concessions in which the grantors are local authorities (municipalities or syndicated municipalities);
- hydropower concessions with the State as grantor;
- the public transmission network operated under concession from the State.

1.3.14.2.1 Public electricity distribution concessions

General background

Since the enactment of the French Law of 8 April 1946, EDF has by law been the sole operator for the main public distribution concessions in France.

The accounting treatment of concessions is based on the concession agreements, with particular reference to their special clauses. It takes into consideration the possibility that EDF may one day lose its status as the sole authorized State concession operator.

These agreements cover terms of between 20 and 30 years, and generally use standard concession rules deriving from the 1992 Framework Contract negotiated with the National Federation of Licensing Authorities (Fédération Nationale des Collectivités Concédantes et Régies - FNCCR) and approved by the public authorities.

Recognition of assets as property, plant and equipment operated under French public electricity distribution concessions

All assets used by EDF in public electricity distribution concessions in France, whether they are owned by the grantor or the operator, are reported together under a specific line in the balance sheet assets at acquisition cost or their estimated value at the transfer date when supplied by the grantor.

1.3.14.2.2 Hydropower concessions

Hydropower concessions in France follow standard rules approved by decree. Assets attributed to the hydropower concessions comprise hydropower generation equipment (dams, pipes, turbines, etc) and, in the case of recently-renewed concessions, electricity generation and switching facilities.

Assets used in these concessions are recorded under "Property, plant and equipment operated under concessions for other activities" at acquisition cost. As a result of changes in the regulations following removal of the outgoing operator's preferential right when a concession is renewed, the Group has shortened the depreciation periods used for certain assets.

1.3.14.2.3 Public transmission concession

Under French law, assets assigned to the public transmission concession belong to RTE. Following application of the equity method to RTE from 31 December 2010, these assets are included in the equity value of RTE in the Group's consolidated balance sheet.

1.3.14.3 Foreign concessions

Foreign concessions are governed by a range of contracts and national laws. Most assets operated under foreign concessions are recorded under "Property, plant and equipment operated under concessions for other activities". Foreign concessions chiefly concern Edison in Italy, which operates hydrocarbon generation sites, gas storage sites, local gas distribution networks and hydropower generating plants under concessions. Edison owns all the assets except for some items of property, plant and equipment on the hydropower generation sites, which will be returned to the grantor for nil consideration when the concession ends. In compliance with IFRIC 12, certain concession agreements are recorded as intangible assets.

Hydropower generation assets which will be returned for nil consideration at the end of the concession are depreciated over the duration of the concession. Hydrocarbon generation sites are recorded in compliance with the rules applicable to the sector (see note 1.3.12).

1.3.15 Leases

In the course of its business the Group uses assets made available to it, or makes assets available to lessees, under lease contracts. These contracts are analyzed in the light of the situations described and indicators supplied in IAS 17 in order to determine whether they are finance leases or operating leases.

1.3.15.1 Finance leases

Contracts that effectively transfer virtually all risks and benefits inherent to ownership of the leased item are classified as finance leases. The main criteria examined in determining whether virtually all the risks and benefits are transferred by an agreement are the following:

- the ratio of the duration of the lease to the leased assets' useful life;
- total discounted future payments as a ratio of the fair value of the financed asset;
- whether ownership is transferred at the end of the lease;
- whether the purchase option is attractive;
- the features specific to the leased asset.

Assets used under finance leases are derecognized from the lessor's balance sheet and included in the relevant category of property, plant and equipment in the lessee's accounts. Such assets are depreciated over their useful life, or the term of the lease contract when this is shorter.
A corresponding financial liability is booked by the lessee, and a financial asset by the lessor.

If the Group performs a sale and leaseback operation resulting in a finance lease agreement, this is recognized in accordance with the principles described above. If the transfer price is higher than the asset's book value, the surplus is deferred and recognized as income progressively over the term of the lease.

1.3.15.2 Operating leases

Lease agreements that do not qualify as finance leases are classified and recognized as operating leases.
Payments made (received) in application of these agreements are included in expenses (income) in the income statement.

1.3.15.3 Arrangements containing a lease

In compliance with IFRIC 4, the Group identifies arrangements that do not have the legal form of a lease contract but nonetheless convey the right to use an asset or group of specific assets to the purchaser, as the purchaser in the arrangement benefits from a substantial share of the asset's production and payment is not dependent on production or market price.
Such arrangements are treated as leases, and analyzed with reference to IAS 17 for classification as either finance or operating leases.

1.3.16 Impairment of goodwill, intangible assets and property, plant and equipment

At the year-end and at each interim reporting date, the Group seeks any indication that an asset could have been significantly impaired. An impairment test is also carried out at least once a year on cash-generating units (CGUs) or groups of CGUs including goodwill or another non-amortizable intangible asset.

For CGUs including goodwill or another non-amortizable intangible asset, or when there is evidence of loss of value, an impairment test is carried out as follows:

- The Group measures any long-term asset impairment by comparing the carrying value of these assets and goodwill, classified into cash-generating units where necessary, and their recoverable amount.
  Cash-generating units (CGUs) are groups of homogeneous assets that generate identifiable independent cash flows. The Group's CGU comprise either subgroups or legal entities, broken down where necessary by activity (generation and supply, distribution, transmission, other). Goodwill is allocated to the CGU that benefits from synergies resulting from the acquisition.
  The recoverable value of these units is the higher of fair value net of disposal costs, and value in use. Value in use is determined with reference to discounted future net cash flows based on medium-term financial projections. When this recoverable value is lower than the carrying amount in the balance sheet, an amount equal to the difference is booked under the heading "Impairment". The loss is allocated first to goodwill, and any surplus to the other assets of the cash-generating unit concerned.
- The discount rates used for these purposes are based on the weighted average cost of capital for each asset or group of assets concerned, determined by economic and geographical area and by business segment where appropriate. The pre-tax discount rate is calculated using an iterative process based on after-tax rates.
- Future cash flows are based on medium-term plan projections over at least three years, and assumptions validated by the Group. Variables that can significantly affect the calculations are:
  - changes in tariff regulations and market prices;
  - changes in interest rates and market risk premiums;
  - market price levels and market share on supplies, and the level of investment;
  - the useful lives of facilities, and the plan for concession renewal;
  - the growth rates used beyond the medium-term plans and the terminal values taken into consideration.
- The fair value net of disposal costs is measured on the basis of multiples observed for the most recent transactions in the relevant sector.

Impairment of goodwill is irreversible.

1.3.17 Financial assets and liabilities

Financial assets include available-for-sale assets (non-consolidated investments, investment securities and certain dedicated assets), loans and receivables at amortized cost, including trade receivables, and the positive fair value of derivatives.

Available-for-sale securities allocated to dedicated assets are presented in note 48.

Financial liabilities comprise financial borrowings and debts, trade payables, bank credit and the negative fair value of financial derivatives.

Financial assets and liabilities are recorded in the balance sheet as current if they mature within one year and non-current if they mature after one year, apart from derivatives held for trading, which are all classified as current.

Operating debts and receivables, and cash and cash equivalents, are governed by IAS 39 and reported separately in the balance sheet.

1.3.17.1 Classification and valuation methods for financial assets and liabilities

Financial instruments are classified as follows under IFRS 7:
- financial assets and liabilities carried at fair value with changes in fair value included in income;
- held-to-maturity financial assets;
- loans and financial receivables;
- available-for-sale financial assets;
- trade receivables;
- cash and cash equivalents;
- financial debts and operating debts;
- derivatives.

Financial instruments stated at fair value are classified in the following categories:
- level 1 (quoted prices): financial instruments listed on an active market;
- level 2 (observable data): financial instruments valued using valuation techniques based on observable parameters;
- level 3 (internal model): financial instruments valued using valuation techniques based wholly or partly on non-observable parameters.

1.3.17.1.1 Financial assets and liabilities carried at fair value with changes in fair value included in income

Financial assets carried at fair value with changes in fair value included in the income statement are classified as such at the inception of the operation. This applies to:
- assets acquired from the outset with the intention of resale in the short term;
- or derivatives not classified as hedges (derivatives held for trading);
- or assets the Group has elected to include in this category under the option allowed by IAS 39.

These assets are recorded at the transaction date, at acquisition cost including purchasing expenses. At each subsequent reporting date they are adjusted to fair value, based on quoted prices available from external sources for listed instruments, or using recognized valuation techniques such as the discounted cash flow method or reference to external sources for other instruments.

Changes in fair value other than those concerning commodity contracts are recorded in the income statement under the heading "Other financial income and expenses".

Dividends and interest received on assets carried at fair value are recorded in the income statement under "Other financial income".

Changes in the fair value of commodity trading contracts are recorded in the income statement under "Sales".
Changes in the fair value of non-trading commodity transactions are reported separately on a specific line of the income statement, "Net changes in fair value on Energy and Commodity derivatives, excluding trading activities" below the operating profit before depreciation and amortization. These are transactions that come under the scope of IAS 39, which for accounting purposes are not eligible for hedge accounting or the IAS 39 "own use" exemption (see note 1.3.17.1.6.1).

Regarding the fair value option, the Group classifies an asset or liability "at fair value with changes in fair value included in income" in the three following circumstances:
- when using fair value eliminates or significantly reduces an inconsistency in the measurement of assets and liabilities ("accounting mismatch");
- when the performance of a group of financial assets or financial liabilities is managed on a fair value basis, in accordance with documented strategies and the reporting to management;
- when a contract contains one or more embedded derivatives. In such cases the fair value option may be applied to the hybrid instrument, unless:
  - the embedded derivative does not substantially affect the cash flows of the contract,
  - analysis of the host contract and the embedded derivative does not lead to separate measurement of the embedded derivative.

1.3.17.1.2 Held-to-maturity financial assets

This category covers fixed-term investments which the Group acquires with the intent and ability to hold to maturity. They are recorded at amortized cost at the transaction date. Interest is calculated at the effective interest rate and recorded in the income statement under the heading "Other financial income and expenses".

1.3.17.1.3 Loans and financial receivables

Loans and financial receivables are valued and recorded at the transaction date, at amortized cost less any impairment.
Interest is calculated at the effective interest rate and recorded in the income statement under the heading "Other financial income and expenses".

1.3.17.1.4 Available-for-sale financial assets

Available-for-sale financial assets comprise non-consolidated investments, investment securities, reserved funds and certain dedicated assets.

Available-for-sale financial assets are recorded at acquisition cost at the transaction date, and adjusted to fair value at the reporting date.

Fair value measurement is based on quoted prices and market data available from external sources for instruments listed on an active market, and on the discounted cash flow method for other financial instruments. When a fair value cannot be reliably estimated by other accepted valuation methods such as discounting future cash flows, these instruments are valued at acquisition cost less any accumulated impairment.

Unrealized gains or losses on these assets are recorded in equity, unless there is evidence of a realized loss, in which case impairment is recognized in the financial result (see note 1.3.17.2.2).

For available-for-sale financial assets represented by debt securities, interest is calculated at the effective interest rate and credited to the income statement under the heading "Other financial income and expenses".

1.3.17.1.5 Financial liabilities

Financial liabilities are recorded at amortized cost, with separate reporting of embedded derivatives where applicable. Interest is calculated at the effective interest rate and recorded under the heading "Cost of gross financial indebtedness" over the duration of the financial liability. The fair value is calculated by discounting future cash flows at market rates.

1.3.17.1.6 Derivatives

1.3.17.1.6.1 Scope

The scope of derivatives applied by the Group corresponds to the principles set out in IAS 39.

In particular, forward purchases and sales for physical delivery of energy or commodities are considered to fall outside the scope of application of IAS 39 when the contract concerned is considered to have been entered into as part of the Group's normal business activity ("own use"). This is demonstrated to be the case when all the following conditions are fulfilled:

- a physical delivery takes place under all such contracts;
- the volumes purchased or sold under the contracts correspond to the Group's operating requirements;
- the contracts cannot be considered as options as defined by the standard. In the specific case of electricity sale contracts, the contract is equivalent to a firm forward sale or can be considered as a capacity sale.

The Group thus considers that transactions negotiated with a view to balancing the volumes between electricity purchase and sale commitments are part of its business as an integrated electricity company, and are outside the scope of IAS 39.

In compliance with IAS 39, the Group analyses all its contracts, of both a financial and non-financial nature, to identify the existence of any "embedded" derivatives. Any component of a contract that affects the cash flows of that contract in the same way as a stand-alone derivative corresponds to the definition of an embedded derivative.

If they meet the conditions set out by IAS 39, embedded derivatives are accounted for separately from the host contract at inception date.

1.3.17.1.6.2 Measurement and recognition

Derivatives are initially recorded at fair value, based on quoted prices and market data available from external sources. If no quoted prices are available, the Group may refer to recent comparable transactions or if no such transactions exist base its valuation on internal models that are recognized by market participants, giving priority to information directly derived from observable data, such as over-the-counter listings.

Changes in the fair value of these derivatives are recorded in the income statement, unless they are classified as hedges for a cash flow or net investment. Changes in the fair value of such hedging instruments are recorded directly in equity, excluding the ineffective portion of the hedge. In the specific case of financial instruments entered into as part of EDF Trading's business, realized and unrealized gains and losses are reported net under the heading "Sales".

1.3.17.1.6.3 Derivatives classified as hedges

The EDF group uses derivatives to hedge its foreign exchange and interest rate risks, as well as risks related to certain commodity contracts.

The Group applies the criteria defined by IAS 39 in classifying derivatives as hedges:

- the instrument must hedge changes in fair value or cash flows attributable to the risk hedged, and the effectiveness of the hedge (*i.e.* the degree to which changes in the value of the hedging instrument offset changes in the value of the hedged item or future transaction) must be between 80% and 125%;
- in the case of cash flow hedges, the future transaction being hedged must be highly probable;
- reliable measurement of the effectiveness of the hedge must be possible;
- the hedge must be supported by appropriate documentation from its inception.

The hedging relationship ends when:

- a derivative ceases to be an effective hedging instrument;
- a derivative expires, or is sold, terminated or exercised;
- the hedged item expires, is sold or redeemed;
- a future transaction ceases to be considered as highly probable.

Only derivatives external to the Group qualify for hedge accounting, and gains or losses on internal derivatives are eliminated in the consolidated financial statements. However, in a cash flow hedging relationship initiated *via* derivatives internal to the Group, hedge accounting is applied if it can be demonstrated that the internal derivatives are matched with similar transactions external to the Group.

The Group uses the following categories for hedges:

(A) Fair value hedges
These instruments hedge the exposure to changes in the fair value of an asset or liability recorded in the balance sheet, or a firm commitment to purchase or sell an asset. Changes in the fair value of the hedged item attributable to the hedged component of that item are recorded in the income statement and offset by corresponding variations in the fair value of the hedging instrument. Only the ineffective portion of the hedge has an impact on income.

(B) Cash flow hedges
These instruments hedge highly probable future transactions: the variability in cash flows generated by the hedged transaction is offset by changes in the value of the hedging instrument.
The effective portion of accumulated changes in the hedge's fair value is recorded in equity, and the ineffective portion (*i.e.* changes in the fair value of the hedging instrument in excess of changes in the fair value of the hedged item) is recorded in the income statement.
When the hedged cash flows materialize, the amounts previously recognized in equity are transferred to the income statement in the same way as for the hedged item.

(C) Hedges of a net investment
These instruments hedge exposure to the foreign exchange risk related to a net investment in a foreign entity. The effective portion of accumulated changes in the hedge's fair value is recorded in equity until disposal of the net investment, when it is included in the gain or loss on disposal. The ineffective portion (defined in the same way as for cash flow hedges) is recorded directly in the income statement.

The Group records the change in fair value resulting from the interest rate effect of derivatives hedging a net investment in a foreign operation in equity in the same way as the change in value resulting from foreign exchange differences.

1.3.17.2 Impairment of financial assets
At the year-end and at each interim reporting date, the Group assesses whether there is any objective evidence that an asset could have been significantly impaired. If so, the Group estimates the asset's recoverable value and records any necessary impairment as appropriate for the category of asset concerned.

1.3.17.2.1 Financial assets recorded at amortized cost
Impairment is equal to the difference between the asset's net book value and the discounted value of expected future cash flows, using the original effective interest rate of the financial instrument. The impairment is included in the income statement under the heading "Other financial income and expenses". If the impairment loss decreases in a subsequent period, the amount of the decrease is reversed and transferred to the income statement.

1.3.17.2.2 Available-for-sale financial assets
If there is a substantial, long-term decline in the fair value of available-for-sale assets, the unrealized loss is reclassified from equity to income. For debt instruments, impairment is only recorded in income when there is an indication of impairment associated with the counterparty. If the fair value of an available-for-sale financial asset rises in a subsequent period, the increase in value is included in equity when it concerns equity instruments, and leads to a reversal from previously-recorded impairment when it concerns debt instruments.

Different criteria for impairment apply to different types of available-for-sale financial assets.

For available-for-sale financial assets other than dedicated assets held by controlled companies, the Group generally uses the following criteria to assess impairment:
- 3 years as the threshold for assessment of long-term loss of value;
- a 50% decline from historic cost as indication of a significant loss of value.

For available-for-sale financial assets held as part of EDF's dedicated assets, the Group uses the following criteria to assess impairment:
- a 5-year period as the threshold for assessment of a long-term loss of value;
- a 40% decline from historic portfolio value as indication of a significant loss of value.

In assessing impairment of dedicated assets, the Group takes into consideration factors specific to their nature: legal and regulatory obligations associated with the funds concerned, the timing of the payments they are to finance, and long-term management of the funds.

1.3.17.3 Derecognition of financial assets and liabilities
Derecognition is applied for all or part of:
- a financial asset, when the contractual rights making up the asset expire, or the Group substantially transfers most of the significant risks associated with ownership of the asset;
- a financial liability, when the liability is extinguished due to cancellation or expiry of the obligation. When a debt is renegotiated with a lender giving rise to substantially different terms, a new liability is recognized.

1.3.17.4 Securitization operations
When it can be demonstrated that the Group does not control the investment funds resulting from securitization operations, they are excluded from the scope of consolidation. Otherwise, an entry corresponding to the cash inflow is recorded under the heading "Financial liabilities".

1.3.18 Inventories
Inventories are recognized at the lower of acquisition cost or net realizable value, except for inventories resulting from trading activities, which are carried at market value. The cost of inventories is determined by the weighted average unit cost method.

Cost includes all direct material costs, labor costs, and a share of indirect production costs.

1.3.18.1 Nuclear fuel and materials

Inventory accounts include:
- nuclear materials, whatever their form during the fuel production cycle;
- fuel components in the warehouse or in the reactor.

The stated value of nuclear fuel and materials and work-in-progress is determined based on direct processing costs including materials, labor and subcontracted services (*e.g.* fluoration, enrichment, production, etc.).

In accordance with regulatory obligations specific to each country, inventories of fuel (new or not entirely consumed) may also comprise expenses for spent fuel management and long-term radioactive waste management, with corresponding provisions or debts in the liabilities, or full and final payments made when the fuel is loaded.

Interest expenses incurred in financing inventories of nuclear fuels are charged to expenses for the period.

Nuclear fuel consumption is determined as a proportion of the expected output when the fuel is loaded in the reactor. These quantities are valued at weighted average cost of inventories. Inventories are periodically corrected in view of forecast burnt quantities based on neutronic measurements and physical inventories.

1.3.18.2 Operating materials and other inventories

Inventories are valued at weighted average cost including direct and indirect purchasing costs.
Provisions concerning spare parts supplied under a maintenance program are based on the turnover of these parts and the useful lives of generation units.

Renewable energy certificates are also included in other inventories (see note 1.3.29.2).

1.3.19 Trade receivables

On initial recognition, trade receivables are stated at the fair value of the consideration received or to be received. Impairment is recorded when their carrying amount, based on the probability of recovery assessed according to the type of receivable, is less than their book value. Depending on the nature of the receivable, the risk associated with doubtful receivables is assessed individually or by experience-based statistical methods.
Trade receivables also include revenue based on an estimate of power already delivered but not yet measured or billed. Impairment is booked to cover the risk of non-recovery.

1.3.20 Cash and cash equivalents

Cash and cash equivalents comprise very liquid assets and very short-term investments, usually maturing within three months or less of the acquisition date, and with negligible risk of fluctuation in value.
Securities held short-term and classified as "cash equivalents" are recorded at fair value, with changes in fair value included in the heading "Financial income on cash and cash equivalents".

1.3.21 Equity

1.3.21.1 Fair value adjustment of financial instruments

The fair value adjustment of financial instruments results from the restatement to fair value of available-for-sale financial assets and certain hedging instruments.

1.3.21.2 Share issue expenses

Share issue expenses correspond exclusively to external costs expressly related to the capital increase. They are charged against the issue premium at their net-of-tax value.

Other expenses are classified as expenses of the period.

1.3.22 Treasury shares

Treasury shares are shares issued by the consolidating company and held either by that company or by other entities in the consolidated group. They are valued at acquisition cost and deducted from equity until the date of disposal. Net income or losses on disposals of treasury shares are directly included in equity and do not affect net income.

1.3.23 Provisions other than employee benefit provisions

The Group recognizes provisions if the following three conditions are met:
- the Group has a present obligation (legal or constructive) towards a third party that arises from an event prior to the closing date;
- it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation;
- the obligation amount can be estimated reliably.

In extremely rare cases when disclosing information could cause serious prejudice to the Group, description of a specific obligation, risk or litigation covered by a provision may be excluded from the notes to the financial statements.

Provisions are determined based on the Group's estimate of the expected cost necessary to settle the obligation. Estimates are based on management data from the information system, assumptions adopted by the Group, and if necessary experience of similar transactions, or in some cases based on independent expert reports or contractor quotes. The various assumptions are reviewed for each closing of the accounts.

If it is anticipated that all or part of the expenses covered by a provision will be reimbursed, the reimbursement is recognized under receivables if and only if the Group is virtually certain of receiving it.

It may occasionally happen that a provision cannot be booked due to lack of a reliable estimate. In such cases, the obligation is mentioned in the notes as a contingent liability, unless there is little likelihood of an outflow of resources.

Provisions mainly cover the following:
- back-end nuclear cycle expenses: provisions for spent fuel management and long-term radioactive waste management are established in accordance with the obligations and final contributions specific to each country;

- costs for decommissioning power plants and losses relating to fuel in the reactor when the reactor is shut down (provision for last cores);
- future losses relating to multi-year agreements for the purchase and sale of energy:
  - losses on energy purchase agreements are measured by comparing the acquisition cost under the contractual terms with the forecast market price for electricity,
  - losses on energy sale agreements are measured by comparing the estimated income under the contractual terms with the cost of generating the energy to be supplied.

Provisions to cover back-end nuclear cycle expenses, expenses related to the decommissioning of power plants and last cores, and future losses relating to multi-year energy purchase and sale agreements are estimated according to future discounted outflows using rates that represent the best estimate of a long-term yield on bond markets.

The rate of inflation and the discount rate are based on the economic parameters of the country where the economic entity is located.

The discount effect generated at each closing to reflect the passage of time is recorded under "Discount effect" in financial expenses.

A change in provisions resulting from a change in discount rates, a change in the disbursement schedule or a change in contractor quote are recorded:
- as a change in the corresponding assets if the provision was initially covered by balance sheet assets;
- in the income statement in all other cases.

1.3.24 Provisions for employee benefits

The Group grants its employees post-employment benefits (pension plans, retirement indemnities, etc) and other long-term benefits (*e.g.* long-service awards) in compliance with the specific laws and measures in force in each country where it does business.

1.3.24.1 Calculation and recognition of employee benefits

Obligations under defined-benefit plans are calculated by the projected unit credit method, which determines the present value of entitlements earned by employees at year-end under all types of plan, taking into consideration each country's specific economic conditions and expected wage increases.

In calculating pensions and other post-employment benefit obligations, this method takes the following factors into consideration:
- career-end salary levels, with reference to employee seniority, projected salary levels at the time of retirement based on the expected effects of career advancement, and estimated trends in pension levels;
- retirement age, determined on the basis of relevant factors (such as years of service a number of children taking into account the prolongation of the employee contribution period to qualify for a full pension);
- forecast numbers of pensioners, determined based on employee turnover rates and mortality data available in each country;
- reversion pensions where relevant, taking into account both the life expectancy of the employee and his/her spouse and the marriage rate observed for the population of IEG status employees;
- a discount rate that depends on the geographical zone and the duration of the obligations; in compliance with IAS 19, this rate is determined as the market yield on high-quality corporate bonds or the year-end rate on government bonds with a similar duration to EDF's commitments.

The provision takes into account the value of the fund assets that cover the pension obligations, which are deducted from the value of the obligation as determined above.

Any actuarial gains or losses on pensions and post-employment benefit obligations in excess of 10% (the "corridor") of the obligations or fund assets, whichever is the higher, are recognized in the income statement progressively over the average residual working life of the company's employees.

For other long-term benefits, any actuarial variance and the entire past service cost are directly included in the provision, without application of the "corridor" rule.

The net expense booked for employee benefit obligations includes:
- the cost of additional vested benefits, and the financial discount cost on existing benefits;
- the income corresponding to the expected return on fund assets;
- the income or expenses resulting from amortization of actuarial gains or losses;
- the income or expenses related to amendments/terminations of the benefit plans or introduction of new plans.

1.3.24.2 Pension and post-employment benefit obligations

When they retire, Group employees benefit from pensions determined under local rules. They may also be entitled to benefits directly paid by the companies, and additional benefits prescribed by the relevant regulations.

French subsidiaries covered by the IEG system

Subsidiaries belonging to the specific IEG (electricity and gas) sector system, namely EDF, ERDF, RTE, Électricité de Strasbourg and certain subsidiaries of the Tiru subgroup, are Group companies where almost all employees benefit from the IEG statutes, including the special pension system and other statutory benefits.

Following the financing reform for the special IEG pension system that took place in 2004 with effect from 1 January 2005, provisions recorded for the special pension system correspond to the specific benefits of employees, *i.e.* benefits not covered by the standard benefit systems.

The provision for pensions thus covers:
- specific benefits of employees in the deregulated or competitive activities;
- specific benefits earned by employees from 1 January 2005 for the regulated activities (transmission and distribution) (past benefits are financed by the CTA levy (*Contribution Tarifaire d'Acheminement*));
- specific benefits of employees benefiting from early retirement before the standard legal retirement age.

The valuation also includes CNIEG management expenses payable by EDF for the administration and payment of retired employees' pensions by the CNIEG (the pension body for France's electricity and gas sector).

In addition to pensions, other benefits are granted to IEG status employees not currently in active service, as detailed below:
- benefits in kind (electricity/gas): article 28 of the IEG national statutes entitles all employees (active or inactive) to benefits in kind in the form of supplies of electricity or gas at the preferential "Employee price". The EDF group's obligation for supplies of energy to EDF and GDF SUEZ employees corresponds to the probable present value of KWhs supplied to beneficiaries during their retirement, valued on the basis of the unit cost, taking into account the payment received under the energy exchange agreement with GDF SUEZ;
- retirement gratuities: these are paid upon retirement to employees due to receive the statutory old-age pension, or to their dependants if the employee dies before reaching retirement. These obligations are almost totally covered by an insurance policy;
- bereavement benefit: this is paid out upon the death of an inactive or disabled employee, in order to provide financial assistance for the expenses incurred at such a time (article 26 -§ 5 of the National Statutes). It is paid to the deceased's principal dependants (statutory indemnity equal to two months' pension) or to a third party that has paid funeral costs (discretionary indemnity equal to the costs incurred);
- bonus pre-retirement paid leave: all employees eligible to benefit immediately from the statutory old-age pension and aged at least 55 at their retirement date are entitled to 18 days of bonus paid leave during the last twelve months of their employment;
- other benefits include cost of studies indemnities, additional retirement indemnities, time banking for pre-retirement leave, and pensions for personnel sent on secondment to subsidiaries not covered by the IEG system.

French and foreign subsidiaries not covered by the special IEG system

Pension obligations principally relate to the British, US and Italian companies and are mostly covered by defined-benefit plans.

1.3.24.3 Other long-term benefit obligations

These benefits concern employees currently in service, and are earned according to local regulations, particularly the statutory regulations for the electricity and gas sector for EDF and French subsidiaries covered by the IEG regime. They include:
- annuities following incapacity, invalidity, industrial accident or work-related illness; like their counterparts in the general national system, IEG employees are entitled to financial support in the event of industrial accident or work-related illness, and invalidity and incapacity annuities and benefits. The obligation is measured as the probable present value of future benefits payable to current beneficiaries, including any possible reversions;
- long-service awards;
- specific benefits for employees who have been in contact with asbestos.

1.3.25 Share-based payments

Under existing legislation in France, employees of a French group may benefit from attribution of shares. When the State sells some of the capital of a public company, article 11 of the French privatization law of 1986 and article 26 of the law of 9 August 2004 require a share offer to be reserved for current and retired employees of the company. The company being privatized may also set up free share plans.

In the light of IFRS 2, these benefits granted to employees and former employees must be treated by the company as personnel expenses in the same way as additional remuneration, and recognized as such with a corresponding adjustment in equity.

Valuation of the benefit granted through a share offer reserved for current and former employees is based on the difference between the share subscription price and the share price at the grant date, with actuarial valuation of the impact, if any, of the payment terms, the minimum holding period, and the fact that no dividends were received during the vesting period for the free shares.

In the case of free shares, the value of the benefit is based on the share price at the grant date, depending on the number of shares granted and the fact that no dividends were received during the vesting period. The expense is spread over the vesting period.

1.3.26 Special concession liabilities

These liabilities represent the contractual obligations specific to the concession rules for public electricity distribution concessions in France, recognized in the liabilities as:
- rights in existing assets: these correspond to the grantor's right to recover all assets for nil consideration. This right comprises the value in kind of the facilities – the net book value of assets operated under concession – less any as yet unamortized financing provided by the operator;
- rights in assets to be replaced: these correspond to the operator's obligation to contribute to the financing of assets due for replacement. These non-financial liabilities comprise:
  - depreciation recorded on the portion of assets financed by the grantor,
  - the provision for renewal, exclusively for assets due for renewal before the end of the concession.

When assets are replaced, the provision and amortization of the grantor's financing recorded in respect of the replaced item are eliminated and transferred to the rights in existing assets, since they are considered as the grantor's financing for the new asset. Any excess provision is taken to income.

During the concession, the grantor's rights in assets to be replaced are thus transferred upon the asset's renewal to become the grantor's rights in existing assets, with no outflow of cash to the benefit of the grantor.

In general, the value of special concession liabilities is determined as follows:

- the grantor's rights in existing assets, representing the share deemed to be held by the grantor in the concession assets, are valued on the basis of the assets recorded in the balance sheet;
- the obligations relating to assets to be replaced are valued on the basis of the estimated value of the relevant assets, measured at each year-end taking into consideration wear and tear on the asset at that date:
  - based on the difference between the asset's replacement value as assessed at year-end and the historical cost for calculation of the provision for renewal. Annual allocations to the provision are based on this difference, less any existing provisions, with the net amount spread over the residual useful life of the assets. Consequently, the expenses recognized for a given item increase over time,
  - based on the share of the asset's historical cost financed by the grantor for amortization of the grantor's financing.

The Group considers that the obligations related to assets to be replaced are to be valued on the basis of the special clauses contained in the concession agreements. Under this approach, these obligations are stated at the value of the contractual obligations as calculated and reported annually in the reports to the grantors.
If no such clauses existed, an alternative approach would be to state contractual obligations at the discounted value of future payments required for replacement of assets operated under concession at the end of their industrial useful life.

For information, the Group reports below the impacts of this alternative approach, *i.e.* the discounting of the future obligation to contribute to financing of assets to be replaced.

The principal assumptions used in preparing this simulation are as follows:

- the basis for calculation of the provision for renewal is the estimated replacement value at the end of the asset's useful life, applying a forecast annual inflation rate of 2%, less the asset's historical value. This amount is based on the wear and tear on the asset and discounted at a rate of 5%;
- amortization of the grantor's financing is also discounted at the rate of 5%.

The following table shows the impacts of this discounting for EDF and ERDF in 2011:

Impact on the income statement:

(in millions of Euros)	2011
Operating profit	500
Financial result	(600)
Income before taxes of consolidated companies	(100)

Impact on the balance sheet - equity:

(in millions of Euros and before taxes)	2011
At opening date	2,540
At closing date	2,440

Valuation of concession liabilities under this method is subject to uncertainty over costs and disbursements, and is also sensitive to inflation and discount rates.

1.3.27 Investment subsidies

Investment subsidies received by Group companies are included in liabilities under the heading "Other liabilities" and transferred to income as and when the economic benefits of the corresponding assets are utilized.

1.3.28 Assets classified as held for sale and associated liabilities, and discontinued operations

Assets classified as held for sale and associated liabilities are disclosed separately from other assets and liabilities in the balance sheet. All income from discontinued operations is disclosed in a single net amount after taxes in the income statement. In the cash flow statement, net changes in cash and cash equivalents of discontinued activities are also reported separately on a specific line.

1.3.29 Environment

1.3.29.1 Greenhouse gas emission rights

Since no IFRS specifically addresses the question, the Group has opted for the "net approach" accounting treatment: emissions produced are not recognized unless the entity expects to have an annual shortfall in emission rights. Only purchases and sales of quotas are recognized in the accounts.

The Group thus applies the following principles:

- purchased emission rights are recorded as intangible assets at acquisition cost; when they have been granted for nil consideration by the relevant State under the National Allocation Plan, they are not shown in the balance sheet (considered to have nil value);
- when a Group entity's actual emissions for the year are higher than the rights allocated by the State less completed transactions on the spot or forward markets for rights still held in respect of that year, a provision is recorded to cover the excess emissions. This provision is equivalent to the acquisition cost up to the amount of rights acquired on the spot or forward markets, and based on market prices for the balance.
  The provision is cancelled when rights are surrendered to the State.

If the number of purchased emission rights recorded as intangible assets at the end of the year and not subject to forward sale is higher than the number of purchased rights that will be surrendered to the State for the year, an impairment test must be applied to the excess. If there is a significant negative differential on the purchased rights held, impairment must be booked, or partly or totally reversed where relevant.

Forward purchases/sales of rights carried out as part of trading activities are recorded in compliance with IAS 39 and stated at fair value at the balance sheet date. Changes in fair value are taken to the income statement.

1.3.29.2 Renewable energy certificates

Electricity produced from renewable energy sources (green energy) is measured in two ways:
- at the sale price, including costs associated with generation of this electricity (EDF);
- at the value of renewable energy certificates obtained.

The renewable energy certificate system thus applies to:
- non-obligated producers (because the obligation concerns energy supply: Poland, EDF Énergies Nouvelles);
- obligated producers (because the obligation concerns energy generation, or because they also supply energy and are subject to an energy supply obligation: Edison, Fenice, EDF Energy).

The EDF group applies the following accounting treatments:
- for non-obligated electricity producers, certificates obtained based on generation output are recorded in "Other inventories" until they are sold on to suppliers;
- for obligated producers and an entity that both produces and supplies energy and is under an obligation to sell a specified quantity of renewable energy, the Group uses the following accounting treatments for certificates obtained based on generation output:
  - up to the level of the obligation, these certificates are not recognized,
  - certificates in excess of the obligation are recorded in "Other inventories",
  - in the specific situation when an entity is not in a position to meet its obligation at the year-end, the Group applies the following accounting treatment:
    - certificates acquired for a consideration in order to meet the obligation are recorded in intangible assets at acquisition cost, and
    - a provision is established equivalent to the shortfall in certificates compared to the obligation at the year-end. The value of this provision is based on the acquisition price of certificates already purchased on the spot or forward market, and market prices or penalty prices for the balance. The provision is cancelled when the certificates are surrendered to the State.

Forward purchases/sales of certificates related to trading activities are recorded in accordance with IAS 39, stated at fair value at the balance sheet date. The change in fair value is recorded in the income statement.

1.3.29.3 Energy savings certificates

Expenses incurred to meet an energy savings obligation are recorded as:
- tangible assets, if the action taken by the entity concerns its own assets and the expenses qualify for recognition as an asset;
- expenses for the year incurred, if they do not meet the requirements for capitalization or if the action taken is to encourage third parties to save energy.

Under an energy savings certificates system of the kind introduced by the French law of 13 July 2005:
- certificates obtained from the State after the action taken are not recognized in the accounts;
- purchases of energy savings certificate are included in:
  - expenses, if the purchases are made to meet the obligation,
  - intangible assets, if the certificates are purchased for resale (as there is no active market).

1.3.29.4 Environmental expenses

Environmental expenses are identifiable expenses incurred to prevent, reduce or repair damage to the environment that has been or may be caused by the Group as a result of its business. These expenses are recorded under three headings:
- they are capitalized if they are incurred to prevent or reduce future damage or protect resources;
- they are booked as environmental liabilities and increases to provisions for environmental risks if they correspond to an obligation that exists at the year-end and it is probable or certain at the reporting date that they will lead to an outflow of resources representing economic benefits;
- they are recognized as expenses if they are operating expenses for the bodies in charge of environmental concerns, environmental supervision, environmental duties and taxes, processing of liquid and gas effluents and non-radioactive waste, or research unrelated to an investment.

Note 2. Comparability

2.1 Presentation of EDF Luminus' energy sale and purchase optimization activities

In 2010, EDF Luminus (the new name for the Belgian company SPE) charged energy purchases undertaken as part of its optimization activities to sales. For compliance with Group presentation rules, this treatment is no longer applied to energy purchases for 2011 and the comparative periods presented. This change leads to a €155 million increase in sales, and an equivalent increase in fuel and energy purchases, for 2010. Operating profit before depreciation and amortization and net income are unaffected.

2.2 Impact on the consolidated income statement for 2010

(in millions of Euros)	2010 as published	EDF Luminus optimization impacts	2010 restated
Sales	65,165	155	65,320
Fuel and energy purchases	(26,021)	(155)	(26,176)
Other external expenses	(10,582)	-	(10,582)
Personnel expenses	(11,422)	-	(11,422)
Taxes other than income taxes	(3,227)	-	(3,227)
Other operating income and expenses	3,090	-	3,090
Prolongation of the transition tariff system (TaRTAM) – laws of 7 June and 7 December 2010	(380)	-	(380)
Operating profit before depreciation and amortization	**16,623**	**-**	**16,623**
Net changes in fair value on Energy and Commodity derivatives, excluding trading activities	15	-	15
Net depreciation and amortization	(7,426)	-	(7,426)
Net increases in provisions for renewal of property, plant and equipment operated under concessions	(428)	-	(428)
(Impairment)/reversals	(1,743)	-	(1,743)
Other income and expenses	(801)	-	(801)
Operating profit	**6,240**	**-**	**6,240**
Cost of gross financial indebtedness	(2,754)	-	(2,754)
Discount effect	(3,134)	-	(3,134)
Other financial income and expenses	1,462	-	1,462
Financial result	**(4,426)**	**-**	**(4,426)**
Income before taxes of consolidated companies	**1,814**	**-**	**1,814**
Income taxes	(1,079)	-	(1,079)
Share in income of associates	134	-	134
Net income of discontinued operations	380	-	380
GROUP NET INCOME	**1,249**	**-**	**1,249**
EDF net income	**1,020**	-	**1,020**
Net income of continuing operations	634	-	634
Net income of discontinued operations	386	-	386
Net income attributable to non-controlling interests	**229**	-	**229**
Net income of continuing operations	235	-	235
Net income of discontinued operations	(6)	-	(6)

Note 3. Significant events and transactions

3.1 Group operations in Italy

3.1.1 Preliminary agreement for acquisition of Edison by the EDF group and acquisition of Edipower by A2A

On 26 December 2011, EDF, A2A, Delmi, Edison and Iren signed a preliminary agreement for reorganization of the shareholding structure of Edison and Edipower. The EDF group will take control of Edison by purchasing Delmi's entire investment in TDE (50%) at the negotiated price of €0.84 per Edison share or a total of €705 million.

After completion of the operation, which is subject to certain conditions particularly concerning approval by the regulatory and competition authorities, the Group will hold 78.96% of the capital and 80.7% of the voting rights in Edison.

This agreement also provides for a mandatory tender offer by the EDF group to Edison's minority shareholders, to buy out their investments at a price no higher than the price of the Edison shares acquired *via* TDE, *i.e.* €0.84 per share. When EDF takes control of Edison, Delmi will take control of Edipower by purchasing the investments in Edipower held by Edison (50%) and Alpiq (20%) for the total sum of €805 million.

In accordance with the timeline defined in the preliminary agreement, on 24 January 2012 the Boards of Directors of Edison and EDF validated the draft preliminary agreement for reorganization of the shareholding structure of Edison and Edipower. The governance bodies of the other companies concerned by the transaction also gave their approval.
The preliminary agreement of 26 December 2011 also stipulates that a long-term (6-year) gas supply contract is to be signed between Edison and Edipower to cover 50% of Edipower's gas requirements.

The final agreements were signed on 15 February 2012. Their execution is conditional upon confirmation by the Italian market regulator (Consob) of the price of €0.84 per share for the offer to minority shareholders, and approval of the operations by the Italian competition authorities and the European Union.

Acquisition of TDE will enable the EDF group to have exclusive control over Edison, from a date that should normally be before 30 June 2012. As a result, this operation will be recorded under IFRS 3 (revised).

Regarding the offer to minority shareholders, since the EDF group will already have taken control of Edison when the offer is made, it will be considered as a transaction between shareholders under IAS 27 (amended), with an impact on equity.

3.1.2 Provision established at 31 December 2010 in respect of the Group's operations in Italy

At 31 December 2010, the Group established a provision of €750 million on the Italy segment in response to various indicators and uncertainties. This provision was recorded in the income statement under "Other income and expenses".

The Group's consolidated financial statements at 31 December 2011 include impairment and provisions recognized in the 2010 annual accounts (finalized in March 2011) and 2011 accounts of Edison and TDE, *via* allocation to the extent of €668 million of the provision recorded at 31 December 2010. Details of this impairment are given in note 14.

3.2 Simplified alternative public cash or exchange offer for EDF Énergies Nouvelles

On 8 April 2011 the EDF group, which already owned 50% of EDF Énergies Nouvelles, launched a simplified alternative public offer to acquire all the shares in EDF Énergies Nouvelles, for a cash consideration or in exchange for shares.
EDF's Board of directors approved this offer at its meeting of 8 April 2011. The operation was supported by the Mouratoglou group, a longstanding partner of EDF and 25.1% shareholder in EDF Énergies Nouvelles, which tendered its entire holding in EDF Énergies Nouvelles to the offer, half for shares and half for cash.

When the offer closed on 16 June 2011, the Group acquired the shares tendered for the sum of €1,351 million, raising its ownership of EDF Énergies Nouvelles to 96.71%. This sum comprises:
- €1,045 million or 33.7% for the cash component of the offer;
- €306 million or 13.0% for the share exchange component of the offer.

EDF then proceeded with a compulsory squeeze-out of shares not tendered to the offer, at the price of €40 per share. In parallel, a liquidity contract was set up to enable EDF to purchase shares covered by employee share plans. These operations generated a total cost of €103 million.

EDF also carried out share repurchases amounting to €324 million in order to neutralize this operation's dilutive effect on EDF shareholders' percentage control. This neutralization became effective on 28 September 2011 after a reduction in the capital of EDF SA through cancellation of treasury shares.

In application of IAS 27 (amended), this operation is considered as a transaction between shareholders. It is reflected in the consolidated financial statements by a €716 million decrease in equity (EDF's share), corresponding to the difference between the acquisition price and the net book value of the minority interests acquired. EDF Énergies Nouvelles remains fully consolidated, with the Group's percentage interest at 100% from 29 June 2011.

3.3 Sale of the investment in EnBW

The disposal of the Group's holding in EnBW was completed on 17 February 2011. On that date, in application of the agreements signed by the two parties on 6 December 2010, the sum of €4.5 billion was paid to the EDF group in addition to the €169 million downpayment received on 16 December 2010. The net gain on the sale is €253 million (€276 million before taxes, included in "Other income and expenses").

EnBW was an operating segment ("Germany") in the EDF group's 2010 financial statements, and in accordance with IFRS 5, the Group's investment in EnBW was treated as a "discontinued operation".

This operation also led to cancellation in 2011 of the €2.3 billion off-balance sheet commitment recorded by the EDF group in respect of OEW's put option to sell EDF part or all of its 25% stake in EnBW.

3.4 Nuclear accident in the Fukushima plant in Japan

Following the Fukushima accident, the administrative authorities of various countries where the Group operates have taken decisions concerning plants already in operation and proposed new plants.

The French Prime Minister asked the Nuclear Safety Authority (ASN) in a letter dated 23 March 2011 to conduct further assessments of the safety of France's nuclear facilities. To ensure coherence in the actions undertaken at national and European level, the ASN presented specifications for these assessments on 9 May 2011.

In April, as well as the additional safety assessments, EDF reported its initial proposals to reinforce safety and control of its nuclear generation fleet to the ASN panel of commissioners. After Fukushima, EDF prepared an initial program of actions for the short, medium and long term, covering several dimensions:

- assessment of the top-level technical and human resources that would be made available in the event of an accident;
- formation of a national rapid-intervention "task force" to reinforce the crisis response procedure, with dedicated transport equipment and human resources that can be mobilized within 24-48 hours;
- a detailed review of power plant design, to ensure that facilities have sufficient safety margins to cope with events such as earthquakes, floods, power loss and cooling.

On 15 September 2011, EDF submitted to the ASN its 19 additional safety assessment reports on the nuclear sites currently in operation and under construction. This in-depth examination of plant design showed that safety levels are good across all of EDF's nuclear fleet. Additional post-Fukushima measures have been proposed to the ASN, taking the assumptions further to help raise the level of plant safety even more.

On 3 January 2012, the ASN released its report on the additional safety assessments conducted following the Fukushima accident.

Following these assessments conducted on nuclear facilities identified as priority, the ASN considers that the facilities examined are sufficiently safe and there is no need to demand immediate closure for any of them. It also concludes that for ongoing operation, the plants' capacity to withstand extreme situations must be increased over and above current safety margins as soon as possible.

3.5 Significant events and transactions of 2010

3.5.1 Change in governance and allocation of 50% of RTE shares to dedicated assets

A decree of 31 December 2010 appointed two further representatives of the French government to the Supervisory Board of RTE, replacing representatives of EDF. This means the EDF group no longer has a majority on RTE's Supervisory Board, and therefore no longer has exclusive control over RTE's operating and financial policies as defined by IAS 27. Since the Group still has significant influence, particularly through its representative members on the Supervisory Board, its investment in RTE is accounted for under the equity method from 31 December 2010.

EDF's loss of control over RTE is considered as a common control transaction and is recorded at net book value.

At 31 December 2010, the EDF group allocated 50% of RTE shares to its portfolio of dedicated assets set aside to cover future nuclear plant decommissioning and back-end nuclear cycle costs in France.

3.5.2 Sale of the British networks

The sale of the British electricity distribution networks finalized on 29 October 2010 generated a €46 million gain, included in "Other income and expenses" at 31 December 2010.
It also led to deconsolidation of balance sheet items related to the British networks, and a reduction of €6.7 billion in the Group's net financial indebtedness.

3.5.3 Group operations in the US

On 3 November 2010, EDF and CEG completed a comprehensive agreement to restructure the two companies' collaboration, eliminating the $2 billion put option for sale of non-nuclear assets and attributing EDF full control over UniStar.

Under the terms of this agreement, EDF acquired CEG's 50% stake in UniStar and now owns 100% of the company. CEG, meanwhile, undertook to transfer potential new nuclear sites at Nine Mile Point and R.E. Ginna in New York State to UniStar. After transferring its investment, CEG withdrew from development and financing for the Calvert Cliffs 3 new reactor project.
In exchange for the above, EDF paid CEG $140 million and will transfer 3.5 million of its CEG shares to CEG. EDF also gave up its seat on CEG's Board of Directors from the date of the transfer.

CEG waived its put option entitling it to sell certain non-nuclear assets to EDF for a maximum of $2 billion.

The ownership structure of CENG remains unchanged: CEG holds 50.01% and EDF 49.99%.

The above factors led to recognition of the following effects, totaling €1,042 million, in the 2010 consolidated income statement:
- a €929 million expense in "Impairment/reversals": €477 million for CENG and €452 million for UniStar;
- a €93 million expense in "Other income and expenses", mainly corresponding to the loss on transfer to CEG of 3.5 million CEG shares held by EDF;
- a €20 million expense related to the additional impairment on CEG shares recorded in 2010 under "Other financial income and expenses".

3.5.4 Exeltium

The EDF group and Exeltium, a consortium of electricity-intensive industrial operators, finalized the terms of the two-phase implementation of their partnership agreement entered into on 31 July 2008. The corresponding operations thus began on 1 May 2010 with deliveries of electricity to around one hundred industrial French sites. The deliveries concerned approximately half of their entitlements under the agreement, which is for total deliveries of approximately 310 TWh spread over 24 years.

In accordance with the agreement, in late April 2010 Exeltium paid the first advance of €1.7 billion. For accounting purposes this advance is discounted to present value from the date it was received.

Note 4. Regulatory events in France

4.1 "NOME" law on the new electricity market organization

The French "NOME" (*Nouvelle organisation du marché de l'électricité*) law on the new electricity market organization was enacted on 7 December 2010 and the first implementation decrees were issued in April and May 2011.

The basic principles of this law, which is intended to encourage greater competition on the electricity market in France, are:
- development of competition, by allowing other suppliers temporary access to a portion of EDF's baseload nuclear energy output (up to a maximum of 100 TWh excluding network operators' losses) until 2025. This is the principle of regulated access to historical nuclear energy (ARENH – *Accès Régulé à l'Électricité Nucléaire Historique*) for which the price is set by government decision;
- contribution to supply security, obliging every supplier to have a sufficient demand response capacity for consumption or generation to supply all customers, particularly in peak consumption periods;
- continuation of the "blue" tariff for residential and small business customers; the calculation method will be modified from 2015 to reflect the ARENH principle;
- discontinuation of the "yellow" and "green" tariffs for business customers from 2015;
- deferral by 5 years, to 29 June 2016, of the deadline for building up the dedicated assets portfolio, provided certain criteria are met.

The ARENH principle came into force on 1 July 2011. The first ARENH deliveries to EDF's competitors are for an initial annual volume of 61.3 TWh. This volume cannot exceed 100 TWh each year, to be increased from August 2013 by the quantities sold to network managers to cover technical losses.

According to the "NOME" Law, the ARENH price has been set at €40/MWh for the second half of 2011 and €42/MWh for the first half of 2012. This initial price will move towards the full cost of generation in the existing nuclear fleet, in application of a future decree defining the costs included in the ARENH.

For the second half of 2011, 30.8 TWh were delivered under the ARENH system for a total value of €1.2 billion.

The capacity obligation system is due to come into force from 2015.

4.2 CSPE

The Contribution to the Public Electricity Service (*Contribution au Service Public de l'Électricité* or CSPE) is intended to compensate for certain public service charges assigned to EDF in particular. The CSPE is based on electricity consumption and is collected directly from the end-user. It was raised by €3/MWh on 1 January 2011 to €7.5/MWh until 30 July 2011. The amended Finance law for 2011 set the CSPE at €9/MWh from 31 July 2011 to 30 June 2012, then €10.5/MWh from 1 July 2012.

Note 5. Changes in the scope of consolidation

5.1 Changes in the scope of consolidation during 2011

In addition to the public alternative cash or exchange offer for EDF Énergies Nouvelles shares described in note 3.2, changes in the scope of consolidation during 2011 concerned the following entities.

5.1.1 Polish entities

The sale of the investment in EnBW in 2011 also had the following consequences:

- a change in the percentage interest and the EDF group's control in Kogeneracja and Zielona Gora (Poland): the Group's ownership of these entities now stands at 33.4% and 32.9% respectively (from 40.6% and 39.9% at 31 December 2010). Kogeneracja and Zielona Gora are proportionally consolidated from 17 February 2011. In application of IAS 27 (amended), the change to proportional consolidation for these entities generated a €28 million gain on deconsolidation;
- a change in the EDF group's ownership interest in ERSA (Rybnik), resulting in the Group holding 64.9% in this entity from 17 February 2011 (compared to 79.8% at 31 December 2010).

Also, the Group signed an agreement with EnBW on 21 December 2011 to purchase EnBW's investments in these entities. The transaction received the approval of the European authorities on 8 February 2012 and should be completed in the second fortnight of February 2012.

After completion, the EDF group will own 97.3% of ERSA and 50% plus one share in Kogeneracja. The value of the transaction is €301 million.

5.1.2 Dunkerque LNG

On 29 June 2011 Fluxys G and Total acquired investments of 25% and 10% respectively in Dunkerque LNG, the company responsible for industrial installations for a methane terminal. Dunkerque LNG has been 65% owned by the EDF group since that date, and remains fully consolidated.

5.2 Changes in the scope of consolidation during 2010

In addition to the following major operations:

- sale of the regulated and deregulated electricity distribution network activities in the United Kingdom;
- acquisition of a further 50% investment in UniStar (United States) to bring the Group's ownership to 100%;
- presentation of the investment in EnBW as discontinued operations;
- change in the consolidation method applied to RTE,

described in detail in note 3.5, the other main changes in the scope of consolidation concern acquisition of a further 12.5% investment in EDF Luminus, bringing the Group's holding in the company to 63.5%.

Note 6. Segment reporting

6.1 Reporting by operating segment

Segment reporting presentation complies with IFRS 8, "Operating segments".
Segment reporting is determined before inter-segment eliminations. Inter-segment transactions take place at market prices.

In accordance with IFRS 8, the breakdown used by the EDF group corresponds to the operating segments as regularly reviewed by the Management Committee. The Group uses the following segments:

- **"France":** EDF, RTE and ERDF, comprising the deregulated activities (mainly Generation and Supply), network activities (Distribution and Transmission) and island activities;
- **"United Kingdom":** the entities of the EDF Energy subgroup including British Energy and EDF Development Company Ltd;
- **"Italy":** all the entities located in Italy, principally the Edison subgroup, TDE and Fenice;
- **"Other International":** EDF International and the other gas and electricity entities located in continental Europe, the US, Latin America and Asia;
- **"Other activities":** all the group's other investments, including EDF Trading, EDF Énergies Nouvelles, Dalkia, Tiru, Électricité de Strasbourg and EDF Investissements Groupe.

No segments have been merged.

6.1.1 At 31 December 2011

(in millions of Euros)	France	United Kingdom	Italy	Other International	Other activities	Inter-segment eliminations	Total
External sales	37,171	8,568	6,552	7,501	5,515	-	65,307
Inter-segment sales	578	8	-	185	620	(1,391)	
TOTAL SALES	**37,749**	**8,576**	**6,552**	**7,686**	**6,135**	**(1,391)**	**65,307**
OPERATING PROFIT BEFORE DEPRECIATION AND AMORTIZATION	**9,111**	**1,912**	**592**	**1,280**	**1,929**	**-**	**14,824**
OPERATING PROFIT	**5,376**	**996**	**(155)**	**946**	**1,123**	**-**	**8,286**
Balance sheet							
Intangible assets and property, plant and equipment	80,537	12,682	3,965	8,966	10,520	-	116,670
Investments in associates	4,737	25	24	2,325	573	-	7,684
Goodwill	-	8,260	1,400	599	1,389	-	11,648
Other segment assets [1]	27,604	4,647	1,837	1,792	8,918	-	44,798
Assets classified as held for sale	-	-	700	1	-	-	701
Other non-allocated assets							50,206
TOTAL ASSETS	**112,878**	**25,614**	**7,926**	**13,683**	**21,400**	**-**	**231,707**
Other information:							
Investments in intangible assets and property, plant and equipment	7,378	1,179	318	437	1,822	-	11,134
Net depreciation and amortization	(3,899)	(966)	(427)	(528)	(465)	-	(6,285)
Impairment	-	-	(320)	(53)	(267)	-	(640)

(1) Other segment assets include inventories, trade receivables and other receivables.

6.1.2 At 31 December 2010

Following the sale of EnBW which was in process at 31 December 2010, the former "Germany" segment was treated as a discontinued operation and was not reported as an operating segment in 2010 for income statement and investment data.

(in millions of Euros)	France	United Kingdom	Germany	Italy	Other International	Other activities	Inter-segment eliminations	Total
External sales	36,167	10,683	-	5,647	7,033	5,790	-	65,320
Inter-segment sales	558	(1)	-	-	173	595	(1,325)	
TOTAL SALES	**36,725**	**10,682**	**-**	**5,647**	**7,206**	**6,385**	**(1,325)**	**65,320**
OPERATING PROFIT BEFORE DEPRECIATION AND AMORTIZATION	**10,124**	**2,732**		**801**	**1,084**	**1,882**	**-**	**16,623**
OPERATING PROFIT	**5,374**	**799**	**-**	**(612)**	**(393)**	**1,072**	**-**	**6,240**
Balance sheet								
Intangible assets and property, plant and equipment	76,491	12,040	-	5,132	9,276	8,877	-	111,816
Investments in associates	4,649	28	-	23	2,515	639	-	7,854
Goodwill	-	7,972	-	1,910	604	1,542	-	12,028
Other segment assets [1]	26,831	4,341	-	1,575	1,790	6,991	-	41,528
Assets classified as held for sale	-	21	17,857	122	78	67	-	18,145
Other non-allocated assets								49,188
TOTAL ASSETS	**107,971**	**24,402**	**17,857**	**8,762**	**14,263**	**18,116**	**-**	**240,559**
Other information:								
Investments in intangible assets and property, plant and equipment	7,874	1,871	-	381	561	1,554	-	12,241
Net depreciation and amortization	(4,361)	(1,513)	-	(471)	(578)	(503)	-	(7,426)
Impairment	-	(397)	-	(192)	(960)	(194)	-	(1,743)

(1) Other segment assets include inventories, trade receivables and other receivables.

6.2 Sales to external customers, by product and service group

The Group's sales are broken down by product and service group as follows:

- **"Generation/Supply":** energy generation and energy sales to industry, local authorities, small businesses and residential consumers. This segment also includes commodity trading activities;
- **"Distribution":** management of the low and medium-voltage public distribution network;
- **"Transmission":** operation, maintenance and development of the high-voltage and very-high-voltage electricity transmission network;
- **"Other":** energy services (district heating, thermal energy services, etc.) for industry and local authorities, and new businesses mainly aimed at boosting electricity generation through cogeneration and renewable energy sources (*e.g.* wind turbines, solar panels, etc.).

(in millions of Euros)	Generation/Supply	Distribution	Transmission [1]	Other	Eliminations [2]	Total
At 31 December 2011:						
External sales:						
- France	24,535	13,099	-	123	(586)	37,171
- Rest of the world	24,092	432	-	3,612	-	28,136
TOTAL SALES	**48,627**	**13,531**	**-**	**3,735**	**(586)**	**65,307**
At 31 December 2010:						
External sales:						
- France	23,011	9,836	4,031	94	(805)	36,167
- Rest of the world	24,121	1,361	23	3,648	-	29,153
TOTAL SALES	**47,132**	**11,197**	**4,054**	**3,742**	**(805)**	**65,320**

(1) No sales are reported for Transmission in France in 2011 because RTE is accounted for under the equity method from 31 December 2010.

(2) Eliminations between regulated activities (Distribution - Transmission): €0 million for 2011, €(271) million for 2010.
Eliminations between deregulated activities: €(30) million for 2011, €(28) million for 2010.

Income statements

Note 7. Sales

Sales are comprised of:

(in millions of Euros)	2011	2010
Sales of energy and energy-related services	60,143	59,608
Other sales of goods and services	4,247	4,837
Trading	917	875
SALES	**65,307**	**65,320**

Sales were stable over the year as organic growth offset the negative effects of changes in the scope of consolidation (chiefly the sale of the network businesses in the United Kingdom in 2010).

In France, EDF registered sales of €1,233 million in the second half of 2011 under the ARENH system (see note 4.1).

Note 8. Fuel and energy purchases

Fuel and energy purchases comprise:

(in millions of Euros)	2011	2010
Fuel purchases used - power generation	(9,922)	(9,165)
Energy purchases	(13,957)	(14,435)
Transmission and delivery expenses	(6,841)	(2,879)
Gain/loss on hedge accounting	274	1
(Increase)/decrease in provisions related to nuclear fuels and energy purchases	251	302
FUEL AND ENERGY PURCHASES	**(30,195)**	**(26,176)**

The increase in fuel and energy purchases is principally associated with transmission and delivery expenses, following application of the equity method to RTE from 31 December 2010 and the sale of the United Kingdom network activities in 2010.

Note 9. Other external expenses

Other external expenses comprise:

(in millions of Euros)	2011	2010
External services	(10,710)	(11,381)
Other purchases (excluding external services, fuel and energy)	(2,955)	(2,849)
Change in inventories and capitalized production	3,464	3,462
(Increase)/decrease in provisions on other external expenses	270	186
OTHER EXTERNAL EXPENSES	**(9,931)**	**(10,582)**

Excluding the effect of changes in the scope of consolidation (RTE and the UK networks), other external expenses were stable.

Note 10. Personnel expenses

10.1 Personnel expenses

Personnel expenses comprise:

(in millions of Euros)	2011	2010
Wages and salaries	(7,119)	(7,513)
Social contributions	(1,346)	(1,459)
Employee profit sharing	(211)	(205)
Non-monetary benefits	(375)	(357)
Other expenses linked to short-term benefits	(206)	(215)
Short-term benefits	**(9,257)**	**(9,749)**
Expenses under defined-contribution plans	(730)	(733)
Expenses under defined-benefit plans	(812)	(855)
Post-employment benefits	**(1,542)**	**(1,588)**
Other long-term expenses	(116)	(89)
Termination payments	(2)	4
Other personnel expenses	**(118)**	**(85)**
PERSONNEL EXPENSES	**(10,917)**	**(11,422)**

10.2 Average workforce

	2011	2010[1]
IEG status	96,385	103,319
Other	55,419	55,445
TOTAL	**151,804**	**158,764**

(1) Including the average RTE workforce (8,670 employees).

Average workforce numbers are reported on a full-time equivalent basis. Personnel corresponding to proportionally consolidated companies included pro rata with the Group's percentage interest represent the equivalent of 22,504 full-time employees at 31 December 2011 (21,467 full-time equivalent employees at 31 December 2010).

Note 11. Taxes other than income taxes

Taxes other than income taxes break down as follows:

(in millions of Euros)	2011	2010
Payroll taxes	(209)	(231)
Energy taxes	(1,396)	(1,559)
Other non-income taxes	(1,496)	(1,437)
TAXES OTHER THAN INCOME TAXES	**(3,101)**	**(3,227)**

Note 12. Other operating income and expenses

Other operating income and expenses comprise:

(in millions of Euros)	2011	2010
Operating subsidies	3,679	2,705
Net expense associated with the TaRTAM transition tariff system	(132)	160
Net income on deconsolidation	140	78
Gains on disposal of property, plant and equipment	79	(109)
Net increase in provisions on current assets	(54)	(36)
Net increase in provisions for operating contingencies and losses	217	486
Other items	(268)	(194)
OTHER OPERATING INCOME AND EXPENSES	**3,661**	**3,090**

12.1 Operating subsidies

This item mainly comprises the subsidy received by EDF in respect of the Contribution to the Public Electricity Service (CSPE) introduced by the French law of 3 January 2003. This contribution is payable by end-users (both eligible and non-eligible) and collected by network operators or electricity suppliers, which then pay it to the State.

In the financial statements, this compensation results in recognition of income of €3,556 million for 2011 (€2,605 million for 2010). The rise in CSPE income recorded in 2011 was largely due to significant increases in the volumes of purchase obligations for photovoltaic and wind power.

12.2 Net expense associated with the TaRTAM transition tariff system

Other operating income and expenses in 2011 also include a net expense of €(132) million for the TaRTAM transition tariff system: €(170) million resulting from the decision of 4 July 2011 issued after re-estimation of the cost by the French market regulator CRE (*Commission de Régulation de l'Énergie*) based on information provided by the suppliers concerned, and €38 million principally reversed from residual provisions.

12.3 Net income on deconsolidation

In 2011, the net income on deconsolidation mainly includes the net gains on disposals of companies in the EDF Énergies Nouvelles and EDF Trading subgroups. It also comprises a €28 million gain resulting from loss of control of Kogeneracja and Zielona Gora (see note 5.1.1).

In 2010, the net income on deconsolidation includes the net gains on disposals of the Eggborough plant by EDF Energy, and Usti (in the Czech Republic) by Dalkia International.

12.4 Gains on disposal of property, plant and equipment

The improvement in this item in 2011 chiefly results from gains on sales of real estate assets in France and the United Kingdom.

12.5 Net increase in provisions for operating contingencies and losses

In 2011, the net increase in provisions for operating contingencies and losses includes €332 million corresponding to reversals of negative fair value on British Energy commodity sales contracts recognized at the acquisition date of 5 January 2009, following their settlement (€532 million in 2010).

Note 13. Prolongation of the transition tariff system (TaRTAM) – laws of 7 June and 7 December 2010

A charge of €380 million (€401 million less €21 million reinvoiced to partners in the nuclear plants) was recorded in the consolidated financial statements at 31 December 2010 to reflect EDF's contribution to electricity supplier compensation for the second half of 2010 and the first half of 2011. This followed the extension of the TaRTAM transition tariff system until application of the principle of regulated access to historical nuclear energy (ARENH - *Accès Régulé à l'Électricité Nucléaire Historique*) from 1 July 2011.

Note 14. Impairment/reversals

14.1 Impairment by category of asset

Details of impairment recognized and reversed are as follows:

(in millions of Euros)	Notes	2011	2010
Impairment of goodwill	19	(655)	(274)
Impairment of other intangible assets	20	(88)	(138)
Impairment of tangible assets	22-23	(620)	(1,331)
Reversal of the provision in respect of operations in Italy [1]	33.1	723	-
IMPAIRMENT NET OF REVERSALS		**(640)**	**(1,743)**

(1) Established in 2010 in "Other income and expenses" (€(750) million).

14.2 Impairment tests on goodwill and other assets and recognition of impairment

The following table gives details of impairment tests carried out on the main goodwill and other Group assets in 2011, and the key assumptions:

Operating Segment	Cash-Generating Unit or Asset	Indication of impairment	WACC after tax, 2011	Growth rate beyond medium-term	Impairment recognized in 2011 *(in millions of Euros)*
United Kingdom	EDF Energy – nuclear	NA	7.5%	-	-
United Kingdom	EDF Energy – ESCS	NA	7.5%	1.7%	-
Italy	Edison	Proposed sale of Edipower and contraction of margins in the electricity business	10.3%/11.4% (1)	0 - 2%	(510)
Other International	EDF Luminus	Revision of nuclear policy in Belgium	6.9%	2%	-
Other activities	Dalkia International	Downscaling of renewable energy businesses in Italy and Spain	7.8%	1.9%	(118)
Other impairment of goodwill					(27)
IMPAIRMENT OF GOODWILL					**(655)**
Italy	Edison	Proposed sale of Edipower and contraction of margins in the electricity business	10.3%/11.4% (1)	0 - 2%	(515)
Other International	CENG	Decrease in the long term electricity prices in the United-States	7.1%	-	-
Other International	Bert	End of government support for cogeneration and new tariff regulations for heat sales	11.1%	-	(52)
Other activities	Dalkia International	Downscaling of renewable energy businesses in Italy and Spain	7.3%	1.9%	(33)
Other activities	EDF Énergies Nouvelles projects	New regulation of photovoltaic energy	5.7% to 9.1% depending on the country	-	(51)
Other impairment of tangible and intangible assets (excluding goodwill)					(57)
IMPAIRMENT OF TANGIBLE AND INTANGIBLE ASSETS (EXCLUDING GOODWILL)					**(708)**

(1) WACC before tax.

United Kingdom

EDF Energy's goodwill amounts to €8,260 million at 31 December 2011. Impairment testing is based on two different Cash Generating Units:

- nuclear activities, including British Energy and development of four EPRs;
- Energy Sourcing and Customer Supply (ESCS), including development of the West Burton plant.

The recoverable value of the nuclear activities is estimated based on discounted future net cash flows from the generation units over their estimated useful life, taking into consideration the probable extension of the useful lives by 5 years for three AGRs (Advanced Gas Reactors) and 20 years for Sizewell B. The approval in December 2010 of useful life extensions for the Heysham 1 and Hartlepool plants confirm the validity of the assumptions adopted by the Group. The assumptions regarding

electricity price movements in the United Kingdom take account of the need to develop new generation facilities to meet demand from 2020, especially due to retirement of existing coal-fired plants, and a recovery in nuclear power by that time. It was assumed the greenhouse gas emission quota prices used for the impairment tests were determined on a basis that reflects the energy market reforms.

The recoverable value of the Nuclear CGU is sensitive to assumptions regarding long-term movements in electricity prices. It is also sensitive to the WACC, mainly as a result of the operating lifetimes of nuclear projects, but using a WACC one point higher would not lead to impairment on this CGU. Also, if the number of EPRs constructed was reduced from 4 to 2 the recoverable value of the CGU would remain higher than its book value.

The recoverable value of ESCS is based on the value in use, determined by reference to the entity's 5-year medium-term plan. Terminal value is determined using an after-tax growth rate to infinity of 1.7%.

Italy

In 2010, the Group established a provision of €750 million in respect of operations in Italy (Edison, TDE and Fenice). In 2011, in view of the impairment recorded by Group subsidiaries in Italy as detailed below, an amount of €668 million was reversed from this provision (€723 million before the effects of tax and minority interests).

Finalization of Edison and TDE 2010 financial statements

The Group has recorded impairment of €(569) million as a result of the 2010 financial statements for Edison and TDE (released in March 2011) which were not finalized when the EDF group established its own 2010 financial statements.

Impairment tests of Edison in 2011

Due to the disposal of Edison's investment in Edipower to Delmi as described in note 3.1.1, in compliance with IFRS 5 the value of this investment (including a share of goodwill) has been adjusted to its probable realizable value net of selling expenses. This has led to recognition of impairment of €(280) million (EDF's share).

The annual impairment test of Edison is based on two different groups of CGUs: Electricity, and Hydrocarbons. The recoverable value of activities is based on future cash flows as estimated in the 8-year plan and a terminal value with growth rate to infinity of between 0 and 2%. The pre-tax discount rate applied to cash flows is 10.3% for Electricity and 11.4% for Hydrocarbons. As a result of this test, €(106) million of impairment (EDF's share) was booked against the Electricity business. The recoverable value of the Hydrocarbons business is higher than its book value.

Following the decline in generation volumes and margins at certain power plants, and changes in Italian regulations, impairment net of reversals of €(70) million (EDF's share) is also booked in respect of Edison's generation assets. The impairment tests consider flows over these assets' useful lives.
Edison's value in use at 31 December 2011 is sensitive to assumptions regarding long-term movements in electricity prices in Italy, and renegotiations on long-term gas supply contracts.

In all, the Group has recognized a total of €(1,025) million before tax in impairment of Edison. Edison's goodwill after this impairment amounts to €1,400 million at 31 December 2011.

Other International

EDF Luminus

EDF Luminus' goodwill amounts to €378 million at 31 December 2011.
For the purposes of impairment testing EDF Luminus is considered as a single Cash-generating unit. The recoverable value is based on its value in use, determined using cash flows over 20 years and a terminal value.
Under the plan adopted by Belgian political parties in October 2011 to withdraw from civil nuclear energy, all Belgian nuclear power plants are to close by 2025, but to avoid any shortages this plan will only be implemented if alternative non-nuclear power sources are available. For the purposes of determining cash flows, it is thus considered that the nuclear plants in which EDF Luminus holds investments will close by 2025, and that the electricity generated by those plants will be replaced by power from a combined cycle gas plant.

CENG

The recoverable value of CENG is based on its value in use, determined using cash flows over the useful lives of the entity's nuclear generation plants, discounted at the rate of 7.1% after tax.
No impairment was recorded as a result of the impairment test carried out in 2011 following a downward adjustment in electricity price scenarios.
CENG's value in use is sensitive to assumptions regarding long-term movements in electricity prices in the United States, and to WACC.

Other activities

Dalkia International

After impairment, Dalkia International's goodwill amounts to €799 million at 31 December 2011. The recoverable value of its assets is based on values in use drawn from the 5-year medium-term plans. The significant cutback in renewable energy business in Italy (and to a lesser extent in Spain) has led to recognition of a total €(151) million of impairment on assets.

Note 15. Other income and expenses

Other income and expenses in 2011 included:
- income of €414 million corresponding to reversals from provisions for renewal of ERDF's concession assets, following a change in estimate for the useful life of low-voltage twisted overhead pipes (which has been extended from 40 to 50 years);
- income of €276 million corresponding to the gain on sale of EnBW (see note 3.3).

Other income and expenses for 2010 mainly included:
- an expense of €(750) million corresponding to a provision in respect of the Italy segment;
- an expense of €(93) million corresponding to the agreements signed on 3 November 2010 with CEG;
- income of €46 million corresponding to the gain on the sale of networks activities in the United Kingdom.

Note 16. Financial result

16.1 Cost of gross financial indebtedness

Details of the components of the cost of gross financial indebtedness are as follows:

(in millions of Euros)	2011	2010
Interest expenses on financing operations	(2,284)	(2,724)
Change in the fair value of derivatives and hedges of liabilities	(5)	(1)
Transfer to income of changes in the fair value of cash flow hedges	(3)	(10)
Net foreign exchange gain on indebtedness	21	(19)
COST OF GROSS FINANCIAL INDEBTEDNESS	**(2,271)**	**(2,754)**

The decrease in interest expenses is largely due to the lower average gross financial indebtedness following debt reduction operations of late 2010 and early 2011 (sale of the UK network activities and EnBW, application of the equity method to RTE from 31 December 2010).

16.2 Discount effect

The discount effect primarily concerns provisions for the back-end nuclear cycle, decommissioning and last cores, and provisions for long-term and post-employment employee benefits.

Details of this expense are as follows:

(in millions of Euros)	2011	2010
Provisions for long-term and post-employment employee benefits	(1,337)	(1,435)
Provisions for back-end nuclear cycle, decommissioning and last cores	(1,554)	(1,510)
Other provisions and advances	(173)	(189)
DISCOUNT EFFECT	**(3,064)**	**(3,134)**

16.3 Other financial income and expenses

Other financial income and expenses comprise:

(in millions of Euros)	2011	2010
Financial income on cash and cash equivalents	44	23
Gains (losses) on available-for-sale financial assets	137	301
Gains (losses) on other financial assets	568	204
Changes in financial instruments carried at fair value with changes in fair value included in income	86	(27)
Other financial expenses	(95)	(62)
Foreign exchange gain/loss on financial items other than debts	(36)	82
Return on hedging assets	597	715
Capitalized borrowing costs	254	226
OTHER FINANCIAL INCOME AND EXPENSES	**1,555**	**1,462**

Gains net of expenses on available-for-sale financial assets include gains on disposals, interest income, and dividends. The fair value of Veolia Environnement shares at 31 December 2011 was more than 50% lower than their historical value, and as a result impairment of €(340) million was recorded against available-for-sale financial assets.

In 2011, "Gains (losses) on other financial assets" include income of €232 million resulting from a debt waiver by the CEA (French Atomic Energy Commission), relating to a loan from the CEA to EDF for construction of the Creys-Malville plant.

Note 17. Income taxes

17.1 Breakdown of tax expense

Details are as follows:

(in millions of Euros)	2011	2010
Current tax expense	(1,690)	(1,385)
Deferred taxes	385	306
TOTAL	**(1,305)**	**(1,079)**

In 2011, €(1,005) million of the current tax expense relates to EDF's tax consolidated group, and €(685) million to other subsidiaries (€(660) million and €(725) million respectively in 2010).

17.2 Reconciliation of the theoretical and effective tax expense (tax proof)

(in millions of Euros)	2011	2010
Income of consolidated companies before tax	**4,506**	**1,814**
Income tax rate applicable to the parent company	36.10%	34.43%
Theoretical tax expense	**(1,627)**	**(625)**
Differences in tax rate	323	219
Permanent differences	47	(129)
Taxes without basis	(78)	42
Net depreciation of deferred tax assets	31	(587)
Other	(1)	1
ACTUAL TAX EXPENSE	**(1,305)**	**(1,079)**
Effective tax rate	**28.96%**	**59.48%**

The effective tax rate for 2011 and 2010 was driven up by impairment and the provision established for the Italy segment. Excluding these factors, the effective tax rate is 26.6% and 29.6% respectively for 2011 and 2010.

The main factors explaining the difference between the French tax rate and the effective rate are:

- 2011:
  - the positive impact of differences in tax rates applicable to foreign subsidiaries (€323 million),
  - the positive effect of reversals of depreciation of deferred tax assets (€114 million), mainly in the French tax consolidation group,
- 2010:
  - the positive impact of differences in tax rates applicable to foreign subsidiaries (€219 million),
  - the negative effect of taxation of certain components of the gain on disposal of network activities in the United Kingdom (in particular, the tax effect on hedges of net investments in foreign operations transferred to income) (€(161) million),
  - the positive effect of reversals of depreciation of deferred tax assets (€95 million), mainly in the French tax consolidation group.

17.3 Change in deferred tax assets and liabilities

(in millions of Euros)	2011
Deferred tax assets	2,125
Deferred tax liabilities	(4,894)
Net deferred taxes at 1 January	**(2,769)**
Change in net income	385
Change in equity	420
Translation adjustments	(44)
Changes in scope of consolidation	(18)
Other movements	54
Net deferred taxes at 31 December	**(1,972)**
Deferred tax assets	2,507
Deferred tax liabilities	(4,479)

17.4 Breakdown of deferred tax assets and liabilities by nature

(in millions of Euros)	31/12/2011	31/12/2010
Deferred tax assets:		
Differences between depreciation recorded for accounting and tax purposes	83	58
Non-deductible provisions for pension obligations	3,974	3,829
Other non-deductible provisions	546	1,199
Other deductible temporary differences	1,214	1,016
Revaluations, revaluation surplus and elimination of intercompany profit	622	512
Tax losses and unused tax credits	720	326
Netting of deferred tax assets and liabilities	(3,338)	(3,348)
Deferred tax assets	**3,821**	**3,592**
Unrecorded deferred tax assets	(1,314)	(1,467)
Deferred tax assets in balance sheet	**2,507**	**2,125**
Deferred tax liabilities:		
Differences between depreciation recorded for accounting and tax purposes	(5,785)	(5,892)
Other taxable temporary differences	(510)	(910)
Revaluations, revaluation surplus and elimination of intercompany profit	(1,522)	(1,440)
Netting of deferred tax assets and liabilities	3,338	3,348
Deferred tax liabilities in balance sheet	**(4,479)**	**(4,894)**
NET DEFERRED TAXES	**(1,972)**	**(2,769)**

At 31 December 2011, unrecorded deferred tax assets represent a potential tax saving of €1,314 million (€1,467 million at 31 December 2010). Of the potential tax saving in 2011, €556 million relates to deferred tax assets in France, mainly on employee benefits (€658 million at 31 December 2010).

Note 18. Basic earnings per share and diluted earnings per share

The diluted earnings per share is calculated by dividing the Group's share of net income, corrected for dilutive instruments, by the weighted average number of potential shares outstanding over the period after elimination of treasury shares.
At 31 December 2011, there is no dilutive instrument in the EDF group.
The following table shows the reconciliation of the basic and diluted earnings used to calculate earnings per share, and the variation in the weighted average number of shares used in calculating basic and diluted earnings per share:

(in millions of Euros)	2011	2010
Net income attributable to ordinary shares	3,010	1,020
Effect of dilutive instruments	-	-
Net income used to calculated diluted earnings per share	**3,010**	**1,020**
Including: net income of continuing operations	***3,010***	***634***
Including: net income of discontinued operations	**-**	***386***
Average weighted number of ordinary shares outstanding during the year	**1,847,318,156**	**1,848,403,320**
Average weighted number of diluted shares outstanding during the year	**1,847,318,156**	**1,848,403,320**
Earnings per share *(in Euros)*		
NET EARNINGS PER SHARE	**1.63**	**0.55**
DILUTED EARNINGS PER SHARE	**1.63**	**0.55**
Earnings per share of continuing operations	1.63	0.34
Diluted earnings per share of continuing operations	1.63	0.34
Earnings per share of discontinued operations	-	0.21
Diluted earnings per share of discontinued operations	-	0.21

Operating assets and liabilities, equity

Note 19. Goodwill

19.1 Changes in goodwill

Goodwill on consolidated entities comprises the following:

(in millions of Euros)	31/12/2011	31/12/2010
Net book value at opening date	**12,028**	**13,526**
Acquisitions	21	200
Disposals	(14)	(116)
Impairment (note 14)	(655)	(274)
Translation adjustments	239	306
Changes in scope of consolidation and other	29	(1,614)
NET BOOK VALUE AT CLOSING DATE	**11,648**	**12,028**
Gross value at closing date	13,415	13,140
Accumulated impairment at closing date	(1,767)	(1,112)

The changes in goodwill in 2011 primarily relate to:
- impairment amounting to €(655) million, mainly concerning Edison and Dalkia (see note 14);
- translation adjustments of €239 million, largely due to the rise of the Pound sterling against the Euro.

The changes in goodwill in 2010 primarily related to the following:
- acquisitions totaling €200 million, including €140 million for the acquisition of PRE by EnBW;
- disposals totaling €(116) million, chiefly the sale of networks in the United Kingdom;
- impairment totaling €(274) million;
- other movements totaling €(1,614) million, including €(1,482) million related to the classification of EnBW goodwill as "discontinued operations" and €(102) million resulting from finalization of the initial balance sheets for EDF Luminus.

19.2 Goodwill by operating segment

The breakdown of goodwill is as follows:

(in millions of Euros)	31/12/2011	31/12/2010
EDF Energy	8,260	7,972
Total: United Kingdom	**8,260**	**7,972**
Edison	1,400	1,910
Total: Italy	**1,400**	**1,910**
EDF Luminus (Belgium)	378	378
ESTAG (Austria)	112	114
Other	109	112
Total: Other International	**599**	**604**
Dalkia International	799	907
EDF Énergies Nouvelles	209	255
Other	381	380
Total: Other activities	**1,389**	**1,542**
GROUP TOTAL	**11,648**	**12,028**

Note 20. Other intangible assets

The net value of other intangible assets breaks down as follows:

31/12/2011 *(in millions of Euros)*	31/12/2010	Acquisitions	Disposals	Translation adjustments	Changes in scope	Other movements	31/12/2011
Greenhouse gas emission rights - Green Certificates	439	458	(590)	2	-	57	366
Other intangible assets	6,070	758	(187)	23	(8)	(58)	6,598
Gross values	**6,509**	**1,216**	**(777)**	**25**	**(8)**	**(1)**	**6,964**
Accumulated amortization and impairment	(1,893)	(493)	183	(6)	13	(66)	(2,262)
NET VALUES	**4,616**	**723**	**(594)**	**19**	**5**	**(67)**	**4,702**

Impairment of €(88) million was booked on other intangible assets in 2011.

31/12/2010 *(in millions of Euros)*	31/12/2009	Acquisitions	Disposals	Translation adjustments	Changes in scope	Other movements	31/12/2010
Greenhouse gas emission rights - Green Certificates	708	777	(978)	11	(79)	-	439
Other intangible assets	6,900	686	(172)	62	(1,314)	(92)	6,070
Gross values	**7,608**	**1,463**	**(1,150)**	**73**	**(1,393)**	**(92)**	**6,509**
Accumulated amortization and impairment	(2,029)	(722)	155	(11)	689	25	(1,893)
NET VALUES	**5,579**	**741**	**(995)**	**62**	**(704)**	**(67)**	**4,616**

Impairment of €(138) million was booked on other intangible assets in 2010.

EDF's research and development expenses recorded in the income statement total €518 million for the year ended 31 December 2011 (€486 million for the year ended 31 December 2010).

Note 21. Property, plant and equipment operated under French public electricity distribution concessions

21.1 Net value of property, plant and equipment operated under French public electricity distribution concessions

(in millions of Euros)	31/12/2011	31/12/2010
Property, plant and equipment	44,342	42,836
Property, plant and equipment in progress	1,159	1,069
PROPERTY, PLANT AND EQUIPMENT OPERATED UNDER FRENCH PUBLIC ELECTRICITY DISTRIBUTION CONCESSIONS	**45,501**	**43,905**

21.2 Movements in property, plant and equipment operated under French public electricity distribution concessions (excluding assets in progress)

(in millions of Euros)	Land and buildings	Networks	Other installations, plant, machinery, equipment & other	Total
Gross value at 31/12/2010	**2,104**	**69,445**	**3,028**	**74,577**
Increases [1]	62	3,399	281	3,742
Decreases	(28)	(499)	(151)	(678)
Other movements	-	-	-	-
Gross value at 31/12/2011	**2,138**	**72,345**	**3,158**	**77,641**
Depreciation and impairment at 31/12/2010	**(1,146)**	**(28,581)**	**(2,014)**	**(31,741)**
Net depreciation	(34)	(174)	(121)	(329)
Disposals	25	384	150	559
Other movements [2]	(9)	(1,695)	(84)	(1,788)
Depreciation and impairment at 31/12/2011	**(1,164)**	**(30,066)**	**(2,069)**	**(33,299)**
Net values at 31/12/2010	**958**	**40,864**	**1,014**	**42,836**
NET VALUES AT 31/12/2011	**974**	**42,279**	**1,089**	**44,342**

(1) Increases also include facilities provided by the concession grantors.

(2) Other movements mainly concern depreciation of assets operated under concessions, booked against amortization recorded in the special concession liabilities.

Note 22. Property, plant and equipment operated under concessions for other activities

22.1 Net value of property, plant and equipment operated under concessions for other activities

The net value of property, plant and equipment operated under concessions for other activities breaks down as follows:

(in millions of Euros)	31/12/2011	31/12/2010
Property, plant and equipment	5,326	5,432
Property, plant and equipment in progress	696	595
PROPERTY, PLANT AND EQUIPMENT OPERATED UNDER CONCESSIONS FOR OTHER ACTIVITIES	**6,022**	**6,027**

22.2 Movements in property, plant and equipment operated under concessions for other activities (excluding assets in progress)

(in millions of Euros)	Land and buildings	Fossil-fired & hydropower plants	Networks	Other installations, plant, machinery, equipment & other	Total
Gross value at 31/12/2010	**1,270**	**9,279**	**547**	**1,123**	**12,219**
Increases	28	317	41	55	441
Decreases	(5)	(22)	(2)	(17)	(46)
Translation adjustments	(3)	10	(63)	20	(36)
Changes in the scope of consolidation	(28)	(253)	-	-	(281)
Other movements	(22)	(97)	1	6	(112)
Gross value at 31/12/2011	**1,240**	**9,234**	**524**	**1,187**	**12,185**
Depreciation and impairment at 31/12/2010	**(795)**	**(5,082)**	**(262)**	**(648)**	**(6,787)**
Net depreciation	(24)	(228)	(26)	(42)	(320)
Impairment net of reversals	-	(4)	-	(24)	(28)
Disposals	4	16	2	16	38
Translation adjustments	1	(4)	31	(11)	17
Changes in the scope of consolidation	6	88	-	-	94
Other movements	21	123	(6)	(11)	127
Depreciation and impairment at 31/12/2011	**(787)**	**(5,091)**	**(261)**	**(720)**	**(6,859)**
Net value at 31/12/2010	**475**	**4,197**	**285**	**475**	**5,432**
NET VALUE AT 31/12/2011	**453**	**4,143**	**263**	**467**	**5,326**

Property, plant and equipment operated under concessions other than French public electricity distribution concessions comprise at 31 December 2011 concession facilities mainly located in France (hydropower) and Italy.

Note 23. Property, plant and equipment used in generation and other tangible assets owned by the Group

23.1 Net value of property, plant and equipment used in generation and other tangible assets owned by the Group

The net value of property, plant and equipment used in generation and other tangible assets owned by the Group breaks down as follows:

(in millions of Euros)	31/12/2011	31/12/2010
Property, plant and equipment	47,184	46,730
Property, plant and equipment in progress	12,951	10,101
Finance-leased property, plant and equipment	310	437
PROPERTY, PLANT AND EQUIPMENT USED IN GENERATION AND OTHER TANGIBLE ASSETS OWNED BY THE GROUP	**60,445**	**57,268**

At 31 December 2011, property, plant and equipment in progress primarily concern EPR construction projects in France, and the West Burton plant in the United Kingdom.
Impairment of €(29) million was also in recorded 2011 in respect of property, plant and equipment in progress.

23.2 Movements in property, plant and equipment used in generation and other tangible assets owned by the Group (excluding assets in progress and finance-leased assets)

(in millions of Euros)	Land and buildings	Nuclear power plants	Fossil-fired & hydropower plants	Networks	Other installations, plant, machinery & equipment & other	Total
Gross value at 31/12/2010	**11,459**	**61,648**	**15,376**	**845**	**11,319**	**100,647**
Increases	422	1,289	956	31	2,062	4,760
Decreases	(134)	(434)	(212)	(5)	(407)	(1,192)
Translation adjustments	(49)	439	(78)	(2)	(44)	266
Changes in the scope of consolidation	(184)	-	(1,217)	(18)	318	(1,101)
Other movements	67	101	79	(30)	(75)	142
Gross value at 31/12/2011	**11,581**	**63,043**	**14,904**	**821**	**13,173**	**103,522**
Depreciation and impairment at 31/12/2010	**(6,155)**	**(34,009)**	**(8,791)**	**(434)**	**(4,528)**	**(53,917)**
Net depreciation	(302)	(2,034)	(589)	(26)	(723)	(3,674)
Impairment net of reversals	(15)	-	(480)	-	(68)	(563)
Disposals	92	360	207	3	376	1,038
Translation adjustments	30	(101)	49	1	43	22
Changes in the scope of consolidation	110	-	810	4	(203)	721
Other movements	(35)	(1)	60	22	(11)	35
Depreciation and impairment at 31/12/2011	**(6,275)**	**(35,785)**	**(8,734)**	**(430)**	**(5,114)**	**(56,338)**
Net value at 31/12/2010	**5,304**	**27,639**	**6,585**	**411**	**6,791**	**46,730**
NET VALUE AT 31/12/2011	**5,306**	**27,258**	**6,170**	**391**	**8,059**	**47,184**

23.3 Finance lease contracts

	31/12/2011				31/12/2010
		Maturity			
(in millions of Euros)	Total	< 1 year	1 to 5 years	> 5 years	Total
Future minimum lease payments receivable as lessor	**60**	16	39	5	**65**
Future minimum lease payments payable as lessee	**149**	22	76	51	**235**

The Group is the lessor in agreements classified as finance leases under IFRIC 4 and IAS 17, which account for almost all of its finance lease commitments as lessor.

The Group is bound as lessee by irrevocable finance lease contracts for premises, equipment and vehicles used in the course of its business. The corresponding payments are subject to renegotiation at intervals defined in the contracts.

Note 24. Investments in associates

Investments in associates are as follows:

		31/12/2011			31/12/2010	
(in millions of Euros)	Principal activity[1]	Ownership %	Share of net equity	Share of net income	Share of net equity	Share of net income
RTE	T	100.00	4,737	266	4,649	-
Alpiq	G	25.00	1,419	(276)	1,746	107
Taishan	G	30.00	688	-	541	-
Dalkia Holding	O	34.00	443	23	470	24
NTPC	G	40.00	125	23	133	29
Other investments in associates			272	9	315	(26)
TOTAL			**7,684**	**45**	**7,854**	**134**

(1) G = generation, D = distribution, T= transmission, O = Other.

24.1 RTE

24.1.1 RTE – financial indicators

The key financial indicators for RTE for 2011 are as follows:

(in millions of Euros)	
2011 Operating profit before depreciation and amortization	1,355
2011 Net income	266
Equity at 31 December 2011	4,737
Balance sheet total at 31 December 2011	14,611
Net indebtedness at 31 December 2011	6,578

24.1.2 Transactions between the EDF group and RTE

At 31 December 2011 the main transactions between the EDF group and RTE were as follows.

Sales

ERDF uses RTE's high-voltage and very high-voltage networks to convey energy from its point of generation to the distribution networks. This service generated €3,055 million in sales revenues for RTE from ERDF over 2011.

In executing its responsibility to ensure balance in the electricity system, in 2011 RTE also undertook:

- energy purchases and sales with EDF, amounting to €180 million and €341 million respectively;
- system service purchases from EDF amounting to €283 million.

Other transactions

The EDF group contributes to financing of RTE through loans amounting to a total of €1,400 million at 31 December 2011 (€1,914 million at 31 December 2010). EDF received a total of €81 million in interest expenses on this loan in 2011.

RTE is also included in the EDF group tax consolidation, under a tax consolidation agreement between the two companies.

24.2 Alpiq

24.2.1 Published financial indicators

The main published indicators by the Alpiq group for 2010 were as follows:

(in millions of Euros)	
2010 Sales	10,205
2010 Net income	467
Equity at 31 December 2010	6,223
Balance sheet total at 31 December 2010	14,778

24.2.2 Impairment

In a restructuring and reorganization plan announced on 4 November 2011, Alpiq decided to refocus business on Switzerland and certain international sectors. Impairment of €320 million (EDF's share) was recognized in investments in associates in the Group's consolidated financial statements. This impairment, recorded by Alpiq in its consolidated accounts, mainly concerned its investment in Romande Energie in Switzerland, and in Edipower and A2A in Italy.

Note 25. Inventories

The carrying value of inventories, broken down by nature, is as follows:

	31/12/2011			31/12/2010		
(in millions of Euros)	Gross value	Provisions	Net value	Gross value	Provisions	Net value
Nuclear fuel	9,848	(13)	9,835	9,551	(12)	9,539
Other fuel	1,963	(8)	1,955	1,678	(8)	1,670
Other raw materials	1,095	(196)	899	1,004	(182)	822
Work-in-progress for production of goods and services	553	(11)	542	315	(6)	309
Other inventories	378	(28)	350	377	(32)	345
TOTAL INVENTORIES	**13,837**	**(256)**	**13,581**	**12,925**	**(240)**	**12,685**

The long-term portion (more than one year) mainly concerns nuclear fuel inventories amounting to €6,778 million (€7,146 million at 31 December 2010).
The value of EDF Trading's inventories stated at market value is €943 million at 31 December 2011 (€825 million at 31 December 2010).

Note 26. Trade receivables

Details of net trade receivables are as follows:

(in millions of Euros)	31/12/2011	31/12/2010
Trade receivables, gross value – excluding EDF Trading	17,962	17,786
Trade receivables, gross value – EDF Trading	3,613	2,375
Impairment	(667)	(637)
TRADE RECEIVABLES, NET VALUE	**20,908**	**19,524**

Most trade receivables mature within one year.

The credit risk on trade receivables is shown below:

	31/12/2011			31/12/2010		
(in millions of Euros)	Gross values	Impairment	Net values	Gross values	Impairment	Net values
TRADE RECEIVABLES	**21,575**	**(667)**	**20,908**	**20,161**	**(637)**	**19,524**
overdue by up to 6 months	2,019	(193)	1,826	1,690	(182)	1,508
overdue by 6-12 months	506	(125)	381	365	(120)	245
overdue by more than 12 months	670	(278)	392	584	(272)	312
Trade receivables due	**3,195**	**(596)**	**2,599**	**2,639**	**(574)**	**2,065**
Trade receivables not yet due	**18,380**	**(71)**	**18,309**	**17,522**	**(63)**	**17,459**

Securitization of trade receivables is undertaken on a recurrent basis, principally by Edison. EDF's share amounts to €2,572 million at 31 December 2011 (€2,122 million at 31 December 2010). As securitization is without recourse, the corresponding receivables are not carried in the Group's consolidated balance sheet.

Note 27. Other receivables

Details of other receivables are as follows:

(in millions of Euros)	31/12/2011	31/12/2010
Prepaid expenses	621	513
Other receivables	9,688	8,806
OTHER RECEIVABLES	**10,309**	**9,319**
Gross value	10,363	9,362
Impairment	(54)	(43)

Most other receivables mature within one year.

"Other receivables" comprise EDF SA's CSPE receivable, amounting to €3,821 million at 31 December 2011 (€2,812 million at 31 December 2010).

They also include various amounts receivable from the French State and local authorities (including €1,582 million of VAT receivables at 31 December 2011 for EDF SA).

Note 28. Equity

28.1 Share capital

At 31 December 2011, the share capital amounted to €924,433,331, comprising 1,848,866,662 fully subscribed and paid-up shares with nominal value of €0.50 each, owned 84.4% by the French State, 13.7% by the public (institutional and private investors), 1.8% by current and retired Group employees and 0.1% held by EDF as treasury shares.

Article 24 of the law of 9 August 2004 requires the State to hold more than 70% of the capital of EDF at all times.

A capital increase of €306 million (11,945,448 EDF shares) took place on 24 June 2011 through the simplified alternative public cash or exchange offer for EDF Énergies Nouvelles shares (see note 3.2).
Share repurchases were also undertaken for a total of €324 million in order to neutralize this operation's dilutive effect on EDF shareholders' percentage control. This neutralization became effective on 28 September 2011 after a reduction in the capital of EDF SA through cancellation of treasury shares.

28.2 Treasury shares

A share repurchase program authorized by the General Shareholders' Meeting of 9 June 2006 was implemented by the Board of Directors, within the limits of 10% of the total number of shares making up the Company's capital. The initial duration of the program is 18 months, renewed for 12 months then by tacit agreement every year.
Under this share repurchase program, for which a liquidity contract exists as required by the market regulator AMF, 3,932,499 shares were acquired during 2011 for a total of €99 million, and 3,305,464 shares were sold for a total of €92 million.

Over the same period, 11,945,448 treasury shares were purchased for €324 million as a result of the simplified public cash or exchange offer for EDF Énergies Nouvelles shares. These shares were subsequently cancelled *via* a capital reduction at EDF SA on 28 September 2011 (see notes 3.2 and 28.1).

At 31 December 2011, treasury shares deducted from consolidated equity represent 1,175,594 shares with total value of €26 million.

28.3 Dividends

The General Shareholders' Meeting of 24 May 2011 decided to distribute a dividend of €1.15 per share in circulation in respect of 2010. Interim dividends of €0.57 per share had been paid out on 17 December 2010, and the balance of €0.58 per share amounting to a total of €1,069 million was paid out on 6 June 2011.

On 22 November 2011, the Board of Directors decided to distribute an interim dividend of €0.57 per share or a total of €1,053 million for 2011, paid out in cash on 16 December 2011.

In keeping with the amendment to the Company's articles of association proposed at the General Shareholders' Meeting of 24 May 2011, shareholders who have held their shares continuously for at least 2 years at the year-end date and still hold them at the dividend distribution date are entitled to a 10% increase in their dividends. The number of shares eligible for this increase cannot be more than 0.5% of the Company's capital for a single shareholder. This amendment will take effect for the payment in 2014 of the dividend for the year 2013.

Note 29. Provisions

The breakdown between current and non-current provisions is as follows:

(in millions of Euros)	Notes	31/12/2011 Current	31/12/2011 Non-current	31/12/2011 Total	31/12/2010 Current	31/12/2010 Non-current	31/12/2010 Total
Provisions for back-end nuclear cycle		1,302	17,528	18,830	1,020	17,000	18,020
Provisions for decommissioning and last cores		173	19,670	19,843	241	18,630	18,871
Provisions related to nuclear generation	30	**1,475**	**37,198**	**38,673**	**1,261**	**35,630**	**36,891**
Provisions for decommissioning of non-nuclear facilities	31	**41**	**809**	**850**	**60**	**753**	**813**
Provisions for employee benefits	32	**846**	**12,215**	**13,061**	**819**	**11,745**	**12,564**
Other provisions	33	**1,606**	**1,338**	**2,944**	**2,870**	**1,337**	**4,207**
TOTAL PROVISIONS		**3,968**	**51,560**	**55,528**	**5,010**	**49,465**	**54,475**

Note 30. Provisions related to nuclear generation – Back-end nuclear cycle, plant decommissioning and last cores

Provisions related to nuclear generation comprise provisions for back-end nuclear cycle expenses (management of spent fuel and radioactive waste), provisions for plant decommissioning and provisions for last cores.

Provisions are estimated under the principles presented in note 1.3.2.1 and 1.3.23.
Obligations can vary noticeably depending on each country's legislation and regulations, and the technologies and industrial practices used in each company.

The movement in provisions for back-end nuclear cycle, provisions for decommissioning and provisions for last cores breaks down as follows:

(in millions of Euros)	31/12/2010	Increases	Decreases		Changes in scope	Other movements	31/12/2011
			Utilizations	Reversals			
Provisions for spent nuclear fuel management	11,024	834	(540)	(22)	-	234	11,530
Provisions for long-term radioactive waste management	6,996	358	(150)	(1)	-	97	7,300
Provisions for back-end nuclear cycle	**18,020**	**1,192**	**(690)**	**(23)**	**-**	**331**	**18,830**
Provisions for nuclear plant decommissioning	15,739	626	(262)	-	-	327	16,430
Provisions for last cores	3,132	167	-	-	-	114	3,413
Provisions for decommissioning and last cores	**18,871**	**793**	**(262)**	**-**	**-**	**441**	**19,843**
PROVISIONS RELATED TO NUCLEAR GENERATION	**36,891**	**1,985**	**(952)**	**(23)**	**-**	**772**	**38,673**

Other changes in provisions related to nuclear generation reflect the change in amounts reimbursable by the NLF and the British government for coverage of EDF Energy's long-term nuclear obligations, totaling €596 million (see note 37.4).

The breakdown of provisions by company is shown below:

(in millions of Euros)	EDF Note 30.1	EDF Energy Note 30.2	CENG Note 30.3	Other entities Note 30.4	Total
Provisions for spent fuel management	9,143	2,385	-	2	11,530
Provisions for long-term radioactive waste management	6,722	577	-	1	7,300
PROVISIONS FOR BACK-END NUCLEAR CYCLE AT 31/12/2011	**15,865**	**2,962**	**-**	**3**	**18,830**
Provisions for back-end nuclear cycle at 31/12/2010	**15,360**	**2,657**	**-**	**3**	**18,020**
Provisions for nuclear plant decommissioning	11,366	4,437	472	155	16,430
Provisions for last cores	2,012	1,354	47	-	3,413
PROVISIONS FOR DECOMMISSIONING AND LAST CORES AT 31/12/2011	**13,378**	**5,791**	**519**	**155**	**19,843**
Provisions for decommissioning and last cores at 31/12/2010	**12,937**	**5,335**	**470**	**129**	**18,871**

30.1 Nuclear provisions in France

In France, EDF's provisions are calculated in accordance with the instructions of the law of 28 June 2006 and its implementing provisions.
In compliance with the regulation on secure financing of nuclear expenses:

- EDF books provisions to cover all obligations related to the nuclear facilities it operates;
- EDF is building up a portfolio of dedicated assets to secure financing of long-term obligations (see note 48).

The relevant expenses are estimated based on the economic conditions of the year-end, then spread over a forecast disbursement schedule and adjusted to Euros of the year of payment through application of a forecast long-term inflation rate. To determine the provisions, these amounts are discounted to present value using a nominal discount rate.

30.1.1 Provisions for spent fuel management

These provisions cover services in connection with the following:

- removal of spent fuel from EDF's generation centers, as well as reception and interim storage;
- processing, including conditioning and storage of recyclable matter and waste resulting from this processing.

Processing expenses exclusively concern spent fuel that can be recycled in existing facilities, including the portion in reactors but not yet irradiated.

Expenses are calculated based on forecast physical flows at the closing date. Valuation is based on the contracts signed with AREVA.

For fuel in reactors but not yet irradiated, provisions are booked against an increase in the value of the fuel included in inventories.

30.1.2 Provisions for long-term radioactive waste management

This includes future expenses for:

- removal and storage of radioactive waste resulting from decommissioning of regulated nuclear installations operated by EDF;
- removal and storage of radioactive waste packages resulting from spent fuel processing at La Hague;
- long-term and direct storage of spent fuel that cannot be recycled on an industrial scale in existing installations: plutonium or uranium fuel derived from enriched processing, fuel from Creys-Malville and Brennilis;
- EDF's share of the costs of studies, coverage, shutdown and surveillance of storage centers:
  - existing centers, for very low-level waste, and low and medium-level waste,
  - new centers to be opened, for long-life low-level waste and long-life medium and high-level waste.

The volumes of waste concerned by provisions include packages of existing waste and all waste to be conditioned, resulting from plant decommissioning or spent fuel processing at La Hague (based on all fuel in reactors at 31 December burnt or otherwise). These volumes are regularly reviewed, in keeping with the data declared for the purposes of the national waste inventory undertaken by the French agency for radioactive waste management ANDRA (*Agence nationale pour la gestion des déchets radioactifs*).

For waste resulting from decommissioning of plants in operation, the accounting treatment is identical to the treatment of decommissioning expenses: an asset corresponding to the provision is recognized under the accounting policies described in note 1.3.13.1.

For future waste that will result from fuel currently in reactors but not yet irradiated, provisions are booked against an increase in the value of the fuel included in inventories.

The provision for long-life medium and high-level waste is the largest component of the provisions for long-term radioactive waste management. The French Law of 28 June 2006 on the sustainable management of radioactive materials and waste has confirmed EDF's assumption of geological storage. Provisions are based on that assumption.

Since 2005, the gross value and disbursement schedules for forecast expenses have been based on a scenario of industrial geological waste storage, following conclusions presented in the first half of 2005 by the task force set up by the French department for Energy and Raw Materials (*Direction Générale de l'Énergie et des Matières Premières* – DGEMP, which has since become the French department for Energy and Climate – *Direction Générale de l'Énergie et du Climat* or DGEC) comprising members representing the relevant government departments (DGEMP, the State investment agency APE and the Budget Department), ANDRA and the producers of waste (EDF, AREVA, CEA). The approach applied by EDF to the working group's conclusions is reasonable and coherent with information available internationally.

In 2011, ANDRA and waste producers set up a partnership aiming to facilitate the completion of the geological storage project by a leverage of all the skills involved in the French nuclear industry. This partnership will include joint studies on targeted issues and organize an interface between the ANDRA project team and nuclear operators, such that they can make well-informed, relevant contributions to governance of the project. The ANDRA has drawn up specifications for early conceptional studies to be carried out in 2012, with project management taking into consideration many of the design options proposed by the waste producers, either as the reference or as variations. Estimation of the cost will only be resulted after completion of these studies. Ultimately, the finalization of the new reference cost for storage of long-life medium and high-level waste is due to be established before the public debate scheduled for 2013.

Regarding the provision for long-life low-level waste, the search for a storage site has been suspended following withdrawal of two sites selected by ANDRA. ANDRA is due to submit a report to the French government in late 2012 with various proposals for management of this type of waste and the conditions for resuming the search for a site (2013 at the earliest). Despite significant delays and the financial risks involved, the calculation method for the provision for storage of long-life low-level waste remains unchanged and should cover most of the alternative scenarios that are currently being examined jointly by EDF and ANDRA.

30.1.3 Decommissioning provisions for nuclear power plants

These provisions concern the decommissioning of pressurized water reactor (PWR) nuclear power plants currently in operation, and nuclear power plants that have been permanently shut down.
They are estimated on the assumption that once decommissioning is complete, the sites will be returned to their original state and the land reused.

For plants still in operation, a tangible fixed asset has been created against the provision, applying the accounting principles presented in note 1.3.13.1.
When some of the decommissioning costs for a plant are to be borne by a partner, the expected reimbursement is recognized as accrued income in the assets. The difference between the provision and the accrued income is recorded as a tangible asset, and subsequent payments made by the partner are deducted from the accrued income.

For nuclear power plants currently in operation (PWR plants with 900 MW, 1,300 MW and N4 reactors)

Provisions are estimated based on a 1991 study by the French Ministry of Trade and Industry, which set an estimated benchmark cost in €/MW, confirming the assumptions defined in 1979 by the PEON commission. This estimate was confirmed by further studies carried out by EDF in 1999 focusing on a specific site, and a further valuation in 2009 involving the following steps:

- measurement of the decommissioning cost for a PWR plant with four 900 MW units, taking into consideration the most recent developments in regulations, past experience in decommissioning of shut-down plants and recommendations issued by the French Nuclear Safety Authority;
- a review of the schedule for decommissioning operations over time;
- determination of the rules for extrapolation of costs for the entire fleet of PWR plants in operation.

International intercomparison studies carried out by a specialist firm support the results of this study.

This study resulted in a figure for decommissioning costs that confirms the amount of the provision booked to date, and validates the benchmark costs used, expressed in €/MW.

For permanently shut-down nuclear power plants (UNGG power plants, Creys-Malville, Brennilis and Chooz A):

The provision is based on contractor quotes (costs and schedules) updated in 2008, which take into account changes in technical and financial assumptions, experience of decommissioning operations currently in process and an intercomparison study. The quotes will be re-examined during 2012.

30.1.4 Provisions for last cores

These provisions cover the future expenses resulting from scrapping fuel that will only be partially used when the reactor is shut down. They are measured based on:

- the cost of the loss on fuel in the reactor that is not totally spent at the time of final reactor shutdown and cannot be reused due to technical and regulatory constraints;
- the cost of fuel processing, disposal and waste storage operations. These costs are valued in a similar way to provisions for spent fuel management and long-term radioactive waste management.

These unavoidable costs are components of the cost of nuclear reactor shutdown and decommissioning. As such, they are fully covered by provision from the commissioning date and an asset associated with the provision is recognized.

30.1.5 Discounting of provisions related to nuclear generation and sensitivity analyses

30.1.5.1 Discount rate

EDF applies a nominal discount rate of 5% in calculating its provisions, together with assumed inflation of 2%, resulting in an effective rate of close to 3%.

Calculation of the discount rate

The discount rate is determined based on long-series data for a sample of bonds with maturities as close as possible to that of the liability. However, some expenses covered by these provisions will be disbursed over periods significantly longer than the duration of instruments generally traded on the financial markets.

The benchmark used to determine the discount rate is the sliding average over 10 years of the return on French treasury bonds over the longest time horizons, plus the spread of corporate bonds rated A to AA, which include EDF.

The assumed inflation rate used is coherent with the forecasts provided by consensus and expected inflation based on the returns on inflation-linked bonds.

Revision of the discount rate

The methodology used to determine the discount rate gives priority to long-term trends in rates, in keeping with the long-term horizon for disbursements. The discount rate is therefore revised in response to structural developments in the economy leading to medium- and long-term changes.

The discount rate applied complies with the two limits set by the decree of 23 February 2007 and the decision of 21 March 2007. It must remain below:

- a regulatory maximum "equal to the arithmetic average over the forty-eight most recent months of the constant 30-year rate (TEC 30 years), observed on the last date of the period concerned, plus one point";
- and the expected rate of return on assets covering the liability (dedicated assets).

30.1.5.2 Analyses of sensitivity to macro-economic assumptions

Sensitivity to assumptions concerning costs, inflation rate, long-term discount rate, and disbursement schedules can be estimated through comparison of the gross amount estimated under year-end economic conditions with the discounted value of the amount.

	31/12/2011		31/12/2010	
(in millions of Euros)	Costs based on year-end economic conditions	Amounts in provisions at present value	Costs based on year-end economic conditions	Amounts in provisions at present value
Spent fuel management	14,844	9,143	14,386	8,852
Long-term radioactive waste management	23,801	6,722	23,017	6,508
BACK-END NUCLEAR CYCLE	**38,645**	**15,865**	**37,403**	**15,360**
Decommissioning of nuclear power plants	21,108	11,366	20,903	11,031
Last cores	3,888	2,012	3,792	1,906
DECOMMISSIONING AND LAST CORES	**24,996**	**13,378**	**24,695**	**12,937**

This approach can be complemented by estimating the impact of a change in the discount rate on the discounted value.

In application of article 11 of the decree of 23 February 2007, the following table reports these details for the main components of provisions for the back-end nuclear cycle, decommissioning of nuclear plants and last cores:

	Amounts in provisions at present value		Sensitivity to discount rate			
			2011		2010	
(in millions of Euros)	2011	2010	+0.25%	-0.25%	+0.25%	-0.25%
Back-end nuclear cycle:						
- spent fuel management	9,143	8,852	(200)	213	(197)	210
- long-term radioactive waste management	6,722	6,508	(412)	471	(401)	457
Decommissioning and last cores:						
- decommissioning of nuclear power plants	11,366	11,031	(544)	576	(543)	577
- impairment of last cores	2,012	1,906	(81)	87	(81)	87
TOTAL	**29,243**	**28,297**	**(1,237)**	**1,347**	**(1,222)**	**1,331**

30.2 EDF Energy's nuclear provisions

The specific financing terms for long-term nuclear obligations related to EDF Energy are reflected as follows in the EDF group's financial statements:

- the obligations are reported in liabilities in the form of provisions amounting to €8,753 million at 31 December 2011;
- in the assets, EDF reports receivables corresponding to the amounts payable under the restructuring agreements by the NLF, for non-contracted obligations or decommissioning obligations, and by the British Government for contracted obligations (or historic liabilities).

These receivables are discounted at the same real rate as the obligations they are intended to finance. They are included in "Financial assets" in the consolidated balance sheet (see note 37.3) at the amount of €7,209 million at 31 December 2011 (€6,613 million at 31 December 2010).

30.2.1 Regulatory and contractual framework

Amendments signed with the Nuclear Liabilities Fund (NLF - an independent trust set up by the UK Government as part of the restructuring of British Energy) following the EDF group's acquisition of British Energy have a limited impact on the contractual financing commitments made to British Energy by the UK Secretary of State and the NLF under the "Restructuring Agreements". These agreements were entered into by British Energy on 14 January 2005 as part of the restructuring led by the UK Government from 2005 in order to stabilize British Energy's financial position. EDF Energy has replaced British Energy since 1 July 2011 as beneficiary of these agreements and amendments, under the terms of which:

- the NLF agreed to fund, to the extent of its assets: (i) qualifying contingent and/or latent nuclear liabilities (including liabilities for management of spent fuel from the Sizewell B power station); and (ii) qualifying decommissioning costs for EDF Energy's existing nuclear power stations;
- the Secretary of State agreed to fund: (i) qualifying contingent and/or latent nuclear liabilities (including liabilities for the management of spent fuel from the Sizewell B power station) and qualifying decommissioning costs related to EDF Energy's existing nuclear power stations, to the extent that they exceed the assets of the NLF; and (ii) subject to a cap of £2,185 million (in December 2002 monetary values, adjusted accordingly), qualifying known existing liabilities for EDF Energy's spent fuel (including liabilities for management of spent fuel from plants other than Sizewell B loaded in reactors prior to 15 January 2005);
- the EDF Energy group is responsible for funding certain excluded or disqualified liabilities (mainly liabilities incurred in connection with unsafe or careless operation of the power plants). The EDF Energy group's obligations to the NLF and the Secretary of State are guaranteed by the assets of the principal members of British Energy group.

EDF Energy has also undertaken commitments to pay:

- annual decommissioning contributions for a period limited to the useful lives of the plants that had ceased operations at the date of the "restructuring agreements"; the corresponding provision amounts to €198 million at 31 December 2011;
- £150,000 (indexed to inflation) per tonne of fuel (expressed in terms of enriched uranium) loaded in the Sizewell B reactor after the date of the "restructuring agreements".

Furthermore, EDF Energy has entered into a separate contract with the Nuclear Decommissioning Authority (NDA) for management of spent fuel resulting from operation of power plants other than Sizewell B since 15 January 2005 including transportation, interim storage, fuel reprocessing and waste storage. EDF Energy bears no responsibility for this fuel once it is transferred to the processing site at Sellafield. The corresponding costs of £150,000 (indexed to inflation) per tonne of loaded uranium are included in inventories (see note 1.3.18.1).

30.2.2 Provisions for the back-end nuclear cycle

The EDF Energy Group's provisions for the back-end nuclear cycle concern obligations for reprocessing and storage of spent fuel and long-term storage of radioactive waste, required by the existing regulations in the UK approved by the Nuclear Decommissioning Authority (NDA). Their amount is based on contractual agreements or if this is not possible, on the most recent technical estimates.

	31/12/2011		31/12/2010	
(in millions of Euros)	Costs based on year-end economic conditions	Amounts in provisions at present value	Costs based on year-end economic conditions	Amounts in provisions at present value
Spent fuel management	3,860	2,385	2,631	2,171
Long-term radioactive waste management	3,969	577	3,311	486
BACK-END NUCLEAR CYCLE	**7,829**	**2,962**	**5,942**	**2,657**

The change observed is mainly due to a reclassification in 2011 allocating the provision for decommissioning waste to provisions for back-end nuclear cycle, causing a €1,447 million increase in the amount of costs at year-end economic conditions.

30.2.3 EDF Energy's decommissioning provisions

Provisions for decommissioning of nuclear plants result from management's best estimates. They cover the full cost of decommissioning and are measured on the basis of existing techniques and methods that are most likely to be used for application of current regulations. The current costs are based on internal studies produced in 2008 and assume that plants will be decommissioned and the land will ultimately be reused.

	31/12/2011		31/12/2010	
(in millions of Euros)	Costs based on year-end economic conditions	Amounts in provisions at present value	Costs based on year-end economic conditions	Amounts in provisions at present value
DECOMMISSIONING	12,213	4,239	12,567	3,951

The amount of nuclear plant decommissioning costs at year-end economic conditions in 2011 includes the €(1,447) million impact of reclassification of the provisions for decommissioning waste as a component of provisions for back-end nuclear cycle.
The table above only concerns decommissioning obligations excluding the discounted value of decommissioning contributions payable to the NLF (€198 million, see note 30.2.1).

30.3 CENG's nuclear provisions

In the US, the obligations concerning spent fuel management, waste management and plant decommissioning are mainly governed by the NRC (Nuclear Regulatory Commission) as well as the federal US Department of Energy (DOE). Additionally, certain waste transport obligations are governed by the Department of Transportation.

30.3.1 Provisions for the back-end nuclear cycle

In accordance with current regulations, spent fuel is not reprocessed but placed in temporary storage until the DOE takes charge of its final transportation and permanent storage in a national repository. CENG makes a quarterly contribution of approximately $1/MWh based on the quantities of electricity generated, and no provision is established for these obligations.

30.3.2 CENG's decommissioning provisions for nuclear plants

CENG is under an obligation to decommission its three nuclear power plants (five nuclear generation units) when they cease operations, in accordance with NRC regulations as well as any relevant state regulations for site restoration (green-fielding requirements). In the US, all decommissioning activities need to be completed within 60 years following termination of plant operations.

Decommissioning provisions mainly comprise decontamination, dismantlement, disposal and site restoration activities, which further encompass such expenses as: internal and external personnel expenses; the cost of materials and equipment; transportation, disposal, and underground burial costs; energy costs; real property taxes and insurance costs, fees paid to the NRC for decontamination certificate procedures and monitoring; costs related to temporary on-site storage of spent nuclear fuel; and finally, site restoration and land rehabilitation expenses in compliance with appropriate regulations.

Estimated decommissioning costs are calculated individually for each site based on technical studies that are regularly updated. Following a study conducted during the second half of 2010, the provision for decommissioning was reduced by $50 million.

30.3.3 Funding of CENG's nuclear obligations

NRC-approved funding options provide for the establishment of external investment trust funds (by unit), which can only be used to fund such decommissioning obligations. These trust funds are currently invested in debt instruments and equities. They are reserved for the nuclear plant to which they belong.

CENG's Investment Committee lays down the general investment strategy, including the allocation between different types of assets. CENG periodically undertakes a comprehensive asset-liability management study, to further optimize and adjust the asset allocation, given strategic objectives, liability duration, long-term capital market conditions, and the magnitude of such projected obligations. The funds cannot be invested directly in companies that own nuclear power plants.

The NRC sets minimum funding assurance levels to provide for radiological decommissioning activities, and the NRC requires all plant owners to file a funding assurance report to the NRC on a biennial basis. If a shortfall is observed, the NRC may require additional financial guarantees in the form of cash, letters of credit or parent company guarantees. During the spring of 2011, CENG submitted its required biennial report, and the NRC subsequently determined that no shortfall was indicated, and furthermore, no additional funding assurance is required at this time.

These funding assets are treated as available-for-sale assets, and carried at fair value (stock market value).

30.4 Other subsidiaries' nuclear provisions

Other subsidiaries' provisions for the back-end of the nuclear cycle and decommissioning mostly concern nuclear plants in Belgium.

Note 31. Provisions for decommissioning of non-nuclear facilities

Provisions for decommissioning of non-nuclear facilities principally concern fossil-fired power plants.

The costs of decommissioning fossil-fired power plants are calculated using regularly updated studies based on estimated future costs, measured by reference to the charges recorded on past operations and the most recent estimates for plants still in operation.

The provision recorded at 31 December 2011 reflects the most recent known contractor quotes and commissioning of new generation assets.

For plants still in operation, an asset is recorded against the provision under the principles presented in note 1.3.13.1.

Note 32. Provisions for employee benefits

32.1 EDF group

(in millions of Euros)	31/12/2011	31/12/2010
Provision for employee benefits – current portion	846	819
Provision for employee benefits – non-current portion	12,215	11,745
PROVISION FOR EMPLOYEE BENEFITS	**13,061**	**12,564**

32.1.1 Breakdown of the change in the net liability

(in millions of Euros)	Obligations	Fund assets	Obligations net of fund assets	Unrecognized past service cost	Unrecognized actuarial gains and losses	Net obligations
Balance at 31/12/2010	**26,064**	**(11,451)**	**14,613**	**(136)**	**(2,086)**	**12,391**
Net expense for 2011	2,137	(597)	1,540	13	115	1,668
Change in unrecognized actuarial gains and losses	921	(161)	760	-	(760)	-
Employer's contributions to funds	-	(769)	(769)	-	-	(769)
Employees' contributions to funds	28	(28)	-	-	-	-
Benefits paid	(1,075)	623	(452)	-	-	(452)
Unvested past service cost	-	-	-	-	-	-
Translation adjustment	190	(158)	32	-	(42)	(10)
Changes in scope of consolidation	(13)	5	(8)	-	-	(8)
Other movements	15	(58)	(43)	1	26	(16)
BALANCE AT 31/12/2011	**28,267**	**(12,594)**	**15,673**	**(122)**	**(2,747)**	**12,804**
Including:						
Provision for employee benefits						**13,061**
Non-current financial assets						**(257)**

32.1.2 Post-employment and long-term employee benefit expenses

(in millions of Euros)	31/12/2011	31/12/2010
Current service cost	(686)	(714)
Interest expense (discount effect)	(1,337)	(1,538)
Expected return on fund assets	597	715
Past service cost	(25)	(25)
Amortization of unrecognized actuarial gains and losses – post-employment benefits	(115)	(115)
Change in actuarial gains and losses – long-term benefits	(100)	(150)
Effect of plan curtailment or settlement	(2)	3
NET CHARGES RELATED TO POST-EMPLOYMENT BENEFITS AND LONG-TERM BENEFITS	**(1,668)**	**(1,824)**
Including:		
Operating expense	(928)	(965)
Financial expense	(740)	(720)
Net income of discontinued operations	-	(139)

32.1.3 Net liability by geographical area

(in millions of Euros)	France	United Kingdom	Italy	Other International	Other activities	Total
Obligations at 31/12/2010	**20,170**	**5,160**	**51**	**380**	**303**	**26,064**
Net expense for 2011	1,629	444	5	50	9	2,137
Change in unrecognized actuarial gains and losses	544	362	-	14	1	921
Employer's contributions to funds	-	-	-	-	-	-
Employees' contributions to funds	-	28	-	-	-	28
Benefits paid	(889)	(150)	(3)	(28)	(5)	(1,075)
Unvested past service cost	-	-	-	-	-	-
Translation adjustment	-	185	-	5	-	190
Changes in scope of consolidation	-	-	(12)	-	(1)	(13)
Other movements	-	(2)	(4)	41	(20)	15
Obligations at 31/12/2011	**21,454**	**6,027**	**37**	**462**	**287**	**28,267**
Fair value of fund assets	(7,306)	(4,978)	-	(181)	(129)	(12,594)
Unrecognized actuarial gains and losses	(1,435)	(1,257)	-	(42)	(13)	(2,747)
Unrecognized past service cost	(117)	-	-	(3)	(2)	(122)
NET EMPLOYEE BENEFIT LIABILITY AT 31/12/2011	**12,596**	**(208)**	**37**	**236**	**143**	**12,804**
Including:						
Provisions for employee benefits	**12,596**	**49**	**37**	**236**	**143**	**13,061**
Non-current financial assets	**-**	**(257)**	**-**	**-**	**-**	**(257)**

(in millions of Euros)	France	United Kingdom	Italy	Other International	Other activities	Total
Obligations at 31/12/2010	**20,170**	**5,160**	**51**	**380**	**303**	**26,064**
Fair value of fund assets	(6,889)	(4,320)	-	(115)	(127)	(11,451)
Unrecognized actuarial gains and losses	(1,059)	(971)	-	(20)	(36)	(2,086)
Unrecognized past service cost	(130)	-	-	(5)	(1)	(136)
NET EMPLOYEE BENEFIT LIABILITY AT 31/12/2010	**12,092**	**(131)**	**51**	**240**	**139**	**12,391**
Including:						
Provisions for employee benefits	**12,092**	**42**	**51**	**240**	**139**	**12,564**
Non-current financial assets	**-**	**(173)**	**-**	**-**	**-**	**(173)**

32.2 France

The "France" segment comprises EDF SA and ERDF; almost all of the employees of these companies benefit from IEG status including the special pension system and other IEG benefits, described in note 1.3.24.2.

32.2.1 Details of changes in the provision

(in millions of Euros)	Obligations	Fund assets	Obligations net of fund assets	Unrecognized past service cost	Unrecognized actuarial gains and losses	Provision
Balance at 31/12/2010	**20,170**	**(6,889)**	**13,281**	**(130)**	**(1,059)**	**12,092**
Net expense for 2011	1,629	(330)	1,299	13	86	1,398
Change in unrecognized actuarial gains and losses	544	(82)	462	-	(462)	-
Employer's contributions to funds	-	(459)	(459)	-	-	(459)
Employees' contributions to funds	-	-	-	-	-	-
Benefits paid	(889)	454	(435)	-	-	(435)
Unvested past service cost	-	-	-	-	-	-
Other movements	-	-	-	-	-	-
BALANCE AT 31/12/2011	**21,454**	**(7,306)**	**14,148**	**(117)**	**(1,435)**	**12,596**

The experience adjustment for France represents an actuarial loss of €165 million.

32.2.2 Post-employment and long-term employee benefit expenses

(in millions of Euros)	31/12/2011	31/12/2010
Current service cost	(501)	(488)
Interest expense (discount effect)	(1,030)	(984)
Expected return on fund assets	330	339
Past service cost	(13)	(16)
Amortization of unrecognized actuarial gains and losses – post-employment benefits	(86)	(38)
Change in actuarial gains and losses – long-term benefits	(98)	(148)
Effect of plan curtailment or settlement	-	(5)
NET POST-EMPLOYMENT AND OTHER LONG-TERM EMPLOYEE BENEFIT EXPENSES	**(1,398)**	**(1,340)**
Including:		
Operating expense	(698)	(695)
Financial expense	(700)	(645)

32.2.3 Provisions for employee benefits by nature

At 31 December 2011:

(in millions of Euros)	Obligations	Fund assets	Unrecognized past service cost	Unrecognized actuarial gains and losses	Provision in the Balance sheet
Provisions for post-employment benefits at 31/12/2011	**20,362**	**(7,306)**	**(117)**	**(1,435)**	**11,504**
Comprising:					
Pensions	16,138	(6,762)	-	273	9,649
Benefits in kind (electricity/gas)	2,912	-	-	(1,633)	1,279
Retirement gratuities	744	(531)	(114)	(95)	4
Other	568	(13)	(3)	20	572
Provisions for long-term employee benefits at 31/12/2011	**1,092**	**-**	**-**	**-**	**1,092**
Comprising:					
Annuities following work-related accident and illness, and invalidity	917	-	-	-	917
Long service awards	141	-	-	-	141
Other	34	-	-	-	34
PROVISIONS FOR EMPLOYEE BENEFITS AT 31/12/2011	**21,454**	**(7,306)**	**(117)**	**(1,435)**	**12,596**

The increase in 2011 in obligations related to the electricity/gas benefit principally results from the fact that the employer has borne the rise in electricity taxes (including the CSPE and local taxes on electricity). This effect has been considered as a change in assumptions, and therefore leads to an increase in unrecognized actuarial gains and losses.

At 31 December 2010:

(in millions of Euros)	Obligations	Fund assets	Unrecognized past service cost	Unrecognized actuarial gains and losses	Provision in the Balance sheet
Provisions for post-employment benefits at 31/12/2010	**19,116**	**(6,889)**	**(130)**	**(1,059)**	**11,038**
Comprising:					
Pensions	15,745	(6,344)	-	(45)	9,356
Benefits in kind (electricity/gas)	2,093	-	-	(969)	1,124
Retirement gratuities	732	(532)	(126)	(66)	8
Other	546	(13)	(4)	21	550
Provisions for long-term employee benefits at 31/12/2010	**1,054**	**-**	**-**	**-**	**1,054**
Comprising:					
Annuities following work-related accident and illness, and invalidity	876	-	-	-	876
Long service awards	142	-	-	-	142
Other	36	-	-	-	36
PROVISIONS FOR EMPLOYEE BENEFITS AT 31/12/2010	**20,170**	**(6,889)**	**(130)**	**(1,059)**	**12,092**

32.2.4 Fund assets

For France, these assets amount to €7,306 million at 31 December 2011 (€6,889 million at 31 December 2010) and concern retirement gratuities (with target coverage of 100%) and the specific benefits of the special pension system.

They consist of insurance contracts.

Investments under these contracts break down as follows:

(in millions of Euros)	31/12/2011	31/12/2010
FUND ASSETS	**7,306**	**6,889**
Assets funding special pension benefits	**6,762**	**6,344**
(%)		
Equities	26%	30%
Bonds and monetary instruments	74%	70%
Assets funding retirement gratuities	**531**	**532**
(%)		
Equities	39%	47%
Bonds and monetary instruments	61%	53%
Other fund assets	**13**	**13**

32.2.5 Actuarial assumptions

(%)	31/12/2011	31/12/2010
Discount rate	5.00%	5.00%
Expected return on fund assets	4.70%	4.80%
Wage increase rate	2.00%	2.00%

In France, the discount rate for long-term obligations to employees is determined based on the return on a government bond of comparable duration – the 2032 French Treasury bond, which has a duration of 14 years consistent with the duration of employee benefit obligations – plus a spread calculated on the leading nonfinancial companies, also over a comparable duration.

The Group kept the same discount rate of 5% for 2011 as a result of this method.

32.2.6 Sensitivity analysis

(%)	31/12/2011	31/12/2010
Impact of a 25bp increase or decrease in the discount rate		
- on the amount of the obligation	-3.4%/+3.6%	-3.3%/+3.5%
- on the past service cost for year 2012	-5.3%/+5.7%	-5.0%/+5.4%
Impact of a 25bp increase or decrease in the expected return on fund assets		
- on the expected expense for year 2012	-1.4%/+1.4%	-1.3%/+1.3%

32.3 United Kingdom

EDF Energy sponsors three defined benefit pension schemes:

- the EDF Energy Pension Scheme ("EEPS") which was established in March 2004 and includes a number of legacy pension schemes from London Electricity and Seeboard. Membership of EEPS is open to all employees other than those in Nuclear Generation;
- the British Energy Generation Group ("BEGG") of the Electricity Supply Pension Scheme ("ESPS"), of which the majority of members are employees in Nuclear Generation. BEGG is open only to employees in Nuclear Generation; and
- the EDF Energy Generation and Supply Group ("EEGS") of the ESPS which was established in December 2010 for the employees remaining with EDF Energy following the transfer of the former Group to UK Power Networks as part of the sale of Networks. EEGS is closed to new members.

Each pension scheme is financially independent from the others. With the exception of EEPS all of the above schemes are part of the industry wide ESPS.

32.3.1 Details of the change in the net liability

(in millions of Euros)	Obligations	Fund assets	Obligations net of fund assets	Unrecognized past service cost	Unrecognized actuarial gains and losses	Net liability
Balance at 31/12/2010	**5,160**	**(4,320)**	**840**	**-**	**(971)**	**(131)**
Net expense for 2011	444	(255)	189	-	29	218
Change in unrecognized actuarial gains and losses	362	(86)	276	-	(276)	-
Employer's contributions to funds	-	(286)	(286)	-	-	(286)
Employees' contributions to funds	28	(28)	-	-	-	-
Benefits paid	(150)	150	-	-	-	-
Unvested past service cost	-	-	-	-	-	-
Translation adjustment	185	(153)	32	-	(39)	(7)
Changes in scope of consolidation	-	-	-	-	-	-
Other movements	(2)	-	(2)	-	-	(2)
BALANCE AT 31/12/2011	**6,027**	**(4,978)**	**1,049**	**-**	**(1,257)**	**(208)**
Comprising:						
Provision for employee benefits						**49**
Non-current financial assets						**(257)**

32.3.2 Post-employment benefit expenses and long-term employee benefit expenses

(in millions of Euros)	31/12/2011	31/12/2010
Current service cost	(160)	(178)
Interest expense (discount effect)	(281)	(426)
Expected return on fund assets	255	365
Amortization of unrecognized actuarial gains and losses – post-employment benefits	(29)	(76)
Effect of plan curtailment or settlement	(3)	(1)
NET POST-EMPLOYMENT AND OTHER LONG-TERM EMPLOYEE BENEFIT EXPENSES	**(218)**	**(316)**
Including:		
Operating expense	(192)	(255)
Financial expense	(26)	(61)

32.3.3 Fund assets

Pension obligations in the United Kingdom are partly covered by external funds with a present value of €4,978 million at 31 December 2011 (€4,320 million at 31 December 2010). These funds break down as follows:

	31/12/2011	31/12/2010
Fund assets covering pension obligations *(in millions of Euros)*	**4,978**	**4,320**
Comprising: (in %)		
Real estate assets	6%	6%
Equities	34%	38%
Bonds and monetary instruments	52%	47%
Other	8%	9%

32.3.4 Actuarial assumptions

(%)	31/12/2011	31/12/2010
Discount rate	4.70%	5.50%
Expected return on pension fund assets	5.10%	6.00%
Wage increase rate	4.70%	5.10%

32.3.5 Sensitivity analyses

(%)	31/12/2011	31/12/2010
Impact of a 25bp increase or decrease in the discount rate		
- on the amount of the obligations	-4.8%/+5.0%	-4.7%/+5.0%
- on the past service cost for year 2012	-7.3%/+7.3%	-6.3%/+7.0%
Impact of a 25bp increase or decrease in the expected return on fund assets		
- on the expected expense for year 2012	-4.8%/+4.8%	-4.7%/+5.3%

Note 33. Other provisions

Details of changes in other provisions are as follows:

(in millions of Euros)	31/12/2010	Increases	Decreases		Changes in scope	Other changes	31/12/2011
			Utilizations	Reversals			
Provisions for contingencies related to investments	944	6	(713)	(32)	(13)	2	194
Provisions for tax liabilities	289	195	(217)	-	(4)	3	266
Provisions for litigation	506	163	(49)	(59)	(6)	8	563
Provisions for onerous contracts	1,025	128	(399)	(1)	-	15	768
Other provisions	1,443	1,159	(1,363)	(82)	(33)	29	1,153
OTHER PROVISIONS	**4,207**	**1,651**	**(2,741)**	**(174)**	**(56)**	**57**	**2,944**

33.1 Provisions for contingencies related to investments

The decline in provisions for contingencies related to investments mainly results from utilization of the provision for the Italy segment in 2011 to absorb impairment on goodwill and other assets booked by the Group in Italy over the period for €668 million. This provision amounted to €750 million at 31 December 2010.

33.2 Provisions for litigation

Provisions for litigation include a provision relating to a dispute with social security bodies.

33.3 Provisions for onerous contracts

Provisions for onerous contracts include the fair value of:
- British Energy sales contracts, amounting to €130 million at 31 December 2011 (€402 million at 31 December 2010);
- CENG sales contracts amounting to €491 million at 31 December 2011 (€512 million at 31 December 2010).

33.4 Other provisions

Other provisions include an amount of €466 million in provisions for greenhouse gas emission quotas and renewable energy certificates at 31 December 2011.

Note 34. Special French public electricity distribution concession liabilities for existing assets and assets to be replaced

The changes in special concession liabilities for existing assets and assets to be replaced are as follows:

(in millions of Euros)	31/12/2011	31/12/2010
Value in kind of assets	40,307	39,001
Unamortized financing by the operator	(19,383)	(18,683)
Rights in existing assets – net value	**20,924**	**20,318**
Amortization in existing by the grantor	9,923	9,404
Provisions for renewal	10,922	11,439
Rights in assets to be replaced	**20,845**	**20,843**
SPECIAL FRENCH PUBLIC ELECTRICITY DISTRIBUTION CONCESSION LIABILITIES FOR EXISTING ASSETS AND ASSETS TO BE REPLACED	**41,769**	**41,161**

Note 35. Trade payables

(in millions of Euros)	31/12/2011	31/12/2010
Trade payables – excluding EDF Trading	9,358	9,856
Trade payables – EDF Trading	4,323	2,949
TRADE PAYABLES	**13,681**	**12,805**

Note 36. Other liabilities

Details of other liabilities are as follows:

(in millions of Euros)	31/12/2011	31/12/2010
Advances and progress payments received	6,696	5,896
Liabilities related to property, plant and equipment	2,404	2,167
Tax and social charges	7,102	6,881
Deferred income	5,935	5,848
Other	2,752	2,847
OTHER LIABILITIES	**24,889**	**23,639**
Non-current portion	4,989	4,965
Current portion	19,900	18,674

36.1 Advances and progress payments received

Advances and progress payments received include monthly standing order payments by EDF SA's residential and business customers amounting to €5,239 million (€4,736 million at 31 December 2010). The increase over 2011 is explained by the growing number of customers that opt to pay their bills this way, combined with a weather effect (advance invoices are based on consumption levels observed the previous year, and winter 2010 was particularly harsh in France).

36.2 Tax and social charges

At 31 December 2011 tax and social charges include an amount of €579 million for the CSPE income to be collected by EDF SA on energy delivered but not yet billed (€344 million at 31 December 2010).

36.3 Deferred income

EDF's deferred income at 31 December 2011 comprises €2,814 million (€2,693 million at 31 December 2010) of partner advances made under the nuclear plant financing plans. This includes an advance of €513 million paid by the Enel group under the industrial partnership agreement for the Flamanville EPR. This advance is subject to specific contractual conditions that allow in certain circumstances Enel to withdraw its financial and operational contribution from the project, in which case the EDF group would be obliged to repay the advance.

Deferred income also includes the €1.7 billion advance paid to EDF in 2010 under the agreement with the Exeltium consortium.

Financial assets and liabilities

Note 37. Current and non-current financial assets

37.1 Breakdown between current and non-current financial assets

Current and non-current financial assets break down as follows:

	31/12/2011			31/12/2010		
(in millions of Euros)	Current	Non-current	Total	Current	Non-current	Total
Financial assets carried at fair value with changes in fair value included in income	4,482	12	**4,494**	4,534	13	**4,547**
Available-for-sale financial assets	10,413	13,915	**24,328**	9,748	15,287	**25,035**
Held-to-maturity investments	3	16	**19**	2	23	**25**
Positive fair value of hedging derivatives	914	1,862	**2,776**	1,401	1,180	**2,581**
Loans and financial receivables	1,168	8,712	**9,880**	1,103	8,418	**9,521**
FINANCIAL ASSETS[1]	**16,980**	**24,517**	**41,497**	**16,788**	**24,921**	**41,709**

(1) Including impairment of €1,141 million at 31 December 2011 (€726 million at 31 December 2010).

37.2 Details of financial assets

37.2.1 Financial assets carried at fair value with changes in fair value included in income

(in millions of Euros)	31/12/2011	31/12/2010
Derivatives - positive fair value	4,478	4,530
Fair value of derivatives held for trading	4	5
Financial assets carried at fair value optionally in income	12	12
FINANCIAL ASSETS CARRIED AT FAIR VALUE WITH CHANGES IN FAIR VALUE INCLUDED IN INCOME	**4,494**	**4,547**

Financial assets carried at fair value with changes in fair value included in income mainly concern EDF Trading.

37.2.2 Available-for-sale financial assets

	31/12/2011			31/12/2010		
(in millions of Euros)	Equities [1]	Debt securities	Total	Equities [1]	Debt securities	Total
Dedicated assets of EDF (note 48)	5,801	7,510	**13,311**	6,820	6,685	**13,505**
Liquid assets	2,782	6,242	**9,024**	4,930	4,355	**9,285**
Other	1,918	75	**1,993**	2,172	73	**2,245**
AVAILABLE-FOR-SALE FINANCIAL ASSETS	**10,501**	**13,827**	**24,328**	**13,922**	**11,113**	**25,035**

(1) Equities and investment funds.

Changes in the fair value of available-for-sale financial assets were recorded in equity (EDF share) over the period as follows:

	31/12/2011		31/12/2010	
(in millions of Euros)	Gross changes in fair value recorded in equity [1]	Gross changes in fair value transferred to income [2]	Gross changes in fair value recorded in equity [1]	Gross changes in fair value transferred to income [2]
Dedicated assets	(448)	(77)	886	(4)
Liquid assets	27	35	(29)	(40)
Other securities	(319)	(38)	(39)	(87)
AVAILABLE-FOR-SALE FINANCIAL ASSETS	**(740)**	**(80)**	**818**	**(131)**

(1) +/( ): increase/(decrease) in equity (EDF share).
(2) +/( ): increase/(decrease) in income.

Gross changes in fair value over 2011 mainly concern EDF (€(843) million), including:
- €(448) million for dedicated assets;
- €(272) million for Veolia Environnement shares and €(149) million for AREVA shares included in "Other securities".

The fair value of Veolia Environnement shares (based on the stock market value at 31 December 2011) declined by more than 50% compared to historical value during 2011, and a €(340) million loss was therefore recognized in financial result.

Gross changes in fair value included in equity in 2010 (EDF's share) principally concern EDF: €850 million, including €886 million for dedicated assets.

No significant impairment was recorded in 2010.

37.2.2.1 Liquid assets

Liquid assets are financial assets consisting of funds or interest rate instruments with initial maturity of over three months that are readily convertible into cash, and are managed according to a liquidity-oriented policy.

EDF's monetary investment funds, included in liquid assets, amount to €2,187 million at 31 December 2011 (€4,842 million at 31 December 2010).

37.2.2.2 Other securities

At 31 December 2011, other securities mainly include:
- at CENG, €555 million of available-for-sale assets related to decommissioning trust funds (reserved for financing of plant decommissioning);
- at EDF Inc., shares in CEG (€424 million);
- at EDF, shares in AREVA (€164 million) and Veolia Environnement (€174 million).

37.3 Fair value of financial assets recorded at amortized cost

	31/12/2011		31/12/2010	
(in millions of Euros)	Fair value	Net book value	Fair value	Net book value
Held-to-maturity investments	19	19	25	25
Loans and financial receivables – amounts receivable from the NLF	7,209	7,209	6,613	6,613
Loans and financial receivables – other	2,824	2,671	2,912	2,908
FINANCIAL ASSETS RECORDED AT AMORTIZED COST	**10,052**	**9,899**	**9,550**	**9,546**

Loans and receivables include amounts representing reimbursements receivable from the NLF and the British government for coverage of long-term nuclear obligations, totaling €7,209 million at 31 December 2011 (€6,613 million at 31 December 2010), discounted at the same rate as the provisions they finance.

37.4 Change in financial assets other than derivatives

The variation in financial assets is as follows:

37.4.1 At 31 December 2011

(in millions of Euros)	31/12/2010	Net Increases	Changes in fair value	Changes in scope	Other	31/12/2011
Available-for-sale financial assets	25,035	(320)	(517)	75	55	**24,328**
Held-to-maturity investments	25	(3)	-	-	(3)	**19**
Loans and financial receivables	9,521	(380)	-	49	690	**9,880**

Other changes in loans and financial receivables reflect the change in the receivable representing reimbursements due from the NLF and the British government for coverage of long-term nuclear obligations, totaling €596 million.

37.4.2 At 31 December 2010

(in millions of Euros)	31/12/2009	Net Increases	Changes in fair value	Changes in scope	Other	31/12/2010
Available-for-sale financial assets	20,805	6,083	1,018	(2,747)	(124)	25,035
Held-to-maturity investments	524	(13)	-	(487)	1	25
Loans and financial receivables	7,848	(11)	-	1,322	362	9,521

Other changes in loans and financial receivables reflect the change in the receivable representing reimbursements due from the NLF and the British government for coverage of long-term nuclear obligations, totaling €214 million.

Note 38. Cash and cash equivalents

Cash and cash equivalents comprise cash in hand and at bank and investments in money market instruments. Cash and cash equivalents as stated in the cash flow statements include the following amounts recorded in the balance sheet:

(in millions of Euros)	31/12/2011	31/12/2010
Cash	2,018	1,838
Cash equivalents[(1)]	3,502	2,804
Financial current accounts	223	187
CASH AND CASH EQUIVALENTS	**5,743**	**4,829**

(1) Items stated at fair value amount to €3,246 million at 31 December 2011.

Note 39. Current and non-current financial liabilities

39.1 Breakdown between current and non-current financial liabilities

Current and non-current financial liabilities break down as follows:

	31/12/2011			31/12/2010		
(in millions of Euros)	Non-current	Current	Total	Non-current	Current	Total
Loans and other financial liabilities	41,989	8,045	**50,034**	39,993	7,784	**47,777**
Negative fair value of derivative held for trading	-	3,433	**3,433**	-	4,002	**4,002**
Negative fair value of hedging derivatives	699	1,311	**2,010**	653	980	**1,633**
FINANCIAL LIABILITIES	**42,688**	**12,789**	**55,477**	**40,646**	**12,766**	**53,412**

39.2 Loans and other financial liabilities

39.2.1 Changes in loans and other financial liabilities

(in millions of Euros)	Bonds	Loans from financial institutions	Other financial liabilities	Loans related to finance leased assets	Accrued interests	Total
Balances at 31/12/2009	**40,072**	**6,450**	**5,892**	**246**	**1,208**	**53,868**
Increases	5,736	2,057	971	-	137	8,901
Decreases	(1,924)	(2,144)	(841)	(42)	(16)	(4,967)
Translation adjustments	646	67	205	-	2	920
Changes in scope of consolidation	(9,489)	(753)	(940)	(13)	(276)	(11,471)
Other changes	458	(273)	199	182	(40)	526
Balances at 31/12/2010	**35,499**	**5,404**	**5,486**	**373**	**1,015**	**47,777**
Increases	1,810	3,275	663	-	81	5,829
Decreases	(1,023)	(3,228)	(302)	(16)	(7)	(4,576)
Translation adjustments	366	34	145	-	1	546
Changes in scope of consolidation	(11)	(29)	(334)	(4)	-	(378)
Other changes	883	25	(91)	18	1	836
BALANCES AT 31/12/2011	**37,524**	**5,481**	**5,567**	**371**	**1,091**	**50,034**

Other changes in loans and other financial liabilities reflect changes in fair value amounting to €826 million at 31 December 2011 (€480 million at 31 December 2010).

On 17 October 2011 EDF received the funds from a 30-year £1.25 billion sterling bond issue with annual coupon of 5.50%.

Loans and other financial liabilities of the Group's main entities are as follows:

(in millions of Euros)	31/12/2011	31/12/2010
EDF and other affiliated subsidiaries (1)	35,407	33,656
EDF Energy (2)	5,965	5,312
EDF Énergies Nouvelles	4,572	4,059
Edison (3)	1,861	2,104
Other	2,229	2,646
GROSS INDEBTEDNESS	**50,034**	**47,777**

(1) ERDF, PEI, EDF International and EDF Investissements Groupe.
(2) Including holding companies.
(3) Edison excluding TDE.

At 31 December 2011, none of these entities was in default on any borrowing.

The Group's principal borrowings at 31 December 2011 are as follows:

(in millions)	Entity	Issue [1]	Maturity	Issuance amount	Currency	Rate
Euro MTN	EDF	11/2008	01/2013	2,000	EUR	5.6% [2]
Bond	EDF	01/2009	01/2014	1,250	USD	5.5%
Euro MTN	EDF	07/2009	07/2014	3,269	EUR	4.5%
Euro MTN	EDF	01/2009	01/2015	2,000	EUR	5.1% [2]
Euro MTN	EDF	10/2001	10/2016	1,100	EUR	5.5%
Euro MTN	EDF	02/2008	02/2018	1,500	EUR	5.0%
Bond	EDF	01/2009	01/2019	2,000	USD	6.5%
Bond	EDF	01/2010	01/2020	1,400	USD	4.6%
Euro MTN	EDF	05/2008	05/2020	1,200	EUR	5.4%
Euro MTN	EDF	01/2009	01/2021	2,000	EUR	6.3%
Euro MTN	EDF	09/2009	09/2024	2,500	EUR	4.6% [2]
Euro MTN	EDF	11/2010	11/2025	750	EUR	4.0%
Euro MTN	EDF	04/2010	04/2030	1,500	EUR	4.6% [2]
Euro MTN	EDF	02/2003	02/2033	850	EUR	5.6%
Euro MTN	EDF	06/2009	06/2034	1,500	GBP	6.1%
Bond	EDF	01/2009	01/2039	1,750	USD	7.0%
Euro MTN	EDF	11/2010	11/2040	750	EUR	4.5%
Euro MTN	EDF	10/2011	10/2041	1,250	GBP	5.5%
Euro MTN	EDF	09/2010	09/2050	1,000	GBP	5.1% [2]

(1) Date funds were received.
(2) These bonds were partly redeemed in 2010 and 2011.

39.2.2 Maturity of loans and other financial liabilities

(in millions of Euros)	Bonds	Loans from financial institutions	Other financial liabilities	Loans related to finance leased assets	Accrued interest	Total
Less than one year	790	1,207	4,920	37	1,091	**8,045**
From one to five years	12,760	1,964	520	101	-	**15,345**
More than five years	23,974	2,310	127	233	-	**26,644**
LOANS AND FINANCIAL LIABILITIES AT 31/12/2011	**37,524**	**5,481**	**5,567**	**371**	**1,091**	**50,034**

39.2.3 Breakdown of loans by currency

	31/12/2011			31/12/2010		
(in millions of Euros)	Initial debt structure	Impact of hedging derivatives [1]	Debt structure after hedging derivatives	Initial debt structure	Impact of hedging derivatives [1]	Debt structure after hedging derivatives
Euro (EUR)	29,479	(3,129)	26,350	28,510	(3,089)	25,421
American dollar (USD)	8,890	(2,401)	6,489	9,257	(4,568)	4,689
Pound sterling (GBP)	6,822	7,559	14,381	5,081	8,678	13,759
Other	4,843	(2,029)	2,814	4,929	(1,021)	3,908
LOANS AND FINANCIAL LIABILITIES	**50,034**	**-**	**50,034**	**47,777**	**-**	**47,777**

(1) Hedges of liabilities and net assets of foreign subsidiaries.

39.2.4 Breakdown of loans by type of interest rate, before and after swaps

(in millions of Euros)	31/12/2011 Initial debt structure	31/12/2011 Impact of hedging derivatives	31/12/2011 Debt structure after hedging derivatives	31/12/2010 Initial debt structure	31/12/2010 Impact of hedging derivatives	31/12/2010 Debt structure after hedging derivatives
Fixed rates	42,614	(2,630)	39,984	41,150	(49)	41,101
Floating rates	7,420	2,630	10,050	6,627	49	6,676
LOANS AND FINANCIAL LIABILITIES	**50,034**	**-**	**50,034**	**47,777**	**-**	**47,777**

The breakdown of loans and financial liabilities by interest rate includes the impact of all derivatives classified as hedges in accordance with IAS 39.

39.2.5 Credit lines

At 31 December 2011, the Group has credit lines with various banks totaling €10,179 million (€11,085 million at 31 December 2010).

(in millions of Euros)	31/12/2011 Total	31/12/2011 Maturity < 1 year	31/12/2011 Maturity 1 to 5 years	31/12/2011 Maturity > 5 years	31/12/2010 Total
Confirmed credit lines	**10,179**	**3,610**	**6,562**	**7**	**11,085**

The decrease in credit lines observed in 2011 partly relates to EDF Énergies Nouvelles where credit lines with the EDF group have replaced external credit lines, and partly to larger drawings on credit lines by EDF SA and Edison in 2011.

39.2.6 Early repayment clauses

Project financing loans to EDF Énergies Nouvelles from non-Group parties generally include early repayment clauses, mainly applicable when the borrower fails to maintain a minimum Debt Service Coverage Ratio (DSCR). In general, early repayment clauses are activated when this ratio falls below 1.

No early repayment took place in 2011 as a result of any Group entity's failure to comply with contractual clauses concerning loans.

39.2.7 Fair value of loans and other financial liabilities

(in millions of Euros)	31/12/2011 Fair value	31/12/2011 Net book value	31/12/2010 Fair value	31/12/2010 Net book value
Loans and financial liabilities	**53,196**	**50,034**	**52,868**	**47,777**

39.3 Net indebtedness

Net indebtedness is not defined in the accounting standards and is not directly visible in the consolidated balance sheet. It comprises total loans and financial liabilities, less cash and cash equivalents and liquid assets. Liquid assets are financial assets consisting of funds or securities with initial maturity of over three months that are readily convertible into cash regardless of their maturity and are managed according to a liquidity-oriented policy.

Since 2010 the net indebtedness has included loans by the Group to RTE, which is accounted for under the equity method from 31 December 2010.

39.3.1 Net indebtedness by nature

(in millions of Euros)	Notes	31/12/2011	31/12/2010
Loans and other liabilities	39.2.1	50,034	47,777
Derivatives used to hedge liabilities		(834)	49
Cash and cash equivalents	38	(5,743)	(4,829)
Liquid assets (1)	37.2	(9,024)	(9,285)
Loan to RTE		(1,400)	(1,914)
Net indebtedness of assets held for sale		252	2,591
NET INDEBTEDNESS		**33,285**	**34,389**

(1) Available-for-sale financial assets: €9,024 million at 31 December 2011 (€9,285 million at 31 December 2010).

The net financial indebtedness of assets held for sale in 2011 is attributable to Edipower (a subsidiary of the Edison subgroup).
The net financial indebtedness of assets held for sale in 2010 is attributable to EnBW.

Note 40. Fair value of financial instruments

The breakdown of financial assets and liabilities carried at fair value in the balance sheet at 31 December 2011 is as follows:

(in millions of Euros)	31/12/2011	Level 1 Quoted prices	Level 2 Observable data	Level 3 Internal models
Financial assets carried at fair value with changes in fair value included in income (1)	4,494	24	4,180	290
Available-for-sale financial assets	24,328	5,171	18,628	529
Positive fair value of hedging derivatives	2,776	-	2,776	-
Cash equivalents carried at fair value	3,246	40	3,206	-
FINANCIAL ASSETS CARRIED AT FAIR VALUE IN THE BALANCE SHEET	**34,844**	**5,235**	**28,790**	**819**
Negative fair value of hedging derivatives	2,010	-	2,009	1
Negative fair value of trading derivatives	3,433	17	3,177	239
FINANCIAL LIABILITIES CARRIED AT FAIR VALUE IN THE BALANCE SHEET	**5,443**	**17**	**5,186**	**240**

(1) Including positive fair value of trading derivatives for €4,478 million.

Level 3 available-for-sale financial assets are principally unconsolidated investments carried at historical value.

Cash equivalents, which principally take the form of negotiable debt instruments and short-term investments, are generally valued using rate curves, and therefore observable market data.

Note 41. Management of financial risks

As an operator in the energy sector worldwide, the EDF group is exposed to risks related to interest rates, exchange rates and fluctuations in commodity prices. The Group uses derivatives in various hedging strategies to eliminate or limit these financial risks, but not for speculative purposes.

To that end, the Group has set up a dedicated body responsible for defining the risk management policy and its governing principles, and supervising their correct application.

EDF entities and Group subsidiaries, particularly EDF Trading, EDF Energy and Edison have adapted these principles as appropriate for management of the risks inherent to their business.

Risks related to exchange rate, interest rate and commodity price fluctuations create volatility affecting Group results, equity and cash flows.
The main derivatives used are forward exchange contracts, currency options and currency swaps, interest rate swaps, cross currency swaps and commodity futures, forwards and swaps.

The equity risk lies essentially in the portfolio to cover nuclear obligations, and to a lesser degree in long-term investments for EDF's cash management.

On the energy markets, the Group enters into trading operations on the wholesale electricity, CO_2 and fossil fuel markets, mainly through its subsidiary EDF Trading. EDF Trading's spot and forward transactions mostly involve instruments such as forward contracts (with or without physical delivery), swaps and options.
EDF Trading is responsible for controlling its own exposure to energy market risks, and its commitments on the markets are also managed at Group level through a "Value at risk" (VaR) limit with a stop-loss limit (see section 1.6.2 of the Management Report).

The credit risk is associated with the risk of default on contractual obligations by counterparties. The Group has set up a counterparty risk management policy based on the following principles:
- close monitoring of the Group's counterparties (a daily report on alerts and specific conservative measures for certain counterparties);
- a methodology to assign exposure limits for each counterparty, related to financial and energy markets;
- monthly consolidation of exposure to counterparty risk on financial and energy market activities and quarterly consolidation across all activities;
- introduction of a loss limit at Group level for each counterparty and each entity, and regular control of compliance with those limits. When they are exceeded, the Corporate Credit Committee is contacted to decide on the corrective action to be applied, or authorize an exception.

Regarding the risk of customer default, another component of the counterparty risk, a statement of receivables not yet due and overdue is shown in note 26.

In the special case of EDF Trading, credit risk is partly covered by bilateral margin agreements and letters of credit.

A description of the types of financial risk and energy market risks and the Group's management and control framework for those risks can be found in section 1.6 of the Management Report.

The sensitivity analysis required by IFRS 7 is contained in the Management Report:
- foreign exchange risk: section 1.6.1.3;
- interest rate risk on financing issued and financial assets: section 1.6.1.4;
- equity risk on financial assets: section 1.6.1.5.

The principal information on financial assets and liabilities are described by theme in the following notes and sections:
- Liquidity risks:
  - maturity of loans and other financial liabilities: note 39.2.2 to the financial statements,
  - credit lines: note 39.2.5 to the financial statements,
  - early repayment clauses for borrowings: note 39.2.6 to the financial statements,
  - off balance sheet commitments: note 44 to the financial statements.
- Foreign exchange risks:
  - breakdown of loans by interest rate and currency: notes 39.2.3 and 39.2.4 to the financial statements.
- Equity risks (Management Report – section 1.6.1.5):
  - coverage of nuclear obligations: note 44.1.1.4 and 30.1.5 to the financial statements,
  - coverage of social obligations: note 32.2.4 and 32.3.3 to the financial statements,
  - long-term cash management,
  - direct investments.
- Interest rate risks:
  - discount rate for nuclear provisions: calculation method and sensitivity: note 30.1.5.1 to the financial statements,
  - discount rate used for employee benefits: notes 32.2.5 and 32.3.4 to the financial statements,
  - breakdown of loans by interest rate and currency: notes 39.2.3 and 39.2.4 to the financial statements.
- Balance sheet treatment of financial and market risks:
  - derivatives and hedge accounting: note 42 to the financial statements, with direct correspondence to the statement of changes in equity,
  - derivatives not classified as hedges: note 43 to the financial statements.

Note 42. Derivatives and hedge accounting

Hedge accounting is applied in compliance with IAS 39, and concerns interest rate derivatives used to hedge long-term indebtedness, currency derivatives used to hedge net foreign investments and debts in foreign currencies, and currency and commodity derivatives used to hedge future cash flows.

The fair value of hedging derivatives reported in the balance sheet breaks down as follows:

(in millions of Euros)	Notes	31/12/2011	31/12/2010
Positive fair value of hedging derivatives	37.1	2,776	2,581
Negative fair value of hedging derivatives	39.1	(2,010)	(1,633)
FAIR VALUE OF HEDGING DERIVATIVES		**766**	**948**
Including interest rate hedging derivatives	42.4.1	337	(192)
Including foreign currency hedges	42.4.2	679	797
Including commodity-related cash flow hedges	42.4.3	(231)	365
Including commodity-related fair value hedges	42.5	(19)	(22)

42.1 Fair value hedges

The EDF group hedges the exposure to changes in the fair value of fixed-rate debts. The derivatives used for this hedging are fixed/floating interest rate swaps and cross currency swaps, with changes in fair value recorded in the income statement. Fair value hedges also include currency hedging instruments on certain firm purchase commitments.

At 31 December 2011, the ineffective portion of fair value hedges represents a gain of €4 million (gain of €2 million at 31 December 2010), included in the financial result.

42.2 Cash flow hedges

The EDF group uses cash flow hedging principally for the following purposes:

- to hedge its floating-rate debt, using interest-rate swaps (floating/fixed rate);
- to hedge the exchange rate risk related to debts contracted in foreign currencies, using cross currency swaps;
- to hedge future cash flows related to expected sales and purchases of electricity, gas, and coal, using futures, forwards and swaps.

The EDF group also hedges the currency risk associated with fuel and commodity purchases.

At 31 December 2011, the ineffective portion of cash flow hedges represents a loss of €9 million (loss of €3 million at 31 December 2010).

42.3 Hedges of net investment in foreign entities

Hedging of net foreign investment is used for protection against exposure to the exchange rate risk related to net investments in the Group's foreign entities.

This risk is hedged at Group level either by contracting debts for investments in the same currency, or through the markets, in which case the Group uses currency swaps and forward exchange contracts.

42.4 Impact of hedging derivatives on equity

Changes during the period in the fair value of hedging instruments included in equity (EDF share) are detailed below:

	31/12/2011			31/12/2010		
(in millions of Euros)	Gross changes in fair value recorded in equity (1)	Gross changes in fair value transferred to income – Recycling (2)	Gross changes in fair value transferred to income – Ineffectiveness	Gross changes in fair value recorded in equity (1)	Gross changes in fair value transferred to income – Recycling (2)	Gross changes in fair value transferred to income – Ineffectiveness
Interest rate hedging	(156)	(1)	(9)	(50)	-	6
Exchange rate hedging	254	317	6	934	661	(7)
Net foreign investment hedging (3)	(508)	-	-	(911)	514	-
Commodity hedging	(1,270)	(693)	-	68	(1,471)	2
HEDGING DERIVATIVES	**(1,680)**	**(377)**	**(3)**	**41**	**(296)**	**1**

(1) +/( ) : increase/(decrease) in equity (EDF share).

(2) +/( ) : increase/(decrease) in income.

(3) Gross changes in the fair value of net foreign investment hedges transferred to income in 2010 related to the sale of the network activities in the United Kingdom.

42.4.1 Interest rate hedging derivatives

Interest rate hedging derivatives break down as follows:

	Notional at 31/12/2011				Notional at 31/12/2010	Fair value	
(in millions of Euros)	< 1 year	1 to 5 years	> 5 years	Total	Total	31/12/2011	31/12/2010
Purchases of CAP contracts	20	70	8	98	98	-	-
Purchases of options	50	70	-	120	170	(1)	(1)
Interest rate transactions	**70**	**140**	**8**	**218**	**268**	**(1)**	**(1)**
Fixed rate payer/floating rate receiver	803	1,768	1,262	3,833	3,848	(304)	(158)
Floating rate payer/fixed rate receiver	-	1,561	4,430	5,991	3,284	705	(18)
Variable/variable	1	1,499	20	1,520	2,064	16	22
Fixed/fixed	506	4,545	5,090	10,141	10,286	(79)	(37)
Interest rate swaps	**1,310**	**9,373**	**10,802**	**21,485**	**19,482**	**338**	**(191)**
INTEREST RATE HEDGING DERIVATIVES	**1,380**	**9,513**	**10,810**	**21,703**	**19,750**	**337**	**(192)**

The fair value of interest rate/exchange rate cross-currency swaps comprises the interest rate effect only.
The notional value of cross-currency swaps is included both in this note and the note on Exchange rate hedging derivatives (42.4.2).

42.4.2 Exchange rate hedging derivatives

Exchange rate hedging derivatives break down as follows:

At 31 December 2011 *(in millions of Euros)*	Notional amount to be received				Notional amount to be given				Fair value
	< 1 year	1 to 5 years	> 5 years	Total	< 1 year	1 to 5 years	> 5 years	Total	31/12/2011
Forward exchange transactions	4,704	1,755	-	**6,459**	4,656	1,744	-	**6,400**	75
Swaps	7,253	7,861	5,254	**20,368**	7,232	7,326	5,223	**19,781**	600
Options	90	-	-	**90**	93	-	-	**93**	4
FOREIGN CURRENCY HEDGES	**12,047**	**9,616**	**5,254**	**26,917**	**11,981**	**9,070**	**5,223**	**26,274**	**679**

At 31 December 2010 *(in millions of Euros)*	Notional amount to be received				Notional amount to be given				Fair value
	< 1 year	1 to 5 years	> 5 years	Total	< 1 year	1 to 5 years	> 5 years	Total	31/12/2010
Forward exchange transactions	2,453	1,566	23	4,042	2,543	1,560	23	4,126	**68**
Swaps	13,220	7,762	6,048	27,030	12,450	7,304	5,902	25,656	**712**
Options	4,877	-	-	4,877	4,845	-	-	4,845	**17**
FOREIGN CURRENCY HEDGES	**20,550**	**9,328**	**6,071**	**35,949**	**19,838**	**8,864**	**5,925**	**34,627**	**797**

The notional value of cross-currency swaps shown in this note is also included in the note on interest rate hedging derivatives (note 42.4.1).

42.4.3 Commodity-related cash flow hedges

For commodities, changes in fair value are mainly explained by:

(in millions of Euros)	31/12/2011	31/12/2010
Electricity hedging contracts	(489)	(389)
Gas hedging contracts	(62)	298
Coal hedging contracts	(591)	118
Oil product hedging contracts	42	72
CO_2 emission rights hedging contracts	(170)	(31)
CHANGES IN FAIR VALUE BEFORE TAXES	**(1,270)**	**68**

The main components of the amount transferred to income in respect of commodity hedges terminated during the year are:

(in millions of Euros)	31/12/2011	31/12/2010
Electricity hedging contracts	(530)	(826)
Gas hedging contracts	90	(115)
Coal hedging contracts	(348)	(424)
Oil product hedging contracts	106	74
CO_2 emission rights hedging contracts	(11)	(180)
CHANGES IN FAIR VALUE BEFORE TAXES	**(693)**	**(1,471)**

Details of commodity-related cash flow hedges are as follows:

(in millions of Euros)	Units of measure	31/12/2011 Net notional < 1 year	1 to 5 years	> 5 years	Total	Fair value	31/12/2010 Net notional Total	Fair value
Swaps		1	-	-	1	2	-	-
Forwards/futures		19	(5)	-	14	(195)	9	19
Power	**TWh**	**20**	**(5)**	**-**	**15**	**(193)**	**9**	**19**
Swaps		92	-	-	92	(9)	-	-
Forwards/futures		571	916	-	1,487	(72)	768	16
Gas	**Millions of therms**	**663**	**916**	**-**	**1,579**	**(81)**	**768**	**16**
Swaps		5,157	1,889	-	7,046	130	31,098	187
Oil products	**Thousands of barrels**	**5,157**	**1,889**	**-**	**7,046**	**130**	**31,098**	**187**
Swaps		8	4	-	12	39	12	160
Coal	**Millions of tonnes**	**8**	**4**	**-**	**12**	**39**	**12**	**160**
Forwards/futures		4,704	11,687	-	16,391	(127)	6,467	(24)
CO_2	**Thousands of tonnes**	**4,704**	**11,687**	**-**	**16,391**	**(127)**	**6,467**	**(24)**
Other commodities						**1**		**7**
CASH FLOW HEDGE COMMODITY DERIVATIVES						**(231)**		**365**

42.5 Commodity-related fair value hedges

Details of commodity-related fair value hedges are as follows:

(in millions of Euros)	Units of measure	31/12/2011 Net notional	Fair value	31/12/2010 Net notional	Fair value
Gas (swaps)	Millions of therms	52	1	169	(1)
Coal and freight	Millions of tonnes	(15)	(20)	(16)	(21)
FAIR VALUE HEDGING COMMODITY DERIVATIVES			**(19)**		**(22)**

Note 43. Derivatives not classified as hedges

Details of the fair value of trading derivatives reported in the balance sheet are as follows:

(in millions of Euros)	Notes	31/12/2011	31/12/2010
Positive fair value of trading derivatives	37.2	4,478	4,530
Negative fair value of trading derivatives	39.1	(3,433)	(4,002)
FAIR VALUE OF TRADING DERIVATIVES		**1,045**	**528**
Including interest rate derivatives held for trading	43.1	(42)	15
Including currency derivatives held for trading	43.2	(35)	(62)
Including non hedging commodity derivatives	43.3	1,122	575

43.1 Interest rate derivatives held for trading

Interest rate derivatives held for trading break down as follows:

	Notional at 31/12/2011				Notional at 31/12/2010	Fair value	
(in millions of Euros)	< 1 year	1 to 5 years	> 5 years	Total	Total	31/12/2011	31/12/2010
Fixed rate payer/floating rate receiver	2,311	1,688	563	4,562	6,070	(279)	(219)
Floating rate payer/fixed rate receiver	1,929	1,611	417	3,957	3,855	242	235
Variable/variable	-	355	-	355	442	(5)	(1)
INTEREST RATE DERIVATIVES HELD FOR TRADING	**4,240**	**3,654**	**980**	**8,874**	**10,367**	**(42)**	**15**

43.2 Currency derivatives held for trading

Currency derivatives held for trading break down as follows:

	Notional amount to be received				Notional amount to be given				Fair value
At 31 December 2011 *(in millions of Euros)*	< 1 year	1 to 5 years	> 5 years	Total	< 1 year	1 to 5 years	> 5 years	Total	Total
Forward transactions	3,177	461	26	3,664	3,165	475	32	3,672	(10)
Swaps	2,171	144	11	2,326	2,175	144	12	2,331	(25)
Options	33	-	-	33	37	-	-	37	-
CURRENCY DERIVATIVES HELD FOR TRADING	**5,381**	**605**	**37**	**6,023**	**5,377**	**619**	**44**	**6,040**	**(35)**

	Notional amount to be received				Notional amount to be given				Fair value
At 31 December 2010 *(in millions of Euros)*	< 1 year	1 to 5 years	> 5 years	Total	< 1 year	1 to 5 years	> 5 years	Total	Total
Forward transactions	2,686	551	292	3,529	2,676	553	297	3,526	(27)
Swaps	3,297	129	96	3,522	3,172	125	95	3,392	(35)
CURRENCY DERIVATIVES HELD FOR TRADING	**5,983**	**680**	**388**	**7,051**	**5,848**	**678**	**392**	**6,918**	**(62)**

43.3 Commodity derivatives not classified as hedges

Details of commodity derivatives not classified as hedges are as follows:

	Units of measure	31/12/2011		31/12/2010	
(in millions of Euros)		Net notional	Fair value	Net notional	Fair value
Swaps		(5)	485	(3)	548
Options		36	31	14	369
Forwards/futures		(14)	663	(22)	(460)
Power	**TWh**	**17**	**1,179**	**(11)**	**457**
Swaps		6	12	10	(24)
Options		16,022	81	110,858	23
Forwards/futures		591	(263)	(152)	(140)
Gas	**Millions of therms**	**16,619**	**(170)**	**110,716**	**(141)**
Swaps		133	17	(7,431)	(8)
Options		1	-	1,283	-
Forwards/futures		(81)	-	199	8
Oil products	**Thousands of barrels**	**53**	**17**	**(5,949)**	**-**
Swaps		(48)	(632)	(48)	(1,135)
Forwards/futures		87	607	83	1,352
Freight		15	46	15	(41)
Coal and freight	**Millions of tonnes**	**54**	**21**	**50**	**176**
Swaps		(561)	-	(1,575)	(7)
Options		3,370	(2)	4 270	(2)
Forwards/futures		9,007	115	11,702	81
CO_2	**Thousands of tonnes**	**11,816**	**113**	**14,397**	**72**
Swaps			(40)		8
Other			**(40)**		**8**
Embedded commodity derivatives			**2**		**3**
NON HEDGING COMMODITY DERIVATIVES			**1,122**		**575**

These mainly include contracts included in EDF Trading's portfolio.

Other information

Note 44. Off-balance sheet commitments

The table below shows off-balance sheet commitments given and received by the Group at 31 December 2011:

Commitments given *(in millions of Euros)*	Notes	31/12/2011 Total	Maturity within 1 year	Maturity between 1 and 5 years	Maturity after 5 years	31/12/2010 Total
Fuel and energy purchase commitments	44.1.1	**39,928**	6,700	15,056	18,172	**39,596**
Operating contract performance commitments	44.1.2	**19,791**	9,284	8,478	2,029	**17,269**
Operating lease commitments as lessee	44.1.3	**2,525**	538	1,326	661	**1,791**
Investment commitments given	44.1.4	**629**	522	41	66	**2,534**
Financing commitments given	44.1.5	**4,584**	953	808	2,823	**5,645**
TOTAL CONTRACTUAL OBLIGATIONS AND COMMITMENTS GIVEN		**67,457**	**17,997**	**25,709**	**23,751**	**66,835**

Commitments received *(in millions of Euros)*	Notes	31/12/2011 Total	Maturity within 1 year	Maturity between 1 and 5 years	Maturity after 5 years	31/12/2010 Total
Operating commitments received	44.2.1	**1,871**	924	318	629	**1,122**
Operating lease commitments as lessor	44.2.3	**1,268**	263	633	372	**1,473**
Investment commitments received	44.2.4	**18**	2	16	-	**4,500**
Financing commitments received	44.2.5	**239**	88	139	12	**689**
TOTAL COMMITMENTS RECEIVED (1)		**3,396**	**1,277**	**1,106**	**1,013**	**7,784**

(1) Excluding electricity supply commitments, described in note 44.2.2 and credit lines in note 39.2.5.

44.1 Commitments given

44.1.1 Fuel and energy purchase commitments

In the course of its generation and supply activities, the Group has entered into long-term contracts for purchases of electricity, gas, other energies and commodities, as well as nuclear fuels, for periods of up to 20 years.
In almost all cases, these are reciprocal commitments, and the third parties concerned are under an obligation to supply the quantities specified in the contracts.
EDF has also entered into long-term purchase contracts with a certain number of electricity producers, by contributing to the financing of power plants.

At 31 December 2011, fuel and energy purchase commitments mature as follows:

(in millions of Euros)	31/12/2011 Total	Maturity < 1 year	Maturity 1 to 5 years	Maturity 5 to 10 years	Maturity > 10 years	31/12/2010 Total
Electricity purchases	**9,467**	2,197	2,911	1,283	3,076	**8,182**
Gas purchases (1)	**10,210**	1,631	5,135	2,498	946	**10,609**
Other energy and commodity purchases	**1,553**	545	904	98	6	**2,239**
Nuclear fuel purchases	**18,698**	2,327	6,106	5,938	4,327	**18,566**
FUEL AND ENERGY PURCHASE COMMITMENTS	**39,928**	**6,700**	**15,056**	**9,817**	**8,355**	**39,596**

(1) Excluding Edison (see note 44.1.1.2).

Most of the changes result from the increase in electricity purchase contracts, especially at EDF.

44.1.1.1 Electricity purchases

Electricity purchase commitments mainly concern EDF, and are mostly for Island Energy Systems (IES), which has made commitments to purchase the electricity generated using bagasse and coal, ERDF and EDF Energy.

In addition to the obligations reported above and under article 10 of the Law of 10 February 2000, in mainland France EDF is obliged, at the producer's request and subject to compliance with certain technical features, to purchase the power produced by co-generation plants and renewable energy generation units (wind turbines and small hydro-electric plants, photovoltaic power, etc). The additional costs generated by this obligation are offset, after validation by the CRE, by the Contribution to the Public Electricity Service (*Contribution au service public de l'électricité or CSPE*). These purchase obligations total 33 TWh for 2011 (31 TWh for 2010), including 12 TWh for co-generation (13 TWh for 2010), 12 TWh for wind power (9 TWh for 2010) and 3 TWh for hydropower (4 TWh for 2010).

44.1.1.2 Gas purchases

Gas purchase commitments are principally undertaken by EDF in connection with the expansion of their gas supply businesses.

Edison has entered into "take or pay" gas import contracts. The contracts already in operation concern imports from Russia, Libya, Algeria, Qatar and Norway, for total supplies of 15.8 billion m^3 per year.
The contract with Terminale GNL Adriatico, a gas liquefaction unit in which Edison has a 7.3% holding and which started operation in October 2009, stipulates the following:

- the other shareholders' right to buy out Edison's 7.3% holding in the event Edison ends the supply contract with Rasgas, at a price corresponding to the sum of capital contributions made at the date the purchase option is exercised;
- Edison is to benefit from approximately 80% of the terminal's regasification capacities until 2034.

The Group is involved in independent power plant (IPP) ventures under power purchase agreements (PPA). Gas purchase commitments are mostly related to electric IPPs, covered by electricity sale agreements received. These agreements include "pass-through" clauses allowing almost all fluctuations in supply source costs to be passed on to the customer.

44.1.1.3 Other energy and commodity purchases

Purchase commitments for other energies and commodities mainly concern coal and oil used to operate the fossil-fired plants.

44.1.1.4 Nuclear fuel purchases

Commitments for purchases of nuclear fuel arise from supply contracts for the nuclear plants intended to cover the EDF group's needs for nuclear fuel and fluoration, enrichment and fuel assembly production services.

44.1.2 Operating contract performance commitments given

In the course of its business, the Group provides contract performance guarantees, generally through the intermediary of banks.

At 31 December 2011, these commitments mature as follows:

	31/12/2011				31/12/2010
	Total	Maturity			Total
(in millions of Euros)		< 1 year	1 to 5 years	> 5 years	
Satisfactory performance, completion and bid guarantees	**566**	276	184	106	**801**
Commitments related to orders for operating items [1]	**4,354**	2,443	1,481	430	**3,992**
Commitments related to orders for fixed assets	**12,083**	5,586	5,829	668	**9,282**
Other operating commitments	**2,788**	979	984	825	**3,194**
OPERATING CONTRACT PERFORMANCE COMMITMENTS GIVEN	**19,791**	**9,284**	**8,478**	**2,029**	**17,269**

(1) Excluding fuel and energy.

Satisfactory performance, completion and bid guarantees at 31 December 2011 mainly consist of guarantees given by EDF Énergies Nouvelles in connection with its development projects and Dalkia International.

Firm commitments on operating orders other than commodity and energy purchases and commitments for purchases of property, plant and equipment amount to €16,437 million (compared to €13,274 million at 31 December 2010).
The main such commitments concern:

- EDF and ERDF (€10,519 million, €8,338 million at 31 December 2010): commitments of €7,682 million undertaken upon signature of fixed asset orders (€5,638 million at 31 December 2010). The increase observed over the year is principally driven by new contracts to supply steam generators for 1,300 MW reactors. Commitments related to fixed asset orders also include €1,282 million related to construction of the EPR at Flamanville in France (€1,471 million in 2010);
- EDF Énergies Nouvelles (EEN) (€2,208 million, €1,875 million at 31 December 2010);
- EDF Energy (€1,267 million, €1,110 million at 31 December 2010): commitments for construction of a CCG plant at West Burton;
- Production Électrique Insulaire (PEI) (€844 million, €911 million at 31 December 2010): commitments mainly undertaken for plant construction;
- Dunkerque LNG (€783 million): construction of the methane terminal at Dunkirk.

Other operating commitments mainly concern EDF SA (€728 million compared to €665 million in 2010) and Edison (€683 million, compared to €766 million in 2010).

44.1.3 Operating lease commitments as lessee

The Group is bound as lessee by irrevocable operating lease contracts for premises, equipment and vehicles used in the course of its business. The corresponding rents are subject to renegotiation at intervals defined in the contracts. Operating leases mainly concern EDF, EDF Trading, ERDF and EDF Énergies Nouvelles.

The change in the year essentially concerns EDF SA and EDF Trading (growth in the freight business).

44.1.4 Investment commitments given

At 31 December 2011, commitments related to investments are as follows:

	31/12/2011				31/12/2010
	Total	Maturity			Total
(in millions of Euros)		< 1 year	1 to 5 years	> 5 years	
Investment commitments	**427**	421	-	6	**2,457**
Other commitments related to Group investments	**202**	101	41	60	**77**
INVESTMENT COMMITMENTS GIVEN	**629**	**522**	**41**	**66**	**2,534**

44.1.4.1 Investment commitments

The sale of EDF's investment in EnBW, completed on February 17, 2011, led to cancellation of the €2.3 billion off-balance sheet commitment recorded by the EDF group in respect of OEW's put option to sell EDF part or all of its 25% stake in EnBW.

Also, following the simplified public cash or exchange offer for EDF Énergies Nouvelles shares, the commitments made by the EDF group to the Mouratoglou group described in note 42.1.4.1 to the consolidated financial statements at 31 December 2010 no longer exist at 31 December 2011.

The residual commitments principally concern the following operations:

- Agreement with Veolia Environnement:
  Veolia Environnement has granted EDF a call option on all its Dalkia shares in the event that a competitor of EDF takes control over Veolia Environnement. EDF has also granted Veolia Environnement a call option over all its Dalkia shares in the event that the status of EDF should change and a competitor of Veolia Environnement, individually or with other parties, should take control over EDF. If the parties fail to agree on the sale price of the shares, it is to be fixed by an independent expert.
- Commitment by EDF Energy to Centrica:
  Centrica has taken a 20% investment in the project company in charge of constructing four EPRs in the United Kingdom. EDF Energy holds the other 80%.
  Centrica has a put option to sell its shares to EDF. This option can be triggered by criteria related to the pre-development budget, or exercised just before the final investment decision for the first EPR.
  At the current stage of the project, the value of this option does not make it a significant commitment for the Group.
- In connection with the formation of EDF Investissements Groupe, C3 (a wholly-owned EDF subsidiary) signed unilateral promises with NBI (Natixis Belgique Investissement, a subsidiary of the Natixis group) to buy and sell shares in investments held respectively by NBI and C3. NBI thus allows C3 to purchase NBI's investment at any time based on the company's net asset value until 2030, and to sell its total investment to NBI based on net asset value during the 5 years following formation of the company.

44.1.4.2 Other commitments related to the Group

The main explanation for the variation over the year was a commitment by Dalkia International to invest in the Warsaw network, in connection with acquisition of Spec in 2011.

44.1.5 Financing commitments given

Guarantees of borrowings by the Group at 31 December 2011 comprise the following:

	31/12/2011				31/12/2010
	Total	Maturity			Total
(in millions of Euros)		< 1 year	1 to 5 years	> 5 years	
Security interests in real property	**3,449**	241	537	2,671	**4,633**
Guarantees related to borrowings	**158**	13	26	119	**197**
Other financing commitments	**977**	699	245	33	**815**
FINANCING COMMITMENTS GIVEN	**4,584**	**953**	**808**	**2,823**	**5,645**

Security interests and assets provided as guarantees mainly concern pledges or mortgages of tangible assets and shares representing investments in consolidated subsidiaries which own property, plant and equipment. The net book value of current and non-current assets given as guarantees is €3,449 million at 31 December 2011 (€4,633 million in 2010), down by €1,184 million.

Most of the decrease concerns Edison, following cancellation of a pledge on the value of Edipower security interests in favor of a pool of banks (€541 million) after the payment facility was reimbursed, and EDF Énergies Nouvelles where pledges of tangible assets were down (€447 million), principally in Italy.

Guarantees related to financing were principally given by EDF.

44.2 Commitments received

44.2.1 Operating commitments received

Electricity supplied by EDF to operators under the NOME law is covered by a stand-alone guarantee enforceable on demand. This guarantee amounts to 1.5 times the average monthly volume of electricity as stated in the CRE's notification of the annual volume of electricity to be sold, valued at the ARENH price in force.

Another factor in the change in 2011 was the signature by Dunkerque LNG of a capacity subscription contract for the Dunkirk methane terminal, with a total value of €515 million.

44.2.2 Electricity supply commitments

In execution of the NOME law on organization of the French electricity market (see note 4.1), the French energy regulator CRE (*Commission de Régulation de l'Énergie*) notified EDF of the total volume to be sold to other suppliers for the delivery period running from 1 January 2012 to 31 December 2012: 60.7 TWh.

EDF has signed several long-term contracts with a number of European electricity operators, undertaking to supply electricity. These contracts are of two types:

- co-financing agreements for nuclear power plants, either for a specific plant or for a defined group of plants. Companies participating in this financing are entitled to a share of the power generated by the plants concerned, in proportion to their initial contribution;
- long-term commercial sales contracts, generally covered by the nuclear power plants.

On 22 December 2008, the European Commission approved the EDF group's takeover of British Energy subject to similar conditions concerning the sale of between 5 and 10 TWh of electricity on the market between 2012 and 2015. Under the agreements signed by EDF and Centrica in 2009, EDF is to supply an additional 18 TWh of electricity to Centrica at market prices for a 5-year period starting in 2011.

Finally, following the dispute between EDF and Direct Énergie, the French competition authorities (*Conseil de la concurrence*) issued a ruling on 10 December 2007 accepting and requiring compliance with EDF's proposed commitments to tender a significant capacity of electricity (1,500 MW, *i.e.* approximately 10 TWh per year for 15 years) to alternative suppliers at prices enabling them to compete effectively with EDF's offers on the deregulated mass market.

For the initial 5-year period, 2008-2012, EDF proposed to apply an average baseload supply price of €44.6/MWh in current Euros in 2011 (€42/MWh in 2010) which will rise to €47.2/MWh in 2012. For the second 10-year period, the price has been fixed at a level that covers EDF's development costs for the Flamanville EPR.

Capacity auctions resulted from a commitment made by EDF to the European Commission when EDF first acquired shares in EnBW. Since 2001, EDF was committed to making part of its generating capacity available on the market up to a volume of 5.4 GW, or approximately 40 TWh a year. This commitment began in 2001 and was intended to make it easier for competitors to enter the French market at a time when no wholesale market existed, for an estimated initial 5 year period, in principle until 7 February 2006.
After discussions with the European Commission and upon a proposal by EDF, in September 2006 the Commission authorized certain adjustments to the auction process, primarily by introduction of a basic product for a period of 4 years which first went on sale in September 2006, although the volume of energy made available annually by EDF was unchanged.
After the sale of EDF International's investments in EnBW to the Baden-Württemberg region on 17 February 2011, EDF applied to the European Commission for termination of the commitments accepted in 2001 when EDF first invested in EnBW. These commitments mainly concern VPP or Virtual Power Plant capacity auctions. On 30 November 2011 the Commission informed EDF that its request was accepted. This decision permanently terminated the auction sales undertaken in this context from that date.
Release from these commitments does not affect the rights acquired in past auctions, including the auction of 30 November 2011.

44.2.3 Operating lease commitments as lessor

The Group is a party to agreements classified as operating leases under IFRIC 4, which account for most of its operating lease commitments as lessor. These agreements mainly concern the Asian IPPs, and also the tolling contract signed by EDF Energy and various partners for the Sutton Bridge plant in 2009.

44.2.4 Investment commitments received

As the Group received a €4.5 billion payment on 17 February 2011 for the sale of its investment in EnBW, no investment commitments received exist in connection with this operation at 31 December 2011.

44.2.5 Financing commitments received

Financing commitments received mainly relate to Dunkerque LNG and EDF Énergies Nouvelles.

Note 45. Contingent liabilities

45.1 General Network – European Commission's decision of 16 December 2003

On 15 December 2009, the European Union Court cancelled the European Commission's decision of 16 December 2003 that had classified the tax treatment of provisions created for the renewal of the General Network at the time of EDF's capital increase in 1997 as state aid, and ordered repayment to the French State of the discounted value, *i.e.* €1,224 million (paid by EDF in February 2004). The State therefore reimbursed this amount to EDF on 30 December 2009, then in February 2010 the European Commission filed an appeal before the Court of Justice of the European Union. A hearing was held in July 2011 and on 20 October 2011 the Advocate General issued his opinion, in which he considered that the decision of 15 December 2009 should be overturned and the case should be referred back to the Court. However, this opinion cannot be considered indicative of the final decision of the Court of Justice, which is expected in 2012.

45.2 Tax inspections

In 2008 and 2009, EDF underwent a tax inspection covering the tax years 2004, 2005 and 2006. At the end of 2011, EDF received a tax reassessment notice. One of the grounds for the reassessment concerns the tax-deductibility of the provision for annuities following work-related accidents and illness; as this is an issue that relates to the special gas and electricity (IEG) statutes, it also concerns RTE, ERDF and électricité de Strasbourg. The Group is contesting the tax authorities' position on the deductibility of this provision. In late 2011 France's National Commission for Direct Taxes and Sales Taxes issued an opinion in favor of EDF on the main grounds for reassessment resulting from the inspection covering the years 2004 to 2006, notably confirming the deductibility of the provision for annuities following work-related accidents and illness. If the outcome of this dispute is unfavorable, the financial risk for the Group associated with payment of income taxes could amount to some €250 million.

During 2010, a further inspection was begun of the years 2007 and 2008, and in late 2011 EDF was notified of a proposed tax reassessment for 2008. EDF is contesting most of the tax reassessments, amounting to approximately €900 million, concerning deductibility of certain long-term liabilities. The Company considers it is likely to win this dispute, and no provision has been established for the principal grounds for tax reassessment.

45.3 Labor litigation

EDF is party to a number of labor lawsuits with employees, primarily regarding the calculation and implementation of rest periods. EDF estimates that none of these lawsuits, individually, is likely to have a significant impact on its profits and financial position. However, because they concern situations likely to involve a large number of EDF's employees in France, any increase in such litigations could present a risk with a potentially significant, negative impact on the Group's financial results.

45.4 ERDF – Dispute with photovoltaic producers

Photovoltaic installations benefit from an obligation incumbent on EDF (or local distribution companies) to purchase the electricity they generate, in a regulatory framework designed as an incentive to foster development of photovoltaic energy in France. As the sector grew very rapidly, the French government issued in 2010 a series of decisions lowering the purchase tariffs, followed by a "moratorium decree" on 9 December 2010: this decree suspended conclusion of new contracts for a three-month period and stipulated that applications for which the technical and financial proposals had not been adopted by 2 December 2010 would have to be resubmitted after that three-month period, based on a photovoltaic power purchase tariff set in a new decision. This decision was issued on 4 March 2011 and significantly reduced the purchase price for photovoltaic electricity.

In anticipation of the coming tariff changes, there was an upsurge in the number of applications for connection received by ERDF's units. Despite the significant measures taken to process these applications, ERDF was not always able to issue technical and financial proposals in time for the power generators to benefit from the pre- 4 March 2011 tariffs.

A Council of State decision of 16 November 2011 rejecting appeals against the moratorium decree of December 2010 generated a large volume of legal proceedings against ERDF in late 2011. Most action was initiated by generators who found themselves forced to abandon their projects since the new electricity purchase tariffs made operating conditions less favorable; they consider ERDF responsible for this situation since it did not issue the technical and financial connection proposals in time for them to benefit from more advantageous terms.

Although provisions have been established to cover the possibility of unfavorable court rulings, the Group does not consider that it can be held liable.

45.5 Edipower

Proceedings are continuing in the action brought before the court of Rome by ACEA (Rome's municipal utility) against several parties, including among others EDF, Edipower Spa and Edison Spa. ACEA is claiming that the joint level of investment in Edison by EDF and AEM violates the 30% limit applicable to public companies' stakes in Edipower, as set by the privatization decree of 8 November 2000. It argues that exceeding the 30% limit constitutes unfair competition that could have an adverse effect on energy market competition and is detrimental to ACEA. Consequently ACEA is claiming compensation and asking for measures to be taken to put an end to the situation, for example disposal of investments in excess of the 30% threshold and a ban on receiving energy generated by Edipower above the authorized quantities. In January 2007, Endesa Italia joined ACEA in its action. The hearing relating to the substance of the case was initially scheduled for June 2008, then subsequently postponed several times until 24 March 2011.

In December 2010, Endesa Italia, now renamed E.ON Italia, and EDF signed a release agreement in which E.ON Italia undertakes to drop the case and all other claims against EDF in connection with EDF's indirect investment in Edipower. The judge took formal note of this agreement in an order issued on 19 May 2011, and deferred the case to 13 March 2013.

45.6 EDF Énergies Nouvelles – Silpro

Silpro (Silicium de Provence) entered court-ordered liquidation on 4 August 2009. The EDF ENR group (owned 50% by EDF Énergies Nouvelles and 50% by EDF Développement Environnement) held a 30% minority interest in Silpro alongside the principal shareholder Sol Holding, a subsidiary of the E Concern group. On 30 May 2011, the liquidator ordered the shareholders and managers of Silpro to jointly repay the shortfall in assets (in the range of €100 million) resulting from Silpro's liquidation.
After examining the situation and seeking external legal opinions, the Group does not consider it necessary to recognize a provision.

Note 46. Held-for-sale assets and liabilities

(in millions of Euros)	31/12/2011	31/12/2010
Assets classified as held for sale	**701**	**18,145**
Liabilities related to assets classified as held for sale	**406**	**12,874**

The change in assets classified as held for sale and related liabilities at 31 December 2011 principally results from completion of the sale of EnBW (€17,857 million of assets and €12,862 million of liabilities were recorded at 31 December 2010). Held-for-sale assets and liabilities as stated in the balance sheet at 31 December 2011 correspond to Edison's investment in Edipower.

Note 47. Contribution of joint ventures

The joint ventures' contributions to the consolidated balance sheet and income statement are as follows:

At 31 December 2011

(in millions of Euros)	% of ownership	Current assets	Non-current assets	Current liabilities	Non-current liabilities	Sales	Operating profit before depreciation and amortization
Edison	48.96%	2,106	5,002	1,744	2,176	6,068	480
CENG	49.99%	424	4,849	106	1,739	542	194
Other		3,231	6,652	3,028	774	3,195	456
TOTAL		**5,761**	**16,503**	**4,878**	**4,689**	**9,805**	**1,130**

At 31 December 2010 (1)

(in millions of Euros)	% owned	Current assets	Non-current assets	Current liabilities	Non-current liabilities	Sales	Operating profit before depreciation and amortization
Edison	48.96%	1,921	6,713	2,055	2,159	5,175	693
CENG	49.99%	453	5,215	286	1,611	597	236
Other		2,103	6,101	2,074	1,354	2,990	486
TOTAL		**4,477**	**18,029**	**4,415**	**5,124**	**8,762**	**1,415**

(1) In application of IFRS 5, EnBW income statement data are not consolidated at this level.

"Other" mainly concerns Dalkia International and EDF Investissements Groupe.

Note 48. Dedicated assets

48.1 Regulations

The French law of 28 June 2006 and the implementing regulations require assets (dedicated assets) to be set aside for secure financing of nuclear plant decommissioning expenses and long-term storage expenses for radioactive waste (spent fuel and fuel recovered from decommissioning).

The regulations govern the way dedicated assets are built up, the management and governance of the funds themselves. These assets are clearly identified and managed separately from the company's other financial assets and investments. They are also subject to specific monitoring and control by the Board of Directors and the administrative authorities.
The initial aim of these laws and regulations was to cover the full present cost of long-term nuclear obligations by 29 June 2011. The NOME law enacted in 2010 deferred the deadline for constitution of dedicated assets by 5 years.

The decree of 29 December 2010 made RTE shares eligible for dedicated assets, subject to certain conditions and administrative authorization. Since the conditions were fulfilled and authorization was received, 50% of EDF's shares in RTE were allocated to dedicated assets on 31 December 2010.

48.2 Portfolio contents and measurement

EDF's dedicated assets consist of diversified bond and equity instruments and 50% of the shares in RTE since 31 December 2010. Given the applicable regulations, these dedicated assets are a highly specific category of assets.

48.2.1 Diversified bond and equity investments

Certain dedicated assets take the form of bonds held directly by EDF. The rest comprise specialized collective investment funds on leading international markets, managed by independent asset management companies. They take the form of open-end funds and small numbers of "reserved" funds established solely for the use of the Group (which does not participate in the fund management).

This portfolio is structured and managed according to a strategic allocation defined by the Board of Directors and reported to the administrative authorities. The strategic allocation is designed to meet the overall objective of long-term coverage of obligations, and determines the structure and management of the portfolio as a whole. It also takes into consideration international stock market cycles (for which the statistical inversion generally observed between equity market cycles and bond market cycles - as well as between geographical areas - has led the Group to define an overall composite benchmark indicator), and continuation of the long-term investment policy.

As a result, for accounting purposes the portfolio is evaluated as a whole, all funds combined, treating the cash flows generated as a group of financial assets. This ensures consistency with the specificities of the dedicated asset portfolio, in particular the legal association with the liability and the distant timing of significant payments – the first important due date is not until 2021, and payments continue until 2117 for the plants currently in operation.

At the year-end, dedicated assets are presented in available-for-sale financial assets in the balance sheet, at their liquidation value. In view of the specific financial characteristics of the portfolio of dedicated assets, the Group has exercised judgment in determining whether indicators of impairment appropriate to the structure of the portfolio should be taken into consideration.

EDF thus takes a 5-year period as the basis for assessment of prolonged decline compared to historical value. This period is at the low end of the range of statistical estimates concerning stock markets. Also, based on statistical observations of the asset/liability management model used for this portfolio, EDF considers impairment of dedicated assets to be significant when the value is 40% or more below the portfolio's historical value.

In parallel to these general criteria for impairment, in the course of operational asset monitoring EDF exercises judgment through its long-term management rules defined and supervised by its governance bodies (maximum investment ratios, volatility analyses and assessment of individual fund manager quality).

48.2.2 RTE shares

By allocating 50% of RTE shares to dedicated assets, the Group diversified its dedicated asset portfolio and reduced its volatility, since this infrastructure asset offers predictable returns with low correlation with other categories of financial assets such as equities and bonds.

The value of the RTE shares allocated to dedicated assets is €2,368 million at 31 December 2011 (€2,324 million at 31 December 2010). This value is the net consolidated value of 50% of the Group's investment in RTE, presented in investments in associates in the consolidated balance sheet.

48.3 Valuation of EDF's dedicated asset portfolio and present cost of the associated long-term nuclear obligations

Dedicated assets are included in EDF's consolidated financial statements at the following values:

(in millions of Euros)	Balance sheet presentation	31/12/2011	31/12/2010
Equities		5,801	6,819
Debt instruments and cash portfolio		7,510	6,686
Dedicated assets – equities and debt instruments	Available-for-sale financial assets	**13,311**	**13,505**
Currency/equity hedging derivatives	Fair value of hedging derivatives	(22)	(12)
Other		2	(2)
Total diversified investments (bonds and equities)		**13,291**	**13,491**
RTE (50% of the Group's investment)	Investments in associates	**2,368**	**2,324**
TOTAL DEDICATED ASSETS		**15,659**	**15,815**

48.4 Evolution of the dedicated asset portfolio in 2011

The cash allocation to the dedicated asset portfolio for 2011 amounts to €315 million (compared to €1,343 million in 2010). In view of market conditions, allocations have been suspended since October 2011. In a context of tension on the European sovereign debt markets, the Group continued its prudent investment policy for these financial instruments in 2011, and as a result its exposure at year-end was limited for Italy and negligible for some severely affected Euro-zone countries (Greece, Portugal, Ireland and Spain).

Withdrawals totaling €378 million were made, equivalent to payments made in respect of the long-term nuclear obligations to be covered (€362 million in 2010).

The Group's assessment of the value of the dedicated asset portfolio did not lead to recognition of any impairment in 2011.
A total of €76 million in net gains on disposals was recorded in 2011.

The difference between the fair value and acquisition cost of diversified equity and bond instruments is a positive €219 million at 31 December 2011 before taxes (€744 million at 31 December 2010).

48.5 Present cost of long-term nuclear obligations to be covered

The Group's long-term nuclear obligations in France concerned by the regulations for dedicated assets are included in EDF's consolidated financial statements at the following values:

(in millions of Euros)	31/12/2011	31/12/2010
Provisions for long-term radioactive waste management	6,722	6,508
Provisions for nuclear plant decommissioning	11,366	11,031
Provisions for last cores – portion for future long-term radioactive waste management	389	371
PRESENT COST OF LONG-TERM NUCLEAR OBLIGATIONS TO BE COVERED	**18,477**	**17,910**

Note 49. Related parties

Details of transactions with related parties are as follows:

	Proportionally consolidated companies		Associates		French State or State-owned entities		Group Total	
(in millions of Euros)	31/12/2011	31/12/2010	31/12/2011	31/12/2010	31/12/2011	31/12/2010	31/12/2011	31/12/2010
Sales	5	10	3,437	100	880	1,173	**4,322**	**1,283**
Fuel and energy purchases	183	98	666	536	1,691	1,822	**2,540**	**2,456**
Other external purchases	-	-	134	35	880	985	**1,014**	**1,020**
Financial assets	41	40	-	-	262	235	**303**	**275**
Other assets	236	67	1,242	1,463	535	541	**2,013**	**2,071**
Financial liabilities	136	134	1,400	1,914	1	-	**1,537**	**2,048**
Other liabilities	224	130	794	852	821	1,483	**1,839**	**2,465**

49.1 Transactions with entities included in the scope of consolidation

Transactions with RTE (classified as an associate since 31 December 2010) are presented in note 24.1.

Transactions with other joint ventures and associates concern sales and purchases of energy.

49.2 Relations with the French State and State-owned entities

49.2.1 Relations with the French State

The French State holds 84.4% of the capital of EDF at 31 December 2011, and is thus entitled in the same way as any majority shareholder to control decisions that require approval by the shareholders.

In accordance with the legislation applicable to all companies having the French State as their majority shareholder, the EDF group is subject to certain inspection procedures, in particular economic and financial inspections by the State, audits by the French Court of Auditors (*Cour des Comptes*) or Parliament, and verifications by the French General Finance Inspectorate (*Inspection Générale des Finances*).

Under an agreement entered into by the French State and the EDF group on 27 July 2001 concerning the monitoring of external investments, procedures exist for prior approval by the French State or notification (advance or otherwise) of the State in respect of certain planned investments, additional investments or disposals by the Group. This agreement also introduced a procedure for monitoring the results of external growth operations.

The public service contract between the French State and EDF was signed on 24 October 2005. This contract is intended to form the framework for public service missions entrusted by the lawmaker to EDF for an unlimited period. The law of 9 August 2004 does not stipulate the duration of the contract.

EDF, like other electricity producers, also participates in the multi-annual generation investment program defined by the Minister in charge of Energy, which sets objectives for the allocation of generation capacity.

Finally, the French State intervenes through the regulation of electricity and gas markets, particularly for authorization to build and operate generation facilities, establishment of sales tariffs for customers that have stayed on the regulated tariffs, transmission and distribution tariffs, and also determination of ARENH price in accordance with the NOME law, and the level of the Contribution to the Public Electricity Service (*Contribution au service public de l'électricité* or CSPE).

49.2.2 Relations with GDF SUEZ

Since the distribution network management businesses were transferred to subsidiaries – ERDF SA, a subsidiary of EDF, has managed electricity distribution since 1 January 2007 and GRDF SA, a subsidiary of GDF SUEZ, has managed gas distribution since 1 January 2008 - the agreement defining relations between ERDF SA and GRDF SA in respect of the common operator has replaced the previous agreement between EDF and GDF SUEZ.
The common network operator manages the local public service for energy distribution, covering network construction, operation and maintenance, and metering.

EDF and GDF SUEZ also have two other common services governed by contracts:
- the Health and Safety Delegation;
- the Information Technology and Telecommunications Division (DIT), which is responsible for certain information systems.

49.2.3 Relations with public sector entities

The Group enters into normal business transactions with public sector entities, mainly for electricity supplies and invoicing for access to the transmission network.

Transactions with AREVA concern uranium purchases, uranium enrichment, nuclear fuel purchases, plant maintenance operations and equipment purchases, and transportation, storage, processing and recycling services for spent fuel.
On 19 December 2008 EDF and AREVA signed a framework agreement for spent fuel management contracts concerning periods after 2007. In execution of this agreement, EDF and AREVA signed two contracts on 12 July 2010 entitled the "EDF-AREVA NC Processing-Recycling agreement" and the "Protocol for recovery and conditioning of EDF waste, the final shutdown and decommissioning of the AREVA NC plant at La Hague".
Under these agreements, on 23 June 2011 EDF paid AREVA the balance of its payment for recovering and conditioning EDF's waste, and final shutdown and decommissioning of facilities at La Hague, amounting to €794 million including taxes. As a result, the Group's financial statements at 31 December 2011 no longer show any liability in connection with this obligation.

The Group also holds shares in AREVA, as stated in note 37.2.2.2.

49.3 Management compensation

The Company's key management and governance personnel are the Chairman of the Board of Directors, the members of the COMEX since February 4, 2010 or their date of appointment if they joined the COMEX after that date, and the external members of the Board of Directors.

The total compensation paid by EDF and controlled companies to the Group's key management and governance personnel amounted to €11.3 million in 2011 (€9.0 million in 2010). This amount covered short-term benefits (basic salaries, performance-related salary, profit share and benefits in kind), special IEG post-employment benefits where relevant, and the corresponding employer contributions, plus director's fees. The change observed in 2011 is largely explained by the fact that certain members of the COMEX were appointed in the course of the year 2010, and the associated compensation was not included on a 12-month basis in the previous year.

Other than the benefits reported above, key management and governance personnel benefit from no other special pension system, starting bonus or severance payment entitlement other except by contractual arrangement.

Note 50. Environment

50.1 Greenhouse gas emission rights

In application of the Kyoto protocol, the EU Directive aiming to reduce greenhouse gas emission levels by attributing emission rights came into effect in 2005, for an initial three-year period which ended on 31 December 2007 and was marked by a reduction in the volumes of rights allocated. The second allocation period runs from 2008 to 2012.

In the EDF group, the entities subject to this Directive are EDF, EDF Energy, Edison, Fenice, Dalkia International and Dalkia Investissement, Bert, Kogeneracja, Zielona Gora, EC Krakow, ERSA, EC Wybrzeze, EDF Luminus and ESTAG.

In 2011, the Group surrendered 71 million tonnes in respect of emissions generated in 2010. In 2010, the Group surrendered 89 million tonnes in respect of emissions generated in 2009.

The Group's total quota allocation for 2011 recorded in the national registers is 59 million tonnes (62 million tonnes for 2010).

The volume of emissions in 2011 stood at 59 million tonnes. The provision resulting from over-quota emissions amounts to €149 million and covers the shortfall in quotas at 31 December 2011 (€319 million at 31 December 2010).

As part of the Clean Development Mechanism defined in the Kyoto protocol the Group set up a Carbon Fund in late 2006 with the aim of supporting projects to reduce greenhouse gas emissions in emerging countries and benefiting from carbon emission permits. This fund involves EDF and all the European entities, and is managed by EDF Trading.

CER credit purchases through the Carbon Fund amount to €192 million at 31 December 2011 (€182 million at 31 December 2010).

50.2 Energy savings certificates

In all its subsidiaries, the Group is engaged in a process to control energy consumption through various measures developed by national legislations, in application of European Union Directives.

The French law of 13 July 2005 introduced a system of energy savings certificates. Companies selling electricity, gas, heat or cold to end-users with sales above a certain level are subject to energy savings obligations for a three-year period. They fulfill these obligations by making direct or indirect energy savings rewarded by certificates, or by purchasing energy savings certificates. At the end of the three years, the entities concerned must provide evidence of compliance with obligations by surrendering the certificates, or pay a fine to the Treasury.

This second period, which runs from 1 January 2011 until 31 December 2013, extends the system to new obligated actors (fuel distributors) and applies stricter requirements for obtaining energy savings certificates. EDF is well-placed to meet its obligation thanks to energy-efficient offers for each market segment: residential customers, business customers, local authorities and organizations funding social projects.

EDF's obligation will be calculated retrospectively, based on gas and electricity sales to households and service sector businesses for the period 2010-2012. The volumes of certificates obtained between the two periods will count towards achievement of the obligation for the second period.

50.3 Renewable energy certificates

In the United Kingdom, Poland, Belgium and Italy, certificates are awarded when electricity is generated from renewable energy sources, to encourage greater use of renewable energies through a compensation system for generation costs and an obligation for energy suppliers to sell a certain quantity of renewable energy. In practice, the generator or supplier must provide proof that the obligation has been fulfilled or surrender the renewable energy certificates gained and/or purchased. Similar systems have been introduced for cogeneration.

At 31 December 2011, Italy, Belgium and the United Kingdom did not have enough certificates to cover their obligation, and a provision of €317 million was recorded to cover the shortfall.

Note 51. Subsequent events

51.1 Bond issue

On 18 January 2012 EDF received the funds from a 10-year €2 billion euro bond issue, with annual coupon of 3.875%.

51.2 Offer to take over Photowatt

EDF, through its subsidiary EDF Énergies Nouvelles Réparties (EDF ENR), has announced on 10 February 2012, that it has filed to absorb Photowatt, the only French maker of silicon-based solar cells, which was placed in receivership in November 2011.
Photowatt holds 40% of PV Alliance, a research and development company in the field of photovoltaic technology, in which EDF ENR already has a 40% stake along with the CEA (20%).
EDF ENR's offer is conditioned on the full takeover of PV Alliance and to the granting of an exclusive and global control of the heterojunction technology, aiming at replacing the current technology in the coming years.

The offer will be subject to the approval required for this kind of operation (governance, competition, etc).

51.3 Long-term partnership for natural uranium with AREVA

On 10 February 2012, EDF and AREVA have reached an agreement on the principles of a long-term partnership to supply natural uranium over the 2014-2030 period, ensuring the security of supply and the competitiveness of the French nuclear fleet.
Covering a total volume which can reach more than 20,000 metric tons, the agreed principles foresee the extension of the supply contract from AREVA's existing mines, and open up the possibility of EDF part-funding the development of a new mining project in exchange for a share of its future production. These principles will provide the basis for a series of agreements which will be subject to approval by the management bodies of the two Groups.

This new industrial and financial partnership consolidates AREVA's status as leading partner of EDF for the supply of natural uranium. AREVA currently provides EDF with nearly 40% of its annual requirements in this area.

Note 52. Scope of consolidation

The scope of consolidation is as follows:

Company	Country	Consolidation method at 31/12/2011	% of ownership at 31/12/2011	% of ownership at 31/12/ 2010	Business sector
FRANCE					
Électricité de France		Parent company	100	100	G, D, O
RTE		EM	100	100	T
Électricité Réseau Distribution France (ERDF)		FC	100	100	D
Groupe PEI		FC	100	100	G
UNITED KINGDOM					
EDF Energy		FC	100	100	G, O
EDF Energy UK Ltd		FC	100	100	O
EDF Development Company Ltd		FC	100	100	O
GERMANY					
EnBW		-	-	46.07	G, D, O, T
ITALY					
Edison		PC	48.96	48.96	G, D, O
Transalpina Di Energia (TDE)		PC	50	50	O
MNTC		FC	100	100	O
Wagram 4		FC	100	100	O
Fenice		FC	100	100	G
OTHER INTERNATIONAL					
EDF International	France	FC	100	100	O
ESTAG	Austria	PC	25	25	G, O
EDF Belgium	Belgium	FC	100	100	G
Segebel	Belgium	-	-	100	O
EDF Luminus	Belgium	FC	63.53	63.50	G
Ute Norte Fluminense	Brazil	FC	90	90	G
Ute Paracambi	Brazil	FC	100	100	G
Figlec	China	FC	100	100	G
Shandong Zhongua Power Company	China	EM	19.60	19.60	G
San Men Xia	China	EM	35	35	G
Taishan Nuclear Power JV Co	China	EM	30	30	G
EDF Inc.	USA	FC	100	100	O
UniStar Nuclear Energy Inc.	USA	FC	100	100	G
Constellation Energy Nuclear Group (CENG)	USA	PC	49.99	49.99	G
Bert	Hungary	FC	95.57	95.57	G
EDF Demasz	Hungary	FC	100	100	G, D, O
Sviluppo Nucleare Italia	Italy	-	-	50	O
Nam Theun Power Company	Laos	EM	40	40	G
SLOE Centrale Holding BV	Netherlands	PC	50	50	G
EC Krakow	Poland	FC	94.31	94.31	G
EC Wybrzeze	Poland	FC	99.75	99.75	G
EDF Polska	Poland	FC	75	86.52	O
ERSA (Rybnik)	Poland	FC	64.85	79.79	G
Kogeneracja	Poland	PC	33.40	40.58	G, D
Zielona Gora	Poland	PC	32.87	39.93	G, D
SSE	Slovakia	PC	49	49	D
EDF Alpes Investissements	Switzerland	FC	100	100	O
Alpiq	Switzerland	EM	25	26.06	G, D, O, T
Meco	Vietnam	FC	56.25	56.25	G

Consolidation methods: FC = full consolidation, PC = proportional consolidation, EM = equity method.
Business segments: G = Generation, D = Distribution, T = Transmission, O = Other.

Company	Country	Consolidation method at 31/12/2011	% of ownership at 31/12/2011	% of ownership at 31/12/ 2010	Business sector
OTHER ACTIVITIES					
Dalkia Holding	France	EM	34	34	O
Edenkia	France	-	-	50	O
Dalkia International	France	PC	50	50	O
Dalkia Investissement	France	PC	67	67	O
Richemont	France	FC	100	100	G
EDF Développement Environnement SA	France	FC	100	100	O
Société pour le Conditionnement des Déchets et Effluents Industriels (SOCODEI)	France	FC	100	100	O
Cofiva	France	FC	100	100	O
Sofinel	France	FC	55	55	O
Électricité de Strasbourg	France	FC	88.82	88.82	D
TIRU SA - Traitement Industriel des Résidus Urbains	France	FC	51	51	O
Dunkerque LNG	France	FC	65	100	O
EDF Énergies Nouvelles (EDF EN)	France	FC	100	50	G, O
Immobilière Wagram Étoile	France	FC	100	100	O
La Gérance Générale Foncière	France	FC	100	100	O
Immobilière PB6	France	PC	50	50	O
AEW IMCOM 6	France	PC	50	-	O
Société Foncière Immobilière et de Location (Sofilo)	France	FC	100	100	O
Protertia	France	FC	100	100	O
EDF Optimal Solutions	France	FC	100	100	O
Société C2	France	FC	100	100	O
Société C3	France	FC	100	100	O
EDF Holding SAS	France	FC	100	100	O
Domofinance	France	EM	45	45	O
Fahrenheit	France	FC	100	100	O
EDF Trading	United Kingdom	FC	100	100	O
EDF Production UK Ltd	United Kingdom	FC	100	100	O
DIN UK	United Kingdom	FC	100	100	O
Wagram Insurance Company	Ireland	FC	100	100	O
Océane Ré	Luxemburg	FC	99.98	99.98	O
EDF Investissements Groupe	Belgium	PC	93.32	93.32	O
EDF Gas Deutschland	Germany	FC	100	100	O
FSG	Germany	PC	50	50	O

Consolidation methods: FC = full consolidation, PC = proportional consolidation, EM = equity method.
Business segments: G = Generation, D = Distribution, T = Transmission, O = Other.

At 31 December 2011 the percentage of voting rights, which is decisive for assessing control, differs from the Group's percentage ownership for the following entities:

Company	% of ownership at 31/12/2011	% voting rights at 31/12/2011
Edison	48.96	50
ERSA (Rybnik)	64.85	64.90
Dalkia International	50	24.14
Dalkia Investissement	67	50
Sofinel	55	54.98
EDF Investissements Groupe	93.32	50

20.2 Statutory Auditors' Report on the consolidated financial statements

This is a free translation into English of the Statutory Auditors' report on the consolidated financial statements issued in French and is provided solely for the convenience of English speaking readers.

This Statutory Auditors' report includes information specifically required by French law in such reports, whether qualified or not. This information is presented below the audit opinion on the consolidated financial statements and includes an explanatory paragraph discussing the auditor's assessments of certain significant accounting and auditing matters. These assessments were considered for the purpose of issuing an audit opinion on the consolidated financial statements taken as a whole and not to provide separate assurance on individual account balances, transactions, or disclosures.

The report also includes information relating to the specific verification of information given in the Group's management report.

This report should be read in conjunction with, and is construed in accordance with, French law and professional auditing standards applicable in France.

Year ended 31 December 2011

To the Shareholders,

Following our appointment as Statutory Auditors by your Annual General Meeting, we hereby report to you, for the year ended 31 December 2011 on:
- the audit of the accompanying consolidated financial statements of Électricité de France S.A. ("the Group");
- the justification of our assessments;
- the specific verification required by law.

The consolidated financial statements have been approved by the Board of Directors. Our role is to express an opinion on these consolidated financial statements based on our audit.

1. Opinion on the consolidated financial statements

We conducted our audit in accordance with professional standards applicable in France; those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement. An audit includes examining, using sample testing techniques or other selection methods, evidence supporting the amounts and disclosures in the consolidated financial statements. An audit also includes assessing the accounting policies used and significant accounting estimates made, as well as the overall presentation of the consolidated financial statements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

In our opinion, the consolidated financial statements give a true and fair view of the assets and liabilities, and of the financial position of the Group as of 31 December 2011 and of the results of its operations for the year then ended in accordance with IFRS as adopted by the European Union.

Without qualifying our opinion, we draw your attention to the valuation of long-term provisions relating to nuclear electricity production, which results from management's best estimates and assumptions as described in notes 1.3.2.1 and 30 to the consolidated financial statements. This valuation is sensitive to the assumptions made concerning technical processes, costs, inflation rates, long-term discount rates, and forecast cash outflows. Changes in these parameters could lead to a material revision of the level of provisioning.

2. Justification of assessments

The preparation of the consolidated financial statements requires the use of accounting estimates, which have been made in an uncertain environment, due to the crisis of public finances affecting certain countries of the Euro zone. This crisis is coupled with an economic and liquidity crisis as well as uncertainties related to commodities and power prices, thus resulting in difficulties to determine the economic outlook. In this context, in accordance with the requirements of article L. 823-9 of the French commercial Code, we have made our own assessments which are brought to your attention, in relation to the following matters:

Accounting policies

We have verified the appropriateness of the disclosures presented in note 1.3.29.1 with respect to the accounting treatments of greenhouse gas emission quotas, an area which is not mandatory or specifically addressed in IFRS as adopted in the European Union as of 31 December 2011.

Management judgments and estimates
Note 1.3.2 to the consolidated financial statements describes the main sensitive accounting policies for which management makes significant estimates and assumptions and exercises judgment, based on macro-economic assumptions appropriate to the very long-term cycle of Group assets. Particularly, notes 1.3.26 and 15, 14, 33 and 45 present respectively the information related to:

- the obligations regarding the French public distribution of electricity and, particularly, the impact of the change in estimate related to the useful life of certain assets which occurred in 2011;
- The impairment charges that have been recognized during the period as well as the main assumptions and indicators of impairment used to test goodwill and long-lived assets;
- The other provisions and contingent liabilities.

Our procedures consisted in assessing these estimates, the data and assumptions, and as applicable, the legal opinions on which they are based, reviewing, on a test basis, the technical data and calculations performed by the Group, comparing accounting estimates of prior periods with corresponding actual amounts, reviewing the procedures for approving these estimates by management and finally verifying that the notes to the consolidated financial statements provide appropriate disclosures.

Verification procedures
Note 4.1 to the consolidated financial statements describes the regulatory framework related to the principle of regulated access to historical nuclear energy (*Accès Regulé à l'Énergie Nucléaire Historique* or ARENH) as established by the NOME Law in France, that is effective 1 July 2011. The procedures we performed in relation to these transactions are based upon, on the one hand, the information available from the Group, or released by the Regulatory Energy Commission (*Commission de Régulation de l'Énergie*), and, on the other hand, the findings resulting from agreed-upon procedures performed by independent third parties that had access to the underlying transactions.

These assessments were made as part of our audit of the consolidated financial statements taken as a whole and contributed to the opinion we formed which is expressed in the first part of this report.

3. Specific verification

As required by law we have also verified, in accordance with professional standards applicable in France, the information relating to the Group, given in the management report.

We have no matters to report as to its fair presentation and its consistency with the consolidated financial statements.

Paris La Défense and Neuilly-sur-Seine, 15 February 2012

The Statutory Auditors

KPMG Audit **Department of KPMG S.A.**		**Deloitte & Associés**	
Bernard Cattenoz	Jacques-François Lethu	Alain Pons	Patrick E. Suissa

20.3 Fees paid by the Group to Statutory Auditors

The following table sets forth the fees related to the 2011 financial year for EDF and its fully consolidated subsidiaries for services by its Statutory Auditors and their respective affiliates:

	Deloitte		KPMG	
(In thousands of Euros)	Amount (taxes excluded)	%	Amount (taxes excluded)	%
Audit:				
Statutory audit, certification, review of company and consolidated accounts				
Issuer	3,407	32.2	3,343	33.3
Fully consolidated subsidiaries	4,006	37.8	4,932	49.1
Other tasks and services directly connected to the Statutory Auditor's mission				
Issuer	377	3.6	1,096	10.9
Fully integrated subsidiaries	904	8.5	94	0.9
Sub-total	**8,694**	**82.1**	**9,465**	**94.2**
Other services provided by the auditors' networks to fully integrated subsidiaries:				
Legal, tax, social	815	7.7	254	2.5
Other	1,077	10.2	333	3.3
Sub-total	**1,892**	**17.9**	**587**	**5.8**
TOTAL	**10,586**	**100**	**10,052**	**100**

Information given for the 2010 financial year:

The following table sets forth the fees related to the 2010 financial year for EDF and its fully consolidated subsidiaries for services by its Statutory Auditors and their respective affiliates:

	Deloitte		KPMG	
(In thousands of Euros)	Amount (taxes excluded)	%	Amount (taxes excluded)	%
Audit:				
Statutory audit, certification, review of company and consolidated accounts				
Issuer	3,413	30.6	3,571	40.6
Fully consolidated subsidiaries	4,897	44.0	4,574	51.9
Other tasks and services directly connected to the Statutory Auditor's mission				
Issuer	585	5.3	581	6.6
Fully integrated subsidiaries	1,168	10.5	72	0.8
Sub-total	**10,063**	**90.4**	**8,798**	**99.9**
Other services provided by the auditors' networks to fully integrated subsidiaries:				
Legal, tax, social	732	6.6	8	0.1
Other	340	3.0	0	0.0
Sub-total	**1,072**	**9.6**	**8**	**0.1**
TOTAL	**11,135**	**100**	**8,806**	**100**

20.4 Dividend policy

20.4.1 Dividends and interim dividends paid within the last three fiscal years

The amount of dividends and interim dividends paid within the last three fiscal years was as follows:

Financial year	Number of shares	Dividend per share *(in Euros)*	Total dividends paid [1] *(in Euros)*	Dividend payment date
2008	1,822,171,090	1.28	2,328,200,485.12 [2]	3 June 2009
2009	1,848,866,662	1.15	2,111,146,365.85 [3]	3 June 2010
2010	1,848,866,662	1.15	2,122,291,972.68 [4]	6 June 2011

(1) After deduction of treasury shares.

(2) €1,164,067,897.60 of which paid on 17 December 2008 as an interim dividend 2008.

(3) €1,002,006,770.05 of which paid on 17 December 2009 as an interim dividend 2009 (€937,815,444.36 of which paid in new shares).

(4) €1,053,574,334.82 of which paid on 17 December 2010 as an interim dividend 2010.

On 22 November 2011, the Board of Directors decided, upon authorisation of the Shareholders' Meeting, for the 2011 fiscal year, to pay an interim dividend of €0.57 per share.

The total amount of the interim dividend (excluding treasury shares) is €1,053,169,658.76, and was paid on 16 December 2011.

At its meeting of 15 February 2012, the Board of Directors decided to propose to the Shareholders' Meeting of 24 May 2012 the distribution of a dividend to €1.15 per share under the year 2011. Given the interim dividend of €0.57 per share paid on December 2011, a balance of €0.58 per share should be paid on 6 June 2012 if this proposal is approved by the Shareholders' Meeting. The ex-date is 1 June 2012.

20.4.2 Dividend distribution policy

The dividend distribution policy of EDF, determined by its Board of Directors, will take into account its investment needs, the economic context and all other factors considered to be relevant.

The Combined Shareholders' Meeting of 24 May 2011 adopted the amendment to EDF's bylaws to insert a provision for the payment of an increased dividend to shareholders who have held registered shares for at least two years. The number of shares giving entitlement to such increase of 10% may not exceed 0.5% of the share capital per shareholder. The first increased dividend will, in accordance with applicable laws, be distributed after the end of the second financial year following the amendment of the bylaws, namely in 2014 for the dividend to be distributed in respect to the 2013 financial year.

20.4.3 Prescription

Dividends that are not claimed within five years of the declared date of payment become time barred and are paid to the French State.

20.5 Legal proceedings and arbitration

In the ordinary course of business, the Group is involved in certain legal, arbitration and administrative proceedings. Charges that result from such proceedings are only provided for where such charges are likely and can be either quantified or assessed within a reasonable range. In the latter case, the amount of the provision is calculated on a case-by-case basis, based on the best possible estimate. The amounts of any provisions made depend on the case-by-case risk assessments and do not depend primarily on the status of the proceedings; however, developments in the proceedings may nonetheless lead to a reassessment of such risks.To the knowledge of the Company, except for the proceedings set out below, there are no other administrative, legal or arbitration proceedings (including pending or threatened proceedings), likely to have or having had in the past 12 months a material impact on the financial situation or the profitability of the Company and/or the Group.

20.5.1 Legal proceedings concerning EDF

French utilities network (*Réseau d'alimentation général* – "RAG")

The European Commission, by a letter dated 16 October 2002, initiated proceedings against France, claiming that State aid had been granted to EDF when its balance sheet was restructured on 1 January 1997. By a decision dated 16 December 2003, the European Commission set the principal amount of aid to be repaid at €889 million. On 11 February 2004, the French State issued a collection note for €1,224 million, consisting of the principal amount of the aid to be repaid, plus interest. This amount was paid by EDF. On 27 April 2004, EDF initiated an action before the European Union General Court, at the time known as the European Court of First Instance, to annul the European Commission's decision, and the French State filed a statement in intervention on 14 November 2004 to support EDF's action. Following a hearing held on 25 November 2008, the European Union General Court issued, on 15 December 2009, a ruling annulling the European Commission's decision of 16 December 2003. As this ruling was binding on the parties, the State repaid €1,224 million to EDF on 30 December 2009. On 26 February 2010, the European Commission filed an appeal against the European Union General Court's ruling before the Court of Justice of the European Union. A hearing was held before the Court of Justice of the European Union on 12 July 2011. On 20 October 2011 the counsel to the prosecutor (*avocat général*) gave closing arguments in favor of reversing the ruling of the European Union General Court. These closing arguments do not necessarily indicate what the final decision will be, which is expected, in principle, in 2012.

Asbestos

In the past, EDF has used products containing asbestos. Thus, certain employees, in particular those working in fossil-fired power plant maintenance, may have been exposed to asbestos before such asbestos was replaced or protective measures were implemented by EDF in the late 1970's.

Between 1997 and the end of December 2011, EDF has been party to 567 strict liability (*faute inexcusable*) actions in France in relation to the alleged exposure of its employees to asbestos in their workplace. A finding or liability in such an action could lead to the payment of additional compensation by the employer to victims or their legal successors.

Since June 2004, EDF has decided to no longer appeal, against employees, rulings made by Social Security Case Panels (*Tribunaux des Affaires de Sécurité Sociale*, "TASS") having made findings of liability (*faute inexcusable*) against the employer.

As at the end of December 2011, the cumulative amount of the final judgments against EDF, in relation to litigations relating to the *faute inexcusable* of the employer amounted to approximately €23.9 million.

As at 31 December 2011, a financial provision of €30 million was provisioned for in EDF's financial statements for legal proceedings by asbestos victims.

Solaire Direct

On 19 May 2008, Solaire Direct filed a complaint and an application for protective measures (*measures conservatoires*) with France's Competition Council, alleging that the EDF group had abused its dominant position in the various electricity markets to enter the emerging global services market for shared photovoltaic electricity generation through its subsidiary EDF Energies Nouvelles Réparties ("EDF ENR"), thereby hindering the entry of new competitors on that market.

The Council met on 26 November 2008 to consider the admissibility of the case on the merits and the request for protective measures. EDF has proposed certain commitments to address concerns over competition expressed by the Council. These commitments were posted on the Council's website as part of a "market test" procedure, in order to allow interested companies to state their opinion.

In February 2009, the Competition Authority (previously known as the Competition Council) decided not to pursue the commitment proposal made by EDF, and order protective measures relating to the methods used by EDF ENR to market global photovoltaic energy services, and commenced a proceeding on the merits following a motion by Solaire Direct. At that stage of the proceeding, the Competition Authority considered whether the communication methods used by EDF would create conflict between, on the one hand, EDF's role as electricity supplier subject to the regulated rates, and on the other hand, the competitive activities of its subsidiary.

In a ruling of 8 April 2009, the French Competition Authority ordered EDF (i) to delete from all communication support for the Bleu Ciel® brand, any reference to EDF ENR's activity in the photovoltaic market (ii) to prevent agents responding to the 39 29 hotline (telephone number for individuals and EDF clients) from making any reference to the services offered by EDF ENR, (iii) to stop communicating information obtained through the 39 29 hotline to EDF ENR – this injunction covers not only the making of appointments for EDF ENR but also the transmission of information on people interested in the generation of photovoltaic energy – and finally (iv) to refrain from providing EDF ENR with information EDF possesses as a result of its activities as an electricity services provider subject to regulated rates. EDF complied with these orders within the deadlines set by the Competition Authority.

The proceedings on the merits are still ongoing. At the end of the proceedings, if the Competition Authority finds that EDF's practices are anti-competitive, it could, notably, levy a fine on EDF in accordance with article L. 464-2 of the French Commercial Code. The amount of any fines assessed is determined in proportion to the seriousness of the charges

made, the significance of the damage made to economy and to the company's situation, up to a maximum of 10% of the global turnover of the company before taxes.

Syndicat national des producteurs indépendants d'électricité thermique – SNPIET (French national union for independent thermal power producers)

On 1 December 2010, SNPIET filed a complaint and an application for protective measures with the Competition Authority for alleged anti-competitive practices implemented by EDF and RTE in order to exclude independent power producers that are members of the SNPIET from public auctions launched by RTE in 2005 and 2007 on ready and additional power reserves, and from the subsequent negotiation with EDF of the power purchase agreements on the open market after expiry of an obligation to purchase. After the *inter partes* proceeding, on 10 May 2011, a session of the Competition Authority was held to review the investigation on the merits and SNPIET's application for protective measures. On 8 June 2011, the Competition Authority rendered a decision rejecting the investigation and the SNPIET's application for protective measures due to lack of evidence. As SNPIET has not appealed the Competition Authority's decision, it has now become final.

Labor litigation

EDF is a party to a number of labor lawsuits with employees relating in particular to the calculation and the implementation of rest periods. EDF does not consider that any of these lawsuits, taken individually, is likely to have a significant impact on its financial results or its financial position. However, as these disputes relate to situations that could involve a significant number of EDF's employees in France, if they were to multiply, they could then have a significant negative impact on the Group's financial results.

The Group is also a party to a number of lawsuits with social welfare organisms. The principal dispute is between EDF and "*Urssaf*" in Toulouse and relates to the inclusion of certain bonuses, indemnifications and other benefits in kind in its tax base.

See note 45.3 in the appendix to the consolidated financial statements of the financial year ended on 31 December 2011.

Environmental litigation

Due to its industrial activities, the Group is a party to various environmental lawsuits, in particular, regarding ground decontamination. As of the date of the filing of this reference document, the Group does not believe that any of these lawsuits, individually, is likely, in the event of an unfavorable outcome, to have a material negative impact on the Group's financial results.

Tax litigation

During 2008 and 2009, EDF was subject to audits of its accounts for the financial years 2004, 2005 and 2006. At the end of 2011, an assessment letter was sent to the company.

One of the grounds for this adjustment refers to the tax deductibility of the provision for benefits for work-related accidents and sicknesses (*accident du travail et maladies professionnelles* – "AT/MP") which also concerns RTE, ERDF and Electricite de Strasbourg, since this issue is linked to the nature of Electricity and Gas Industry companies. The Group challenged the position of the tax administration on the deductibility of such provision. At the end of 2011, the national commission on direct taxes and turnover taxes rendered a decision in favor of the Company on the main assessment issues that arose from the audits relating to financial years 2004 through 2006 and has in particular confirmed the deductibility of the provision for the AT/MP benefits. In case of unfavorable outcome, the financial risk for the Group in relation to the payment of corporate tax could amount to €250 million.

An audit of the accounts for 2007 and 2008 began in 2010. At the end of 2011, EDF received a proposed adjustment for the 2008 financial year. EDF is contesting most of these tax reassessments, of approximately €900 million, relating to the deductibility of certain long-term liabilities. The Company considers it has good chances to be successful in this litigation and no provision has been accounted to cover these reassessments.

Alcan Saint-Jean-de-Maurienne

On 31 December 1985, EDF, Pechiney (now named Alcan France) and Aluminium Pechiney signed an energy supply contract (2 TWh) intended primarily to supply Pechiney's primary aluminum plant at Saint-Jean-de-Maurienne. Under the terms of this contract, EDF undertook to supply volumes of electricity at a fixed price. The term of the contract was modified by amendments. The contract will expire on 31 December 2012 for the Saint-Jean-de-Maurienne plant.

Further to several letters from Alcan France requesting an extension of the contract, Alcan France and Aluminium Pechiney served a summons on EDF on 2 August 2007 to appear before the Paris Commercial Court on 21 September 2007 for an initial procedural hearing.

After several postponements, the pleadings were held on 26 October 2009. In its ruling issued on January 18, 2010, the Commercial Court dismissed all of the claims of Alcan and Aluminium Pechiney, who filed an appeal against the ruling before the Paris Court of Appeals on 19 March 2010. By an order rendered on 20 September 2011, the Court of Appeal has upheld the dismissal of the proceedings, after Alcan delivered a discontinuance memorandum, which EDF accepted.

Greenpeace

A preliminary investigation was initiated in February 2009 before the Nanterre Criminal Court in relation to a "concealment of invasion of an automated data processing system" (*complicité et recel d'atteinte à un système de traitement automatisé de données*) after a computer expert from a non-Group company stated that he had hacked into the computer used by former Greenpeace spokesman in 2006, Mr. Yannick Jadot, at the request of an EDF employee. Said employee and his supervisor were formally placed under investigation (*mis en examen*) on 24 March and 10 June 2009 respectively, and have been subject to disciplinary transfers. EDF was placed under investigation on 26 August 2009. On 15 October 2010, the examining magistrate (*juge d'instruction)* ordered EDF and the two employees to appear before the Nanterre Criminal Court.

By a judgment rendered on 10 November 2011, EDF and the two employees were found guilty of complicity and invasion of an automated data processing system. EDF was sentenced to pay a €1.5 million fine. The employee was sentenced to three years of prison (including a suspended sentence of 30 months), and his supervisor was sentenced to three years of prison (including a suspended sentence of 24 months), and a €10,000 fine.

In civil proceedings, EDF and the employees were jointly ordered to pay €500,000 in damages to Greenpeace France and €50,000 in damages to

Yannick Jadot. The case will be reexamined by the Court of Appeal of Versailles during hearings to be held on 7, 8 and 9 November 2012.

Bugey 1

After EDF obtained permission to completely dismantle the Bugey 1 nuclear facility, by decree 2008-1197 of 18 November 2008, an association filed an action before the French Council of State (*Conseil d'Etat*) to cancel the decree on 21 January 2009.

EDF was notified of this action on 6 May 2009. The defense pleadings were filed on 7 August 2009 by the French State and on 3 September 2009 by EDF. A public *rapporteur* was appointed in October 2010. In a decision dated 9 December 2011, the French Council of State dismissed the association's action, thus putting an end to this dispute.

Verdesis

In June 2008, Euro Power Technology filed a complaint and a request for protective measures with the French Competition Council against EDF and its subsidiary, Verdesis, concerning the biofuel activities of the two companies. The French Competition Authority notified EDF of this complaint on 9 June 2009, and EDF submitted its preliminary responses on 23 June 2009.

The French Competition Authority met on 17 February 2010 to assess whether Euro Power Technology's complaint and request for protective measures were admissible. On 16 April 2010, the complaint was dismissed.

On 26 April 2010, Euro Power Technology lodged an appeal against this decision before the Paris Court of Appeals, which was dismissed on 2 December 2010. Euro Power Technology lodged a further appeal with the *Cour de Cassation* on 28 December 2010 and filed its statements for its appeal, to which EDF responded. EDF and Verdesis' request to dismiss Euro Power Technology's appeal was rejected by a court order on 27 October 2011.

Fessenheim

On 25 July 2008, an association and individuals petitioned the French Ministers in charge of nuclear safety (the Ministers of Energy and Environmental Protection) to order the permanent shutdown and dismantling of the Fessenheim nuclear power plant. This request was based on article 34 of French law 2006-686 of 13 June 2006 relating to transparency and safety in nuclear matters, which allows the enactment of a decree adopted in the French Council of State, after consultation with the Nuclear Safety Authority (*Autorité de Sûreté Nucléaire* - ASN), to order the final shutdown and dismantling of a nuclear installation that presents serious risks, when no other course of action is possible.

After the dismissal of the petition by the Ministers, the petitioners filed an appeal with the Strasbourg Administrative Tribunal on 10 December 2008, which was rejected on 9 March 2011. The petitioners lodged an appeal against this decision on 4 May 2011.

The same petitioners filed an application for review on 18 April 2011, requesting the Ministers in charge of nuclear safety and the ASN to suspend the operation of the Fessenheim power plant. The petitioners base their request on articles 34 and 35 of the decree of 2 November 2007 relating to basic nuclear installations and to the control of nuclear safety and security for the transportation of radioactive substances, which enables Ministers or the ASN to suspend the operation of a basic nuclear installation in case of serious risk. After the refusal of the Ministers and the ASN to adhere to their request, the petitioners have initiated actions with the Administrative Tribunal of Strasbourg (for the Ministers' implied refusal) and French Council of State (for the ASN's implied refusal).

European Commission investigation concerning an increase in prices on the wholesale electricity market

The European Commission carried out in March 2009 surprise inspections at various EDF premises, in the context of an investigation relating to the changing of prices on the wholesale electricity market in France.

These inspections follow upon the conclusions of the Commission's inquiry into the energy sector published in January 2007. They represent a preliminary step in the investigation of suspected anti-competitive practices and do not necessarily reflect the final conclusion of the actual investigation itself.

At the end of this investigation, if the Commission were to conclude that EDF implemented anti-competitive practices, it could decide to levy a fine, pursuant to Article 23, paragraph 2, a) of Regulation (EC) 1/2003. The amount of any fines assessed is set in proportion to the seriousness of the charges made, the significance of the damage made to economy and to the company's situation, up to a maximum of 10% of the global turnover of the company before taxes.

Photovoltaic producers litigation

The announcement by the Ministry of Ecology, Energy, Sustainable Development and Sea (the MEEDDEM) in Autumn 2009 of a decrease in the photovoltaic electricity purchase prices set by the order of 10 July 2006, triggered a massive increase in requests for purchase contracts, likely to generate a very significant increase in costs to be compensated by the CSPE (See section 6.5.1.2 ("French legislation: Energy Code")). In this context, the French Government decided, by an order of 12 January 2010, to modify both the purchase prices of electricity generated from photovoltaic energy and their terms of application.

Several producers, including the Green Yellow companies, subsidiaries of the Casino group operating in the distribution business, then decided to bring proceedings against EDF to compel EDF to purchase the generated electricity at the more favorable tariff conditions set out by the previous order of 10 July 2006.

Pursuant to a judgment of 11 July 2011, the Commercial Court of Paris determined that is was competent to render a decision in the case and that the electricity purchase contracts subject to the dispute should be deemed entered into on the date completed requests for contracts are delivered. The Court found that the petitioners have the right, in relation to the contracts, to benefit from the tariff conditions set by the above-mentioned order of 10 July 2006.

On 12 December 2011, the Conflicts Tribunal declared null and void the judgment of the Commercial Court of 11 July 2011 because the Commercial Court rejected the petition of the Paris local administrative authority (*Préfet de Paris*) and decided on the merits of the requests from the Green Yellow companies. Further to that decision, the case will once again be brought before the Commercial Court of Paris.

At the same time, some producers have initiated proceedings in order to contest the application to them of certain tariff conditions. These procee-

dings are currently pending either before judicial or administrative judges.

Packaging and interim storage installation for radioactive waste (ICEDA)

A decree of 23 April 2010 authorised EDF to put up a regulated nuclear installation, a conditioning and interim storage installation for radioactive waste in the city of Saint-Vulbas, in the Ain *département*. Two petitions for cancellation of the decree were filed with the French Council of State in June 2010, one by Roozen, a horticultural company operating near the site, and the other by a group of environmental protection associations. As of the date of the filing of this reference document, the investigation is still pending with the French Council of State.

Roozen had also filed two other petitions with the Lyon Administrative Court, against the decision of 22 February 2010 in which the Ain local administrative authority (*Préfet*) granted ICEDA the building permit.

The first of these petitions was filed on 21 April 2010 and sought cancellation of the building permit. In a judgment of 13 December 2011, the Administrative Court cancelled the building permit for violation of the zoning plan on the relevant city. EDF lodged an appeal with the Lyon Administrative Court of Appeal also requesting a delay of the implementation of the judgment. In addition, the city will consult with stakeholders and will start reviewing its zoning plan. EDF is preparing a new building permit request.

The second petition, filed on 25 November 2010, requested an emergency injunction to suspend the building permit. The petition was dismissed by an order of the Lyon Administrative Court on 13 December 2010, and such order was confirmed by the French Council of State in an order dated 24 May 2011 following an appeal lodged by Roozen.

Flamanville

On 15 November 2006, EDF brought a request to the ASN to authorise the retention and disposal of liquid and gaseous effluents from the nuclear plant of Flamanville (Manche). This request included the retention and disposal of the two existing reactors on the site (Flamanville 1 and Flamanville 2), as well as those of the future EPR reactor (Flamanville 3) currently under construction.

The ASN has decided, on 7 July 2010, to limit EDF disposals in the environment of the liquid and gaseous effluents for the operation of the 3 reactors. This decision was validated by an order of the Ministers in charge of nuclear safety on 15 September 2010.

A local association, CRILAN, has initiated proceedings with the Caen Administrative Tribunal on 23 March 2011 to have this order cancelled. EDF has filed its statement with the Caen Administrative Tribunal in September 2011.

Statoil

On 14 February 2003 EDF and Statoil signed a 15-year natural gas supply contract. In January 2009, one of the indices included in the contractual price calculation, ceased to be published, and EDF and Statoil began discussions over its replacement. After an independent expert determined a replacement index, the parties signed an agreement on 13 May 2011 putting an end to their disagreement on the retroactive application of the new index.

Brennilis

After EDF obtained authorisation, by an order of 27 July 2011, to partially dismantle the Brennilis nuclear installation, a storage installation for the Monts-d'Arrée nuclear plant, several associations brought an action against this order before the French Council of State on 28 September 2011, followed by the filing of an additional statement filed on 28 December 2011.

20.5.2 Legal proceedings concerning EDF's subsidiaries

RTE

Sale of high voltage electricity transmission by SNCF

French law of 9 August 2004 on the public electricity and gas service and electricity and gas companies had also set out that SNCF's high voltage electricity transmission network facilities should be sold to RTE. On 9 July 2009 a specially-formed commission, "Commission ad hoc", issued its decision on the transfer value of the network, estimating it at €140 million. SNCF filed an appeal against this decision with the French Council of State on 20 August 2009, considering the transfer value of the facilities to be much higher. Until the French Council of State rules on the appeal, SNCF has transferred its electricity facilities to RTE and the sale was agreed for an amount of €140 million, of which only €80 million have been paid by RTE as down-payment.

Tax litigation

In 2008 and 2009, RTE was subject to an audit of its accounts for financial years 2005, 2006 and 2007. At the end of 2011, an assessment letter was sent to EDF, its parent company, which is liable for the taxes of RTE pursuant to the tax consolidation structure RTE is part of. The assessment was settled to the extent of the accepted adjustments. The correction relating to the deductibility of the provision for the benefits for occupational accidents and diseases remains contested by the Group.

In addition, during 2010 and 2011, RTE was subject to an accounts audit for the 2008 and 2009 financial years. At the end of 2011, the tax administration delivered a proposed adjustment to the company that would not have material financial consequences on the company.

ERDF

Tax litigation

Since February 2010, ERDF is subject to a tax audit for the 2007 and 2008 financial years. As of 31 December 2010, ERDF has received no proposed adjustment from the tax administration for 2007, and the deadline for tax reassessments in respect of that year had expired. The audit concerning the year 2008 ended with the receipt of a proposed adjustment at the end of 2011. The increases notified do not have a significant financial impact.

In addition, EDF received at the end of 2009 a proposed adjustment related to an accounts audit for the 2004, 2005 and 2006 financial years. This proposal also related to ERDF considering that, pursuant to the agreements signed within the scope of the subsidising of the distribution activities, adjustment costs relating to periods prior to the subsidy are to be borne by ERDF. The payment of these increases was requested in December 2011 and, in accordance with the tax consolidation agreement, ERDF has paid its part in the adjustments agreed to. The adjustment relating to the deductibility of the provision for the

benefits for occupational accidents and sicknesses remains contested by the Group.

Direct Energie

Article 23 of the law of 10 February 2000, allows suppliers to offer their customers a single contract for both supply and network access, and enter into a contract known as a GRD-F contract with the network operator for access to the network in order to perform such supply contracts. The current wording of the GRD-F contract provides that in the event of a payment default of the final customer, the supplier must pay ERDF the price corresponding to delivery through the network. Direct Energie challenged this provision through a petition to the *Comité de règlement des différends et des sanctions de la CRE* (the "CoRDIS") filed on 20 July 2010. In a decision of 22 October 2010 notified to ERDF on 17 November 2010, CoRDIS ruled that no provision in the current legislation authorised ERDF to force the supplier to bear the risk of non-payment of the share due to the distributor, and that the supplier must have recovered the amounts due for network use from the final customer before paying them to the network operator. CoRDIS therefore requested that ERDF sends to Direct Energie a new GRD-F contract in compliance with this decision. ERDF lodged an appeal before the Paris Court of Appeal, as this decision undermines the overall balance of the single contract and would increase the complexity of market rules, as well as generating a surplus cost for its implementation that would ultimately be borne by end-customers.

On 29 September 2011, the Court of Appeal confirmed the decision of CoRDIS. A discussion process between suppliers and ERDF was led under the supervision of the CRE to be able to adapt the GRD-F agreement, taking into account the CoRDIS decision confirmed by the appeal. At this stage, no offer has been made by the CRE on the contractual developments of the GRD-F agreement. A further appeal (*cassation*) has been lodged against this decision.

At the same time, Direct Energie (which has become Poweo's reference shareholder in September 2011) and Poweo have summoned ERDF before the Paris Commercial Court on 11 December 2009 and 3 March 2011 respectively. Both companies are asking ERDF, in particular, to retroactively bear the costs of unpaid amounts they have in their records since the opening of the markets in 2004 as well as to void the GRD-F agreement and, secondarily, a retroactive requalification of the agreement into a mandate contract. In this context, Direct Energie and Poweo have blocked bank transfers to ERDF in 2010 and 2011 up to the amount it considered having unduly paid because of the unpaid liabilities. As of the date of the filing of this reference document, no judgment has been rendered on the merits of the case by the Paris Commercial Court.

Litigation with photovoltaic producers

Photovoltaic installations benefit from EDF's (or the local electricity distribution companies') obligation to purchase the electricity they produce. An agreeable regulatory framework made possible the development of the photovoltaic industry in France. As this industry is growing very fast, the government has, after several orders on 12 January, 16 March and 31 August 2010 decreasing repurchase prices of photovoltaic electricity, decided by a moratorium decree on 9 December 2010 to suspend the signing of new contracts for a period of three months and indicated that the transactions for which technical and financial offers had not been adopted by 2 December 2010 should go through the entire process again to request the connection, based on new tariff conditions. This order, issued on 4 March 2011, generated a significant decrease in the repurchase price of photovoltaic electricity.

The perspective of these various price changes has led to a large number of submissions to request connections in ERDF's units. In spite of important measures implemented to attend to all these submissions, ERDF has still not been able to deliver the technical and financial offers within a time period enabling producers to benefit from the prices applicable prior to the 4 March 2011 order.

An order of the French Council of State of 16 November 2011 rejecting the claims brought against the decision of 9 December 2010 has generated a significant number of claims against ERDF at the end of 2011. These claims were mainly brought by producers who had to abandon their projects because the operational conditions were less favorable with the new electricity repurchase prices. They consider ERDF responsible for this situation as they claim that the company did not deliver the technical and financial offers on time for them to benefit from more advantageous repurchase conditions.

ERDF denies any responsibility.

EDEV

EDEV's tax audit on financial years 2002 and 2003 led to an assessment of €14.5 million in overdue corporate taxes. Due to a persisting disagreement with the tax authorities on the proposed adjustments, and further to an unfavorable judgment from the Montreuil Administrative Tribunal of 11 March 2010, EDF, as controlling company of the consolidated tax group, lodged an appeal before the Versailles Administrative Appeal Court on 28 May 2010. The goal of the litigation before the Versailles Administrative Appeal Court is to obtain the reimbursement of €2.1 million.

Edison

Legal Action initiated by ACEA SpA concerning Edison's shareholding in Edipower

In May 2006, ACEA SpA ("ACEA"), Rome's municipal utility, addressed a complaint to the Italian Government and to Italian regulatory (AEEG) and competition (AGCM) authorities, alleging that the joint takeover of Edison by EDF and A2A S.A. (formerly AEM S.p.A) had crossed the threshold of 30% of the share capital of Edipower held by State corporations (limit set forth by a decree of the President of the Italian Council of Ministers, dated 8 November 2000 defining the rules applicable to the privatisation of companies (called Gencos) then held by Enel SpA).

On 7 July 2006, the AGCM rendered an opinion (*segnalazione*) supporting ACEA's position and officially requiring the Italian Government and parliament to take measures to comply with the provisions of the 8 November 2000 decree.

In August 2006, ACEA initiated an action against EDF, IEB and WGRMH Holding 4 (along with Edison, A2A S.A., Delmi, Edipower, AEM Turin, Atel and TdE) before the Rome Civil Court.

According to ACEA, crossing this threshold is a violation of the applicable laws and constitutes an act of unfair competition which could adversely affect the competition on the energy market and consumers' interests.

ACEA therefore asked the court to acknowledge the unfair behavior of EDF and A2A S.A, and force EDF and A2A S.A. to sell their stakes in order to remain under the 30% limit and prohibit them from taking and using energy in excess of the 30% threshold, and to compensate ACEA for the

prejudice suffered that it has not been able to precisely evaluate at this stage, the valuation being subject to a distinct hearing.

ACEA also indicated that it would request the court to take protective measures to protect its interests until the court rules on the merits.

In January 2007, Endesa Italia joined ACEA in its legal action.

The judge has rejected the addition to the file of a note from ACEA (new evidence) which assessed the prejudice that ACEA would suffer at €800 million.

The hearing on the merits of the case and on the grounds on which ACEA based itself to assess its prejudice, was initially set for 26 June 2008, and has been postponed several times, this time until 24 March 2011. As EDF and its subsidiaries refused the *inter partes* proceeding requested by ACEA for the assessment of its prejudice, any potential decision by an Italian judge in favor of this assessment should not be binding upon EDF.

In December 2010, Endesa Italia, now named E.ON Italia, and EDF signed a settlement agreement in which E.ON Italia undertakes to drop the case and all other claims against EDF in connection with EDF's indirect investment in Edipower. The judge has acknowledged this agreement in an order dated 19 May 2011, by which the case was postponed to 13 March 2013.

Proceeding concerning the sale of Ausimont

Further to a preliminary investigation initiated by the Public Prosecutor of Pescara (area of Abruzzes) in relation to a suspected case of water pollution and ecological disaster affecting the river Aterno basin at Bussi sul Tirino, which for more than a century has been the site of an industrial complex belonging to Ausimont SpA that was sold to Solvay Solexis SpA in 2002. The Public Prosecutor of Pescara notified certain former directors and managers of Solvay Solexis and Edison that the case would go to court on charges of water poisoning, ecological disaster and fraud to the prejudice of the site's purchaser, Solvay Solexis.

On 15 December 2009, the proceedings against Montedison (now Edison) for fraud were abandoned, whereas the proceedings on the matters of environmental disaster and poisoning continued. By an order of 10 May 2011, the judge heading the preliminary investigations has turned the poisoning charges into "water alteration", for which the maximum penalties and damages which could be ordered by the judge would be lesser.

In this context, a large quantity of industrial waste was found on a plot of land belonging to Edison adjacent to the plant, and an attachment order has been placed on that land, and the President of the Italian Council of Ministers appointed on 4 October 2007 a deputy special commissioner empowered to undertake urgent measures: identification, safety and rehabilitation measures for the land. The commissioner has ordered Edison to prepare a survey of the zone, take urgent measures to make it safe and present proposals for decontamination of the ground and ground water. Edison, which has never used this site for its business, has filed an appeal with the Regional Administrative Court. The Regional Administrative Court has rejected this appeal in March 2011 and Edison has challenged this judgment before the French Council of State.

Action by the Public Prosecutor of the Republic of Alessandria

In 2009, the Public Prosecutor of the Republic of Alessandria (Italy) sent certain managers and former directors of Ausimont Spa (now named Solvay Solexis SpA, a company sold by MontEdison to the Solvay group in 2002) notification of the conclusion of investigations related to the possible poisoning of water from the spring on the industrial site of Spinetta Marengo and surrounding sites, and the lack of any action for site rehabilitation. The investigation was closed on 16 January 2012. The first hearing will be held on 18 July 2012.

In addition, an administrative decision ordered Solvay Solexis to rehabilitate Spinetta Marengo site. Edison voluntarily intervened in the proceeding to defend its interests in relation with the claim filed by Solvay Solexis for the cancellation of this administrative decision, notably because the administrative decision doesn't impose any obligation on Edison to rehabilitate the site (this obligation is imposed exclusively on Solvay Solexis).

Claims brought by employees concerning exposure to asbestos or other harmful chemical substances

Over the last years, Edison has faced a significant increase in the number of claims for damages arising from the death or illness of employees that were allegedly caused by exposure to several forms of asbestos at factories owned by MontEdison, or other judicial cases assumed by Edison as a result of corporate acquisitions.

Furthermore, Edison is involved in several criminal proceedings filed by former employees of companies belonging to the Edison group or their legal successors, arising from exposure to harmful chemical substances emitted by MontEdison's facilities (since transferred to Enimont which became Enichem, a subsidiary of ENI).

Litigation concerning environmental matters

Edison is involved in several criminal proceedings currently underway concerning damages caused by the operation of MontEdison's chemical factories (petrochemical facilities at Porto Marghera, Crotone, Mantua and Cesano Maderno) prior to their sale to Enimont. These criminal proceedings also include actions brought by third parties concerning personal injuries related to the alleged environmental damage.

BE ZRt

Following a formal investigation based on European regulations on State aid, the European Commission issued a decision on 4 June 2008, requiring the Hungarian Government to terminate without compensation the long-term electrical energy purchase agreements ("PPAs") existing at the end of 2008 and that the electricity producers refund by April 2009 any amounts of State aid received since 1 May 2004, the date on which Hungary joined the European Union. BE ZRt has lodged an appeal against this decision before the General Court ("EGC") on 4 May 2009. By an order dated 13 February 2012, the EGC has rejected the request for cancellation filed by BE ZRt against the decision.

The Hungarian Government did not challenge the European Commission's decision, and the Hungarian legislature enacted a law on 10 November 2008 terminating all PPAs on 31 December 2008 without compensation. In late April 2010 the European Commission and the Hungarian government finally accepted the principle of netting stranded costs with the State aid paid. As a result BE ZRt will have no illegal State aid to repay.

In order to pursue its business after the termination of its PPAs, BE ZRt negotiated an 8-year sales contract with MVM, the sole Hungarian buyer owned by the Hungarian State, for half of its electricity output, and benefited from the "Cogen 1 decree" for the sale of the other half of its output, for a period due to run until 2013. However, Hungary adopted on 16 March 2011 an amendment to the law on electricity ending any support to cogeneration in Hungary as from July 2011.

EDF International, whose investment in BE ZRt was undertaken after the company's privatisation on specific terms that are now in question, notified the Hungarian State, on 12 May 2009 of an arbitration on the basis of the Energy Charter Treaty (ECT), in accordance with UNCITRAL rules. The arbitration proceedings were suspended until 1 October 2011, further to several successive agreements, and have now resumed. EDF International filed on 30 December 2011, with the permanent arbitration court of The Hague, a request statement in order to obtain compensation for the loss of the PPAs. The prejudice with respect to heating prices in 2011 was introduced in this statement for protective purposes.

SSE

In 2002, the Slovakian regulator adopted a resolution setting electricity rates applicable for 2003, without waiting the publication of a specific decree. Seven companies challenged this procedure and brought the matter before the Constitutional Court in 2004. They won the case in 2006 when the court declared the regulator's resolution void.

The same companies, considering that the prices for 2003 had therefore not been validly set and that the lower rates from 2002 should apply, sued the State for reimbursement. Their case was dismissed, as the court ruled that the only consequence of the regulator's error was unwarranted additional income for electricity suppliers.

Following this decision, one customer of SSE began legal action against SSE on 4 September 2009, claiming reimbursement of the sum of €780,905. This amount corresponds to the difference between the amount received by SSE in application of the 2003 rates wrongly set by the regulator and the amount it would have received if the 2002 rates had applied.

Five other SSE clients also filed similar claims against SSE, in late 2009 and early 2010, claiming a global amount of approximately €10 million. As of this date, all of the clients have abandoned the charges, the last two were subject to two closing decisions in January 2012.

SSE also filed on 6 July 2010 a similar claim for €37.5 million, on similar grounds, against its electricity supplier. The claim was withdrawn by SSE and a closing decision was rendered in October 2011.

EDF Luminus – Test-Achat association claim

On 17 May 2010, the Belgian consumer association, namely Test-Achats, has initiated an action for cancellation of the European Commission's decision dated 12 November 2009 approving the acquisition of the Belgian operator SPE, which has now become EDF Luminus, by EDF before the European Union General Court. Test-Achats asserts in particular that the European Commission's procedure did not sufficiently take into account the fact that French players with a common shareholder would take control of the electricity sector in Belgium. The European Union General Court has accepted EDF's voluntary intervention to support the European Commission's position. After the hearing held on 11 May 2011, the European Union General Court has fully rejected the association's claim in a decision of 12 October 2011. The time period within which an appeal can be lodged having expired, the decision of the European Commission of 12 November 2009 authorising the takeover of SPE by EDF is now final.

20.5.3 Litigation having arisen after the closing of the 2011 financial year

EnBW

On 22 February 2012, EDF International received an arbitration request filed with the International Chamber of Commerce by the German company Neckarpri GmbH, acquisition vehicle of the Bade-Wurtemberg State within the scope of the transfer by the EDF group of its shareholding in EnBW, signed on 6 December 2010 and finalised on 17 February 2011.

Neckarpri claims that the level of the price paid for the acquisition of the EDF group's shareholding in EnBW was excessive and thus constituted illegal State aid. On this basis, Neckarpri is mainly seeking the reimbursement of the amount allegedly paid in excess.

ERDF – Claim against the TURPE 3 price decision

On 17 August 2009, a claim was filed with the French Council of State by certain market players in the energy industry, in order to cancel the TURPE 3 price offer and decision of 5 May 2009 and 5 June 2009. The French Council of State rendered a decision on 28 March 2012 which confirms the validity of the procedure for adopting TURPE 3, but before delivering a judgment on the merits, has requested an external advice, in particular on the method used to determine the average weighted capital cost entering in the calculation formula of the TURPE. The consultant, an auditor, will have to submit its conclusions within 3 months.

20.6 Significant change in the Company's financial or trading position

The significant events that took place between the end of the 2011 fiscal year and the date of filing of this reference document are mentioned in note 51 to the consolidated financial statements for the fiscal year ended 31 December 2011 as to events that took place before the financial statements were drawn up by the Board of Directors on 15 February 2012, and, for events occurring after 15 February 2012, in section 12.1 ("Subsequent events") of this reference document.

21.

Additional information

21.1 General information regarding the Company's capital **396**
- 21.1.1 Share capital amount 396
- 21.1.2 Market for the Company's shares 396
- 21.1.3 Treasury shares and share buyback programme 397
  - 21.1.3.1 Share buyback programme in force as of the filing date of the reference document (programme authorised by the ordinary shareholder meeting of 24 May 2011) 397
  - 21.1.3.2 Summary of the Company's trading in its own shares during the 2011 fiscal year 398
  - 21.1.3.3 Description of the programme submitted to the Combined Shareholders' Meeting of 24 May 2012 for authorisation 399
- 21.1.4 Capital authorised but not issued 399
- 21.1.5 Other equity securities 400
- 21.1.6 Non-equity securities 400
- 21.1.7 Changes in the share capital 400
- 21.1.8 Information on the capital of every Group member that is the subject of a conditional or unconditional agreement 401
- 21.1.9 Pledge of the Company's securities 401

21.2 Bylaw provisions **401**
- 21.2.1 Corporate purpose 401
- 21.2.2 Fiscal year 401
- 21.2.3 Appropriation of profits under the bylaws 401
- 21.2.4 Rights attached to shares 402
- 21.2.5 Assignment and transfer of shares 402
- 21.2.6 Changes to the bylaws, the capital and the rights attached to votes 402
- 21.2.7 Shareholder's meetings 402
  - 21.2.7.1 Convening notices to meetings 402
  - 21.2.7.2 Participation in meetings and exercise of voting rights 402
  - 21.2.7.3 Requests for the inclusion of items or draft resolutions on the agenda and written questions to the Board of Directors 403
  - 21.2.7.4 Temporary disposals during meeting periods 403
- 21.2.8 Bylaw provisions that delay acquisition of control over the Company 404
- 21.2.9 Threshold disclosure requirements 404

21.1 General information regarding the Company's capital

21.1.1 Share capital amount

On the filing date of this reference document, the details of the Company's share capital are as follows:

Number of shares issued	1,848,866,662
Par value	€0.50 per share
Type of shares issued	common shares
Share capital amount	€924,433,331

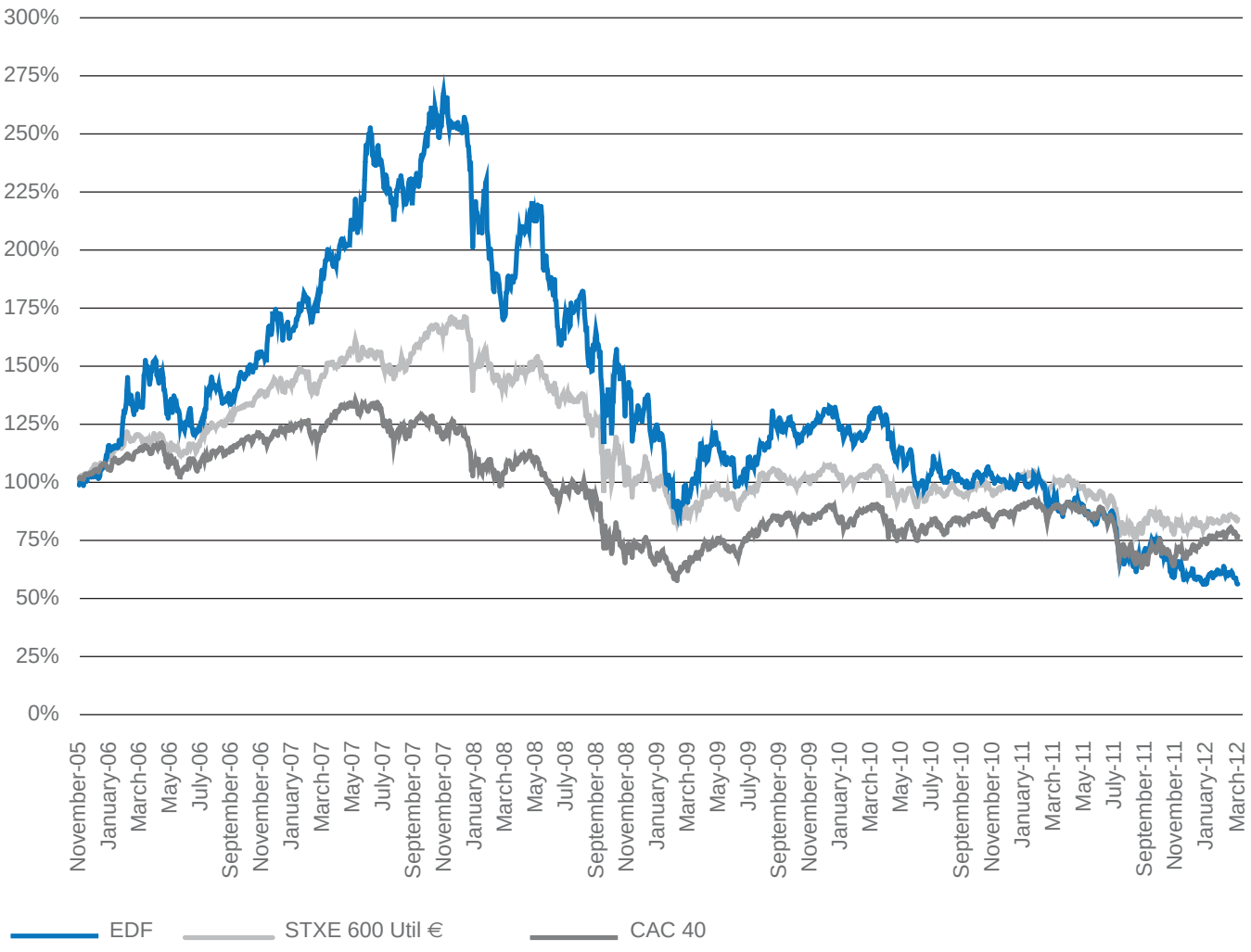
The share capital issued by the Company has been paid up in full. The Company has not issued or authorised any preference shares.

In 2011, the capital was first increased on 24 June 2011 to €930,406,055, divided into 1,860,812,110 common shares, then reduced on 28 September 2011 to €924,433,331, divided into 1,848,866,662 common shares (see sections 21.1.3 ("Treasury shares and share buyback programme") and 21.1.7 ("Changes in the share capital")).

21.1.2 Market for the Company's shares

The Company's shares have been listed for trading by Euronext Paris (Compartment A) since 21 November 2005, under ISIN code FR 0010242511, Reuters code (EDF.PA) and Bloomberg code (EDF:FP).

The following graph shows the changes in the Company's share price between 21 November 2005 and 30 March 2012:



Source : Bloomberg.

The following table shows the share price and volume of EDF shares traded between 1 January 2011 and 30 March 2012 on the Euronext Paris stock market:

	Transaction		Closing price (in euros)	
	in millions of shares	in millions of euros (1)	High	Low
2011				
January 2011	37.23	1,179.98	32.545	30.46
February 2011	46.94	1,479.47	32.62	30.75
March 2011	61.88	1,804.82	31.905	27.455
April 2011	47.17	1,315.12	29.545	26.635
May 2011	37.33	1,065.54	29.25	28.105
June 2011	38.64	1,027.38	27.36	25.545
July 2011	30.96	828.55	27.50	25.83
August 2011	51.75	1,124.76	25.52	19.91
September 2011	40.77	830.38	22.135	18.84
October 2011	31.24	701.24	23.56	21.165
November 2011	36.46	727.55	21.76	18.02
December 2011	32.37	602.35	20.275	17.685
2012				
January	36.75	651.06	19.24	17.075
February	31.35	580.72	19.075	17.98
March	33.12	606.29	19.60	17.11

(1) The trades expressed in millions of euros correspond to the monthly sum of the daily number of securities traded, multiplied by the market closing price on the same day. (Source: Euronext)

2011

In 2011, EDF's share price fell by 38.8%. The French CAC 40 index lost 17%, while the Euro Stoxx Utility sector index dropped by 16.6%.

At 30 December 2011, the closing price of the EDF share was €18.80 (compared to €30.69 at 31 December 2010). Its lowest closing price in 2011 was €17.68 on 14 December, and its highest closing price was €32.62 on 17 February 2011.

At 31 December 2011, EDF's market capitalisation totalled €34.76 billion (compared to €56.75 billion at 31 December 2010).

2012

Between the start of 2012 and 30 March inclusive, EDF's share price fell by 9.0%, the CAC 40 index increased by 8.4% and the Euro Stoxx Utility (SX6P) sector index rose by 2.5%.

At 30 March 2012, the closing price of the EDF share was €17.11. Its lowest closing price in 2012, through 30 March inclusive, was €17.075 on the 23 January 2012, and its highest closing price was €19.6 on the 2 March 2012.

At 30 March 2012, EDF's market capitalisation totalled €31.6 billion.

21.1.3 Treasury shares and share buyback programme

21.1.3.1 Share buyback programme in force as of the filing date of the reference document (programme authorised by the ordinary shareholder meeting of 24 May 2011)

After consulting the Board of Directors' report, and in accordance with the provisions of Articles L. 225-209 et seq. of the French Commercial Code, the tenth resolution adopted by the general meeting of 24 May 2011 authorised the Board of Directors to implement a programme to buy back Company shares, capped at a maximum of 10% of the Company's capital.

This resolution immediately terminated the unused portion of the authorisation to purchase Company shares, which was granted by the seventh resolution adopted by the general meeting held on 18 May 2010.

The aims of the share buyback programme are as follows: to deliver shares when rights are exercised that are attached to securities that represent debt instruments, which grant immediate or deferred access to the Company's shares by all means, as well as to perform all hedging transactions with respect to the obligations of EDF (or one of its subsidiaries) that are connected with such securities; to retain shares for future delivery in exchange or as payment in the context of external growth or contribution operations; to allocate shares to EDF group employees, in particular, within the framework of any share purchase or bonus share award plans under the terms stipulated by law and, in particular, by Articles L. 225-197-1 *et seq.* of the French Commercial Code or Articles L. 3332-18 *et seq.* of the French Labour Code; to reduce the Company's capital by cancelling all or part of the shares purchased; and, finally, to ensure the

liquidity of EDF shares via an investment services provider, under a liquidity agreement that is consistent with the code of ethics recognised by the *Autorité des Marchés Financiers*.

Purchases of Company shares may involve any number of shares, provided that the number of shares that the Company purchases during the buyback programme does not exceed 10% of the shares that make up the Company's existing share capital on the date of the general meeting of 24 May 2011, and provided that the number of shares that the Company holds at any one time does not exceed 10% of the shares that make up the Company's capital.

These shares may be acquired or transferred, under the conditions and within the limits, in particular in terms of volumes and price, provided for by the laws and regulations in force on the date of the relevant transactions, by any means, such as on the market or over the counter, including via block trades (purchases or sales), by the use of derivative financial instruments or notes or securities that grant access to Company shares, or by implementing option strategies, under the conditions stipulated by the market authorities and at such times as determined by the Board of Directors or any person who is acting on the Board's behalf. This authorisation may be used during public takeover bids, within the limits permitted by the applicable regulations.

The general meeting has set at €90 the maximum purchase price per share(1) and at €2 billion the maximum amount of funds allocated to the implementation of the programme, and has granted the Board of Directors full powers, with the right of delegation, to use this authorisation.

The authorisation was granted for a maximum of 18 months as from the general meeting of 24 May 2011, and will therefore end on 24 November 2012, unless the general meeting of 24 May 2012 adopts the new programme described in paragraph 21.1.3.3 below.

21.1.3.2 Summary of the Company's trading in its own shares during the 2011 fiscal year

Number of treasury shares held at 31 December 2011	1,175,594
Percentage of capital held through treasury shares at 31 December 2011	0.06%
Carrying value of the portfolio at 31 December 2011* (in euros)	25,740,912.75
Market value of the portfolio at 31 December 2011** (in euros)	22,101,167.20
Number of shares cancelled over the past 24 months	11,945,448

* *Valued at the purchase price.*

** *Based on the closing price at 30 December 2011, i.e. €18.80.*

Liquidity agreement

On 24 May 2006, a one-year liquidity agreement was entered into with Crédit Agricole Chevreux, which has since been renewed annually by tacit agreement. A rider to this agreement was signed on 11 July 2011, in order to bring the provisions into compliance with the new *Association française des marchés financiers* (AMAFI) ethics charter of 8 March 2011 and the AMF decision of 21 March 2011, which updated permitted market practices involving liquidity agreements.

The initial amount of €35 million was allocated to the liquidity account for the implementation of the liquidity agreement as from its signature, as part of the Company's share buyback programme.

In respect of the 2011 fiscal year, the flat-rate commission paid by EDF under the liquidity agreement totalled €120,000.

Number of shares bought and sold during the 2011 fiscal year

During the 2011 fiscal year, EDF purchased a total of 15,877,947 treasury shares and sold 3,305,464 shares:

- Between 1 January 2011 and 31 December 2011, under the liquidity agreement, the Company acquired 3,932,499 treasury shares for an average unit value of €25.16, and sold 3,305,464 shares for an average unit value of €25.63;
- EDF also purchased 11,945,448 treasury shares between 11 April 2011 and 8 August 2011, with the aim of cancelling them under the share buyback programme, for a total amount of €324,455,659.63, i.e. an average price of €27.16 per EDF share. These shares were acquired for the purposes of cancellation, in order to offset the dilution caused by the alternative simplified public purchase or exchange offer involving EDF Énergies Nouvelles shares (see section 6.4.1.2.2 ("EDF Énergies Nouvelles")). These 11,945,448 shares were in fact cancelled pursuant to a decision by the EDF Board of Directors on 28 September 2011.

Average share purchase and sale prices

During the 2011 fiscal year, the average share purchase price was €26.67 and the average share sale price was €25.63.

Portfolio breakdown at 31 December 2011

At 31 December 2011, the Company held a total of 1,175,594 treasury shares. 1,125,000 of these shares (or 0.06% of its share capital) are held under the liquidity agreement, and the remaining 50,594 shares (0.003% of its share capital), were acquired on the market with a view to being allocated to employees within the framework of the "ACT 2007" bonus share award plan, but were not actually allocated (see section 17.5.8 ("Bonus share issues")).

On this date, EDF's subsidiaries did not hold any shares, either directly or indirectly.

Post-closing transactions

Between 1 January 2012 and 30 March 2012, the Company acquired 559 123 treasury shares for an average unit value of €18.23, and sold 434 123 shares for an average unit value of €18.43.

(1) The Board of Directors may, however, adjust the aforementioned purchase price if premiums, reserves or profits are capitalised, which results either in an increase in the par value of the shares or the creation and award of bonus shares, and in the event of a stock split or reverse stock split, or any other transaction involving the shareholders' equity, in order to take into account the impact of these operations on share value.

21.1.3.3 Description of the programme submitted to the Combined Shareholders' Meeting of 24 May 2012 for authorisation

As stated above, the authorisation described in section 21.1.3.1 will end on 24 November 2012, unless the general meeting of 24 May 2012 adopts the resolution described below.

In accordance with the draft resolution prepared by the Board of Directors' meeting of 15 February 2012, the Combined Shareholders' Meeting of 24 May 2012 will be asked to authorise a share buyback programme, the characteristics of which are similar to the programme authorised by the general meeting of 24 May 2011, in particular with regard to the objectives of this programme, the limits on the number of shares that can be bought back, as well as the maximum purchase price (set at €90) and the maximum amount that may be allocated to the share buyback programme (€2 billion).

21.1.4 Capital authorised but not issued

The following table presents a summary of the delegations of authority and authorisations to increase or reduce the share capital that are in force on the filing date of this reference document, which the Board of Directors was granted by the Combined Shareholders' Meeting of 18 May 2010 and by the Combined Shareholders' Meeting of 24 May 2011, and the extent to which they have been used at 31 December 2011:

Status of the authorisations adopted by the Combined Shareholders' Meetings of 18 May 2010 and 24 May 2011

Securities concerned / type of issue	Term[1] of the authorisation and expiration	Maximum nominal increase or reduction in capital *(in millions of euros)*	Use made of the authorisations *(in millions of euros)*
Delegation of authority to the Board to increase the capital with maintenance of the shareholders' preferential subscription right			
Capital increase, all securities combined	26 months 18 July 2012	45[2]	none
Delegation of authority to the Board to increase the capital with cancellation of the shareholders' preferential subscription right			
Capital increase, all securities combined	26 months 18 July 2012	45[2]	none
Delegation of authority to the Board to make offers for private placements[3] with cancellation of the shareholders' preferential subscription right			
Capital increase, all securities combined	26 months 18 July 2012	45[2]	none
Authorisation for the Board to increase the number of securities to be issued in the event of a capital increase, with or without preferential subscription rights			
Capital increase, all securities combined	26 months 18 July 2012	15% of the amount of the initial issue[2]	none
Delegation of authority to the Board to increase the capital through the capitalisation of reserves, profits, premiums or otherwise	26 months 18 July 2012	1,000	none
Delegation of authority to the Board to increase the capital as consideration for a public exchange bid initiated by the Company	26 months 18 July 2012	45[2]	5.97
Authorisation for the Board to increase the capital to compensate in-kind contributions[4]	26 months 18 July 2012	10% of the Company capital up to a maximum of 45[2]	none
Delegation of powers to the Board to increase the capital for the benefit of savings plan members			
Issues reserved for the personnel	26 months 18 July 2012	10	none
Authorisation for the Board to reduce the capital by cancelling treasury shares	26 months 24 July 2013	10% of the capital by 24-month periods	5.97

(1) As from the date of the general meeting that approved them. All the resolutions were adopted by the Combined Shareholders' Meeting of 18 May 2010, with the exception of the authorisation granted to the Board of Directors to reduce the share capital via the cancellation of treasury shares, which was approved by the Combined Shareholders' Meeting of 24 May 2011

(2) Nominal aggregate limit on the share capital increase approved by the general meeting of 18 May 2010.

(3) Offers governed by Article L. 411-2 II of the French Monetary and Financial Code.

(4) Article L. 225-147 of the French Commercial Code.

Authorisations put to the vote of the Combined Shareholders' Meeting of 24 May 2012

The following table presents the authorisations that will be put to the vote of the Combined Shareholders' Meeting of 24 May 2012, in accordance with the draft resolutions drawn up by the Board of Directors' meeting of 15 February 2012.

Securities concerned / type of issue	Term [1] of the authorisation and expiration	Maximum nominal increase or reduction in capital *(in millions of euros)*
Delegation of authority to the Board to increase the capital with maintenance of the shareholders' preferential subscription right		
Capital increase, all securities combined	26 months 24 July 2014	45[2]
Delegation of authority to the Board to increase the capital with cancellation of the shareholders' preferential subscription right		
Capital increase, all securities combined	26 months 24 July 2014	45
Delegation of authority to the Board to make offers for private placements[3] with cancellation of the shareholders' preferential subscription right		
Capital increase, all securities combined	26 months 24 July 2014	45
Authorisation for the Board to increase the number of securities to be issued in the event of a capital increase, with or without preferential subscription rights		
Capital increase, all securities combined	26 months 24 July 2014	15% of the amount of the initial issue
Delegation of authority to the Board to increase the capital through the capitalisation of reserves, profits, premiums or otherwise	26 months 24 July 2014	1,000
Delegation of authority to the Board to increase the capital as consideration for a public exchange bid initiated by the Company	26 months 24 July 2014	45
Authorisation for the Board to increase the capital to compensate in-kind contributions[4]	26 months 24 July 2014	45 (within the limit of 10% of the Company capital)
Delegation of powers to the Board to increase the capital for the benefit of savings plan members		
Issues reserved for the personnel	26 months 24 July 2014	10
Authorisation for the Board to reduce the capital by cancelling treasury shares	26 months 24 July 2014	10% of the capital by 24-month periods

(1) As from 24 May 2012, the date of the Combined Shareholders' Meeting.

(2) The nominal aggregate limit on the share capital increase of €45 million provided for in the sixth resolution that is submitted to the general meeting of 24 May 2012 applies to all capital increases, with the exception of capital increases through capitalisation of reserves, premiums, profits or otherwise and capital increases that are reserved for savings plan members.

(3) Offers governed by Article L. 411-2 II of the French Monetary and Financial Code, in that they are exclusively intended for persons who provide investment portfolio management services on behalf of third parties or qualified investors or a restricted circle of investors acting on their own behalf.

(4) Article L. 225-147 of the French Commercial Code.

21.1.5 Other equity securities

On the filing date of this reference document, other than the common shares of Company stock, there are no other securities that grant access to EDF's share capital, either directly or indirectly.

21.1.6 Non-equity securities

On 18 April 1996, EDF implemented a programme to issue debt securities in the form of Euro Medium Term Notes (the "EMTN" programme). Since this date, this programme has been renewed each year.

On 6 September 2011, EDF proceeded with an annual update to the debt security issue programme for a maximum amount of €20 billion.

In October 2011, the Company issued bonds to investors in the United Kingdom for an amount of GBP 1.250 billion, at a fixed rate of 5.5%, maturing on 17 October 2041, as part of its EMTN programme. This operation will contribute to the financing of the Group's investment strategy and falls within the scope of the policy to extend the maturity of its debt.

At 31 December 2011, the Company's outstanding bond debt (EMTN-format bond issues and other stand-alone debt securities) totalled €36,180 million, with average maturity on that date of 11.6 years.

A description of the Group's bond debt is provided in Note 39 to the consolidated financial statements at 31 December 2011.

21.1.7 Changes in the share capital

Pursuant to the law of 9 August 2004, EDF was converted into a *société anonyme* (joint-stock company) on 20 November 2004 and its capital set at €8,129,000,000, divided into 1,625,800,000 shares with a par value of €5.

The EDF general meeting of 31 August 2005 granted full powers to the EDF Board of Directors with a view to reducing the capital by a maximum

amount of €7,316,100,000, via a reduction in the par value of shares from €5 to a minimum of €0.5. During its meeting of 27 October 2005, the Board of Directors decided to reduce the share capital by €7,316,100,000, via a €4.5 reduction in the par value of shares, which therefore decreased from €5 to €0.5. The share capital was thus reduced to €812,900,000.

During its 18 November 2005 meeting, Board of Directors used the authority granted to it by the Combined Shareholders' Meeting of 10 October 2005, and approved the increases in the Company's share capital in connection with the Open Price Offering and the Guaranteed Global Placement that were performed when the Group was first listed on the stock market. As a result, the Board of Directors increased the share capital to €906,834,514.

On 20 December 2005, Calyon (now Crédit Agricole-CIB) paid EDF the price that corresponded to the exercise of 8,502,062 warrants that the EDF Board issued to Calyon by decision taken on 18 November 2005. Consequently, the share capital was increased to €911,085,545 divided into 1,822,171,090 common shares.

The payment of dividends in shares on 17 December 2009 (see section 20.4.1 ("Dividends and interim dividends paid within the last three fiscal years")) resulted in an increase in the share capital of €13,347,786 following the issue of 26,695,572 shares. On 21 January 2010 the share capital was thus increased to €924,433,331 divided into 1,848 866,662 common shares.

On 24 June 2011, the capital was increased to €930,406,055 divided into 1,860,812,110 common shares, via the issue of new shares as consideration for the EDF Énergies Nouvelles shares contributed to EDF in exchange for the EDF shares tendered as part of the alternative simplified public purchase or exchange offer involving EDF Énergies Nouvelles shares, which was initiated by EDF (see section 6.4.1.2.2 ("EDF Énergies Nouvelles")). Then, on 28 September 2011, the capital was reduced to €924,433,331 divided into 1,848,866,662 common shares, via the cancellation of the shares purchased as part of the share buyback programme with a view to cancellation, in order to offset the dilution caused by the aforementioned offer (see section 21.1.3 ("Treasury shares and share buyback programme")).

21.1.8 Information on the capital of every Group member that is the subject of a conditional or unconditional agreement

The acquisition and disposal commitments involving securities in subsidiaries are described in note 44 to the consolidated financial statements for the fiscal year ended 31 December 2011.

With the exception of these commitments to acquire and dispose of securities and any other commitments that are described in section 6 ("Business overview") of this reference document, EDF has not made any promises to purchase or sell that would make it possible to acquire or dispose of, as applicable, all or part of the capital of the Company or of any of its subsidiaries, as defined in Article L. 233-1 of the French Commercial Code.

21.1.9 Pledge of the Company's securities

To the Company's knowledge, none of the Company's common shares that make up its share capital have been pledged.

21.2 Bylaw provisions

21.2.1 Corporate purpose

EDF's purpose, both in France and abroad is:

- to ensure the generation, transmission, distribution, supply and trading of electrical energy, and the import and export of said energy;
- to carry out the public service missions assigned to EDF by the laws and regulations, in particular by the French law of 15 June 1906 on energy distribution, the aforementioned French laws of 8 April 1946 and 10 February 2000, and Article L. 2224-31 of the French Local Authorities Code, as well as by concession agreements, and in particular the mission to develop and operate public electricity grids and the mission to supply energy to non-eligible customers, and to supply back-up power to electricity producers and customers with the aim of compensating for unforeseen supply failures, and to supply electricity to eligible customers who cannot find a supplier, while contributing to the goals defined by the multi-year generation investments programme defined by the Minister for Energy;
- more generally, to engage in any industrial, commercial or service activity, including research and engineering activities, in the field of energy, for all categories of customer;
- to enhance the value of all the personal and real property assets it holds or uses;
- to create, acquire, rent or lease under a business lease, all personal property, real property, businesses and clientele, to lease, install and operate all establishments, businesses and clientele, plants and workshops relating to any one of the aforementioned purposes;
- to obtain, acquire, operate or sell all processes and patents concerning the activities that are related to any of the aforementioned purposes;
- to take part, directly or indirectly, in all transactions that may be connected to any of the aforementioned purposes, by creating new companies or undertakings, by contributing, subscribing for or purchasing equity or ownership interests, stakes, or through mergers, partnerships or in any other way whatsoever; and
- more generally, to engage in all industrial, commercial, financial transactions, whether in personal or real property, that are directly or indirectly connected, in whole or in part, to any similar or related purposes or even to any purposes that may favour or develop the Company's business.

21.2.2 Fiscal year

Each fiscal year lasts for 12 months, starting on 1 January and ending on 31 December of each year.

21.2.3 Appropriation of profits under the bylaws

The distributable profit consists of the net profit for the fiscal year, less prior losses carried forward and the various deductions provided for by the law, plus any retained earnings carried forward.

The general meeting may decide to distribute amounts that are deducted from the reserves that are freely available to it, but must expressly state the reserve items from which the deductions are made.

After approving the financial statements and confirming the existence of distributable amounts (which include the distributable profit and any amounts deducted from the reserves mentioned above), the general meeting can decide to distribute all or part of such amounts to the shareholders in the form of a dividend, allocate them to reserve items or carry them forward.

The general meeting has the option of granting the shareholders a choice, for all or part of the dividend or interim dividend paid out, between payment in cash and payment in shares under the conditions laid down by law. Moreover, the general meeting may decide, for all or part of the dividend, interim dividends, reserves or premiums that are distributed or for any reduction in capital, that said distribution or said reduction will be paid in kind through remittal of the Company's assets.

The Board of Directors has the option of distributing interim dividends prior to the approval of the financial statements for the fiscal year, under the conditions provided for by law.

The Combined Shareholders' Meeting of 24 May 2011 approved the amendment to EDF's bylaws to insert a provision for the payment of an increased dividend to shareholders who have held their shares in registered form for at least two years (see section 20.4.2 ("Distribution policy, increased dividend"). In accordance with the law, the first increased dividend will be paid after the closure of the second fiscal year that follows the amendment of the bylaws, i.e. in 2014 for the dividend that will be distributed in respect of the 2013 fiscal year.

21.2.4 Rights attached to shares

Each share entitles its holder to a portion of the Company's profit and corporate assets that is proportional to the percentage of the capital that the share represents. Moreover, each share confers a voting right and the right to be represented at Shareholders' Meeting in accordance with legislative, regulatory and statutory restrictions.

On the filing date of this reference document, EDF has only issued a single class of shares.

Ownership of a share automatically entails acceptance of the by laws and decisions adopted by general meetings.

Shareholders are only liable for losses within the limit of their contributions.

Whenever it is necessary to hold more than one share in order to exercise any right whatsoever, in the event of an exchange, reverse stock split or allocation of shares, or due to a capital increase or reduction, a merger or any other corporate transaction, owners of single shares or numbers of shares below that required may only exercise such right if they take personal responsibility for consolidating or, if necessary, purchasing or selling the requisite number of shares.

Shareholders can choose to hold shares in registered or bearer form, subject to compliance with the laws and regulations.

Shares may be registered with an intermediary under the conditions provided for in Articles L. 228-1 *et seq*. of the French Commercial Code.

Intermediaries must declare their status as intermediaries who hold shares for a third party, under the conditions provided for in the laws and regulations. These provisions are also applicable to the other securities issued by the Company.

Under the conditions provided for by the law and regulations in force, the Company is entitled to request from the central custodian of financial instruments, at any time and provided that it pays the required consideration, as applicable, the name or corporate name, the nationality, the year of birth or the year of incorporation, and the address of the holders of bearer shares that grant an immediate or deferred right to vote at its own shareholders' meetings, as well as the quantity of securities held by each of these shareholders and, where applicable, any restrictions to which the securities may be subject. On the basis of the list provided by such custodian, the Company has the option of asking the persons or entities listed that the Company believes may be registered on behalf of third parties, for the information stated above concerning the owners of the securities.

For registered shares that grant immediate or deferred access to the capital, intermediaries that are registered under the conditions provided for in Article L. 228-1 of the French Commercial Code mentioned above, are required, within ten business days as from the request made by the Company or its agent, which may be made at any time, to disclose the identity of the owners of said securities.

21.2.5 Assignment and transfer of shares

Shares can be traded without restriction, subject to compliance with the provisions of the law and regulations. They are registered in an account and are transmitted by transfer from one account to another.

21.2.6 Changes to the bylaws, the capital and the rights attached to votes

All changes to the bylaws, the capital or the voting rights attached to the securities that make up the capital are subject to the requirements of law, as the bylaws contain no specific provisions regarding such matters.

21.2.7 Shareholder's meetings

21.2.7.1 Convening notices to meetings

General meetings are convened by the Board of Directors or, in the last resort, by the Statutory Auditors or by any person empowered to do so. Meetings are held at the registered office or at any other place stated in the convening notice.

21.2.7.2 Participation in meetings and exercise of voting rights

General meetings may be held by video conference or telecommunication means that allow for shareholders to be identified. The conditions governing the type and use of such means are specified in Articles R. 225-97 to R. 225-99 of the French Commercial Code. In such cases, shareholders who participate in the meeting by such means are deemed to be present for the calculation of the quorum and majority, under the conditions specified by law.

All shareholders can attend general meetings, regardless of the number of shares they own.

Shareholders can choose between one of the three following methods of participation: attend the meeting in person by requesting an admission card, grant authorisation (a proxy) to the chairman of the general meeting or to any individual or legal entity of their choice (article L.225-106 of the Commercial Code), or vote by mail.

In accordance with article R.225-85 of the Commercial Code, proof of the right to participate in a general meeting is obtained by the registration of the securities in an account in the name of the shareholder or of the intermediary that is registered on the shareholder's behalf (pursuant to paragraph 7 of article L.228-1 of the Commercial Code), on the third day prior to the meeting, i.e. at midnight, Paris time, or in the registered share accounts held by the Company (or its authorised representative), or in the bearer share accounts held by the accredited intermediary.

In accordance with article R.225-85 of the Commercial Code, the entry or registration of the securities in the bearer share accounts held by financial intermediaries is evidenced by a shareholding certificate issued by these intermediaries, where applicable by electronic means under the conditions provided for in article R.225-61 of the Commercial Code, as an appendix to the postal voting form, the voting proxy or attendance card request made on behalf of a shareholder or on behalf of a shareholder who is represented by the registered intermediary.

All shareholders may grant a proxy to any individual or legal entity of their choice in order to be represented at a general meeting. Proxies, as well as any proxy revocations, must be evidenced in writing and notified to the Company. Proxies may be revoked in the same forms as those required for the designation of the proxy holder, including by electronic means if need be. The owners of shares that are properly registered in the name of an intermediary under the conditions provided for in Article L.228-1 of the French Commercial Code may be represented by a registered intermediary under the conditions provided for in said article.

EDF gives its shareholders the possibility of voting online, prior to the general meeting, on the dedicated voting website that is made available by the Company's authorised representative.

In addition to the participation and voting rules set out above, holders of bearer shares may also use the new online Votaccess platform for the general meeting of 24 May 2012: this platform allows holders of bearer shares to send their voting instructions electronically request an admission card and grant or withdraw a proxy, before the general meeting is held. Only holders of bearer shares for whom the custodian is affiliated to the Votaccess system and offers them this service for the 24 May 2012 general meeting can access this platform.

21.2.7.3 Requests for the inclusion of items or draft resolutions on the agenda and written questions to the Board of Directors

The shareholders who meet the conditions provided for in article R. 225-71 of the Commercial Code may request the inclusion of items or draft resolutions on the general meeting agenda within 20 calendar days as from the publication of the meeting notice, in accordance with article R. 225-73 of the Commercial Code.

Requests for the inclusion of items on the agenda must be substantiated. The wording of the draft resolutions, as well as a brief explanation of the reasons, must accompany requests for the inclusion of draft resolutions.

On the date of the request, the authors must provide proof of owning or representing the percentage of the capital required by article R. 225-71 of the Commercial Code. Requests must be accompanied by proof of entry in an account. Agenda items or draft resolutions that are proposed for inclusion are only reviewed if the authors of the request submit a new certificate proving the registration of the securities in the same accounts on the third day prior to the meeting.

Each shareholder also has the option of sending the Board of Directors written questions of his or her choice. The Board of Directors will answer the questions during the meeting, or, in accordance with article L. 225-108 of the Commercial Code, the answer is deemed to have been given provided that it is published on the Company's website.

Written questions must be sent to the Company by registered letter with return receipt or by electronic telecommunication at the latest on the fourth business day prior to the date of the general meeting. In accordance with article R. 225-84 of the Commercial Code, these questions must be accompanied by a shareholding certificate, in order to be taken into account.

21.2.7.4 Temporary disposals during meeting periods

In accordance with the provisions of Article L. 225-126 of the French Commercial Code, any person who holds, alone or together with other persons, in respect of one or more temporary disposals or any transaction that grants the right to or requires the resale or return of said shares to the assignor, a number of shares that represents more than 0.5% of the voting rights in a listed company, must inform the Company and the *Autorité des marchés financiers* no later than midnight, Paris time, on the third business day prior to the general meeting, and when the contract that arranges this transaction remains in force on this date, said information must include the total number of shares held on a temporary basis. In addition to the number of shares acquired, this declaration must contain the identity of the assignor, the date and the expiration of the contract that organises the transaction and, as applicable, the voting agreement.

If no information is provided to the company and the *Autorité des marchés financiers*, the shares thus acquired are automatically stripped of voting rights for the shareholders' meeting concerned and for all shareholders' meetings that are held until such shares are resold or returned.

Moreover, the company representative, a shareholder or the *Autorité des marchés financiers* may petition the Commercial Court to order the complete or partial suspension, for a maximum of five years, of the voting rights of any shareholder who fails to provide such information, regardless of whether or not the voting borrowing shareholder has exercised his or her voting rights.

21.2.8 Bylaw provisions that delay acquisition of control over the Company

Pursuant to the Law of 9 August 2004 and the EDF bylaws, changes in share capital cannot result in the French state's shareholding falling below the statutory 70% threshold. With the exception of this restriction, no other provision in the bylaws specifically aims to prevent or delay the takeover of the Company by a third party.

21.2.9 Threshold disclosure requirements

Pursuant to the provisions of the French Commercial Code, any individual or legal entity, acting alone or together with other persons or entities, that acquires a number of shares that represents more than 5%, 10%, 15%, 20%, 25%, 30%, 33.3%, 50%, 66.6%, 90% or 95% of the capital or voting rights must inform the Company, no later than prior to the close of business on the fourth trading day following the day on which the shareholding threshold is exceeded, of the total number of shares or voting rights owned (Article R.233-1 of the French Commercial Code). Moreover, such individuals or legal entities must also inform the AMF of these acquisitions no later than prior to the close of business on the fourth trading day after exceeding the shareholding threshold (Article 223-14 of the AMF General Regulation). The AMF publishes threshold crossings that are notified to it.

Within the same timeframes and under the same conditions, this information must also be disclosed when the capital or voting rights fall below the thresholds stated above.

Absent a proper declaration, the shares that exceed the fraction which should have been declared in accordance with the provisions of law mentioned above will be stripped of voting rights for all shareholders' meetings that are held during a two-year period following the date on which the effective disclosure is made.

Moreover, the Company bylaws provide that any individual or legal entity, acting alone or jointly, who acquires or ceases to hold, directly or indirectly, a number of shares that corresponds to 0.5% of the Company's capital or voting rights, or a multiple of said fraction, is required to inform the Company, by registered letter with return receipt requested, at the latest before the close of business on the fourth trading day following the crossing of such threshold, of the total number of shares, voting rights or equity interests held.

Failure to comply with the above provisions is punishable by the loss of voting rights for the shares that exceed the fraction that should have been declared, for all shareholders' meetings that are held until the expiration of a two-year period following the date of the effective threshold disclosure provided for above, if the application of this penalty is requested by one or more shareholders who hold at least 1% of the Company's capital. Such requests are recorded in the minutes of general meetings.

22.

Material contracts

With the exception of any contracts described in chapters 6 (“Business overview”) and 9 (“Operating and financial review”) of this reference document, and possibly in chapter 12 (“Information on trends”) for those who were entered into after the closing of 2011 financial year, EDF has not concluded, during the two years preceding the date of filing of this reference document, any material contracts other than those entered into in the ordinary course of business.

23.

Third party information, statement by experts and declaration of interests

None.

24.

Documents available to the public

All legal documents relating to the Company (bylaws, reports, letters and other documents, historical financial information of EDF and its subsidiaries for each of the two years preceding the filing of this reference document) which must be made available to the public can be consulted at the EDF corporate offices, at 22-30, avenue de Wagram, 75382 Paris Cedex 08, during the validity of this reference document.

25.

Information on holdings

For information about the companies in which EDF holds an interest that could have a significant effect on an assessment of its holdings, its financial position or financial results, see Chapters 7 ("Organisational charts") and 6 ("Business overview") as well as note 52 to the consolidated financial statements for the year ended 31 December 2011.

Glossary

ANDRA (Agence nationale pour la gestion des déchets radioactifs)

The French law of 30 December 1991 established a public industrial and commercial body, the National Agency for the Management of Nuclear Waste (*Agence nationale pour la gestion des déchets radioactifs* "ANDRA"), responsible for the long-term management of radioactive waste. The Agency, which reports to the Ministers of Industry, Research and the Environment, established the storage centers based in the Aube region of France for the long-term management of short-life waste.

AP913 Procedure

Standard procedure created by the INPO (Institute of Nuclear Power Operations) to verify equipment reliability and implement equipment health checks. This procedure consists of classifying components according to the consequences of their failure. It enables a maintenance strategy to be developed that is adapted to the criticality of each component.

Architect-Assembler

For EDF, the architect-assembler has control over:
- the design and operation of its power plants;
- the organisation of development projects;
- the schedule for completion and costs of construction;
- relations with the Nuclear Safety Authority; and
- the integration of feedback from operational experience.

EDF's role as architect-assembler ensures control over its industrial policy with respect to the design, construction and operation of its fleet of power plants

ASN (Autorité de Sûreté Nucléaire)

The French Nuclear Safety Authority (*Autorité de Sûreté Nucléaire* or "ASN") controls, nuclear safety and radioprotection in France, on behalf of the French government, to protect workers, patients, the public and the environmental risks associated with the use of nuclear energy. It is notably in charge of the external control of nuclear facilities in France. The French ASN is an independent administrative authority with a staff of more than 300. The French ASN is represented at the national level by the General Agency for Nuclear Safety and Radioprotection (or "DGSNR").

Assembly/Fuel

Nuclear fuel is in the form of an assembly made up of an array of 264 fuel rods, bound together by a rigid structure made of tubes and grids. Each fuel rod consists of a water-tight zirconium tube into which uranium oxide pellets are piled, constituting the fuel. The assemblies are loaded side by side into the reactor vessel – 205 assemblies are required for a 1,500 MW reactor – to make up the core of the reactor. During operation, these assemblies are crossed by bottom to top with primary water which heats on contact and carries this energy to the steam generators.

Balancing Mechanism

Created by RTE on 1 April 2003, the balancing mechanism allows it to use power reserves that can be mobilized in the event of an imbalance between supply and demand.

Becquerel (Bq)

International legal unit for measuring radioactivity. The Becquerel (Bq) is equal to one disintegration per second. This unit represents such a low level of activity that it is used in multiples: the MBq (megabecquerel or million Becquerels) and the GBq (gigabecquerel or billion Becquerels).

Blue Tariff

Tariff available to sites whose subscribed power is less than or equal to 36 KVA.

Capacity auctions

At the beginning of 2001, the Group agreed to auction a portion of its generation in order to allow European energy groups to compete in the French market just as EDF competes in foreign markets. This agreement, signed with the European Commission, stipulated that EDF would sell 6,000 MW of its electricity 'capacities' or 8% of the electricity generated in France.

Glossary

Clean Development Mechanism (CDM)

The CDM is a mechanism defined by the Kyoto Protocol based on projects to reduce emissions or capture greenhouse gases (GHS) and sustainable development plans in developing countries. This mechanism provides that any public or private entity in a country on Schedule 1 (industrialized countries) which makes investments in such projects in a county on Schedule II (developing countries) acquires carbon credits in return. These credits can then be used by those Parties to meet their emission quotas, or they can be sold on the carbon market in International Emissions Trading (IET) or the EU emissions quota trading system (EU ETS).

The CDM is placed under the authority of the Conference of the Parties acting as a meeting of the parties to the Kyoto Protocol, supervised by an Executive Board, the powers of which were defined by the 2001 Marrakech agreements.

Cogeneration

Generation technique for combined electricity and heat production. The advantage of cogeneration is the ability to capture the heat produced by the fuel whereas in traditional electricity generation this heat is lost. This process also allows the same facility to meet the heating (hot water or steam) and electricity needs of both industrial and local authority customers. This system improves the energy efficiency of the generation process and reduces fuel use by an average of 20%.

Combined-Cycle Gas

The most recent technology for generating electricity in a natural gas-fired plant. A combined cycle is made up of one or more combustion turbines and a steam turbine allowing for an improved yield. The syngas is routed to the combustion turbine, which generates electricity and very hot exhaust gases (effluents). The heat from the exhaust gases is recovered by a boiler, thus producing steam. Part of the steam is then recovered by the steam turbine to generate electricity.

Congestion

Situation in which an interconnection linking the national transmission grids cannot absorb all of the physical flows resulting from international exchanges required by market operators due to a shortage of capacity in the interconnection and/or the national transmission grids involved.

CRE (Commission de Régulation de l'Énergie)

The French Energy Regulatory Commission (Commission de Régulation de l'Énergie, or "CRE") was created on 30 March 2000. The CRE, an independent body, regulates the process to open the energy market opening. It ensures that all of the generators and eligible customers have non-discriminatory access to the network. Within its jurisdiction, this body supervises and authorizes, settles any disputes and, if required, imposes sanctions. For a detailed description of its powers, see section 6.5.1.2 ("French legislation: Energy Code").

Distribution networks

Downstream of the transmission network, medium- and low-tension distribution networks serve end-users (individuals, groups, SMEs, SMIs, etc.).

DNN

Non-Nationalized Distributor.

Downstream

See "Fuel Cycle" and "Downstream Asset Portfolio".

Downstream Asset Portfolio

All contractual energy disposal commitments involving operators or end users.

EAR (Earning at Risk)

A financial indicator providing a statistical measure of risk of maximum potential loss of a company's income versus its budgeted income in the event of unfavorable market movements over a certain period of time and within a given confidence interval.

EBITDA

Earnings before interest, taxes, depreciation and amortization, corresponding to gross operating surplus.

Effects of changes in the scope of consolidation

Effects of changes in the scope of consolidation, occurring during a given year, including acquisitions, disposals and changes in the Group's scope of consolidation.

Electricity supply

Electricity demand can be broken down into four types of consumption: "basic" (or "ribbon") supply is
- the "basic" (or "ribbon") supply of electricity generated and consumed throughout the year;
- "semi-basic" supply is the electricity generated and consumed over the winter period;
- "peak" supply corresponds to periods of the year when electricity generation or supply is in heavy demand;
- "lace" supply is a complement to "ribbon" supply.

Electricity Value Chain

The electricity value chain includes both deregulated activities (generation and supply) and regulated activities (transmission and distribution).

Enriched uranium

Uranium, whose isotope 235 content, the only fissile material, has been increased from its low natural level (0.7%) to approximately 4% for pressurized water reactor fuel.

Enrichment

Process to increase the fissile content of an element. In its natural state uranium is 0.7% uranium 235 (fissile) and 99.3% uranium 238 (non fissile). To enable its efficient use in a pressurized water reactor, it is enriched with 235 uranium whose proportion is increased to around 4%.

Entity Responsible for Balance

Entities with which RTE signs a contract for the financing of shortfalls between forecast and actual consumption and the production of a portfolio of users brought together by the balance responsible entity which plays a role of insurer covering the potential losses arising from the many differences between over- and under- supply.

EPR

European Pressurized Reactor. The latest generation of reactors currently under construction (known as generation 3), it is the result of Franco-German cooperation, and offers advanced safety, environmental and technical performance.

Fluorination/conversion

Also called "conversion", fluorination allows for the purification of uranium compounds and their transformation Into uranium hexafluoride (UF6), allowing their enrichment using current techniques.

FNCCR

French National Federation of Licensors and Local Utilities or "FNCCR").

Fuel

See Assembly-Fuel

Fuel Cycle

The nuclear fuel cycle encompasses all industrial operations in France and abroad which enable the supply of the fuel to generate energy in a reactor, then to unload and process it. The cycle can be broken down into three stages:

- upstream: the processing of concentrates from uranium ore, the conversion, enrichment and production of fuel (which takes more than two years);
- the core of the cycle corresponding to the use of fuel in the reactor: receipt, loading, operation and discharging (which takes three to five years);
- downstream: pool storage, reprocessing of spent fuel in reactors of recoverable material, vitrification of highly radioactive waste, then temporary storage of the waste before storage.

Generic Hazard

In the nuclear field, an unpredictable technical incident common to a set of nuclear plants.

Green Tariff

Tariff available to sites whose subscribed power is strictly greater than 250 KVA.

Greenhouse gases

Gas that retains a portion of the solar radiation in the atmosphere and for which an increase in emissions due to human activity (man-made emissions) causes an increase in the earth's average temperature and plays an important role in climate change. The Kyoto Protocol and amended EC Directive 2003/87/EC of 13 October 2003 cover the six following principal greenhouse gases: carbon dioxide (CO_2), methane (CH_4), nitrogen protoxide (N_2O), hydrofluorocarbons (HFC), perfluorated hydrocarbons (PFC) and sulfur hexafluoride (SF_6). For the period from 2005-2007, carbon dioxide was the subject in Europe of measures to reduce emissions with the application of national plans for the allocation of greenhouse gas quotas. For the 2008-2012 periods, the scope of gases is expanding. In the long term, the gases listed in Appendix II of the aforementioned directive will be covered, as will "any other gaseous atmospheric component, whether natural or man-made, that absorbs and reflects infrared radiation" (amended directive, adopted but not published to date).

Gross energies margin

Gross energies margin is calculated based on accounting data from the income statement and represents the margin on energy, fuel and transmission costs generated by energy sales (i.e., electricity and gas).

Homojunction

Inside a solar cell, the p-n junction between two layers of semi-conductor material (one positively doped (p) and the other negatively doped (n)), separates the charges generated by light. In a homojunction solar cell, the layers in this p-n junction are made from the same material. This is the case in conventional crystalline silicon technology.

Heterojunction

A heterojunction solar cell has a p-n junction made from two different semi-conductor materials. This technology is more advanced than the homojunction and increases conversion yields. In the case of crystalline silicon, the junction is made from crystalline silicon (heavy) and a thin film of amorphous silicon. Thin-film technologies based on CIGS (copper, indium, gallium, selenide) or on CdTe (Cadmium telluride) are also heterojunction cells.

IAEA

International Atomic Energy Agency based in Vienna (Austria).

Impact of Exchange Rate Variations

The impact of exchange rates entered in the income statement for a fiscal year, reflects the fluctuations in average exchange rates between the euro and another operational currency in use by the subsidiaries within the Group's scope of consolidation.

Interconnection

Electricity transmission infrastructure that allows for exchanges of energy between different countries, by connecting the transmission network of one country to that of a neighboring country.

Intermediate Storage

Intermediate stage in the process of managing nuclear waste. It involves placing waste packages in a facility to ensure, for a given period of time, their isolation from contact with man and the environment with the intention of retrieving them for a further stage in the waste management process. Intermediate storage facilities are designed, built and managed by the producers of such waste (EDF, AREVA NC (formerly COGEMA), CEA) and are close to areas where waste is conditioned.

Glossary

Interruptibility	Voluntary reduction of electrical power by a customer, in exchange for compensation.
IPP	An Independent Power Producer, whose operations are not state-regulated. IPP can only refer to projects and/or units developed outside France.
LDC	French local distribution companies. Local Distribution Companies sell and deliver electrical energy to end users located in their exclusive service area.
LNG (Liquefied Natural Gas)	Natural gas turned into liquid form by reducing its temperature to –162C allowing for a reduction by 600 in its volume.
Metering	A system allowing for the recording, at a given network connection point, of the volumes of electricity transmitted or distributed (power, frequency, active and reactive energy).
Midstream	All assets of the gas business, allowing for its availability, transportation and management. These might be infrastructures (gas pipelines, storage facilities, LNG terminals, etc.) or contractual (rights relating to pre-determined capacity, procurement contracts, etc.). The midstream segment includes the trading and negotiating activities.
MOX	"Mixed Oxides". Nuclear fuel based on a mixture of uranium oxides (natural or depleted) and plutonium.
MW / MWh	The MWh is the energy unit generated by a facility and is equal to the facilities' power, expressed in MW, multiplied by the duration of operations in hours. • 1 MW = 1,000 kilowatts = 1 million watts • 1 MWh = 1 MW generated in one hour = 1 megawatt hour • 1 GW = 1,000 MW = 1 billion watts • 1 TW = 1,000 GW
National Quota Allocation Plan	This plan defines the total quantity of greenhouse gas emission quotas that the French state plans to grant for the quotas exchange system for each multi-year period (NAP 1 2005-2007, NAP 2 2008-2012) and the allocation method used to allocate quotas to the industrial facilities in question.
Non-interconnected zones	Zones in France which are not connected to metropolitan France (Corsica and Overseas departments).
Nuclear tranche	Electrical production unit consisting of a nuclear boiler and a turbo-alternator generator. A nuclear tranche essentially consists of its reactor type and the power of its turbo-alternator generator. EDF nuclear plants include two or four tranches, and occasionally six.
Nuclear safety	Nuclear safety includes all of the technical, organisational and human measures which are intended to prevent accident risks and to limit the effects of an accident, and which are taken at every stage of the life of a nuclear power plant (from design to operation and finally to decommissioning).
PCB	Polychlorobiphenyls
PCT	Polychloroterphenyls
Plant availability	Fraction of power available, out of theoretical maximum energy, counting only technical non-availability. The availability coefficient (Kd) is defined as the ratio between annual actual generation capacity (or amount producible annually) and maximum theoretical generation capacity, where maximum theoretical generation capacity = installed capacity x 8,760 hr. The Kd, which counts only technical non-availability, i.e., scheduled shutdowns, unplanned outages and testing periods, characterizes a plant's industrial performance. For EDF's nuclear fleet in France, the maximum theoretical generation capacity is of 553 TWh (63.1 GW X 8,760 h).
Plutonium (Pu)	Element with the atomic number of 94 (number of neutrons) with no isotope (elements whose atoms possess the same number of electrons and protons – thus the same chemical properties – but a different number of neutrons) exists in nature. Plutonium 239, a fissile isotope, is produced in nuclear reactors from uranium 238.
PPA	A Power Purchase Agreement. This type of long-term contract generally forms the basis for an IPP project (see above).
Producible hydropower generation	Maximum energy that hydroelectric facilities may produce using contributions under normal hydraulicity conditions. However, generation from hydroelectric facilities does vary, sometimes markedly, from one year to the next depending on hydraulicity (rainfall, snowfall). In dry years, the generation index may vary by 20% or more from the standard level.
Profit at Risk (PaR) (Edison)	Regarding Edison, the Profit at Risk ("PaR") is, for a given confidence interval, the maximum decline of the expected value of a portfolio (MtM) on a yearly time horizon.

Radiation protection (Dosimetry – Dose)
At a power plant, ionizing radiation sources are numerous: the fuel itself, equipment activated by neutron flux (particularly that which is close to the core, such as tanks or lids), particles from corrosion of the primary circuit of reactors and carried by the primary fluid. The level of exposure of a person is quantified by the dose equivalent in Sieverts (Sv). The total dose equivalents, called dosimetry and expressed in man-sieverts, is used as an indicator of dose received by all participating persons. The mobilization of ground players has allowed a continuous improvement of performance on the protection of employees against the effects of ionizing radiation.

Remote metering
Remote metering of the quantity of electrical power injected into and drawn from the network.

Renewable energies
Energies for which production does not require extinction of the initial resource. They largely derive from geothermal, water, air, fire and solar sources. They include hydro, wind, solar (the energy produced by marine waves and currents), geothermal (energy derived from the heat below the earth's magma) energies, and bio-mass (energy derived from living matter, particularly wood and organic waste). They often include energy from the incineration of household or industrial waste.

Reprocessing
Reactor burnt fuel reprocessing aimed at separating materials that can be recycled (uranium and plutonium) from final waste.

RPD
French public distribution network.

RPT
French public transmission network.

Series
In the nuclear field, a series of plants means a set of nuclear plants with identical generation capacity. EDF's PWR model is divided into three series of available electrical power: the 900-MW series (34 tranches of approximately 900 MW each), the 1,300-MW series (20 tranches) and the 1,450-MW series (4 tranches).

STEP
An energy transfer pumping station (STEP) is a plant with two reservoirs, one higher and one lower, connected via pumps to push the water up and turbines to produce energy.

Storage
Storage consists in placing packages of radioactive waste in a facility, ensuring their long-term management, i.e., under safe conditions allowing for long-term risks control.

Storage center
Low- or medium-level short-lived radioactive waste, from nuclear plants, the Hague or Centraco facilities, are sent to ANDRA's Soulaines storage center in the Aube region, which has been operational since 1992. This center has capacity of 1,000,000 m3, and acceptance capacity of approximately 60 years. Very low-level short-lived radioactive waste is sent to ANDRA's Morvilliers storage center (also in the Aube region). This center was commissioned in October 2003 and has an operating life of about 30 years.

Systems services
Systems Services are services provided to users (consumers or electricity producers) through the joint action of the electricity transmission network manager RTE and the producers. They are intended to regulate frequency and voltage in order to maintain the balance between electric consumption and production at all times. They are created by RTE from elementary contributions from producers, i.e. primary and secondary reserves provided to RTE. RTE remunerates the producers for these auxiliary services before reinvoicing these services via the tariff to use the network under the rules defined by the Union for the Coordination of Transmission of Electricity (UCTE).

Therms (th)
One therm is equivalent to 1,163 kWh or 4,186 million joules.

Transmission network
Network providing for the transmission of electrical power at high and very high voltages from the generating sites to the distribution networks or industrial sites directly connected to it; this includes the major interconnection transmission network (400,000 volts and 225,000 volts) and the regional distribution networks (225,000 volts, 150,000 volts, 90,000 volts and 63,000 volts).

Tritium (^3H)
Hydrogen isotope, which emits beta rays, present in pressurized water reactor effluents.

Ultracentrifugation
This process involves very high speed spinning in a vacuum of a cylinder containing uranium hexafluoride (UF6). Through the effect of the centrifugal force, the heavier molecules (238U) aggregate at the periphery while the lighter ones (235U) move towards the center, creating an isotopic separation effect.

UO_2
Natural uranium, fluorinated and then enriched. Uranium oxide, a particularly stable chemical form of uranium used as fissile material in fuel assemblies of pressurized water reactors.

Upstream
See "Fuel Cycle" and "Upstream Asset Portfolio".

Upstream Asset Portfolio
All assets that contribute to electrical power availability. These may include physical assets (generating plants, etc.) or their contractual equivalent: long-term agreements, interests, agreements giving rise to a share of energy produced, etc.

Glossary

Uranium (U)

In its natural state, uranium is a mix containing three main isotopes (elements whose atoms have the same number of electrons and protons, thus the same chemical properties, but a different number of neutrons):
- uranium 238, 99.3% fertile;
- uranium 235, 0.7% fissile;
- uranium 234.

Uranium 235 is the only natural fissile isotope, a quality which justifies its use as an energy source.

URE (Re-enriched uranium)

To be used in a reactor, reprocessed uranium (Reprocessing Uranium, or "URT"), even if containing more fissile uranium than in its natural state, must be further enriched. It is therefore called re-enriched uranium (Enriched Uranium, or "URE").

URT (Reprocessed uranium)

Reprocessed uranium (or "URT"), uranium derived from spent fuel reprocessing, differs from natural uranium as it contains slightly more uranium 235 and more uranium isotopes. It is recyclable and URT fuel assembly refueling is commonly used in reactors.

VaR (Value at Risk)

Financial indicator giving the statistical measure of potential maximum risk of loss of economic value (market value or mark to market) to a portfolio of cash flows in the event of unfavorable market movements over a certain period of time and a given confidence interval.

Vitrification

Process of immobilization in a glass structure concentrated solutions of high-level waste by mixing at high temperature with glass paste.

Waste

The nuclear generation of 1 MWh of electricity (equivalent to the monthly consumption of two households) produces around 11 g of total waste across all categories.
Short-lived waste represents more than 90% of the total, but contains only 0.1% of the radioactivity of waste.

Depending upon their level of radioactivity, this type of waste is subdivided into two different categories: very low-level waste and low-level waste.

Long-lived medium and high level waste are produced in low quantity, less than 10% of the total quantity, but they contains almost all of the radioactivity of the waste (99.9%).

Yellow Tariff

Tariff available to sites whose subscribed power is strictly greater than 36 KVA, and less than or equal to 250 KVA.

APPENDIX

Appendix A 425
2011 Report by the Chairman of the EDF Board of Directors on corporate governance, internal control and risk management procedures

Appendix B 445
Statutory Auditors' Report, prepared in accordance with Article L.225-235 of the French Commercial Code *("Code de commerce")*, on the Report prepared by the Chairman of the Board of Directors of Électricité de France S.A.

Appendix C 449
Statutory Auditors' Report on Regulated Agreements and Commitments

Appendix D 455
EDF SA's financial statements and statutory Auditors' report on the financial statements

Appendix E 511
Concordance table
Annual financial report

Appendix F 515
Draft resolutions to be submitted to the Combined Shareholders' Meeting of 24 May 2012

A.

2011 Report by the Chairman of the EDF Board of Directors on corporate governance, internal control and risk management procedures

A. Appendix

2011 Report by the Chairman of the EDF

Introduction 427

1. Corporate governance 427

1.1. Corporate Governance Code 427

1.2. Composition and functioning of the Board of Directors 427

1.2.1. Composition of the Board of Directors 427

1.2.2. Obligations and duties of directors 428

1.2.3. Executive Management method, powers and responsibilities of the Chairman and CEO 428

1.2.4. Powers and remits of the Board of Directors 428

1.2.5. Assessment of director independence 429

1.2.6. Assessment of the functioning of the Board of Directors 429

1.2.7. Directors information and training 429

1.3. Board activity in 2011 430

1.4. Committees that report to the Board of Directors 430

1.4.1. Audit Committee 430

1.4.2. Nuclear Commitments Monitoring Committee 431

1.4.3. Strategy Committee 431

1.4.4. Ethics Committee 431

1.4.5. Nominations and Compensation Committee 432

1.5. Compensation 432

1.6. Shareholders' Meetings 432

2. EDF group internal control 433

2.1. Control environment 433

2.1.1. Executive Management steering structures 433

2.1.2. Internal control system 434

2.1.3. The divisions responsible for steering internal control 434

2.1.4. Delegations of powers and technical authorisations 436

2.1.5. Ethics and Environmental Quality Policies 437

2.1.6. Organisation and steering of the Information Systems (IS) 437

2.1.7. External controls 438

2.2. Risk management and control 438

2.2.1. Risk management and control policy 438

2.2.2. Risk mapping process 438

2.2.3. Crisis management policy 438

2.3. Group control activities 439

2.3.1 Internal control procedures relating to the effective functioning of internal processes 439

2.3.2 Internal control procedures relating to the reliability of accounting and financial information 440

2.3.3 Internal control procedures relating to compliance with laws and regulations 441

2.3.4 Internal control procedures relating to the application of Executive Management instructions and policies 442

2.4. Information communication and circulation 442

2.5. Activities relating to the steering of internal control 443

Introduction

Pursuant to article L. 225-37 of the French Commercial Code, this report sets out:

- the corporate governance environment (the composition of the Board of Directors, the conditions under which the Board of Directors' work is prepared and performed, and the limits on the Chairman and CEO's powers), the principles and rules laid down by the Board of Directors to determine the corporate officers' compensation and the provisions governing shareholder involvement in EDF general meetings (§ 1);
- as well as the internal control and risk management procedures implemented within the EDF group (§ 2).

For the purposes of this report, the terms "EDF" or "Company" refer to Électricité de France SA.

The terms "EDF group" or "Group" refer to:

- the EDF corporation;
- its subsidiaries in the regulated sector: RTE and ERDF, which are respectively responsible for managing the energy transmission and distribution networks, for which the legal and regulatory framework (law no. 2004-803 of 9 August 2004, as amended, inter alia, by law no. 2006-1537 of 7 December 2006 and order no. 2011-504 of 9 May 2011) provides for specific management independence that limits the control over their activities by the parent company: "the regulated subsidiaries";
- its other directly or indirectly held subsidiaries, over which it has majority control, in or outside France: "the controlled subsidiaries";
- its affiliates that are jointly-controlled, such as CENG and Dalkia: "the jointly-controlled affiliates";
- affiliates in which the Group has direct or indirect minority holdings: "the Shareholdings".

Note 1: the consolidation scope for the Group's consolidated financial statements is detailed in note 52 of the notes to the consolidated financial statements as of 31 December 2011.

Note 2: the information specific to the subsidiaries RTE and Électricité de Strasbourg is available in the reports produced by these two companies pursuant to article L.225-37 of the French Commercial Code. The practices and terms for exercising control may differ depending on the specific area of activity of the entities mentioned above, and will be specified as necessary throughout this report.

1 Corporate governance

The functioning of the Company's oversight and management bodies is described in chapter 16 of the 2011 Reference Document.

1.1 Corporate Governance Code

EDF adheres to the AFEP-MEDEF Consolidated Code, which was revised in April 2010. This is the corporate governance code to which the Company refers pursuant to article L. 225-37 of the French Commercial Code, subject to the specific provisions of the law and regulations that are applicable to EDF.

These specific provisions, which are a result of EDF being a state-owned company, and in particular the application to the Company of law no. 83-675 of 26 July 1983 on the democratisation of the public sector and decree no. 53-707 of 9 August 1953, concern, in particular: the division of the Board of Directors into three colleges and its impact on the proportion of independent Board members, the rules that determine the compensation awarded to the Chairman and CEO, the directors' 5-year terms of office and the global reappointment of the Board members, as well as the rules governing the appointment of the EDF Chairman and CEO and the way in which Executive Management decisions are taken and implemented in the Company.

For more details, please refer to section 16.1 and chapters 14, 15 and 16 of the 2011 *Reference Document*.

1.2 Composition and functioning of the Board of Directors

The Board of Directors Internal Regulations specify the principles on which the Board operates and how the Board, as well as the specialised advisory committees set up by the Board, fulfil their remits. These Regulations also stipulate the role and powers of the Chairman and CEO.

These Internal Regulations are reviewed as required, in order to take into account any changes in the law and regulations in particular.

1.2.1 Composition of the Board of Directors

In accordance with article 6 of law no. 83-675 of 26 July 1983 on the democratisation of the public sector, 18 directors sit on the Board. The employees elect one-third of the directors. The remaining two-thirds are appointed during ordinary general meetings, following a proposal by the Board of Directors, with the exception of the directors who represent the French State, who are appointed by decree.

In accordance with article 11 of the law on the democratisation of the public sector, members of the Board of Directors serve a five-year term of office.

The conditions under which directors may be removed from office are provided for in article 12 of the law on the democratisation of the public sector (see section16.2.1.2 of the 2011 *Reference Document*).

If a member's seat on the Board of Directors becomes vacant, regardless of the cause, the incoming director's term of office only lasts until the Board membership is next global renewed.

The list of directors and their personal details are provided in section 14.1 of the 2011 *Reference Document*. Pursuant to law no. 2011-103 of 27 January 2011 on the balanced representation of women and men on boards of directors and supervisory boards, and professional gender equality, EDF, in its capacity as a listed *société anonyme* and state-owned company, is subject (i) to the rules applicable to listed companies (as regards the college of directors appointed by general meetings) and (ii) to the rules applicable to public institutions (for the college of directors appointed by decree).

As of the date of this report, the EDF Board of Directors has 3 female members, one of whom belongs to the college of directors appointed by general shareholders' meetings. The two others belong to the college of directors that represents the employees (see section 16. 2.1.1 of the 2011 *Reference Document*).

The Head of the French State's Economic and Financial Audit Office for EDF[1] and the Secretary of the Central Works Council attend the meetings of the Board of Directors, but are not entitled to vote.

1.2.2 Obligations and duties of directors

The Board of Directors Internal Regulations provide that Board members are subject to obligations such as: acting in the interest of the Company, informing the Board of Directors of any conflicts of interest and abstaining from voting in any discussion involving a potential conflict of interest, respecting the confidentiality obligation and complying with EDF's Stock Market Compliance Charter.

The members of the Board of Directors, and the Chairman and CEO are required to inform the Board of Directors immediately of any agreement concluded by the Company in which they have a direct or indirect interest or that may be concluded by an intermediary.

Each director receives a regularly updated Director's Handbook that is primarily a compendium of the Company's bylaws, the Internal Regulations of the Board of Directors and its Committees, the Stock Market Compliance Charter (see section 16.5 of the 2011 *Reference Document*) and the AFEP-MEDEF Code.

1.2.3 Executive Management method, powers and responsibilities of the Chairman and CEO

According to the EDF bylaws, the Chairman of the Board of Directors is responsible for the general management of the Company and has the title of Chairman and Chief Executive Officer (CEO). He is appointed by Presidential decree on the basis of a proposal of the Board of Directors and may also be removed from office by such a decree, in accordance with article 10 of the law on the democratisation of the public sector.

Henri Proglio was appointed Chairman and CEO of EDF on 25 November 2009, by decree.

Subject to the specific provisions of the law relative to public sector companies and the powers that the law or the bylaws expressly reserve for the Board of Directors or shareholders' meetings, the Chairman and CEO is vested with the broadest powers to act on behalf of the Company in all circumstances, within the limit of the corporate purpose. The Chairman and CEO organises and oversees the Board of Directors' work, on which he reports to general meetings. He ensures that the various corporate bodies function correctly and, in particular, verifies that the directors are able to fulfil their remits.

Moreover, as an internal rule, the Chairman and CEO exercises his powers within the limits provided for in the Board of Directors Internal Regulations (see § 1.2.4).

1.2.4 Powers and remits of the Board of Directors

In accordance with the law, the Board of Directors determines the Company's business policies and ensures that these policies are implemented. Subject to the powers that are expressly conferred on shareholders' meetings and within the limit of the corporate purpose, the Board of Directors may take it upon itself to review all matters that are related to the smooth running of the Company, governing such affairs through its deliberations.

Moreover, in accordance with article 7 of the law on the democratisation of the public sector, the Board deliberates on all the Company's strategic, economic, financial or technology policies, as well as on matters that the law expressly entrusts to the Board or that the Board has reserved for itself.

Pursuant to its Internal Regulations, solely the Board of Directors can authorise the following operations:

- internal and external growth operations or disposals that represent financial exposure for the Company in excess of €200 million. This threshold is reduced to €50 million for acquisitions that are not in keeping with the Company's strategic policies;
- real estate transactions that exceed €200 million;

(1) In accordance with the decree n° 55-733 of 26 May 1955, this office exercises French State economic and financial control over EDF. It may perform control procedures extensively.

- certain financial transactions for which the amount exceeds the value determined each year by a specific Board decision; in 2011, the Board set (i) the total amount of the aggregate authorisation for guarantees, endorsements and sureties at €500 million (the Chairman and CEO reports to the Board on all transactions of this type for which the unit amount exceeds €100 million, which are granted on behalf of the Company or by an undertaking that is controlled by the Company) and (ii) the nominal unit amount of certain financial transactions at €5 billion;
- procurement contracts (for supplies, works or services, with or without a financial commitment) for which the amount, including that of any successive riders entered into during the same year, is equal to or higher than €200 million, or between €100 and €200 million if these procurement contracts correspond to a new Group strategic policy or business line;
- long-term contracts for the purchase or sale of energy, or CO_2 emission credit and allowances, which were entered into by the Company or by a company under its exclusive control, for annual volumes or amounts in excess of:
  - 10 TWh for electricity;
  - 20 TWh for gas (detailed information on long-term contracts for the sale or purchase of gas for more than 5 TWh and less than 20 TWh is also provided during the Board meeting that follows their signature);
  - €250 million for coal and carbon dioxide;
- nuclear fuel cycle operations and, in particular, the strategies related to nuclear fuel cycle front-end and back-end operations;
- operations to transfer obligations relating to decommissioning or back-end of the nuclear fuel cycle.

The Board of Directors establishes the framework for the policy on the constitution and management of the assets used to cover nuclear commitments, and votes, in particular, on asset-liability management, the asset allocation strategy, the quality of the assets and the method used to select any financial intermediaries. The Board sets the market, counterparty and liquidity risk limits.

Lastly, pursuant to the law of 27 January 2011 relating to the balanced representation of women and men on boards of directors and supervisory boards[1] and professional gender equality, the Board of Directors must deliberate annually on the Company's policy on professional gender equality and equal pay.

1.2.5 Assessment of director independence

The AFEP-MEDEF Corporate Governance Code recommends that, in controlled companies, at least one-third of the seats on the Board of Directors should be held by independent directors. Given the specific legal framework that applies to the Company, out of a total of 18 members, the Board of Directors has 12 directors, six who represent the French State and six who represent the employees, who cannot meet the independence criteria defined by the AFEP-MEDEF Code. During the joint meeting of 9 January 2012, the Ethics Committee and the Nominations and Compensation Committee reviewed each director's individual position. On the basis of the these Committees' findings, during its meeting of 24 January 2012, the Board of Directors assessed the independence of the directors in light of the criteria defined by the AFEP-MEDEF Corporate Governance Code and confirmed that Ms Faugère and Messrs Crouzet, Jay, Lafont and Mariani qualify as independent directors. In the Board's opinion, these directors have no ties with the Company, its Group or its Management that would be liable to compromise their freedom of judgement.

As of the date of this report, the Company Board of Directors therefore has 5 independent directors out of a total of 18 members.

1.2.6 Assessment of the functioning of the Board of Directors

In accordance with the provisions of the AFEP-MEDEF Code, the Board of Directors Internal Regulations require the Ethics Committee to perform an annual functional assessment of the Board of Directors and to suggest areas that require improvement. Consequently, once a year the Board of Directors devotes an agenda item to this assessment and discusses how the Board functions, in order to improve the Board's effectiveness, and to verify that major issues are properly prepared and discussed within the Board. Moreover, every three years, an outside consultant performs this assessment, which is overseen by the Ethics Committee.

In 2011, the annual assessment was performed internally using a questionnaire, then validated by the Board following a proposal by the Ethics Committee. According to the results of this assessment, which were reviewed by the Ethics Committee and presented to the Board of Directors on 24 January 2012, the directors' satisfaction regarding the Company's implementation of corporate governance best practices has increased. Opinion on the way all Board members are involved in the Group's strategic planning was again positive, as were the views on how the roles of the specialised Committees mesh with that of the Board of Directors.

1.2.7 Directors information and training

In accordance with the Board of Directors Internal Regulations, the directors periodically receive information on the Company's and the Group's financial position, cash flow and commitments, as well as data such as the financial outcome of contracts awarded by the Company for the purchase of nuclear fuels, a performance review of the Company's main subsidiaries when the annual and half-yearly financial statements are released, the customer policy, the procurements and sub-contracting policy and the human resources policy.

A document that focuses on current affairs in the Group's major areas of business, market trends, the economic, financial and institutional environment is prepared for each Board meeting.

Directors are informed of the main events involving the Company that occur in between Board meetings.

The directors may supplement this information by meeting with senior managers from the Company or Group.

Moreover, informational meetings are held on complex matters or matters of major strategic importance, as well as areas in which the directors wish to receive training.

(1) See section 16.2.1 of the 2011 Reference Document.

1.3 Board activity in 2011

The Board of Directors meets as often as the interest of the Company requires, in accordance with the provisions of the law and regulations. During the 2011 financial year, the Board of Directors met 11 times and 31 committee meetings were held in order to prepare these meetings.

On average, Board meetings lasted three hours, which allowed for an in-depth review and discussion of the agenda items.

The directors' average attendance rate at Board meetings was 85.4% in 2011.

In 2011, in addition to the numerous matters associated with the day-to-day running of the Company, the Board of Directors reviewed and authorised major courses of action, such as:

- proposing that the General Meeting appoint the Company's principal and deputy Statutory Auditors for 2011 through 2016, on the basis of the Audit Committee's opinion;
- EDF's professional equality and equal pay policy;
- the alternative, simplified public purchase or exchange offer for EDF Énergies Nouvelles shares that are not held by EDF;
- the Austro (324 MW) wind farm project in Mexico and the Spinning Spur (161 MW) wind farm project in the USA, for which EDF Énergies Nouvelles is the project manager;
- the construction of a natural gas terminal in Dunkirk by Dunkerque LNG and EDF's commitment as one of the terminal's capacity subscribers;
- EDF International's disposal of its stake in the Constellation Energy Group;
- the partnership entered into with General Electric concerning the development of a new-generation combined cycle gas plant;
- the construction in Poland of a high-yield, supercritical coal-fired plant (900 MW) and the acquisition of stakes by EnBW in the Polish companies Ersa and Kogeneracja.

1.4 Committees that report to the Board of Directors

For the performance of its duties, the Board of Directors is assisted by five committees, which are tasked with reviewing and preparing specific files, prior to their presentation to the full Board. These specialised committees are: the Audit Committee, the Nuclear Commitments Monitoring Committee, the Strategy Committee, the Ethics Committee and the Nominations and Compensation Committee.

The membership, functioning and remits of the Committees are governed by the Board of Directors Internal Regulations.

The Board of Directors selects the directors who sit on these committees. The Board appoints the Chairman of each Committee following a proposal by the members of the Committee concerned.

The Head of the French State's Economic and Financial General Control Mission to the Company is invited to attend committee meetings.

The committees' work is organised within the framework of an annual programme. Meetings are recorded in written minutes. Each committee chairman provides written reports to the Board of Directors.

1.4.1 Audit Committee

1.4.1.1 Functioning and composition

The Audit Committee fulfils the remits that are entrusted to it in accordance with the provisions of order no. 2008-1278 of 8 December 2008, which transposed the eighth European directive of 17 May 2006 on statutory audits of annual accounts and consolidated accounts into French law.

Article L. 823-19 of the French Commercial Code provides that at least one member of the Audit Committee must have specific financial or accounting skills, and be independent on the basis of criteria that are specified and made public by the Board of Directors.

During the joint meeting of 14 January 2011, the Ethics Committee and the Nominations and Compensation Committee reviewed Mr Mariani's position and issued an opinion that was presented to the Board of Directors. During the Board meeting of 21 January 2011, the directors noted that Mr Mariani has specific financial and accounting skills, as per the criteria recommended by the French financial markets authority (*Autorité des marchés financiers* – AMF) in its report on the Audit Committee dated 22 July 2010, and that he meets both the skills and independence criteria, in accordance with Article L. 823-19 of the French Commercial Code (see paragraph 1.2.5).

The Audit Committee is chaired by Mr Mariani, an independent director who is appointed by the general shareholders' meeting and a respected figure from outside the EDF group. The other members are Messrs Comolli and d'Escatha, two directors who represent the French State, along with Ms Meyling, Messrs Grillat and Villota, three directors who were elected by the employees.

Ms Meyling was appointed as a member of the Audit Committee by the Board of Directors' meeting of 28 September 2011, as a replacement for Mr Pesteil.

The Chairman and CEO attends committee meetings that review the annual and half-yearly financial statements, and the budget.

The Audit Committee met seven times in 2011. The average rate of attendance for directors who are members of this committee was 81%.

1.4.1.2 Remits

Prior to review by the Board of Directors, the Audit Committee analyses and issues an opinion on:

- the Company's financial position;
- the medium-term plan and the budget;
- the draft financial reports prepared by the Corporate Finance Division (parent company financial statements, Group consolidated financial statements and Group management report);
- the monitoring of the Company's risks (in particular, this committee reviews the Group's risk mapping and risk mitigation methods every six months);
- audit and internal control: the organisation, deployment and assessment of internal control, half-year audit programmes, main findings and resulting corrective measures, follow-up on their implementation, as well as the draft annual report by the Chairman of the Board of Directors on corporate governance, internal control and risk management procedures;

- the insurance policy;
- the selection of Statutory Auditors, while ensuring their independence, and the fees paid to them;
- the review of the financial aspects of external growth operations or disposals that are particularly significant in nature (see § 1.2.4).

As part of its work, the committee is in regular contact with the Statutory Auditors and the Executive Management, as well as the Corporate Finance, Corporate Audit and Corporate Risk Management Divisions.

1.4.1.3 Activities in 2011

In 2011, the Audit Committee reviewed matters that specifically fall within the bounds of its remits (half-yearly and annual financial statements and related press releases, press releases on the quarterly sales figures, risk mapping, internal audit summary reports and the audit programme). The Audit Committee also reviewed the initial findings of the EDF impact analysis of the Japanese nuclear accident that occurred in March 2011.

1.4.2 Nuclear Commitments Monitoring Committee

1.4.2.1 Functioning and composition

The Nuclear Commitments Monitoring Committee is chaired by Mr Crouzet, an independent director appointed by the general shareholders' meeting and a respected figure from outside the Group. The other committee members are Messrs Abadie and d'Escatha, two directors who represent the French State, and Ms Meyling and Mr Villota, two directors who were elected by the employees.

Ms Meyling was appointed as member of the Nuclear Commitments Monitoring Committee by the Board meeting of 28 September 2011, as a replacement for Mr Pesteil.

The Nuclear Commitments Monitoring Committee met three times in 2011. The average rate of attendance by directors who are members of this committee was 86.7%.

1.4.2.2 Remits

The Nuclear Commitments Monitoring Committee is tasked with monitoring changes in nuclear provisions, commenting on governance issues related to dedicated assets, the rules for matching assets and liabilities and on strategic allocation, and ensuring the compliance of EDF's asset management within the framework of the policy on the constitution and management of dedicated assets. To this end, it can call on the support of the Nuclear Commitments Financial Expertise Committee (CEFEN), which comprises six(1) independent experts. The CEFEN's remit is to assist the Company and its governance bodies in this area.

1.4.2.3 Activities in 2011

In 2011, the committee reviewed, in particular as part of the policy on the constitution and management of dedicated assets, the state of progress of the project for the disposal of high-level waste and long-lived intermediate-level waste (HLW/ILW-LL), and the 2011 update letter on the second three-year report on the securing the financing of nuclear expenses (see § 2.3.3.1).

1.4.3 Strategy Committee

1.4.3.1 Functioning and composition

Mr Proglio, the Chairman and CEO, chairs the Strategy Committee. The other members are Mr Jay, an independent director appointed by the general shareholders' meeting and a respected figure from outside the Group, Messrs Abadie, Comolli and Sellal, three directors who represent the French State, along with Ms Meyling, Messrs Grillat and Rignac, three directors who were elected by the employees.

Ms Meyling was appointed as a Strategy Committee member by the Board of Directors' meeting of 28 September 2011, as a replacement for Mr Pesteil.

Since 2010, the Chairman has invited directors who are not members to attend Strategy Committee meetings.

The Strategy Committee met eight times in 2011. The average rate of attendance by directors who are members of this committee was 84.4%.

1.4.3.2 Remits

The Strategy Committee issues an opinion to the Board of Directors on the Company's major strategy policies, in particular the major strategic development plan, the industrial and commercial policy, the public service contract, strategic agreements, alliances and partnerships, the research and development policy, external or internal growth or disposal projects that require authorisation from the Board of Directors.

1.4.3.3 Activities in 2011

In 2011, the Strategy Committee reviewed, the Group's strategy in the nuclear, thermal and hydraulic fields, on the subject of renewable energies and gas, the strategic policies adopted by EDF's Customers Division in response to competitive and environmental strategic issues on the electricity market and the Group's 2010-2011 achievements in the field of research and development.

1.4.4 Ethics Committee

1.4.4.1 Functioning and composition

Ms Faugère, an independent director who was appointed by the general shareholders' meeting and a respected figure from outside the Group, chairs the Ethics Committee. The other members are Ms Chabauty and Ms Meyling, Messrs Maïssa and Grillat, Board of Directors elected by the employees.

Ms Meyling was appointed as a member of the Ethics Committee by the Board of Directors' meeting of 28 September 2011, as a replacement for Mr Pesteil. Mr Van de Maele, one of the directors who represents the French State, was member of the Committee until February 2012.

The Ethics Committee met eight times in 2011. The average rate of attendance by directors who are members of this committee was 81.3%.

(1) appointed on 26 October 2010 by the Board of Directors for three years.

1.4.4.2 Remits

The Ethics Committee ensures that ethical considerations are taken into account in the work of the Board of Directors and in the management of the Company. The committee reviews the reports filed by the Mediator, the Senior Vice President, Nuclear Safety and Radioprotection, the Head of Hydro Safety and the Senior Vice President, Regulated Activities Governance.

Moreover, each year the Ethics Committee oversees an assessment of how the Board and its committees function. Every three years, this is entrusted to an outside consultant (see §1.2.6).

1.4.4.3 Activities in 2011

In 2011, among other matters, the Ethics Committee studied the EDF professional equality and equal pay policy, the Group's skills management policy and EDF's policy for the benefit of disadvantaged customers. Moreover, the committee periodically visits operations sites in order to gain improved understanding of the implementation of the agreement on socially responsible sub-contracting.

1.4.5 Nominations and Compensation Committee

1.4.5.1 Functioning and composition

Mr Lafont, an independent director appointed by the General Shareholders' Meeting and a respected figure from outside the Group, chairs the Nominations and Compensation Committee. The other members of the Committee are Mr Jay, an independent director appointed by the General Shareholders' Meeting and a respected figure from outside the group and Mr Comolli, one of the directors who represents the French State.

The Nominations and Compensation Committee met five times in 2011. The average rate of attendance by directors who are members of this committee was 86.7%.

1.4.5.2 Remits

The Nominations and Compensation Committee submits proposals to the Board of Directors with a view to directors being appointed by the general shareholders' meeting. The committee sends the Minister responsible for the economy and finance, and the Minister responsible for energy, an opinion, for approval, on the salary, variable compensation (criteria used to determine the variable portion and assessment of the results obtained compared to the targets set), and peripheral compensation of the Chairman and CEO. It also sends this opinion to the Board of Directors, with a view to the Board discussing and determining these compensation components.

Where applicable, the committee reviews the compensation paid to Vice-Presidents. It provides an opinion to the Board of Directors on the conditions for establishing the compensation of the principal senior executives (fixed and variable components, calculation method and indexing), as well as on the amount and conditions for allocating the directors' fees. The committee ensures that succession plan charts exist for positions on the Executive Committee.

1.4.5.3 Activities in 2011

In 2011, among other matters, the Nominations and Compensation Committee reviewed the variable component of the Chairman and CEO's compensation in respect of 2010 and his gross annual compensation, as well as the criteria used to calculate his variable compensation in respect of 2011. The committee also reviewed the aggregate amount of the directors' fees for 2011 and proposed new allocation rules that will be applicable to directors' fees as from 2011 (see section 15.1 of the 2011 Reference Document).

1.5 Compensation

The principles and rules established by the Board of Directors for determining the corporate officer compensation and the rules governing the allocation of directors' fees, as well as the amounts paid to directors in 2011, are detailed in chapter 15 of the 2011 *Reference Document*.

1.6 Shareholders' Meetings

The rules governing shareholder involvement in general meetings are set out in article 20 of the Company bylaws, and are described in section 21.2.7 of the 2011 *Reference Document*.

Moreover, the information provided for by article L. 225-100-3 of the French Commercial Code is published in the Company's *Reference Document*.

2 EDF group internal control

The aim of this report is not to give an exhaustive presentation of all the control procedures that exist within the Group's companies, but to focus on the control procedures that concern activities or risks that are deemed to be significant, as well as on the main long-term procedures in effect in 2011, highlighting any changes and key initiatives developed during that year. These internal control and risk management procedures are consistent with the general principles stipulated in the AMF Reference Framework for risk management and internal control[1] (published on 22 January 2007 and updated on 14 June 2010).

2.1 Control environment

2.1.1 Executive Management steering structures

EDF's Executive Management is organised in line with two major policies: (i) improve functioning as an integrated Group while respecting the management autonomy of the regulated subsidiaries and (ii) reinforce the role of the operating teams in the decision-making process.

Executive Committee

The Chairman and CEO is supported by an Executive Committee comprising representatives from all the Group's business lines, together with representatives from corporate finance, legal affairs and human resources.

The Executive Committee membership was as follows as of the date of this report:

- Henri Proglio, Chairman and CEO, Chairman of the Executive Committee;
- Marianne Laigneau, Group Senior Executive Vice President, Human Resources;
- Pierre Lederer, Group Senior Executive Vice President, Customers, Optimisation and Trading;
- Hervé Machenaud, Group Senior Executive Vice President, Generation and Engineering;
- Jean-Louis Mathias, Group Senior Executive Vice President, Activities Coordination in France, Information Systems, Gas and Renewable Energies;
- Thomas Piquemal, Group Senior Executive Vice President, Finance;
- Vincent de Rivaz, Chief Executive of EDF Energy; and
- Alain Tchernonog, General Secretary.

Denis Lépée, Advisor to the Chairman, is the Secretary to the Executive Committee.

This Committee is a forum for reflection, discussions on strategy and consultation on the Group's crosscutting issues. It monitors the targets and operating results, and contributes to the management and anticipation of the EDF group's major strategic challenges. The Committee reviews and approves major projects and, in particular, Group investment or divestment projects for which the amounts exceed certain thresholds. The Executive Committee meets weekly.

Commitments Committee within the Executive Committee

In April 2010, in order to provide additional project review and monitoring resources, the Chairman and CEO created a Commitments Committee, which reports to the Executive Committee. The Commitments Committee performs in-depth reviews of projects to which the Executive Committee is, in principle, favourable, prior to the Executive Committee making a final decision. No Company investment project can be submitted to the Board of Directors for review without first being approved by this committee[2].

Management Committee

In 2010, the Executive Management organisation was complemented by the creation of a Management Committee. The Executive Committee members also sit on the Management Committee, along with the Group's top international executives and the heads of geographical regions, the Chairman of the ERDF Management Board and heads of Company support functions. The membership was as follows as of the date of this report:

- Michèle Bellon, Chair of the ERDF Management Board;
- Jean-Paul Bouttes, Senior Executive Vice President, Corporate Strategy;
- Catherine Gros, Senior Executive Vice President, Communications;
- Bruno Lescoeur, Senior Executive Vice President, Gas;
- Philippe Huet, Senior Executive Vice President, Risks and Audit;
- Philippe Méchet, Senior Executive Vice President, Institutional Relations;
- Bernard Salha, Senior Executive Vice President, Research and Development; and
- Gérard Wolf, Senior Executive Vice President, International Business Development.

The Management Committee brings together business line, geographical and functional expertise. It is a forum for discussion between the Group's top executives on crosscutting matters. It provides support to the Company's Executive Management for strategy implementation and steering synergies within the Group. This Committee meets monthly.

Senior Vice President, Nuclear Safety and Radioprotection

The Senior Vice President, Nuclear Safety and Radioprotection, who is appointed by and reports to the EDF Chairman and CEO, is tasked with conducting audits in his or her spheres of action and issuing an annual opinion on the overall safety of the Group's nuclear power stations. The remit also includes making proposals to Executive Management regarding potential areas for improvement.

EDF group Head of Hydro Safety

The EDF Group Head of Hydro Safety, who is appointed by and reports to the EDF Chairman and CEO, is tasked with conducting audits in his or her spheres of action and issuing an annual opinion on the overall safety of the

(1) In preparing this report, EDF used the AMF Reference Framework (chapters 2.3.1 to 2.3.4), which is based on the Committee of Sponsoring Organisations of the Treadway Commission ("COSO") reference framework (chapters 2.1 to 2.5).

(2) This Committee replaces the Commitments and Shareholdings Committee and is chaired by the Chairman and CEO.

Group's hydroelectric plants. The remit also includes making proposals to Executive Management regarding potential areas for improvement.

2.1.2 Internal Control system

The Chairman and CEO signed off on a new decision relating to the implementation of internal control within the EDF group on 3 September 2010. This decision takes into account, in particular, the provisions of the order of 8 December 2008 on statutory audits of financial statements and specifies the EDF group's internal control policies. It aims to provide a reasonable assurance of risk management at EDF, with a view to ensuring constant improvement, by using the following key principles as a foundation:

- delegated accountability to each of the Group's executives who, at every level, are responsible for:
  - managing the principal risks,
  - checking this management for the activities they have sub-delegated,
  - ensuring that the risks identified have the appropriate, proportionate control procedures in place,
  - self-assessing the procedures thus implemented and reporting regularly and formally on these procedures to their line managers;
- a single audit procedure, with reporting to the Chairman and CEO, as described in § 2.1.3.2.

These key principles apply to all the Group's entities, although the implementation conditions may vary depending on the entities concerned (size, governance conditions and level of control).

Within the scope of the control (excluding regulated subsidiaries), these principles are implemented by Executive Management at the subsidiaries that they control and in the main EDF Operating Divisions, which themselves control several operating units or subsidiaries.

Each executive concerned has appointed an "Internal Control Coordinator". The Corporate Audit Division organises this network of coordinators through training, regular meetings and sharing documentary resources on the intranet, for example.

An Internal Control Manual(1) has been written and is offered to each entity as a standard for the implementation of its own internal control system. This manual highlights the risk areas concerned, identifies the main aims of internal control to be explored and suggests the best practices to be adopted. It is updated annually to take into account feedback and any new control requirements created by new decisions or internal policies, for example. The 2011 manual will thus take into account the Chairman and CEO's formal decision of 14 September 2010 on combating fraud, which puts the emphasis on the prevention, detection and handling of such situations. As a complement, baseline tests for detecting instances of fraud were developed in 2011 for five major processes (procurements, non-current tangible and intangible assets, payroll, cash flow and accounting) in order to improve the control plans in this area. These tests are designed to be used in all the entities concerned.

Since 2007, the functional entities have established control area standards relating to the application of the policies and major decisions in their area of responsibility. These standards are included in the Internal Control Manual and will be deployed by all entities concerned within the Group.

At the end of 2011, each of the 45 entities concerned produced an annual report on internal control that includes a description of their internal control system, a self-assessment of this system (for 45 entities), a statement by the head of the entity on commitment to internal control and an account of the intended measures to achieve these aims. This is the fifth year that the Group has commissioned this report.

In 2011 the Corporate Audit Division completed the first audit cycle of internal control systems (eight audits of this type were conducted in 2011). These audits confirmed that internal control systems are becoming increasingly mature and, in the majority of cases, that the corresponding self-assessments are reasonably reliable. This approach will continue to be used for the same purposes and at the same frequency, but with higher standards, given that internal control systems are becoming increasingly mature.

Concerning the other Group subsidiaries (regulated subsidiaries, jointly-controlled affiliates and significant shareholdings), risk control is the responsibility of EDF's representatives within the governance bodies. For each subsidiary and affiliate, these representatives are responsible for implementing risk mapping, producing a description of the internal control and audit systems and providing regular information on risk mapping and the audit activities (audit programme and main findings), as well as verifying the effectiveness and the relevance of each of these systems through periodic audits conducted at least every 5 years.

The Corporate Audit Division and the Corporate Risk Management Division implement this process, which aims to provide support for:

- EDF representatives within its major subsidiaries, to help them implement and steer the approach within governance bodies;
- heads of the Divisions to which they report, who are tasked with providing the same level of support to the EDF representatives within subsidiaries of lesser importance that within their area of responsibility, and reporting back on this in their annual self-assessment reports.

2.1.3 The divisions responsible for steering internal control

2.1.3.1 Corporate Risk Management Division (CRMD)

For many years, EDF has implemented a policy for managing its operating, financial and organisational risks.

In response to a constantly changing environment, back in 2003 EDF decided to establish an overarching process for managing and controlling its risks with the aim of tightening up existing procedures, in particular by creating the Corporate Risk Management Division. The Corporate Risk Management Division is primarily responsible for:

- ensuring that each Group entity carries out risk mapping, either directly for the EDF scope and that of the controlled subsidiaries, or through the governance bodies for the regulated subsidiaries and jointly-controlled affiliates, and establishing and updating the consolidated risk mapping of the Group's major risks (see § 2.2.2);
- warning the Chairman and CEO and the Executive Committee of emerging risks and risks that have not been adequately identified;
- consolidating the deployment of the risk control policy, either directly within the EDF scope and that of the controlled subsidiaries, or through

(1) In preparing this report, EDF used the AMF Reference Framework (chapters 2.3.1 to 2.3.4), which is based on the COSO reference framework (chapters 2.1 to 2.5).

the governance bodies for the regulated subsidiaries and jointly-controlled affiliates (see § 2.2) in particular by ensuring the comprehensiveness and consistency of the various sectoral risk control policies (see § 2.3.1.1);
- ensuring the deployment of the energy market risk policy within the EDF scope and that of the controlled subsidiaries and, more generally, ensuring the control of these energy market risks either directly within the EDF scope and that of the controlled subsidiaries, or through the governance bodies for the regulated subsidiaries or jointly-controlled affiliates (see § 2.3.1.1.1);
- defining and implementing a financial risk control (interest and currency exchange rates, liquidity and equities risks) and a counterparty risk control for the EDF scope and that of the controlled subsidiaries and ensuring the control of these financial risks through the governance bodies, for the regulated subsidiaries or jointly-controlled affiliates (see § 2.3.1.1.2);
- managing the comprehensiveness and relevance of the risk analyses performed on long-term investment and commitment projects, which are submitted to Executive Committee-level bodies for approval;
- updating the policy on crisis management for the EDF scope and that of the controlled subsidiaries, and defining the terms of cooperation with regulated subsidiaries and, through the divisions to which they report, with the jointly-controlled affiliates, during periods of crisis (see § 2.2);
- at the request of the Purchasing Division and business line divisions, performing the various controls that are required for awarding sensitive procurement contracts.

2.1.3.2 Group Audit function

The Group's Audit function comprises all the Group's audit resources involved in internal audit at Group, EDF and subsidiary level. The Chairman and CEO has entrusted the coordination of this function to the Senior Vice President, Risks and Audit. It comprises the Corporate Audit Division and dedicated "operating" audit teams: "business line" audit teams (in the generation and customer areas for EDF) and audit teams specific to each of the main French and international subsidiaries and affiliates (RTE, ERDF, EDF Énergies Nouvelles, EDF Energy and EDF Trading, Edison, Alpiq and Luminus (previously SPE)).

The relationships between Corporate Audit and the various audit teams, along with their respective prerogatives, take into account the fact that they are part of teams at EDF, the controlled subsidiaries or the regulated or jointly-controlled subsidiaries. In all cases, the Corporate Audit Division is responsible for the operational coordination of the function (joint appointment and joint assessment of business line Audit Directors, exchanges of best practices, training initiatives, pooling tools and methods, etc.).

The Corporate Audit Division is responsible for controlling EDF's internal control systems and its controlled subsidiaries. The Corporate Audit Division also performs crosscutting audits or audits of "corporate" importance for the Group, within the same scope and, as necessary, outside this scope, while complying with regulatory and governance constraints.

Qualification standards concerning EDF and the controlled subsidiaries:

- The Corporate Audit Division applies international standards as defined by The Institute of Internal Auditors and ensures that these standards are promoted and upheld within the scope of control;
- The duties, powers and responsibilities of the auditors, as well as the rights and duties of the audited entities, are defined in a charter that was updated on 3 September 2010. This charter, which was signed by the Chairman and CEO, highlights the independence of the audit function and outlines the missions and commitments of the internal audit function, together with the duties and the prerogatives of auditors and audited entities;
- The Corporate Audit Division reports to the General Secretary, while the Senior Vice President, Corporate Audit, also benefits from direct access to the Chairman and CEO;
- All the Auditors in the Corporate Audit Division and the Audit departments of EDF and its controlled subsidiaries (excluding the regulated subsidiaries) are trained to use the same methodology, which is consistent with international standards. They are recruited from EDF's various business lines, as well as from external audit firms. Each auditor is assessed at the end of each mission and a transfer to audit is considered a positive career move. A memorandum of understanding was signed to this effect in March 2006 between the Corporate Audit Division and the EDF Senior Executive Development Division;
- The key processes that are essential to the proper functioning of the Corporate Audit Division over the chain of its activities (from the drawing up of audit programs to the monitoring of the implementation of recommendations) are outlined and steered.

Following an outside assessment performed in 2008, an independent assessment will be conducted in 2012 on the Corporate Audit Division and the "business line" audit services. The assessment will cover the functioning of the key processes for these entities, compliance with professional standards and the quality of the audits undertaken.

Standards of functioning with regard to EDF and the controlled subsidiaries:

- The Corporate Audit Division coordinates the deployment of the Internal Control Policy and the internal control function, ensures the control of the internal control procedures in the various divisions and controlled subsidiaries, and conducts both crosscutting and corporate-level audits.
- The Chairman and CEO signs off on the audit programme. The plan is then reviewed by the EDF Audit Committee, which reports back to the Board of Directors. The audit programme takes into account:
  - the decision by the Chairman and CEO concerning the implementation of internal control within the Group, (on this basis, missions to audit the internal control procedures of entities within the scope of control are planned);
  - the risks identified in the Group's risk mapping;
  - the monitoring of the implementation of decisions taken by Executive Management;
  - the major projects and the principal crosscutting processes;
  - the requests from Executive Management, excluding the snap audits requested during the execution of the plan,
  - any audits of the controlled subsidiaries attached to the operating divisions;
  - any joint audits with Veolia Environnement for the Dalkia International scope, and "corporate" audits conducted within the EDF Energy and EDF Trading scope.

  The plan for the business line audit teams is coordinated with that of the Corporate Audit Division, which is the only structure that is authorised to perform business line audits that involve a corporate-level risk.
- All audits give rise to recommendations, which, after being approved by the audited entities and their management, form the basis for action plans on their part, are submitted to the Corporate Audit Division.

During the year following the audit, the Corporate Audit Division monitors the implementation of these corrective actions or any other action decided on by the management with the aim of eradicating the dysfunctions identified by the audit. An audit is only considered to have reached a satisfactory conclusion when these dysfunctions have been definitively eliminated. In contrast, an unsatisfactory conclusion to an audit or one where reservations are expressed triggers an appropriate management alert.

- The Corporate Audit Division issues half-yearly summary reports, which resume the main audit findings and the corresponding recommendations, as well as the results of audits concluded during the period. It also identifies possible recurring or generic problems that appeared over the course of several audits conducted during the period, which warrant particular attention of the management. This report is presented first to the Chairman and CEO, then to the Audit Committee and the Board of Directors.
  Once a year, this report also presents a summary of the self-assessments of the various entities on the level of deployment of the Internal Control Policy within the Group (including information on the internal control procedures in the regulated subsidiaries and jointly-controlled affiliates).

2.1.3.3 Corporate Finance Division

The Corporate Finance Division monitors changes that affect the markets and financial techniques, and also analyses project financial risks. Within the Corporate Finance Division, the Group Control Division is split into two divisions, Management Control and Accounting.

Management Control has the following remits:

- steer the forecasting processes for the Group's management cycle (budgets, forecast updates and medium-term plans), summarises these processes and proposes trade-offs at Division and subsidiary level for the Group as a whole. In its analyses, Management Control is required to issue warnings and make proposals, before decisions are taken, regarding the financial consequences of the contemplated transactions, or the proposed performance levels;
- assist operations management in performance steering: budget implementation (for which forecast adjustments are issued twice a year, as well as a monthly reporting package that covers the results achieved to date and update of the most recent forecast adjustment) is tracked through regular, general performance reviews within the Division and controlled subsidiaries;
- perform the financial control function for the Group, by contributing, in particular, to the investment control processes and by performing economic and financial optimisation analyses;
- be the driving force behind the preparation of medium- and long-term financial trajectories.

The Finance Management Heads of the Divisions and subsidiaries sit on the Management Committees of the entities to which they are assigned. They are appointed and assessed by the operations management and the Management Control service line.

Accounting has the following remits:

- prepare and publish the EDF parent company financial statements and unbundled accounts, as well as the Group's consolidated financial statements, ensure the quality of accounting by designing a set of Group standards that guarantee uniform accounting treatment and correct data input through upstream processes;
- to update, for EDF, the internal control standards concerning the control of accounting and financial information.

The Internal Control policies for the subsidiaries are the responsibility of each legal structure concerned.

2.1.3.4 Legal Affairs Division

In addition to the contribution to the Group's internal control made by the Legal Affairs Division outlined in 2.1.4 and 2.3.3, since 2007 EDF has kept a contract library in order to guarantee the level of knowledge and control over its confidential contract archives. This contract library, which is an integral part of the internal control system, is a secure information system for the centralised archiving and scanning of the major contractual commitments of EDF and certain subsidiaries (excluding the regulated subsidiaries and jointly-controlled affiliates). This system was complemented by a new decision and a practical memorandum on the management of major contracts, which the General Secretary signed on 11 January 2011. Pursuant to this decision, the original counterparts of major contracts that meet certain specific criteria are centralised in a secure national storage facility.

Since 2010, Legal Affairs has tasked a "knowledge manager" with capitalising on, harmonising and sharing the Legal Affairs Division's precedents and positions, as well as monitoring legal developments in the field of legislation and case law that are of major interest for the Group.

Lastly, quarterly Legal Affairs reporting (for EDF and major subsidiaries), concerning litigation and major or sensitive cases, has been in use since it was introduced in 2010.

2.1.4 Delegations of powers and technical authorisations

The Chairman and CEO delegates certain powers that were granted to him by the Board of Directors, in particular to certain members of the management team.

In the area of procurements, the current organisation is designed to ensure control is maintained over purchases. Based on a series of thresholds, procurement contracts are signed by the Chairman, a Group Senior Executive Vice President or one of their delegated representatives after being approved by the Senior Vice President, Purchasing, or his or her delegated representatives; this approval confirms that the contract complies with the procurement process. Each Group Senior Executive Vice President must also reinforce the internal control procedures on procurement contracts that are submitted for his or her signature and those handled directly by their respective divisions.

The powers conferred on the "nuclear operator's representative" are delegated to the Senior Executive Vice President, Generation and Engineering, who, in turn, delegates to the Senior Vice Presidents in charge of Nuclear Operations and Nuclear Engineering.

Each facility head, subject to prior evaluation of the appropriate skills, issues the technical authorisations allowing individuals to work in the facilities (power plants, electricity transmission networks, etc.). These requirements apply to all workers, be they employees of EDF or external service providers.

Given the changes in EDF's organisation at the end of 2009 and during 2010, new delegations of powers were issued, with the assistance of the Legal Affairs Division. In addition, the delegations of powers handbook written by the Legal Affairs Division, which was released in November 2008 in order to ensure that the EDF entities were better informed as to

the nature, consequences and management rules for delegations of powers, was updated and re-released in 2010. All the delegations of powers granted to Executive Committee members were reviewed in May 2011, in particular with a view to adapting the delegation thresholds and to take into account the recasting of delegations of powers with regard to establishment managers. At the same time, delegations of powers were prepared for the members of the EDF Executive Committee and who are also responsible for geographical segments.

2.1.5 Ethics and Environmental Quality Policies

2.1.5.1 Ethics Policy

The ethics policy, which is founded on a decision by the Chairman and CEO taken on 15 March 2007, is based on a reference document, known as the Ethics Handbook.

This Handbook, which takes the Group's five core values (respect for the individual, environmental responsibility, striving for excellence, a commitment to the community and the necessity of integrity) as a starting point, sets out for EDF the principles governing action by the Company and recommended individual courses of action.

The document was updated in late 2007 and circulated within all EDF divisions. Individual copies are handed to each employee by their line managers and their use actively encouraged to ensure individual and collective adherence. The appointment of ethics coordinators to promote the Handbook and encourage proper respect of the core values in the field has strengthened the existing ethics system.

EDF's values serve as guidelines for ethical procedures in the subsidiaries, for the codes of conduct developed in the business lines and certain areas, as well as for fundamental processes such as recruitment (recruitment standards), training (employee awareness initiatives), relations with suppliers and subcontractors (supplier charter, social agreements on subcontracting), as well as individual and collective performance reviews (individual appraisals and bonus criteria).

Since its creation in 2008, the existence of a Group Sustainable Development Committee comprising the sustainable development executives in the various subsidiaries such as EDF Energy, EDF Démász, the EDF group subsidiaries in Poland, China, South-East Asia and Edison has made it possible to harmonise ethics policies.

The ethical alert procedure, which has been established since 2004 within the EDF scope, recognises every employee's right, and that of every external partner and customer, to question the company, confidentially but not anonymously, on the manner in which the company respects its ethical commitments, in terms of both its actions and the behaviour of its employees. Consultation with the Ethics and Compliance Advisor takes place, for the most part, through a secure ethics email system. Furthermore, since 2008, as part of greater emphasis on ethics, a free, anonymous toll-free number has been available, which enables each employee to report any work-related difficulties encountered during his or her professional life to external counsellors who are qualified in psychology.

Since 2010, a report on the work of the Ethics and Compliance Advisor has been included in the corporate social responsibility management review.

In 2011, the Group Management decided to hold a consultation on the publication of an Ethics Code that explains EDF's values in the principles governing action and policies that are common to the Group. Reference was made to the Group Ethics Code, which was written with the involvement of all the Divisions and subsidiaries and approved by the Group Management Committee on 19 October 2011. This Code will be adapted to each entity in order to take into account cultural differences between countries, then issued throughout the Group starting in 2012.

2.1.5.2 Environmental Quality Policy

For many years, the EDF group has taken into account the strategic issues associated with sustainable development, and has made sustainable development a fully-fledged component of its overarching strategy. This Group policy was materialised by the signature in 2009 of a document containing a series of shared commitments by senior executives from the Group's principal companies. These commitments provide a framework to facilitate consistency between the initiatives taken by these companies and are built around three priorities:

- combating climate change and protecting biodiversity;
- giving everyone access to energy and acting locally; and
- contributing to the debate on sustainable development.

The EDF group Sustainable Development Committee coordinates the implementation of these commitments.

This Committee acts as an Environment Board at Group level, and is in charge of steering the Environmental Management System in compliance with ISO 14001, inasmuch as the EDF group has been ISO 14001 certified since 9 April 2002.

The certification scope includes EDF (all its operating entities and most of its functional entities), a number of French subsidiaries (including the RTE and ERDF regulated subsidiaries) as well as numerous international subsidiaries, including EDF Energy. Moreover, some jointly-controlled subsidiaries are also ISO 14001 certified (but are not currently part of the Group certification scope). In April 2011, the Afnor independent certification body announced the third ISO 14001 renewal for the EDF group. This certification is valid until 2014.

The processes implemented within the framework of this certification help strengthen the management of the Group's environmental risks, the regulatory aspect of which is undergoing continual improvement, and gives our stakeholders the reassurance of a structured organisation, which is tangible proof that the Group's commitment to environmental protection is an acknowledged reality.

2.1.6 Organisation and steering of the Information Systems (IS)

Each Company and Group entity (Divisions or subsidiaries) has project ownership responsibilities for its specified scope. The Group Information Systems Division is responsible for infrastructure-wide project ownership. Depending on each division's policies, project management responsibilities are shared between the division concerned and the IT and Telecommunications Shared Services Division, which acts as a cross-functional operator for EDF and the subsidiaries, including the regulated subsidiaries.

Overall consistency is managed by the Group Information Systems Division, which coordinates the Information Systems function through

common policies. Two levels in the organisation have responsibility for Information System governance:
- depending on their nature and the scope concerned, strategic decisions and choices are submitted every quarter to one of the EDF Committees (see § 2.1.1) or to the IS Strategy Committee, which involves the Directors and their IS Divisions;
- other major decisions are taken by a committee of the heads of information systems, France, and by the Information Systems Group Committee, on which the Group's subsidiaries are also represented.

Governance-related policies are currently being reviewed. The updated Governance Policy for Group IS Projects, which is one offshoot of the commitments approval procedure overhaul (see § 2.3.1.2.1), has been available since May 2011 *(French version)* and October 2011 *(English version)*.

2.1.7 External controls

As is the case for all listed companies, EDF is subject to the regulatory control of the French financial markets authority (Autorité des *Marchés Financiers* – AMF). Due to the French State being a majority shareholder in EDF, the company is also subject to control by the French Court of Auditors, the State Controllers, the Inspectorate of Public Finances, the French National Assembly and Senate Commissions for Economic Affairs and the Public Procurement Contracts Commission.

As required by French law, the Statutory Auditors certify the annual financial statements (parent company and consolidated statements) and carry out a limited review of the Group's summary consolidated half-year financial statements. They also issue an opinion on the annual report by the Chairman of the Board of Directors that is prepared pursuant to article L.225-37 of the French Commercial Code.

Owing to the nature of its business activities, EDF is also subject to control by the French Energy Regulation Commission (*Commission de Régulation de l'Énergie* – CRE) and by the Nuclear Security Authority (*Autorité de Sûreté Nucléaire* – ASN).

The findings of these various external reviews bodies are incorporated into the internal control and audit programmes, in particular.

2.2 Risk management and control

2.2.1 Risk management and control policy

The objectives of the risk control policy are to:
- contribute to securing the Group's strategic and operational trajectory, and in order to do so,
  - identify and prioritise risks in all areas (operational risks, external risks, strategic risks, including risks that are linked to the consistency of actions with the Group's values, and those linked to protecting the Group's value, assets and the reputation), with a view to ensuring a constant increase in the robustness of risk management;
  - ensure the Group's entities are made responsible and accountable for identifying, assessing and handling risks, so that each executive is aware of the risks inherent in his or her activities and implements the action required to control these risks;
- ensure that EDF senior executives and governance bodies have an aggregated and regularly-updated picture of the major risks and their level of control;
- meet the increasing information requirements of external stakeholders with regard to the management of risks across the organisation.

NB: the operating and functional entities are responsible for managing the risks that fall within their scope of activity, under the responsibility of Group Executive Management.

The Group's risk control policy is implemented either directly for the EDF scope and that of the controlled subsidiaries, or through the governance bodies for the regulated subsidiaries or jointly-controlled affiliates.

This policy is supported by a risk control function that is separate from the risk management functions (supplemented by specific control functions concerning, in particular, financial and energy market risks – see § 2.3.1.1). This function provides, inter alia, a consistent approach to the identification, assessment and managements of risks.

2.2.2 Risk mapping process

In accordance with these principles, every half-year, in line with the reporting schedules for the publication of the half-yearly consolidated financial statements, the EDF group issues consolidated mapping of its major risks for the EDF scope and that of its controlled and jointly-controlled subsidiaries (with the exception of Dalkia International). This consolidated risk mapping is based on maps established by each operating or functional entity using a common methodology (typology, identification and assessment principles, risk control measures, etc.). Each risk identified must be the subject of a clear action plan. Responsibility for the major risks falls to a project leader appointed by the Executive Committee.

The consolidated risk mapping is submitted, each half-year, for approval by the Executive Committee and, following review by the Audit Committee, is the subject of a presentation to the EDF Board of Directors. It is also regularly discussed by the executive managements of the main contributing divisions and by those involved in the risk control function.

The risk mapping process provides the foundation for a number of other processes: internal control and the audit programme, which must be adapted to the risks identified, the Insurance Strategy and its implementation, the analysis of risks involved in projects reviewed by EDF's decision-making bodies (the Executive Committee, the Commitments Committee that reports to the Executive Committee, etc.). Through risk mapping, the risk control process contributes, in particular, to securing the investments and long-term commitments process by monitoring the quality of the risk analysis of projects submitted to the Commitments Committee that reports to the Executive Committee. Lastly, the main risks to which the Group is exposed are described in section 4.1 of the 2011 Reference Document, in compliance with the consolidated risk mapping for the Group.

2.2.3 Crisis management policy

In addition, EDF has a Crisis Management Policy for the EDF scope and that of its controlled subsidiaries, the latest version of which was signed by the Chairman and CEO in June 2005. The primary focus of the Policy is:
- ensuring the existence of appropriate crisis management procedures, in light of the risks incurred in each EDF division involved in crisis management and the controlled subsidiaries;
- defining the procedures for cooperating with the regulated subsidiaries and – via the divisions to which they report – with the jointly-controlled affiliates, during crisis periods;
- verifying overall consistency.

A programme of crisis exercises enables the effectiveness of these procedures to be regularly stress-tested and to benefit from any lessons learned. Finally, the crisis management organisation is regularly readjusted to reflect any significant changes in internal organisation or the external environment, as well as in the light of lessons learned following a major crisis.

2.3 Group control activities

2.3.1 Internal control procedures relating to the effective functioning of internal processes

2.3.1.1 Sectoral strategies on risk control

2.3.1.1.1 Energy market risk control

The Energy Market Risks Policy, which was formalised by the Chairman and CEO's decision of 9 December 2005, defines how these risks should be managed for the EDF scope and that of the controlled subsidiaries and stipulates all the necessary procedures for its implementation and the control of its application. For the regulated subsidiaries and jointly-controlled affiliates, the Energy Market Risks Policy and the control procedure are reviewed within the framework of the governance bodies of these companies (Board of Directors and Audit Committee).

This policy describes:
- the governance and measurement system, clearly separating the risk management and risk control responsibilities and enabling the tracking of exposure within the scope defined above;
- the risk control procedures involving the EDF executive management in the event that risk limits are exceeded. Note that particularly rigorous risk control procedures are in operation at EDF Trading, given the specificity of the business activities and the fast reaction time required;
- the function responsible for controlling Energy Market Risks, which has a two-tier organisational structure, with the entities ensuring operating control and the Group Energy Market Risks department within Corporate Risk Management ensuring a second level of control.

The EDF Audit Committee issues an opinion to the Board of Directors on the Energy Market Risks Policy and changes made to it. The Executive Management approves the entity hedging strategies annually, together with the related risk limits, which are submitted to it at the same time as the budget.

2.3.1.1.2 Financial risk control

EDF has established a Financial Risk Control department, which is responsible for controlling interest rate, foreign exchange, liquidity and counterparty risk for EDF and the controlled subsidiaries. This control is exercised through:
- verifying the proper application of financial risk management principles, in particular through the regular calculation of risk indicators and the tracking of risk limits;
- executing methodology and organisation control missions within EDF entities and the controlled subsidiaries;
- operating control of EDF's trading room, which is responsible for cash management. For these activities, a standing system of indicators and risk limits, which is verified daily, is used to track and control financial risk exposure. The Senior Vice President, Finance and Investments, the Head of the Trading Room and the Head of Financial Risk Control are responsible for this and are expected to take immediate action if a limit is exceeded. The "Markets" committee performs monthly checks on limit compliance and decides on any potential changes to specific limits.

In order to guarantee the independence of the financial risk control structure vis-à-vis the activities responsible for managing these risks, the Financial Risk Control department is attached to the Group Corporate Risk Management Division. This department has a functional link with the Financing and Investments Division.

2.3.1.2 Specific controls

2.3.1.2.1 Procedure for approving commitments

In accordance with the Group's "commitments process", for which the framework is provided by a procedure that was updated on 28 September 2011, the Commitments Committee, which reports to the Group Executive Committee, reviews potential Group commitments, excluding regulated subsidiaries and jointly-controlled affiliates, once the Executive Committee has adopted a favourable position in principle with respect to the commitment concerned. This review covers, in particular:[1] :
- investment, disinvestment, merger and acquisition projects in excess of €50 million;
- expenditure on supplies, works or services for an amount in excess of €200 million;
- long-term purchase or sale contracts that exceed annual limits of 5 TWh for electricity, 10 TWh for gas and €150 million for coal, fuel oil, CO_2 emission credits and allowances,
- the multi-year supply programme for reactors and back-end nuclear fuel cycle services; and
- operations to transfer obligations regarding decommissioning or the back-end of the nuclear fuel cycle.

Committee meetings are systematically preceded by a meeting attended by experts at corporate level (Group Risk Management Division, Legal Affairs Division, Corporate Finance Division, Upstream-Downstream Optimisation & Trading Division, etc.) and project managers in order to verify the exhaustiveness and depth of the risk analysis on the projects submitted. This work is based on methodology standards for the analysis of the risks involved in development projects, which take into account the full impact of a project and, particularly, the evaluation of a number of stress scenarios.

Planned commitments are then reviewed by the Board of Directors, as described in § 1.2.4.

2.3.1.2.2 Control of Information Systems (SI)

Organisation of the internal control of the Information Systems function:

The internal control system for the Information Systems function is part of the Group's Internal Control Policy (that contains proposed control area standards, which the operating entities adapt to their specificities) and covers the implementation of the function's policies. These policies address, in particular, the security of the Information Systems, the steering of information systems projects, the management of information systems risks and compliance with the French Data Protection law.

(1) Decision of 28 September 2011.

For the record, EDF's Information Systems internal control referencing system is based on the COBIT (Control Objectives for Information and related Technology) external referencing system.

The Group Information Systems Division has coordinated the internal control and coverage of risks that are specific to information system issues since 2009 at three levels within the function's organisation: a network of information systems internal control coordinators, a network of the risk officers and the committee comprising the Heads of Information Systems who represent the divisions. In 2011, the interlinking of the risk officers', internal control and Information Systems networks made it possible to achieve even better coordination between risk coverage and internal control for EDF.

The IS internal control action plan incorporates data obtained from past experience and second level controls.

Moreover, in the field of information systems, the IS function has contributed to the standards for fraud detection tests.

Initiatives in the field of Information Systems security

The EDF group's Information Systems Security Policy structures the information system security policies and organisation for the EDF group. For EDF, the adjustment of these policies, as well as the level of security, are monitored monthly by a security committee, which is chaired by the Group Information Systems Director, and brings together the Heads of Information Systems Security from all the entities within the EDF scope. ERDF is associated with this initiative. The Information System Strategy Committee, which was set up in 2011, reviews, as required, in consultation with the Heads of the Corporate Risk Management Division and the Security Division ("DIRSEC"), adjustments to the Group IS Security policy that are found to be necessary, without replacing the existing technical bodies. This ensures that a consistent, strategic vision is shared of IS security and IS key issues in terms of system availability and continuity, information and processing integrity, and the protection of sensitive information.

Lastly, bridge-building efforts with the subsidiaries continued in 2011 and a "security cross-comparison" exercise was carried out with EDF's main subsidiaries and principal electricity partners in Europe. This study made it possible to identity three potential areas for improvement:

- the management of information security within the Group and in its exchanges with third parties;
- the deployment and strengthening of access control policies;
- the day-to-day surveillance and management of information systems incidents.

Moreover, more targeted action involving EDF Energy has made it possible to achieve synergies between security infrastructures.

2.3.1.2.3 Administration and oversight of subsidiaries

Each EDF subsidiary or shareholding (with the exception of the regulated subsidiaries) reports to a Senior Executive who is a member of the Executive Committee or to his or her delegated representative. These Senior Executives, or their representatives, put forward the directors who will represent EDF on the governance bodies of these subsidiaries or shareholdings, then send the directors concerned an assignment letter and a letter outlining their objectives. The Group's Executive Management validates these assignments each year.

The Directors and Companies Delegation, which was started in 2002, pays particular attention to:

- updates to company reporting line mapping, in the light of decisions taken by the Executive Management;
- the tracking of "target composition profiles" which foresee the assembly of the necessary collective skills, as well as the profiles necessary to represent EDF effectively on the governance bodies of subsidiaries, and shareholdings, in light of the strategy defined by the Senior Executives to whom they report;
- compliance with the appointment process for directors, prior management agreement for nomination (conformity with the target profile, control over the number of offices, the approval of the proposed director's line management, etc.); and
- the professional standards of new directors (induction training seminar for new directors with the support of the Corporate University, information via the intranet site for the directors community and on-going vocational training via Board Directors' workshops).

2.3.1.3 Other control policies

EDF has also defined:

- a health and safety policy, which the Chairman and CEO signed in October 2003;
- a policy on insurance, which the Board of Directors approved on 1 July 2004. Since that date, whenever there is any significant change a status report is presented to the Audit Committee on the scope and the cost of adequately insuring EDF's risks or transferring them to the financial markets.

2.3.2 Internal control procedures relating to the reliability of accounting and financial information

2.3.2.1 AMF Reference Framework

The section of the Internal Control Manual that covers control over accounting and financial information was completely restructured in 2011 in order to conform to the AMF Reference Framework, as revised in 2010. This change, which was coordinated by the Group Control Division, was brought about as part of an extensive consultation that also involved several Group subsidiaries.

2.3.2.2 Group accounting standards and principles

The accounting standards used by the EDF group[1] conform to the international accounting standards as published by the International Accounting Standards Board (IASB), as approved by the European Union, which have been applicable since 31 December 2011. These international standards comprise IAS (International Accounting Standards), IFRS (International Financial Reporting Standards) and the interpretations (SIC and IFRIC). The accounting rules and methods are described in the Group manual on accounting principles and summarised in the notes to the consolidated financial statements.

A network of correspondents in the Operating Divisions has ensured that the new activities are recognised in the accounts and identified the impacts of the transposition of new accounting standards and new regulations.

(1) The scope of the Group's consolidated financial statements is detailed in the notes to the consolidated financial statements (cf. 2011 Financial Report).

2.3.2.3 Procedures for preparing and controlling the consolidated financial statements

The Consolidation Department prepares the consolidated financial statements every six months based on data input locally by each entity (entities of the parent company and subsidiaries), in accordance with Group standards and instructions that are issued on a half-yearly basis, using a single chart of accounts.

The annual consolidated financial statements are presented to the Audit Committee, then closed off by the EDF Board of Directors and approved by the general meeting. The half-yearly consolidated financial statements are also presented to the Audit Committee and the Board of Directors.

Each time the half-yearly and annual financial statements are closed off, instructions are issued that specify all the deliverables expected from each person who plays a role in the publication of the financial statements, and in preparing the management report and the reference document used for annual closings. Meetings between the EDF divisions and the subsidiaries are used to prepare for each half-yearly closing, anticipate any changes in certain forms of accounting treatment and ensure that the financial and accounting information published is reliable. Subsequent analysis of the conditions under which the deliverables were produced (compliance with deadlines, quality of information, etc.) allows for a steady improvement in the process for preparing and analysing the consolidated financial statements.

A monthly reporting package containing information on the balance sheet and income statement accounts was set up in 2011.

The use of a financial language that is shared by Accounting and Financial Control contributes to the consistency of the Group's steering. This common language is one of the ways of ensuring continuity between:
- actual data obtained from accounting and the data produced during the forecasting phases;
- external financial communication and internal steering.

This common language facilitates dialogue and cooperation between these two functions at all levels of the organisation and helps to ensure the exchange of information between the players and the quality of the information produced.

Performance steering and the management dialogue are based on data produced under Group accounting standards, as used for the publication of the consolidated financial statements.

2.3.2.4 Procedures for preparing and controlling the parent company financial statements

EDF's transactional accounting (excluding the Financing and Investments Division, the Nuclear Fuel Division, Island Energy Systems and the Senior Executive Development Division for payroll accounting) is entrusted to an Accounting Shared Services Centre within the Shared Services Division. The handling of transactional accounting is organised by process. "Governance pacts" establish the respective responsibilities of the operating branches and divisions, the operating accounting structures and the Accounting Consolidation Department.

The parent company financial statements are prepared on a half-yearly basis by the Parent Company Accounts Department in the Accounts Consolidation Division.

Each operating branch and division head makes a formalised annual commitment to respecting the internal control rules and ensuring the reliability of the financial information for which he or she is responsible via a letter of commitment addressed to the Head of Accounting.

In addition to parent company financial statements, in accordance with articles L.111-84 et seq. of the French Energy Code, EDF produces unbundled accounts for the generation and distribution activities. These financial statements are established in line with the principles on unbundled accounting and the recommendations made by the French Energy Regulation Commission (CRE). Based on the unbundling of generation activities, EDF establishes unbundled accounts for the supply activities based on new criteria (supply to customers having exercised their eligibility – benefiting from new sales and marketing offers, supply to customers not having exercised their eligibility – maintained on the regulated tariff and gas supply). Following review by the Statutory Auditors, these accounts are submitted to the French Energy Regulation Commission. The rules for establishing these accounts have been commented on by the Competition Council, become the Competition Authority, prior to any announcement from the French Energy Regulation Commission as to their approval.

The accounting internal control system is incorporated into the Group internal control system. EDF uses benchmark indicators, which make it possible to measure the extent to which certain aspects of accounting information are compliant, by process.

The accounting function has contributed to the validation of the fraud detection baseline tests for the processes that concern it.

2.3.3 Internal control procedures relating to compliance with laws and regulations

The Legal Affairs Division has a remit to track changes in the law and regulations. It issues warnings and raises awareness within the relevant divisions in light of any changes that are liable to impact the Group.

Pursuant to a joint decision of 1 June 2007, the Legal Affairs and Corporate Audit Divisions adopted an action plan aimed at formalising the role of Legal Affairs in defining the control objectives prescribed in the different EDF entities, so that they can be taken into account in the entities' own internal control plans. These control objectives aim to ensure that these entities:
- inform the Legal Affairs Division of the regulatory areas that particularly concern them, to ensure that the Division can perform its assignment optimally;
- systematically involve the Legal Affairs Division as early as possible in matters involving strategic issues and significant legal risks;
- ensure that their delegations of power effectively reflect their organisation;
- identify their needs in terms of legal awareness within the fields that concern them, including crosscutting needs, and notify them to the Legal Affairs Division;
- ensure that individuals granted delegations of powers are aware of the scope and the consequences of their delegation.

2.3.3.1 Regulations relating to industrial operations

Numerous control procedures exist in the field of industrial operations, in particular for nuclear facilities.

The regulations in force are specific to each country where facilities are located. External controls are organised by the relevant national

authorities (the Nuclear Safety Authority in France (ASN), the Nuclear Directorate within the Health and Safety Executive in the United Kingdom, the Nuclear Regulatory Commission in the United States, etc.).

Within EDF, this responsibility falls to the following executives and/or entities:

- the Senior Vice President, Nuclear Safety and Radioprotection who, on behalf of the Chairman, ensures that all aspects of safety and radiation protection in the nuclear facilities for which EDF has operating responsibility are fully taken into account and whose annual report is made public;
- the Nuclear Inspectorate, a department that reports directly to the Senior Vice President, Nuclear Operations, and the Audit Assessment Taskforce, which functionally reports to the Senior Vice President, Nuclear Engineering, the verification work of which makes it possible to regularly assess the level of safety in all the various Nuclear Operations and Nuclear Engineering entities and their work.

The law of 28 June 2006, as amended by NOME law on the new electricity market organisation of 7 December 2010, and its implementation regulations (decree of 23 February 2007 and order of 21 March 2007) on securing financing for nuclear expenses, require the Company to produce a report on the procedures and systems used to assess the expenses linked to the sustainable management of radioactive matter and waste. This report must specify the methods applied to calculate the related provisions and the choices made for the composition and management of the assets allocated to covering the provisions.

Since June 2007, and in accordance with the legislative and regulatory framework, EDF files a report with the French Nuclear Safety Authority (ASN) every three years and sends an update letter yearly. The second tri-annual report was finalised in June 2010 and updated in 2011. These reports and update letters are given an in-depth review by the Nuclear Commitments Monitoring Committee, which then reports to the EDF Board of Directors before sending the reports and letters to the ASN.

In the other operations-related areas (such as, for example, the monitoring of pressure vessels and dam surveillance), each entity is responsible for defining and implementing the appropriate control procedures.

Immediately following the Fukushima accident of 11 March 2011, and in addition to monitoring events in Japan in real time, EDF acted responsibly in its capacity as a nuclear operator by applying the lessons learned to its own facilities, as described in EDF's letter to the French Nuclear Safety Authority (ASN) dated 30 March 2011. It is on these bases that EDF responded to the request of the European safety authorities (Western European Nuclear Regulators Association - WENRA) regarding the general requirements for Complementary Safety Assessments (CSA).

EDF then pooled its engineering, research & development and operations competencies. More than three hundred engineers were involved in drawing up EDF's Complementary Safety Assessments, which were filed with the ASN by the urgent deadline of 15 September 2011.

The 19 site reports (those for the Flamanville and Penly plants also have an "EPR" section) show that safety levels are good across all of EDF's nuclear fleet in terms of the threats highlighted by the Fukushima incident, and show no significant shortcomings in the definition of the level of external events considered (earthquake and floods). These reports propose additional countermeasures that would make it possible to increase the fleet's robustness to situations for which the levels go well beyond those under consideration, and that would exceed current nuclear safety requirements.

The reports were subject to in-depth analysis by the French Institute of Radiation Protection and Nuclear Safety (IRSN) and by the Standing Groups of experts who advise the Nuclear Safety Authority (ASN). These groups met on 8, 9 and 10 November 2011. The ASN notified its findings to the French government in a report dated 3 January 2012, which contains an opinion (no. 2012-AV-0139) in which the ASN states, in particular:

"Following the complementary safety assessments of the priority nuclear facilities, ASN considers that the facilities examined offer a sufficient level of safety for it not to request the immediate shutdown of any of them. At the same time, ASN considers that for the continuation of their operation, an increase in the robustness of the facilities to extreme situations, beyond their existing safety margins, is necessary, as rapidly as possible."

In early 2012, the ASN will issue a set of technical requirements for each site, with deadlines for the complementary measures to be implemented that are consistent with this opinion.

The European safety authorities will conduct peer reviews in the first half of 2012.

Moreover, in light of the Fukushima incident, EDF has played a pivotal role in recasting the principles of the World Association Of Nuclear Operators, which were adopted during the Board General Meeting of October 2011.

2.3.3.2 Other regulations

Control procedures are also used for the application of labour and employment regulations.

The implementation of management systems, particularly with regard to environmental considerations (see § 2.1.5.2) and Health and Safety, has enabled tighter control of the application of regulations and compliance with any regulatory changes to be foreseen.

2.3.4 Internal control procedures relating to the application of Executive Management instructions and policies

Within the framework of the deployment of the Internal Control Policy within the Group, the monitoring of the effective implementation of major decisions and policies is taken into account by their inclusion in the Internal Control Reference Manual. Moreover, audits, may be included in the corporate audit programme in order to check the correct implementation of these decisions and policies, and that the targets set within this framework are attained.

2.4 Information communication and circulation

In addition to the communication and reporting initiatives outlined within this report, the following specific initiatives are noteworthy:

- financial communication:
  Since EDF shares were listed for trading in 2005, EDF has established procedures that aim to provide a framework for and ensure the

reliability of EDF financial disclosure processes and content, as well as to prevent market abuse. Accordingly, a procedure has been defined to organise the respective roles within the Company with regard to the preparation, approval and dissemination of financial disclosure data.

A Financial Information Committee has been established, tasked primarily with ensuring the validation and consistency of EDF's different financial communication sources as well as the review and validation of the contents of all financial communication channels. This Committee comprises representatives from the Corporate Finance, Communication and Legal Affairs Divisions.

Furthermore, since 2006 the EDF group has adopted principles and rules that are applicable to transactions involving EDF securities or those of the EDF group's listed subsidiaries. These rules have been compiled in an Ethics Code that was updated in March 2011, in order to take into account the AMF recommendations of November 2010, and was presented to the EDF Executive Committee on 4 April 2011. In parallel with the publication of this Code, initiatives have been taken to raise Group employees' awareness of stock market rules, in particular the precautions and obligations associated with holding inside information and the blackout periods during which senior executives and certain employees who are party to insider information may not trade in the Company's shares;

- the code of conduct:
  Compliance with the codes of conduct for the regulated subsidiaries is monitored annually by these subsidiaries, and verified by the French Energy Regulation Commission, which publishes the results of its checks in its annual report;
- awareness of top executives:
  An intranet manager, who is available to EDF and ERDF senior and top executives, facilitates the circulation of information such as decisions taken by the Chairman, policies in force, Group standards, information on current projects and language pointers relating to these projects.

2.5 Activities relating to the steering of internal control

The Corporate Audit Division performs three types of steering activities:

- audits of the control of control systems and the other different categories of corporate audits (see § 2.1.3.3.) which take into account the risks, potential major malfunctions and external recommendations (see § 2.1.7.). Additionally, any suspected significant process malfunction or failure in internal control may lead to the realisation of a specific audit mission, either within the framework of the plan proposed by Corporate Audit or at the request of executive management (accelerated additional audit), and/or the establishment of the corresponding action plans;
- follow-up of the implementation of recommendations arising from these audits through a formalised audit closure process involving the line management and internal control coordinators of each relevant entity (see § 2.1.3.3.), the latter being responsible for ensuring the steering of control procedures and post-audit action plans inside each of the entities within their scope;
- sharing feedback on lessons learned, several aspects of which were described in chapters 2.1.2 and 2.1.3.3:
  - half-yearly summaries by the Corporate Audit Division (see § 2.1.3.3.);
  - yearly reviews between the Corporate Audit Division and each executive during which an analysis of internal control systems is discussed, but which also involve progress reports on action plans initiated following previous audits, as well as future audit programmes, which enables the connection between the audits, risks and internal control measures to be strengthened;
  - proactive measures steered by the Corporate Audit Division in liaison with the operating and functional entities concerned, aimed at eliminating the weak points noted in the deployment of the Internal Control Policy, and identified based on the management self-assessment process;
  - regular upgrading of tools and referencing systems (see § 2.1.2.);
  - periodic bi-monthly meetings of the Group's internal control coordinator network (around 60 people) to facilitate, in particular, benchmarking and the sharing of best practices, together with additional reflection and proposals provided by dedicated working groups;
  - regular meetings between the audit team heads at the operating Divisions (generation, customers, etc.) and the main French and foreign subsidiaries, in particular to facilitate the coordination of the preparation and implementation of audit programmes and professional practices (see § 2.1.3.3.);
  - a periodic external audit of the skills and processes deployed by the Corporate Audit Division within the framework of these various assignments;
  - regular discussions between the Corporate Risk Management and Corporate Audit to analyse audit findings with a view to mapping the Group's risks.

This report was prepared by a working group coordinated by the EDF Corporate Audit Division, which includes representatives of the Legal Affairs, Corporate Risk Management and Corporate Finance Divisions, as well as the General Secretary to the Board of Directors. Various contributors, such as the Ethics and Compliance Standards Delegation, the Information Systems Division, the Directors and Companies Delegation, the Sustainable Development Division and the Investors and Markets Division were also involved[1]. This report was successively reviewed by the Group General Secretary (7 February 2012), the Financial Information Committee (7 February 2012) and the Audit Committee (14 February 2012) before being approved by the Board of Directors' meeting of 15 February 2012, in accordance with article L. 225-37 of the French Commercial Code.

Paris, 15 February 2012

The Chairman and CEO of EDF
Henri PROGLIO

(1) In preparing this report, EDF used the AMF Reference Framework (chapters 2.3.1 to 2.3.4), which is based on the COSO reference framework (chapters 2.1 to 2.5).

B.

Statutory Auditors' Report, prepared in accordance with Article L.225-235 of the French Commercial Code ("Code de commerce"), on the Report prepared by the Chairman of the Board of Directors of Électricité de France S.A.

B. Appendix

Statutory Auditors' Report, prepared in accordance with Article L.225-235 of the French Commercial Code ("Code de commerce"), on the Report prepared by the Chairman of the Board of Directors of Électricité de France S.A.

Statutory Auditors' Report, prepared in accordance with Article L.225-235 of the French Commercial Code ("Code de commerce"), on the Report prepared by the Chairman of the Board of Directors of Électricité de France S.A.

This is a free translation into English of a report issued in French and is provided solely for the convenience of English-speaking readers. This report should be read in conjunction with, and is construed in accordance with, French law and professional auditing standards applicable in France.

Year ended 31 December 2011

To the shareholders,

In our capacity as Statutory Auditors of Électricité de France S.A., and in accordance with Article L.225-235 of the French Commercial Code ("Code de commerce"), we hereby report on the Report prepared by the Chairman of your Company in accordance with Article L.225-37 of the French Commercial Code for the year ended 31 December 2011.

It is the Chairman's responsibility to prepare, and submit to the Board of Directors for approval, a report on the internal control and risk management procedures implemented by the Company and containing the other disclosures required by Article L.225-37 particularly in terms of the corporate governance measures.

It is our responsibility:
- to report to you on the information contained in the Chairman's Report in respect of the internal control and risk management procedures relating to the preparation and processing of the accounting and financial information, and
- to attest that this Report contains the other disclosures required by Article L.225-37 of the French Commercial Code ("Code de commerce"), it being specified that we are not responsible for verifying the fairness of these disclosures.

We conducted our work in accordance with professional standards applicable in France.

Information on the internal control and risk management procedures relating to the preparation and processing of accounting and financial information

These standards require that we perform the necessary procedures to assess the fairness of the information provided in the Chairman's Report in respect of the internal control and risk management procedures relating to the preparation and processing of the accounting and financial information. These procedures consisted mainly in:
- obtaining an understanding of the internal control and risk management procedures relating to the preparation and processing of the accounting and financial information on which the information presented in the Chairman's Report is based and existing documentation;
- obtaining an understanding of the work involved in the preparation of this information and existing documentation;
- determining if any significant weaknesses in the internal control procedures relating to the preparation and processing of the accounting and financial information that we would have noted in the course of our engagement are properly disclosed in the Chairman's Report.

On the basis of our work, we have nothing to report on the information in respect of the Company's internal control and risk management procedures relating to the preparation and processing of accounting and financial information contained in the Report prepared by the Chairman of the Board in accordance with Article L.225-37 of the French Commercial Code ("Code de Commerce").

Appendix .B

Statutory Auditors' Report, prepared in accordance with Article L.225-235 of the French Commercial Code ("Code de commerce"), on the Report prepared by the Chairman of the Board of Directors of Électricité de France S.A.

Other disclosures

We hereby attest that the Chairman's Report includes the other disclosures required by Article L.225-37 of the French Commercial Code ("Code de commerce").

Paris La Défense and Neuilly-sur-Seine, 15 February 2012

The Statutory Auditors

KPMG Audit **Department of KPMG S.A.**		**Deloitte & Associés**	
Bernard Cattenoz	Jacques-François Lethu	Alain Pons	Patrick E. Suissa

C.

Statutory Auditors' Report on Regulated Agreements and Commitments

Statutory Auditors' Report on Regulated Agreements and Commitments

This is a free translation into English of the Statutory Auditors' report on regulated agreements and commitments that is issued in French and is provided solely for the convenience of English speaking readers. This report on regulated agreements and commitments should be read in conjunction with, and construed in accordance with, French law and professional auditing standards applicable in France. It should be understood that the agreements reported on are only those provided by the French Commercial Code and that the report does not apply to those related party transactions described in IAS 24 or other equivalent accounting standards.

Shareholders' meeting approving the financial statements for the year ended 31 December 2011

To the shareholders,

In our capacity as Statutory Auditors of your Company, we hereby present to you our report on the regulated agreements and commitments.

We are required to present to you, on the basis of the information provided to us, the terms and conditions of the agreements and commitments of which we were notified or of which we became aware during our engagement. It is not our role to determine whether they are beneficial or appropriate neither to ascertain whether any other regulated agreement or commitment exists. It is your responsibility, under the terms of article R.225-31 of the French Commercial Code ("*Code de Commerce*"), to evaluate the benefits arising from these agreements and commitments prior to their approval.

In addition, in accordance with the terms of article R.225-31 of the French Commercial Code, we are required to present to you the continuing effect of agreements and commitments already approved by the General Shareholders' meeting, if any.

We performed the procedures we considered necessary in accordance with professional guidance issued by the national institute of auditors ("*Compagnie Nationale des Commissaires aux Comptes*"), relating to this engagement. Our work consisted in verifying that the information provided to us is in agreement with the underlying documentation from which it was extracted.

Agreements and engagements submitted to the general shareholders' meeting approval

In accordance with article L.225-40 of the French Commercial Code, we have been advised of agreements and commitments which have been previously authorised by your Board of Directors:

Agreement entered into between EDF, AREVA and the CEA in respect with the audits required by the DGEC

In accordance with the law of 28 June 2006 related to the sustainable management of radioactive materials and waste, and in compliance with the application decree of 23 February 2007 on securing the funds to cover the nuclear expenses, the French Department for Energy and Climate ("*Direction Générale de l'Energie et du Climat*" or "DGEC") asked the three actors of the French nuclear industry to perform audits of their tools used for the valuation of the nuclear generation cycle obligations. As those audits are common to the aforementioned three operators, the DGEC requested that a single set of specifications be prepared with the selection of a single contractor for each of them.

On 25 May 2011, the three stakeholders and the DGEC, as the prescriber, entered into an agreement that sets out:
- the organisation and governance rules of the combination agreed by the stakeholders with respect to the performance of the audits;
- the terms and conditions upon which the stakeholders will set up the financing and monitor the tender procedure related to those audits.

This agreement was authorised beforehand by your Board of Directors at the 24 May 2011 meeting.

Directors concerned by the agreement: Mr Jean-Dominique Comolli and Mr Pierre Sellal, members of the Board of Directors of EDF and members of the Supervisory Board of AREVA, and Mr Pierre-Marie Abadie, member of the Board of Directors of EDF and Director of Energy at the DGEC.

Continuing agreements and engagements already approved by the general shareholders'meeting

In accordance with the terms of article R.225-30 of the French Commercial Code, we have been informed of the following agreements and commitments, which were approved during previous years by the general shareholders' meeting and which were applicable during the period:

Sale of EDF shares reserved for current and retired employees of EDF group entities

Following the sale by the French State at the end of 2007 of a portion of its interest held in EDF's share capital via an accelerated private placement with institutional investors, the French State carried out an offering of EDF shares reserved for current and retired employees of EDF group entities in September 2008, in accordance with the regulatory framework.

As part of this offering of shares, a memorandum of agreement was entered into on 23 October 2008 between EDF, the French State and BNP Paribas Securities Services, describing the terms and conditions relating to payment, allocation of free shares and collection of unpaid amounts due in respect of the purchase of EDF shares, when necessary.

Upon conclusion of the share offering, 3,266,541 shares were delivered to the various subscribers on 30 October 2008. In connection therewith, your Company paid the French State a consideration of 137 million euros in 2008 corresponding to the first payment installment owed by the subscribers, of 32 million euros in 2009 corresponding to the second installment, and of 44 million euros in 2010 corresponding to the final installment. The grant of free shares by the French State to the employees as stated in the offering of shares occurred on 31 October 2011 and EDF received from the subscribers the final payment installment in December 2011.

This agreement ended simultaneously with the final settlement of the grant of free shares and the reimbursement payment by the subscribers.

Public Service Contract

On 24 October 2005, the French State and Electricité de France S.A. signed a public service contract whose purpose is to form the framework for the Company's public service mission and duties.

This contract sets out the commitments undertaken by the Company over the period 2005-2006-2007 and defines the financial compensation payable for public service obligations, in particular the principles set for the calculation of and the change in electricity sales tariffs. In the absence of a new agreement, the performance of certain provisions of this contract was continued in 2011.

Final processing-recycling agreement entered into by EDF and AREVA for the period 2008-2012

In application of the agreement of 19 December 2008 setting forth the principles governing back-end cycle contracts for the post-2007 period, EDF and AREVA signed the following two contracts on 12 July 2010:

- the "EDF-AREVA NC Processing-Recycling Agreement" which lays down (i) the contractual terms for the period 2008-2012, including the payment by EDF of an upfront payment of 120 million euros repayable on 31 December 2012, and (ii) the principles governing prices and investments for subsequent periods;
- the "Protocol for recovery and conditioning of EDF waste, the final shutdown and decommissioning of the AREVA NC plant at La Hague" which, notably, sets the amount to be paid by your Company that will release it from any further obligation as regards to the recovery and packaging of old waste ("*Reprise et Conditionnement des Déchets anciens*" or "RCD"), to the definitive shut-down ("*Mise à l'Arrêt Définitif*" or "MAD") and to the decommissioning ("*Démantèlement*" or "DEM") of the La Hague facilities for 2.3 billion euros based on economic conditions existing as of 31 December 2007 and following amounts and schedule of payments defined in an agreement signed with AREVA on 6 July 2009. The balance of the payment for recovering and conditioning EDF's waste, and final shutdown and decommissioning of facilities at La Hague, amounting to 794 millions of euros including taxes, was paid to AREVA on 23 June 2011. This agreement ended on the same date.

Other agreements with the AREVA Group

Your Company entered into three agreements with the AREVA Group in 2007 with respect to the following services:
- Construction of the nuclear boiler for the Flamanville 3 EPR nuclear plant;
- Maintenance and servicing of boilers as part of the third ten-year inspection of the 900MW-type nuclear plants in France;
- Advance booking of forged parts for EPR reactors constructed abroad.

Total consideration for these agreements amounted respectively to 994 million euros, including the amendments to the contract (of which 172 million euros recorded in 2011), 121 million euros (of which 15 million euros recorded in 2011) and 212 million euros, including 106 million euros for the optional portion, the amount excluding the optional part being wholly recognised at 31 December 2010.

Paris La Défense and Neuilly-sur-Seine, 15 February 2012

The Statutory Auditors

KPMG Audit **Department of KPMG S.A.**		**Deloitte & Associés**	
Bernard Cattenoz	Jacques-François Lethu	Alain Pons	Patrick E. Suissa

D.

EDF SA's financial statements and Statutory Auditors' Report on the financial statements

Annual financial statements

Income statements 456
Balance sheets 458
Cash flow statements 460
Notes to the financial statements 461
Statutory Auditors' Report on the financial statements 508

Income statements

(in millions of Euros)	Notes		2011		2010
SALES [1]	**4**		**41,950**		**40,906**
Change in inventories and work-in-progress			18		275
Capitalized production			462		441
Operating subsidies	5		3,565		2,615
Reversals of provisions, amortization and depreciation	6		2,437		2,793
Transfers of charges			78		253
Other operating income	7		647		659
I - TOTAL OPERATING INCOME			**49,157**		**47,942**
Purchases and other external expenses	8		**32,208**		**31,420**
Fuel purchases used – power generation		3,116		3,284	
Energy purchases		10,696		9,892	
Other purchases used		998		996	
Services		17,398		17,248	
Taxes other than income taxes	9		**2,609**		**2,627**
Based on salaries and wages		142		128	
Energy-related		1,398		1,556	
Other		1,069		943	
Personnel expenses	10		**5,761**		**5,502**
Salaries and wages		3,600		3,377	
Social contributions		2,161		2,125	
Depreciation, amortization and provisions			**3,558**		**3,592**
Depreciation and amortization on fixed assets	11	2,100		1,979	
Provisions for depreciation on fixed assets	12	14		13	
Provisions for depreciation on current assets	12	162		162	
Provisions for risks and expenses	12	1,282		1,438	
Other operating expenses	13		**1,064**		**1,108**
II - TOTAL OPERATING EXPENSES			**45,200**		**44,249**
Operating profit (I - II)			**3,957**		**3,693**
Joint operations					
III - PROFIT ASSIGNED OR LOSS TRANSFERRED			**8**		**9**
IV - LOSS CHARGED OR PROFIT TRANSFERRED			**1**		**3**
Financial income					
Income from investments			1,047		1,710
Income from other securities and receivables related to fixed assets			344		358
Interest and similar income			827		30
Reversals of provisions and transfers of charges			424		925
Foreign exchange gains			2,291		2,755
Net income on sales of marketable securities			79		59
V - TOTAL FINANCIAL INCOME			**5,012**		**5,837**

(in millions of Euros)	Notes		2011		2010
Financial amortization and provisions			3,344		3,102
Interest and similar expenses			2,158		1,827
Foreign exchange losses			2,179		2,697
Net charges on sales of marketable securities			18		12
VI - TOTAL FINANCIAL EXPENSES			**7,699**		**7,638**
Financial result (V - VI)	14		**(2,687)**		**(1,801)**
Profit or loss before income taxes and exceptional items (I - II + III - IV + V - VI)			**1,277**		**1,898**
Exceptional income on capital transactions			367		538
Reversals of depreciation, amortization and provisions and transfers of charges			652		568
VII - TOTAL EXCEPTIONAL INCOME			**1,019**		**1,106**
Exceptional charges on capital transactions			**268**		**505**
Book values of real estate and financial assets sold		260		502	
Other		8		3	
Exceptional depreciation, amortization and provisions			**554**		**347**
Allocation to tax regulated reserves		283		189	
Depreciation, amortization and provisions		271		158	
VIII - TOTAL EXCEPTIONAL EXPENSES			**822**		**852**
Exceptional result (VII-VIII)	15		**197**		**254**
IX - INCOME TAXES	**16**		**356**		**660**
Total income (I + III +V +VII)			**55,196**		**54,894**
Total expenses (II + IV+VI+VIII+ IX)			**54,078**		**53,402**
NET INCOME			**1,118**		**1,492**

(1) Production of goods for export in 2011: €5,944 million; production of services for export in 2011: €498 million.

Balance sheets

ASSETS *(in millions of Euros)*	Notes	31/12/2011 Gross values	31/12/2011 Depreciation or provisions	31/12/2011 Net values	31/12/2010 Net values
Intangible assets	17,18	**1,003**	**310**	**693**	**765**
Land		115	5	110	107
Buildings		9,096	5,869	3,227	3,145
Technical installations, plant and machinery, equipment and fixtures		57,675	39,264	18,411	18,205
Other tangible assets		1,098	704	394	356
Property, plant and equipment owned by EDF	17,18	**67,984**	**45,842**	**22,142**	**21,813**
Land		38	-	38	37
Buildings		8,861	5,586	3,275	3,229
Technical installations, plant and machinery, equipment and fixtures		3,436	1,785	1,651	1,465
Other tangible assets		11	11	-	1
Property, plant and equipment operated under concession	17,18	**12,346**	**7,382**	**4,964**	**4,732**
Work-in-progress		6,769	-	6,769	5,647
Advances		1,368	-	1,368	1,208
Tangible assets in progress	17	**8,137**	**-**	**8,137**	**6,855**
Intangible assets in progress	17	**1,014**	**-**	**1,014**	**892**
Investments and related receivables		53,702	1,150	52,552	50,207
Investment securities		13,206	823	12,383	12,851
Loans and other financial assets		4,830	-	4,830	4,409
Investments	19, 20, 23	**71,738**	**1,973**	**69,765**	**67,467**
TOTAL I - FIXED ASSETS		**162,222**	**55,507**	**106,715**	**102,524**
Raw materials		7,971	13	7,958	7,591
Other supplies		851	158	693	573
Work-in-progress and other		18	-	18	10
Inventories	22	**8,840**	**171**	**8,669**	**8,174**
Advances on orders	23	**796**	**-**	**796**	**688**
Trade receivables and related accounts		11,920	267	11,653	12,337
Other receivables		6,694	2	6,692	6,034
Trade and other receivables	23	**18,614**	**269**	**18,345**	**18,371**
Marketable securities	24, 25	9,050	1	9,049	10,014
Cash instruments	23	2,807	-	2,807	2,013
Cash and cash equivalents	25	3,194	-	3,194	1,576
Prepaid expenses	23	603	-	603	483
Other currents assets		**15,654**	**1**	**15,653**	**14,086**
TOTAL II - CURRENT ASSETS		**43,904**	**441**	**43,463**	**41,319**
Deferred charges (III)		**257**	**-**	**257**	**282**
Bond redemption premiums (IV)		**381**	**57**	**324**	**213**
Unrealized foreign exchange losses (V)	26	**295**	**-**	**295**	**110**
TOTAL ASSETS (I + II + III + IV + V)		**207,059**	**56,005**	**151,054**	**144,448**

EQUITY AND LIABILITIES *(in millions of Euros)*	Notes	31/12/2011	31/12/2010
Capital		**924**	**924**
Capital-related premiums			
Share issue premium		7,015	7,033
Merger premium		25	25
Revaluation surplus			
Special reserves-law of 28 December 1959		668	713
Tax-regulated reserves – law of 29 December 1976		15	16
Other reserves		**3,000**	**3,000**
Tax-regulated reserves			
Legal reserves		92	92
Retained earnings		**4,286**	**4,917**
Profit or loss for the financial year		**1,118**	**1,492**
Interim dividend		**(1,053)**	**(1,054)**
Investment subsidies		**171**	**127**
Tax-regulated provisions			
Provisions related to depreciable fixed assets (law of 30 December 1977)		14	15
Excess depreciation		6,535	6,719
Equity	27	**22,810**	**24,019**
Special concession accounts	28	**1,968**	**1,909**
TOTAL I - EQUITY AND CONCESSION ACCOUNTS		**24,778**	**25,928**
Provisions for risks	29	**553**	**349**
Provisions for expenses			
Renewal of facilities operated under concession		238	230
Back-end nuclear cycle	30	15,865	15,360
Decommissioning and last cores	30	13,854	13,419
Employee benefits	31	10,594	10,267
Other expenses	32	637	749
TOTAL II - PROVISIONS FOR RISKS AND EXPENSES		**41,741**	**40,374**
Bonds and borrowings		40,093	37,859
Advances received on consumption		90	134
Other debts		1,178	1,385
Financial liabilities	33, 34	**41,361**	**39,378**
Advances and payments on account received	33	**5,444**	**4,873**
Trade payables and related accounts		7,793	8,958
Tax and social security debts payable		5,575	5,335
Debts related to fixed assets and related accounts		1,381	1,423
Other liabilities		15,757	11,497
Operating, investment and other liabilities	33	**30,506**	**27,213**
Cash instruments	33	**1,889**	**1,259**
Deferred income	33	**5,185**	**5,244**
TOTAL III - LIABILITIES		**84,385**	**77,967**
Unrealized foreign exchange gains (IV)	26	**150**	**179**
TOTAL EQUITY AND LIABILITIES (I + II + III + IV)		**151,054**	**144,448**

Cash flow statements

(in millions of Euros)		31/12/2011	31/12/2010
Operating activities			
Profit/(loss) before income tax		1,474	2,152
Amortization, depreciation and provisions		3,913	2,747
Capital (gains)/losses		(100)	(31)
Financial (income) and expenses		(171)	(329)
Changes in working capital		(797)	137
Cash flows from operations		**4,319**	**4,676**
Net financial expenses, including dividends received		(325)	589
Income taxes paid		(849)	(1,128)
Net cash flow from operating activities	**(A)**	**3,145**	**4,137**
Investing activities			
Purchases of property, plant and equipment and intangible assets		(4,146)	(3,939)
Sales of property, plant and equipment and intangible assets		33	49
Changes in financial assets		(1,639)	(6,311)
Net cash flows used in investing activities	**(B)**	**(5,752)**	**(10,201)**
Financing activities			
Issuance of borrowings and underwriting agreements		6,168	7,978
Repayment of borrowings and underwriting agreements		(2,108)	(3,256)
Dividends paid		(2,122)	(2,163)
Increase in special concession accounts		13	16
Investment subsidies		51	40
Net cash flows from financing activities	**(C)**	**2,002**	**2,615**
Net increase/(Decrease) in cash and cash equivalents	**(A)+(B)+(C)**	**(605)**	**(3,449)**
CASH AND CASH EQUIVALENTS - OPENING BALANCE *		**(2,521)**	**895**
Effect of currency fluctuations		(68)	(8)
Financial income on cash and cash equivalents		94	41
CASH AND CASH EQUIVALENTS - CLOSING BALANCE *		**(3,100)**	**(2,521)**

** "Cash and cash equivalents – opening balance" and "Cash and cash equivalents – closing balance" do not include investment funds, nor negotiable debt instruments maturing in more than three months. Details of the variation in cash and cash equivalents are presented in note 25.*

Contents

Notes to the financial statements

Note 1 Accounting principles and methods 463
1.1 Accounting policies 463
1.2 Management estimates 463
1.3 Sales 463
1.4 Intangible assets 463
1.5 Property, plant and equipment 464
1.6 Long-term asset impairment 465
1.7 Investments 465
1.8 Inventories and work-in-progress 466
1.9 Accounts receivable and marketable securities 466
1.10 Deferred charges 467
1.11 Translation of receivables and payables in foreign currencies 467
1.12 Tax regulated provisions 467
1.13 Special concession accounts 467
1.14 Provisions for risks and expenses 467
1.15 Provisions and obligations for employee benefits 468
1.16 Derivatives 469
1.17 Commodity contracts 470
1.18 Free shares 470
1.19 Environment 470

Note 2 Regulatory events in 2011 with an impact on the financial statements 471
2.1 "NOME" law on the new electricity market organization 471
2.2 End of the transition tariff system (TaRTAM) 471
2.3 CSPE 471

Note 3 Significant events and transactions in 2011 472
3.1 Preliminary agreement for acquisition of Edison by EDF and acquisition of Edipower by A2A 472
3.2 Simplified alternative public cash or exchange offer for EDF Énergies Nouvelles 472
3.3 Nuclear accident in the Fukushima plant in Japan 473
3.4 Bond issue 473

Note 4 Sales 473

Note 5 Operating subsidies 474

Note 6 Reversals of provisions, amortization and depreciation 474

Note 7 Other operating income 474

Note 8 Purchases and other external expenses 475

Note 9 Taxes other than income taxes 475

Note 10 Personnel expenses 475

Note 11 Depreciation and amortization 476

Note 12 Provisions 476

Note 13 Other operating expenses 476

Note 14 Financial result 477

Note 15 Exceptional result 477

Note 16 Income taxes 477
16.1 Tax group 477
16.2 Income tax payable 477
16.3 Deferred taxes 478

Note 17 Gross values of intangible and tangible fixed assets 479

Note 18 Depreciation, amortization and provisions on intangible and tangible fixed assets 480

Note 19 Dedicated assets 480
19.1 Regulations 480
19.2 Portfolio contents and measurement 480
19.3 Present cost of long-term nuclear obligations 481

Note 20 Investments 482
20.1 Movements in investments 482
20.2 Subsidiaries and investments of at least 50% of capital 483
20.3 Subsidiaries and investments under 50% of capital 484
20.4 Investment securities portfolio 484
20.5 Variation in treasury shares 484

Note 21 Related companies 485
21.1 Relations with subsidiaries 485
21.2 Relations with the French State and state-owned entities 485

Note 22 Inventories and work-in-progress 486

Note 23 Receivables and prepaid expenses 486

Note 24 Marketable securities 487

Note 25 Variation in cash and cash equivalents reported in the cash flow statement 487

Note 26 Unrealized foreign exchange gains and losses 488

Note 27 Changes in equity 488

Note 28 Special concession accounts 489

Note 29 Provisions for risks and contingent liabilities 489

Note 30 Provisions for back-end nuclear cycle, plant decommissioning and last cores 491
30.1 Provisions for the back-end nuclear cycle 491
30.2 Provisions for decommissioning and last cores 493
30.3 Discounting of provisions related to nuclear generation and sensitivity analyses 494

Note 31 Provisions for employee benefits 495
31.1 Provisions for post-employment benefits 496
31.2 Provisions for other long-term benefits for current employees 496
31.3 Fund assets 497
31.4 Actuarial assumptions 497

Note 32 Provisions for other expenses 497

Note 33 Financial and operating liabilities 498

Note 34 Financial liabilities 499
34.1 Breakdown of loans by currency, before and after hedging instruments 500
34.2 Breakdown of loans by type of interest rate before and after hedging instruments 500

Note 35 Financial instruments 501
35.1 Impacts of financial instrument transactions on net income 502
35.2 Fair value of derivative financial instruments 502

D. Appendix

Note 36	**Off-balance sheet commitments and operations**	**503**
	36.1 Off-balance sheet commitments given	503
	36.2 Off-balance sheet commitments received	504
	36.3 Other types of commitments	504
Note 37	**Environment**	**506**
	37.1 Greenhouse gas emission quotas	506
	37.2 Energy savings certificates	506
	37.3 Carbon Fund	506
Note 38	**Management compensation**	**506**
Note 39	**Subsequent events**	**507**
	39.1 Bond issue	507
	39.2 Long term partnership for natural uranium with AREVA	507
Statutory Auditor's Report on the financial statements		**508**

Notes to the financial statements

Électricité de France SA (EDF), the parent company of the EDF group, is an electricity and gas generation and supply operator. EDF also covers all the business activities of Island Energy Systems, IES (located in Corsica and France's overseas departments).

Note 1. Accounting principles and methods

1.1 Accounting policies

EDF's annual financial statements are prepared in accordance with the accounting principles and methods defined by the French national chart of accounts, as presented by CRC (French accounting committee) regulation 99-03 of 29 April 1999 with additions in subsequent regulations.

1.2 Management estimates

The preparation of the financial statements requires the use of judgments, best estimates and assumptions in determining the value of assets and liabilities, income and expenses recorded for the period, and positive and negative contingencies existing at year-end. The figures in future financial statements may differ from current estimates due to changes in these assumptions or economic conditions.

The principal sensitive accounting methods involving use of estimates and judgments concern measurement of nuclear provisions, pensions, other long-term and post-employment benefit obligations, quantities of energy delivered but not yet measured or billed, and estimation of the provision for the transition tariff system (TaRTAM – *Tarif réglementé transitoire d'ajustement du marché*) which applied until 30 June 2011.

The measurement of provisions for the back-end of the nuclear cycle, decommissioning and last cores is sensitive to assumptions concerning costs, inflation rate, long-term discount rate, and disbursement schedules. A revised estimate is therefore established at each closing date to ensure that the amounts accrued correspond to the best estimate of the costs eventually to be borne by EDF. Any significant differences resulting from these revised estimates could entail changes in the amounts accrued.

To date, reflection on the consequences of the Fukushima nuclear accident has not led EDF to change its main assumptions concerning operation and development of its nuclear generation fleet, particularly as regards their operating lifetimes.

1.3 Sales

Sales essentially comprise income from the sales of energy and services. Services for delivery through the energy distribution network purchased from the subsidiary ERDF and reinvoiced to end-customers contribute to EDF's energy sales.

EDF accounts for sales when:
- a contract exists;
- delivery has taken place (or the service has been provided);
- a quantifiable price has been established or can be determined;
- and the receivables are likely to be recovered.

Delivery takes place when the risks and benefits associated with ownership are transferred to the buyer.

The quantities of energy delivered to EDF customers but not yet measured or billed at the end of the period are calculated based on the quantities used by the sites of the EDF balance responsible entities less the quantities billed, after losses measured by a statistical method presented to the *Commission de Régulation de l'Énergie* (CRE), the French Energy Regulation Commission. These quantities are valued using an average price determined by reference to energy invoiced in the previous month.

Sales of goods and revenues on services not completed at the balance sheet date are valued by reference to the stage of completion at the closing date.

Sales of energy to EDF Trading, the Group's trading company, are recorded at their contractually stipulated amount.

1.4 Intangible assets

Intangible assets mainly consist of software, concession rights, licenses, trademarks and similar rights, operating rights, development costs, storage capacity reservation costs, and greenhouse gas emission quotas.

Development costs are recognized as an intangible asset if EDF can demonstrate:
- the technical feasibility of making the intangible asset ready for commissioning or sale;
- its intention to complete the intangible asset and use or sell it;

- its ability to use or sell the intangible asset;
- how the intangible asset will generate likely future economic benefits;
- the availability of the appropriate resources (technical, financial or other) to complete development and use or sell the intangible asset;
- its ability to provide a reliable estimate of expenses attributable to the intangible asset during its development.

Research expenses are recognized as expenses in the financial period incurred.

In application of ruling 2004-330 of 14 April 2004, since 1 January 2005 the French State has attributed energy operators a fixed quantity of quotas representing one tonne of carbon dioxide equivalent each for a specified period under the National Allocation Plan.

In compliance with CNC (French National Accounting Council) Emergency Committee opinion 2004-C issued on 23 March 2004, greenhouse gas emission quotas are recorded as intangible assets at their market value at the date of registration in the SERINGAS register managed by the *Caisse des Dépôts et Consignations*, with an offsetting entry under "Other liabilities".

Intangible assets other than greenhouse gas emission quotas are amortized on a straight-line basis over their useful lives regardless of whether they are generated in-house or purchased.

1.5 Property, plant and equipment

Property, plant and equipment are recorded at acquisition or production cost or at their revalued amount where applicable, less accumulated depreciation and provisions:

- cost corresponds to acquisition or production cost (including external costs as well as costs incurred directly by EDF);
- the revaluations were performed in accordance with French legislation (law of 28 December 1959 for fixed assets put into service before 1 January 1960 and specific legislation issued for those put into service before 1 January 1977).

The cost of facilities developed in-house includes all labor and materials costs, and all other production costs attributable to the construction cost of the asset.

In application of CRC regulation 2000-06 on liabilities, confirmed by Emergency Committee regulation 2005-H, certain assets have been recognized in connection with provisions for liabilities related to decommissioning of nuclear and fossil-fired power plants and the provision for last cores.

At the date of commissioning, these assets are carried in property, plant and equipment, and are measured and recorded in the same way as the corresponding provision.

They are depreciated in the same way and over the same useful life as the relevant facility.

The asset ceases to be recognized when the associated facility has been totally depreciated.

Pre-operating expenses and borrowing costs incurred to finance installations are recognized as expenses.

EDF's property, plant and equipment comprise both assets owned by EDF and assets operated under concession.

1.5.1 Property, plant and equipment owned by EDF

Most of the property, plant and equipment owned by EDF concern nuclear facilities.

The following components are included in the balance sheet value of nuclear power plants currently in service:

- the discounted cost of decommissioning the facilities;
- the discounted cost of last core nuclear fuel, including depreciation of residual reactor fuel that will not be fully irradiated when production shuts down, the cost of nuclear fuel reprocessing and the cost of removing and storing waste from these operations.

Strategic safety spare parts for nuclear facilities are treated as property, plant and equipment, and depreciated over the residual useful life of the last unit of the series to which they are assigned.

Impairment is booked in respect of certain temporarily closed down non-nuclear plants, when it is unlikely that they will ever be brought back into service.

1.5.2 Property, plant and equipment operated under concession

In France, EDF is the operator for two types of public service concessions:

- public electricity distribution concessions in which the grantors are local authorities (municipalities or syndicated municipalities);
- hydropower concessions with the French State as grantor.

1.5.2.1 Public electricity distribution concessions

EDF is the concession operator for the island networks located in Corsica and France's overseas departments.

The accounting treatment of concessions is based on the concession agreements, with particular reference to their special clauses. These agreements generally use standard concession rules deriving from the 1992 Framework Contract negotiated with the National Federation of Licensors and Local Utilities (*Fédération nationale des collectivités concédantes et régies* – FNCCR) and approved by the public authorities.

All assets used under concessions are reported in the balance sheet assets as property, plant and equipment operated under concession, regardless of their initial financing, with recognition of a liability corresponding to any assets supplied for nil consideration by concession grantors.

These items of property, plant and equipment are stated at cost less accumulated depreciation, and amortized on a straight-line basis over the estimated useful life.

1.5.2.2 Hydropower concessions

Hydropower concessions follow standard rules approved by decree.

Assets attributed to the hydropower concessions comprise hydropower generation equipment (dams, pipes, turbines, etc) and, in the case of recently-renewed concessions, electricity generation and switching facilities (alternators, etc).

The concession assets are recorded under property, plant and equipment operated under concession. These items of property, plant and equipment are stated at cost less accumulated depreciation. Depreciation is calculated over their useful life, which is generally identical to the term of the concession.

Additional depreciation is booked in complement to industrial depreciation for assets operated under concession that are to be returned for nil consideration at the end of the concession but whose useful life extends beyond the concession term.

1.5.3 Depreciation

Property, plant and equipment are depreciated on a straight-line basis.

The estimated useful lives used to determine industrial depreciation for the principal facilities are the following:

Hydroelectric dams	75 years
Electromechanical equipment used in hydropower plants	50 years
Fossil-fired power plants	30 to 45 years
Nuclear power plants	40 years
Distribution installations (lines, substations)	20 to 45 years

1.6 Long-term asset impairment

At the year-end and at each interim reporting date, EDF assesses whether there is any indication that an asset could have been significantly impaired. If so, an impairment test is carried out as follows:

- EDF measures any long-term asset impairment by comparing the carrying value of these assets, classified into cash-generating units where necessary, and their recoverable amount, usually determined using the discounted future cash flow method;
- the discount rates used for these purposes are based on the weighted average cost of capital for each asset or group of assets concerned;
- future cash flows are based on medium-term plan projections.

This impairment test is based on business plans and assumptions approved by the management.

1.7 Investments

1.7.1 Investments

Investments are carried at cost, except for certain investments acquired before 1 January 1977 which were revalued, replacing the original cost by the fair value at the end of 1976 if the fair value was higher.

Gains and losses on sales of investments are valued using the FIFO (first in first out) method.

In accordance with the Emergency Committee opinion 2007-C of 15 June 2007, transfer duties, fees and commissions and legal fees related to acquisitions of investments are included in the cost of acquisition of the asset. This concerns shares governed by article 39.1.5 of the French Tax Code. Expenses of this type relating to other shares are included in expenses. Tax-regulated amortization of acquisition costs is recorded in an excess depreciation account.

When the book value of investments is higher than their value in use, a provision is recorded to cover the difference.

The value in use of listed securities in non-consolidated entities is based on stock market price.

For unlisted and listed securities in companies included in the EDF group consolidation, the value in use is determined by reference to equity or net adjusted consolidated assets, taking into account expert valuation information and information that has become known since the previous year-end when necessary.

1.7.2 Investment securities

EDF has set up two investment portfolios:

- the first comprises dedicated financial assets intended to finance the end of nuclear fuel cycle operations, for which provisions have been accrued. These assets are managed separately from other financial assets and investments in view of their specific objective, and comprise bonds, equities, collective investment funds and "reserved" funds built up by EDF solely for its own use;
- the second comprises securities acquired to generate a satisfactory return on investment in the medium to long term, without participating in the management of the companies concerned.

Investment securities also include treasury shares that cover obligations relating to debt instruments providing access to the company's capital, acquired under a liquidity contract with an investment services company or through an external operation or capital reduction, in application of CNC Emergency Committee opinion 98-D of 17 December 1998.

Shares are recorded at acquisition cost. In compliance with CRC regulation 99-03 and CNC Emergency Committee opinion 2005-J of 6 December 2005, transfer duties, professional fees, commissions, legal expenses and purchasing costs are all charged to expenses, under the option used for other investments and non-consolidated investments.

The investment portfolios (shares and bonds) are recorded at acquisition cost. If the carrying amount of a security is lower than the book value, the unrealized capital loss is fully provisioned without being netted against potential gains on other securities. The carrying amount of listed securities is assessed individually, taking the stock market price into account. For unlisted securities, the carrying amount is also assessed individually, mainly in consideration of the growth prospects of the companies concerned and their share prices.

1.7.3 Other financial assets

As part of Group activities, EDF grants short-term loans in foreign currencies to its subsidiaries. In order to reduce exposure to foreign exchange risks, the Group mainly finances these loans by short-term commercial paper issues in foreign currencies and in Euros, together with the use of currency hedging derivatives.

1.8 Inventories and work-in-progress

The initial cost of inventories includes the direct material costs (including the effect of hedging), labor costs and overheads incurred to bring the inventories to their current condition and location. They are subsequently measured at weighted average cost.

1.8.1 Nuclear fuel and materials

Inventory accounts include:
- nuclear materials, whatever their form during the fuel production cycle;
- and fuel components in the warehouse or in the reactor.

The stated value of nuclear fuel and materials and work-in-progress is determined based on direct processing costs including materials, labor and subcontracted services (*e.g.* fluoration, enrichment, production, etc).

In accordance with the notion of "loaded fuel" as defined in the decision of 21 March 2007, the cost of inventories for fuel in reactors but not yet irradiated includes expenses for spent fuel management and long-term radioactive waste management. The corresponding amounts are taken into account in the relevant provisions.

Interest expenses incurred in financing inventories of nuclear fuels are charged to expenses for the period.

Withdrawals from nuclear fuel inventories are valued using the weighted average cost method, applied to each component (natural uranium, fluoration, enrichment, fuel assembly production).

Nuclear fuel consumption is determined for each component based on forecasts of quantities used per kWh produced. At the end of each campaign, a physical inventory is carried out based on neutronic measurements and the inventories are corrected accordingly.

1.8.2 Other fuels

Inventories of "other fuels" consist of fossil materials required for operation of the fossil-fired plants.
These inventories are measured using the weighted average cost method, applied to each component.

1.8.3 Operating materials and equipment

These inventories are measured at weighted average cost. Direct and indirect purchasing costs are included in the initial cost.

Provisions concerning spare parts supplied under a maintenance program are based on the turnover of these parts and the useful lives of generation units.

Safety spare parts used for nuclear power plants that require specific delivery times, production specifications and utilization are included in property, plant and equipment.

1.8.4 Gas held for trading

Inventories are valued at weighted average cost including direct and indirect purchasing costs, principally transmission costs.
Impairment of these inventories is determined based on the net realizable value, *i.e.* the future sale price.

1.9 Accounts receivable and marketable securities

1.9.1 Trade receivables

Trade receivables are stated at nominal value.

Trade and other receivables also include revenue based on an estimate of energy delivered and measured but not yet billed, and energy delivered and not yet measured or billed.

A provision is recorded to cover the future cost of energy not yet measured or billed.

A provision is recorded when the carrying amount, based on the probability of recovery, assessed statistically or on a case-by-case basis depending on the type of receivable, is lower than book value. The risk associated with doubtful receivables is evaluated individually.

1.9.2 Marketable securities

Marketable securities are initially recorded as assets at acquisition cost, and restated at their value in use at year-end.
For listed securities, the value in use is equal to the year-end stock market price. For unlisted securities, the value in use is the probable trading value taking the company's growth prospects into consideration. A provision is recorded to fully cover any unrealized losses, without netting against unrealized gains. Gains and losses on sales of marketable securities are valued using the FIFO (first in first out) method.

Treasury shares purchased for attribution to employees under a specified plan are also classified as marketable securities. In accordance with CNC opinion 2008-17 of 6 November 2008 impairment based on market price is not recognized in respect of treasury shares.

1.10 Deferred charges

Bond redemption premiums are amortized on a straight-line basis over the term of the related bond (or each tranche of the bond to maturity in the case of serial bonds).
Commissions and external costs paid by EDF upon issuance of borrowings are spread on a straight-line basis over the term of the related instruments.

1.11 Translation of receivables and payables in foreign currencies

Foreign currency receivables and payables are translated into Euros at the year-end exchange rates. The resulting translation differences are recorded in the balance sheet in other receivables and other liabilities under "Unrealized foreign exchange gains" and "Unrealized foreign exchange losses". Provisions are recorded to cover all unrealized exchange losses on foreign currency borrowings not hedged for exchange risks. Unrealized gains are not included in the income statement.
Translation differences with respect to swaps hedging foreign currency borrowings are recorded under "Unrealized foreign exchange gains" and "Unrealized foreign exchange losses" as an offsetting entry to "Cash Instruments".

1.12 Tax regulated provisions

The following items are recorded under this heading:
- excess depreciation on generation, transmission and distribution facilities computed using the declining-balance method;
- accelerated depreciation on the chimney sulfur removal facilities of fossil-fired plants;
- excess depreciation on software developed in-house by the company.

1.13 Special concession accounts

These liabilities relate mostly to public electricity distribution concessions for the Island Energy Systems (IES), and Hydropower concessions.

Recognition of special IES public distribution concession liabilities

These liabilities represent the contractual obligations specific to the concession rules, as reported annually to the grantor:
- rights in existing assets: these correspond to the grantor's right to recover all assets for nil consideration. This right comprises the value in kind of the facilities – the net book value of assets operated under concession – less any as yet unamortized financing provided by the operator;
- rights in assets to be replaced: these correspond to the operator's obligation to contribute to the financing of assets due for replacement. These non-financial liabilities are recorded under the following headings:
  - depreciation recorded on the portion of assets financed by the grantor;
  - provision for renewal, generally based on the difference between the replacement value at year-end and the historical value of the assets, concerning only assets due for renewal before the end of the concession; the annual allocations to the provision correspond to the difference between the replacement value as remeasured at each year-end, and the historical value, less any existing provisions. The net amount is spread over the residual useful life of the assets. This provision is included in provisions for expenses.

When assets are replaced, the provision and amortization of the grantor's financing recorded in respect of the replaced item are eliminated and transferred to the rights in existing assets, since they are considered as the grantor's financing for the new asset. Any excess provision is taken to income.

During the concession, the grantor's rights in assets to be replaced are thus transferred upon the asset's renewal to become the grantor's rights in existing assets, with no outflow of cash to the benefit of the grantor.

Recognition of special Hydropower concession liabilities:

These liabilities comprise:
- the value of assets remitted for nil consideration and contributions received;
- differences arising from revaluations in accordance with French legislation for fixed assets put into service before 1 January 1959 and before 1 January 1977;
- and since 1 January 2009 (when implementation decree 2008-1009 of 26 September 2008 came into force) additional depreciation booked for facilities that are to be returned for nil consideration at the end of the concession but whose useful life extends beyond the concession term. This additional depreciation is based on the share of the assets' net book value at the end of the concession financed by the concession operator.

Following the changes made to the accounting treatment of Hydropower concessions at 1 January 2009, the 1959 revaluation reserve is transferred to equity when the assets concerned are retired.

The net revaluation reserve generated by the 1976 revaluation is taken to income over the residual useful life of the assets concerned.

The value of assets remitted for nil consideration and contributions received are transferred to the income statement over their useful lives.

1.14 Provisions for risks and expenses

EDF recognizes provisions for risks and expenses if the following three conditions are met:
- EDF has a present obligation (legal or constructive) towards a third party that arises from an event prior to the closing date;
- it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation;
- the obligation's amount can be estimated reliably.

Provisions are determined based on EDF's estimate of the expected cost necessary to settle the obligation. Estimates are based on management data from the information system, assumptions adopted by EDF, and if necessary experience of similar transactions, or in some cases based on independent expert reports or contractor quotes. The various assumptions are reviewed for each closing of the accounts.

The company records any changes in estimates on long-term provisions as required by CRC regulation 2000-06 and Emergency Committee regulation 2005-H.

The proceeds from expected asset disposals are not taken into account in calculating provisions, even if these disposals are closely linked to events which gave rise to the provisions.

If it is anticipated that all or part of the expenses necessary to settle an obligation covered by a provision will be reimbursed, the reimbursement is recognized under receivables if and only if the company is virtually certain of receiving it.

It may very rarely happen that a provision cannot be booked due to lack of a reliable estimate. In such cases, the obligation is mentioned in the notes as a contingent liability, unless there is little likelihood of an outflow of resources. Contingent assets and liabilities are not recorded.

The provisions for risks and expenses mainly cover the following:
- unrealized foreign exchange losses;
- the future cost related to energy not yet measured or billed;
- future losses relating to multi-year agreements for the purchase and sale of electricity or gas:
  - losses on energy purchase agreements are measured by comparing the acquisition cost under the contractual terms with the forecast price of electricity on the European market;
  - losses on electricity sale agreements are measured by comparing the estimated income under the contractual terms with the cost of generating the energy to be supplied, based on the cost of nuclear power generation;
  - losses on gas sale agreements are measured by comparing the estimated income under the contractual terms with the cost of supplying the energy;
- costs of renewal of facilities operated under distribution concessions;
- back-end nuclear cycle expenses: provisions for spent fuel management and for the long-term radioactive waste management are booked for all fuels. This provision concerns all fuel in reactors, regardless of the extent of irradiation; it also covers management expenses for radioactive waste resulting from decommissioning of nuclear plants;
- costs of decommissioning power plants and the costs relating to fuel in the reactor when the reactor is shut down (provision for last cores);
- costs of 10-year inspections of nuclear and fossil-fired power plants.

Provisions to cover back-end nuclear cycle expenses, expenses related to the decommissioning of power plants and last cores, and future losses relating to multi-year energy purchase and sale agreements are estimated based on future discounted outflows, using rates that represent the best estimate of a long-term yield on bond markets.

The rate of inflation and the discount rate are based on economic parameters specific to France.

The discount effect generated at each closing to reflect the passage of time is included in financial expenses.

A change in provisions resulting from a change in discount rates, a change in the disbursement schedule or a change in contractor's estimate would be recorded:
- as a change in the corresponding assets if the provision was initially covered by balance sheet assets;
- in the income statement in all other cases.

1.15 Provisions and obligations for employee benefits

EDF's employees are entitled to benefits both during and after their employment, in accordance with the statutory regulations for companies in the electricity and gas sector (IEG) in France.

1.15.1 Calculation and recognition of employee benefits

In application of the CNC Emergency Committee opinion 2000-A issued on 6 July 2000 and article 335.1 paragraph 2 of the General Chart of Accounts, EDF opted for recognition of post-employment benefits granted to personnel as of 1 January 2005.

The actuarial value of obligations under defined-benefit plans is calculated by the projected unit credit method, which determines the present value of entitlements earned by employees at year-end to pensions, post-employment benefits and long-term benefits, taking into consideration the country's specific economic conditions and expected wage increases.

In calculating pensions and other post-employment benefit obligations, this method takes the following factors into consideration, in compliance with CNC recommendation 2003-R01:
- career-end salary levels, with reference to employee seniority, projected salary levels at the time of retirement based on the expected effects of career advancement, and estimated trends in pension levels;
- retirement age, determined on the basis of the applicable provisions (such as years of service and number of children, taking into account the prolongation of the employee contribution period to qualify for a full pension);
- forecast numbers of pensioners, determined based on the employee turnover rate and mortality data;
- reversion pensions, taking into account both the life expectancy of the employee and his/her spouse and the marriage rate observed for the population of employees in the electricity and gas sector;
- a discount rate based on the year-end yield on high-quality corporate bonds with a similar duration to EDF's benefit obligations.

The provision takes into account the value of the assets that fund pension obligations, which are deducted from the value of the obligation as determined above.

Any actuarial gain or loss on pensions and post-employment benefit obligations in excess of 10% (the "corridor") of the obligations or fund assets, whichever is the highest, are recognized in the income statement progressively over the average residual working life of the company's employees.

For other long-term benefits, any actuarial variance and the entire past service cost are directly included in the provision, without application of the "corridor" rule.

The net expense booked for employee benefit obligations includes:
- the cost of additional vested benefits, and the financial discount cost on existing benefits;
- the income corresponding to the expected return on plan assets;
- the income or expenses resulting from amortization of actuarial gains or losses;
- the income or expense related to amendments/settlements of the benefit plans or introduction of new plans.

Entitlements earned during the year are added to the provision and discounting costs are included in financial expenses.

1.15.2 Pension and post-employment benefit obligations

Following the financing reform for the special IEG pension system introduced in 2004 with effect from 1 January 2005, provisions recorded for the special pension system correspond to the specific benefits of employees, *i.e.* benefits not covered by the standard benefit systems.

The provision for pensions thus covers:
- specific benefits of employees in the deregulated or competitive activities;
- specific benefits earned by employees from 1 January 2005 for the regulated activities (transmission and distribution) past benefits were financed by the CTA levy (*Contribution Tarifaire d'Acheminement*);
- specific benefits of employees benefiting from early retirement before the standard legal retirement age.

The valuation also includes CNIEG management expenses payable by EDF for the administration and payment of retired employees' pensions by the CNIEG.

In addition to pensions, other benefits are granted to IEG status employees not currently in active service, as detailed below:
- **benefits in kind (electricity/gas):** article 28 of the IEG national statutes entitles all employees (active or inactive) to benefits in kind in the form of supplies of electricity or gas at the preferential "employee price". EDF's obligation for supplies of energy to EDF and GDF SUEZ employees corresponds to the probable present value of kWhs supplied to beneficiaries during their retirement, valued on the basis of the unit cost, taking into account the payment received under the energy exchange agreement with GDF SUEZ;
- **retirement gratuities:** these are paid upon retirement to employees due to receive the statutory old-age pension, or to their dependants if the employee dies before reaching retirement. These obligations are almost totally covered by an insurance policy;
- **bereavement benefit:** this is paid out upon the death of an inactive or handicapped employee, in order to provide financial assistance for the expenses incurred at such a time (article 26 – § 5 of the National Statutes). It is paid to the deceased's principal dependants (statutory indemnity equal to two months' pension) or to a third party that has paid funeral costs (discretionary indemnity equal to the costs incurred);
- **bonus pre-retirement paid leave:** all employees eligible to benefit immediately from the statutory old-age pension and aged at least 55 at their retirement date are entitled to 18 days of bonus paid leave during the last twelve months of their employment;
- **other benefits** include costs of studies indemnities, additional retirement indemnities, time banking for pre-retirement leave, and pensions for personnel sent on secondment to companies not covered by the IEG system.

1.15.3 Other long-term benefit obligations

These benefits concern employees currently in service, and include:
- annuities following incapacity, invalidity, industrial accident or work-related illness; like their counterparts in the general national system, IEG employees are entitled to financial support in the event of industrial accident or work-related illness, and invalidity and incapacity annuities and benefits. The obligation is measured as the probable present value of future benefits payable to current beneficiaries, including any possible reversions;
- long-service awards;
- specific benefits for employees who have been in contact with asbestos.

1.16 Derivatives

1.16.1 Short-term foreign exchange rate derivatives

Short-term foreign exchange rate derivatives comprise:
- currency options;
- currency swaps;
- and forward currency contracts.

Gains and losses on instruments designated as hedges are recorded in the income statement symmetrically to the income and expenses recognized in respect of the hedged item.

This treatment applies to currency swaps used to hedge fuel supplies contracted in foreign currencies.

The treatment for instruments not qualifying as hedges is as follows:
- derivatives traded on organized or similar markets are stated at fair value at the year-end. The unrealized foreign exchange gain is recorded in the financial result;
- for derivatives traded over the counter, a provision is recorded for unrealized losses and unrealized gains are not recognized;
- premiums paid or received on currency options are recognized in income at settlement.

Instruments outstanding at the year-end are included in off balance sheet commitments at the nominal value of the contracts.

1.16.2 Long-term interest rate and foreign exchange rate derivatives

One of the main objectives of exchange rate and interest rate risk management is to minimize their impact on equity and net income. For exchange rate risks, debts are as far as possible entered into in the local currency of the entity (parent company or subsidiary). If a transaction is undertaken in a different currency, a hedging policy (matching assets and liabilities) is set up wherever possible.

Long-term instruments consist of interest rate swaps and currency swaps.

Derivatives used in a hedging relationship are taken into account to adjust the foreign exchange result and interest expenses on a debt. If the exchange rate risk is totally hedged, no provision is recorded. If the risk is only partly hedged, a provision equivalent to the total unhedged unrealized exchange loss is recorded.

If no hedging relationship exists:
- derivatives traded on organized or similar markets are stated at fair value at the year-end. The unrealized foreign exchange gains and losses are recorded in the financial result;
- for derivatives traded over the counter, a provision is established for unrealized losses and unrealized gains are not recognized.

Instruments outstanding at the year-end are included in off balance sheet commitments at the nominal value of the contracts.

1.17 Commodity contracts

Forward financial instruments on commodities are traded for hedging purposes. Gains and losses on these operations are included in sales or in the cost of energy purchases, depending on the nature of the hedged item.

1.18 Free shares

For the attribution of free shares to employees, a provision is established in respect of the obligation to deliver the shares, taking into consideration the services rendered by the employee. The value of such a provision would be based on:

- estimates of the number of shares to be remitted to employees;
- the acquisition price of shares already acquired, less any impairment recognized on those shares;
- the market price of shares still to be acquired or the forward price plus the premium paid if the company has acquired purchase options for treasury shares.

This provision should be remeasured at each year-end prior to delivery of the shares, and reversed when the shares are remitted to employees.

1.19 Environment

1.19.1 Greenhouse gas emission quotas

EDF has been allocated greenhouse gas emission quotas since 2005.

In compliance with CNC Emergency Committee opinion 2004-C of 23 March 2004, greenhouse gas emission quotas are recorded as intangible assets (see note 1.4), with an offsetting entry in a special liability account under "Other liabilities".

Greenhouse gas emissions generate an expense and an obligation to surrender quotas equivalent to the emissions produced. The quotas allocated by the State give rise to reversals from the amounts in the special liability account, and recognition of income.

If the purchased quotas held at the end of the year are higher than the forecast or actual emissions for the year, an impairment test must be applied to the excess and impairment must be booked where relevant.

As quotas are allocated by period, quotas receivable from the State for the period are reported in the notes as Commitments received. When quotas or emission credits are sold, the difference between the intangible asset's book value and sale price is recorded in income.

If the quotas sold were previously allocated by the State but not yet utilized, the corresponding amount is reversed from the special liability account.

1.19.2 Energy savings certificates

In application of French law 2005-781 of 13 July 2005 defining the major lines of the national energy policy, which introduced a system of energy savings certificates for legal entities selling electricity, gas, heat or cold to end-users, and CNC Emergency Committee opinion 2006-D of 4 October 2006 defining the relevant accounting treatment under French GAAP, EDF's financial statements reflect the management of energy savings certificates.

Expenses incurred to meet an energy savings obligation are recorded as:

- tangible assets, if the action taken by the company concerns its own assets and the expenses qualify for recognition as an asset;
- expenses for the year incurred, if they do not meet the requirements for capitalization or if the action taken is to encourage third parties to save energy.

Under the general framework of an energy savings certificates system:

- certificates obtained from the State after the action taken are not recognized in the accounts;
- purchases of energy savings certificate are included in:
  - expenses, if the purchases are made to meet the obligation;
  - intangible assets, if the certificates are purchased for resale (as there is no active market).

Certificates purchased, obtained or receivable from the State in support of the action taken are recorded in off-balance sheet accounts.

Note 2. Regulatory events in 2011 with an impact on the financial statements

2.1 "NOME" law on the new electricity market organization

The French "NOME" *(Nouvelle organisation du marché de l'électricité)* law on the new electricity market organization was enacted on 7 December 2010 and the first implementation decrees were issued in April and May 2011.

The basic principles of this law, which is intended to encourage greater competition on the electricity market in France, are:

- development of competition, by allowing other suppliers temporary access to a portion of EDF's baseload nuclear energy output (up to a maximum of 100 TWh excluding network operators' losses) until 2025. This is the principle of regulated access to historical nuclear energy (ARENH – *Accès Régulé à l'Électricité Nucléaire Historique*) for which the price is set by government decision;
- contribution to supply security, obliging every supplier to have a sufficient demand response capacity for consumption or generation to supply all customers, particularly in peak consumption periods;
- continuation of the "blue" tariff for residential and small business customers; the calculation method will be modified from 2015 to reflect the ARENH principle;
- discontinuation of the "yellow" and "green" tariffs for business customers from 2015;
- deferral by 5 years, to 29 June 2016, of the deadline for building up the dedicated assets portfolio, provided certain criteria are met.

The ARENH principle came into force on 1 July 2011. The first ARENH deliveries to EDF's competitors are for an initial annual volume of 61.3 TWh. This volume cannot exceed 100 TWh each year, to be increased from August 2013 by the quantities sold to network managers to cover technical losses.

According to the "NOME" law, the ARENH price has been set at €40/MWh for the second half of 2011 and €42/MWh for the first half of 2012. This initial price will move towards the full cost of generation in the existing nuclear fleet, in application of a future decree defining the costs included in the ARENH.

For the second half of 2011, 30.8 TWh were delivered under the ARENH system for a total value of €1,233 million recorded on sales.

The capacity obligation system is due to come into force from 2015.

2.2 End of the transition tariff system (TaRTAM)

In application of the NOME law, the TaRTAM transition tariff system ended when the ARENH principle took effect, *i.e.* from July, 2011.

2.3 CSPE

The Contribution to the Public Electricity Service (*Contribution au Service Public de l'Électricité* or CSPE) is intended to compensate for certain public service charges assigned to EDF in particular. The CSPE is based on electricity consumption and is collected directly by EDF and other electricity suppliers from the end-user. It was set at €4.5/MWh in 2004, with a maximum of 7% of the tariff.

France's 2011 Finance Law abolished the legal limit on the CSPE and stipulated that if the government did not issue a decision in response to the French Energy Regulation Commission's proposal, the unit amount proposed by the CRE would automatically apply at January 1 subject to a maximum increase of €3/MWh. Accordingly, the CSPE was raised on 1 January 2011 to €7.5/MWh.

The amended Finance Law for 2011 set the CSPE at €9/MWh from 31 July 2011 to 30 June 2012, then €10.5/MWh from 1 July to 31 December 2012.

Note 3. Significant events and transactions in 2011

The main events and transactions in 2011 with a definite or potential significant impact on the financial statements are as follows:

3.1 Preliminary agreement for acquisition of Edison by EDF and acquisition of Edipower by A2A

On 26 December 2011, EDF, A2A, Delmi, Edison and Iren signed a preliminary agreement for reorganization of the shareholding structure of Edison and Edipower. EDF will take control of Edison by purchasing Delmi's entire investment in TDE (50%) at the negotiated price of €0.84 per Edison share or a total of €705 million.

After completion of the operation, which is subject to certain conditions particularly concerning approval by the regulatory and competition authorities, EDF will hold 78.96% of the capital and 80.7% of the voting rights in Edison.

This agreement also provides for a mandatory tender offer by EDF to Edison's minority shareholders, to buy out their investments at a price no higher than the price agreed for TDE's Edison shares, *i.e.* €0.84 per share. When EDF takes control of Edison, Delmi will take control of Edipower by purchasing the investments in Edipower held by Edison (50%) and Alpiq (20%) for the total sum of €805 million.

In accordance with the timeline defined in the preliminary agreement, on January 24, 2012 the Boards of Directors of Edison and EDF validated the draft preliminary agreement for reorganization of the shareholding structure of Edison and Edipower. The governance bodies of the other companies concerned by the transaction also gave their approval.
The preliminary agreement of 26 December 2011 also stipulates that a long-term (6-year) gas supply contract is to be signed between Edison and Edipower to cover 50% of Edipower's gas requirements.

The final agreements were signed on 15 February 2012. Their execution is conditional upon confirmation by the Italian market regulator (Consob) of the price of €0.84 per share for the offer to minority shareholders, and approval of the operations by the Italian competition authorities and the European Union.

Acquisition of TDE will enable EDF to have exclusive control over Edison, from a date that should normally be before 30 June 2012.

3.2 Simplified alternative public cash or exchange offer for EDF Énergies Nouvelles

On 8 April 2011 EDF, which already owned 50% of EDF Énergies Nouvelles through its subsidiary EDF Développement Environnement (EDEV), launched a simplified alternative public offer to acquire all the shares in EDF Énergies Nouvelles, for a cash consideration or in exchange for shares.

EDF's Board of Directors approved this offer at its meeting of 8 April 2011. The operation was supported by the Mouratoglou group, a longstanding partner of EDF and 25.1% shareholder in EDF Énergies Nouvelles, which tendered its entire holding in EDF Énergies Nouvelles to the offer, half for shares and half for cash.

When the operation was completed on 29 June EDF had acquired 36,228,431 shares in EDF Énergies Nouvelles: 26,120,745 through the cash offer at the price of €40 per share, and 10,107,686 shares through the exchange offer.

EDF then proceeded with a compulsory squeeze-out of shares not tendered to the offer, at the price of €40 per share. In parallel, a liquidity contract was set up to enable EDF to purchase shares covered by employee share plans.

As a result of the exchange offer, on 24 June 2011 EDF issued 11,945,448 new shares, raising the share capital by €6 million with a share issue premium of €300 million.

By decision of Board of Directors, EDF repurchased 11,945,448 treasury shares during 2011 for €324 million in order to neutralize the operation's dilutive effect on EDF shareholders' percentage control. This neutralization became effective on 28 September 2011 after a capital reduction through cancellation of treasury shares.

The share capital thus returned to its initial level of €924,433,331 comprising 1,848,866,662 shares with nominal value of €0.50 each. The €318 million difference between the acquisition price for the 11,945,448 cancelled shares and their nominal value was charged to the share issue premium.

3.3 Nuclear accident in the Fukushima plant in Japan

The French Prime Minister asked the Nuclear Safety Authority (ASN) in a letter dated 23 March 2011 to conduct further assessments of the safety of France's nuclear facilities. To ensure coherence in the actions undertaken at national and European level, the ASN presented specifications for these assessments on May 9, 2011.

In April, as well as the additional safety assessments, EDF reported its initial proposals to reinforce safety and control of its nuclear generation fleet to the ASN panel of commissioners. After Fukushima, EDF prepared an initial program of actions for the short, medium and long term, covering several dimensions:

- assessment of the top-level technical and human resources that would be made available in the event of an accident;
- formation of a national rapid-intervention "task force" to reinforce the crisis response procedure, with dedicated transport equipment and human resources that can be mobilized within 24-48 hours;
- a detailed review of power plant design, to ensure that facilities have sufficient safety margins to cope with events such as earthquakes, floods, power loss and cooling.

On 15 September 2011, EDF submitted to the ASN its 19 additional safety assessment reports on the nuclear sites currently in operation and under construction. This in-depth examination of plant design showed that safety levels are good across all of EDF's nuclear fleet. Additional post-Fukushima measures have been proposed to the ASN, taking the assumptions further to help raise the level of plant safety even more.

On 3 January 2012, the ASN released its report on the additional safety assessments conducted following the Fukushima accident.

Following these assessments, the ASN considers that the facilities examined are sufficiently safe and there is no need to demand immediate closure for any of them. It also concludes that for ongoing operation, the plants' capacity to withstand extreme situations must be increased over and above current safety margins as soon as possible.

3.4 Bond issue

On 17 October 2011 EDF received the funds from a 30-year £1.25 billion sterling bond issue with annual coupon of 5.50%.

Note 4. Sales

Sales are comprised of:

(in millions of Euros)	2011	2010
Sales of energy [1]	40,096	38,902
Sales of goods and services	1,854	2,004
SALES	**41,950**	**40,906**

(1) Including a share of transport costs for sales of electricity and gas.

Sales were up by 2.6% from 2010. This change principally concerns electricity sales in France, particularly reflecting the regulated tariff increases of 15 August 2010 and 1 July 2011.

Note 5. Operating subsidies

(in millions of Euros)	2011	2010
OPERATING SUBSIDIES	**3,565**	**2,615**

Operating subsidies mainly comprise the subsidy received or receivable by EDF in respect of the "Contribution to the Public Electricity Service" (CSPE) introduced in 2003, and covered by the articles L.121-6 and following of the French Energy Code. This contribution is payable by end-users and collected by network operators or electricity suppliers, which then pay it to the *Caisse des Dépôts et Consignations*. It is intended to offset the surplus costs resulting actions to support renewable energies, additional electricity generation and purchase costs in non-interconnected zones to the mainland network, and the costs of social measures (the basic necessity tariff (*tarif de première nécessité*) and participation in aid for people in vulnerable situations).

In the financial statements, this compensation results in recognition of income of €3,556 million for 2011 (€2,605 million for 2010). The increase is mainly explained by higher purchase volume obligations, largely attributable to photovoltaic and wind power, and fuel purchases in non-interconnected zones.

Note 6. Reversals of provisions, amortization and depreciation

(in millions of Euros)	2011	2010
Reversals of provisions for risks	**78**	**110**
Pensions and similar obligations	766	789
Renewal of property, plant and equipment operated under concession	2	2
Spent fuel management	562	599
Long-term radioactive waste management	150	157
Decommissioning of power plants	287	277
Last cores	-	10
Other provisions for expenses [1]	444	658
Reversals of provisions for expenses	**2,211**	**2,492**
Reversals of impairment	**148**	**191**
TOTAL	**2,437**	**2,793**

(1) Including a €173 million reversal in 2011 from the provision for the transition tariff (TaRTAM) system (€501 million in 2010).

Note 7. Other operating income

(in millions of Euros)	2011	2010
OTHER OPERATING INCOME	**647**	**659**

Other operating income notably includes the greenhouse gas emission quotas allocated for the current year by the French State and used by EDF, in application of CNC Emergency Committee opinion 2004-C of 23 March 2004.

Note 8. Purchases and other external expenses

(in millions of Euros)	2011	2010
Fuel purchases used	3,116	3,284
Energy purchases [1]	10,696	9,892
Other purchases used	998	996
Services [2]	17,398	17,248
PURCHASES AND OTHER EXTERNAL EXPENSES	**32,208**	**31,420**

(1) The rise in energy purchases primarily concerns purchase obligations for photovoltaic and wind power.

*(2) This item notably consists of distribution network access fees invoiced by the subsidiary ERDF, including the rise in the TURPE network access tariff (*Tarif d'Utilisation des Réseaux Publics d'électricité*).*

Note 9. Taxes other than income taxes

(in millions of Euros)	2011	2010
Energy-related taxes [1]	1,398	1,556
Local Economic Contribution	457	429
Property taxes	355	336
Taxes on salaries and wages	142	128
Other taxes	257	178
TAXES OTHER THAN INCOME TAXES	**2,609**	**2,627**

(1) A net contribution of €316 million was booked in 2011 (€561 million in 2010) in connection with the transition tariff (TaRTAM) system, which ended when the ARENH principle came into force on 1 July 2011.

Note 10. Personnel expenses

Personnel expenses

(in millions of Euros)	2011	2010
Salaries and wages	3,600	3,377
Social contributions	2,161	2,125
PERSONNEL EXPENSES	**5,761**	**5,502**

The increase in personnel expenses results primarily from changes in the workforce and the basic national salary (SNB).

Average workforce

	2011			2010
	IEG status	Other	Total	Total
Executives	25,664	366	**26,030**	23,566
Operational, supervisory and technical staff	36,030	419	**36,449**	36,814
AVERAGE WORKFORCE	**61,694**	**785**	**62,479**	**60,380**

Average workforce numbers are reported on a full-time equivalent basis.

Note 11. Depreciation and amortization

(in millions of Euros)	2011	2010
Amortization of intangible assets	104	93
Depreciation on property, plant and equipment:		
- owned by EDF	1,770	1,673
- operated under concession [1]	195	189
Total depreciation and amortization on fixed assets	**2,069**	**1,955**
Amortization of bond issuance expenses and other capitalized expenses	**31**	**24**
TOTAL	**2,100**	**1,979**

(1) Depreciation concerns the Island Energy Systems' "Public Distribution" concessions and "Hydropower concessions".

Note 12. Provisions

(in millions of Euros)	2011	2010
Provisions for risks	**90**	**117**
Pensions and similar obligations	515	442
Renewal of assets operated under concession	16	19
Management of spent nuclear fuel	396	337
Long-term management of radioactive waste	36	-
Decommissioning of fossil-fired power plants	11	71
Other provisions for expenses [1]	218	452
Provisions for expenses	**1,192**	**1,321**
Provisions for depreciation	**176**	**175**
TOTAL	**1,458**	**1,613**

(1) Including an allocation of €173 million to the provision for the transition tariff (TaRTAM) system in 2010 that had no equivalent in 2011.

Note 13. Other operating expenses

(in millions of Euros)	2011	2010
Greenhouse gas emissions	201	324
Other operating expenses	863	784
TOTAL	**1,064**	**1,108**

Note 14. Financial result

(in millions of Euros)	2011	2010
Income from investments [1]	1,047	1,710
Income from other securities and receivables related to fixed assets	344	358
Interest and similar income [2]	827	30
Reversal of provisions and transfert of charges [3]	424	925
Foreign exchange result	112	58
Income on sales of marketable securities	61	47
Financial amortization and provisions [4]	(3,344)	(3,102)
Interest and similar expenses [5]	(2,158)	(1,827)
FINANCIAL RESULT	**(2,687)**	**(1,801)**

(1) In 2010, €633 million of dividends were received from EDF International; there was no equivalent transaction in 2011.

(2) Most of the change results from the rise in unrealized foreign exchange gains on foreign exchange instruments, and a €319 million debt waiver by the CEA, relating to a loan from the CEA to EDF for the construction of the Creys-Malville plant.

(3) This item notably includes reversals from provisions on dedicated assets (€84 million compared to €562 million in 2010).

(4) This item mainly includes the financial discounting expenses for long-term provisions (nuclear and employee benefit provisions).
In 2011, allocations to provisions principally concerned shares in Veolia (€272 million), shares in La Gérance Générale Foncière (€212 million) and dedicated assets (€293 million).
In 2010, they essentially related to shares in the Italian subsidiaries MNTC and Wagram 4, for an amount of €700 million.

(5) The change in this item is mainly attributable to rises in unrealized foreign exchange losses on foreign exchange instruments.

Note 15. Exceptional result

At 31 December 2011, exceptional items resulted in net income of €197 million, the main item being net reversals of accelerated tax depreciation on property, plant and equipment and intangible assets amounting to €185 million.

At 31 December 2010, exceptional items resulted in net income of €254 million, the main items of which are the following:

- net reversals of accelerated tax depreciation on property, plant and equipment and intangible assets amounting to €191 million;
- capital gains of €102 million on disposals of property, plant and equipment, including €69 million in connection with contributions of buildings to Sofilo.

Note 16. Income taxes

16.1 Tax group

Since 1 January 1988, EDF and certain subsidiaries have formed a group subject to the tax consolidation system existing under French tax legislation (articles L.223A to L.223U of the French Tax Code). The tax consolidation group comprises 47 subsidiaries in 2011, including RTE Réseau de Transport d'Électricité (RTE), ERDF and EDF International.

16.2 Income tax payable

Under article L.223A of the French Tax Code, EDF, as the head of the tax consolidated group, is the sole entity responsible for payment of income taxes and additional related contributions.

The tax consolidation agreement between the members of the tax group stipulates that the arrangement must be neutral in effect. In application of this principle, each subsidiary pays the consolidating company a contribution to the group income tax equivalent to the tax it would have paid had it been taxed separately.

The tax consolidation agreement between EDF and the subsidiaries included in the tax group requires EDF to reimburse loss-making subsidiaries for the tax saving generated by their losses, as and when the entities concerned make taxable profits.

In 2011, income tax includes the additional 5% contribution based on income tax introduced by the amended Finance Law for 2011 (article 30 of law 2011-1978 of 28 December 2011).

EDF, as the head of the tax consolidated group, recorded an income tax expense of €356 million for 2011. The breakdown is as follows:
- €278 million for the current taxable profit of 2011;
- €112 million for the net exceptional income;
- €(22) million for adjustments resulting from the tax consolidation;
- €(12) million, mainly for adjustments relating to the previous year.

16.3 Deferred taxes

Deferred taxes are not recognized in the individual accounts of EDF. Deferred taxes result from differences between the accounting bases and tax bases of items. They generally arise as a result of timing differences in the recognition of income and expenses:
- deferred tax assets reflect expenses which will be tax deductible in future years or losses carried forward which will reduce taxable income in the future;
- deferred tax liabilities reflect either advance tax deduction of future accounting expenses or accounting revenues that will be taxable in future years and will increase the tax basis.

Changes in deferred taxes are as follows:

(in millions of Euros)	2011	2010	Change
1. Timing differences generating a deferred tax asset			
Non-deductible provisions [1]	(11,720)	(11,118)	(602)
Financial instruments and unrealized exchange gains	(3,104)	(3,195)	91
Other	(255)	(213)	(42)
Total deferred tax assets subject to the standard rate	**(15,079)**	**(14,526)**	**(553)**
2. Timing differences generating a deferred tax liability			
Financial instruments and unrealized exchange losses	2,859	2,534	325
Total deferred tax liabilities subject to the standard rate	**2,859**	**2,534**	**325**
Capital gains not yet taxed, net of capital losses	79	79	-
Total deferred tax liabilities subject to reduced rate	**79**	**79**	**-**
DEFERRED TAXES	**(12,141)**	**(11,913)**	**(228)**
Net future tax asset at standard rate	(4,207)	(4,130)	(77)
Net future tax liability at reduced rate	1	1	-

(1) Mainly concerning post-employment benefits granted to personnel.

Note 17. Gross values of intangible and tangible fixed assets

(in millions of Euros)	Gross value at 31/12/2010	Increases	Decreases	Gross value at 31/12/2011
Intangible assets				
Software	460	151	54	557
Other [1]	558	329	441	446
Sub-total	**1,018**	**480**	**495**	**1,003**
Property, plant and equipment owned by EDF				
Land	111	8	4	115
Buildings	9,084	368	356	9,096
Nuclear power plants	46,129	1,100	396	46,833
Machinery and plant other than networks	10,009	671	619	10,061
EDF-owned networks	674	108	1	781
Other	1,066	121	89	1,098
Sub-total	**67,073**	**2,376**	**1,465**	**67,984**
Property, plant and equipment operated under concession [2]				
Land	37	1	-	38
Buildings	8,505	359	3	8,861
Machinery and plant other than networks	975	371	3	1,343
Concession networks	1,993	109	9	2,093
Other	11	-	-	11
Sub-total	**11,521**	**840**	**15**	**12,346**
Assets in progress				
Tangible assets [3]	5,647	3,657	2,535	6,769
Intangible assets	892	284	162	1,014
Advances and progress payments on orders	1,208	160	-	1,368
Sub-total	**7,747**	**4,101**	**2,697**	**9,151**
TOTAL	**87,359**	**7,797**	**4,672**	**90,484**

(1) The €329 million increase includes €256 million related to greenhouse gas emission quotas allocated by the French State in 2011, and the €441 million decrease comprises €313 million for 2010 quotas surrendered to the State in 2011.

(2) Assets operated under concession concern the Island Energy Systems and Hydropower concessions.

(3) Investments in 2011 mainly concerned nuclear equipment for existing plants, construction of the EPR at Flamanville and renovation of fossil-fired plants.

Note 18. Depreciation, amortization and provisions on intangible and tangible fixed assets

(in millions of Euros)	Accum. at 31/12/2010	Increases	Decreases	Accum. at 31/12/2011
Intangible assets				
Software	201	91	54	238
Other	52	20	-	72
Sub-total	**253**	**111**	**54**	**310**
Property, plant and equipment owned by EDF				
Buildings and land developments	5,943	222	291	5,874
Nuclear generation plants	31,201	1,309	498	32,012
Machinery and plant other than networks	7,119	308	482	6,945
EDF-owned networks	287	21	1	307
Other	710	78	84	704
Sub-total	**45,260**	**1,938**	**1,356**	**45,842**
Property, plant and equipment operated under concession				
Buildings and land developments	5,276	313	3	5,586
Machinery and plant other than networks	742	235	2	975
Concession networks	761	56	7	810
Other	10	1	-	11
Sub-total	**6,789**	**605**	**12**	**7,382**
TOTAL	**52,302**	**2,654**	**1,422**	**53,534**

Note 19. Dedicated assets

19.1 Regulations

The French law of 28 June 2006 and its implementing regulations require assets, known as dedicated assets, to be set aside for secure financing of nuclear plant decommissioning expenses and long-term storage expenses for radioactive waste (spent fuel and fuel recovered from decommissioning). The regulations govern the way dedicated assets are built up, the management and governance of the funds themselves. These assets are clearly identified and managed separately from the company's other financial assets and investments. They are also subject to specific monitoring and control by the Board of Directors and the administrative authorities.

The initial aim of these laws and regulations was to cover the full present cost of long-term nuclear obligations by 29 June 2011. The NOME law enacted in 2010 deferred the deadline for constitution of dedicated assets by 5 years.

The decree of 29 December 2010 made RTE shares eligible for dedicated assets, subject to certain conditions and administrative authorization. Since the conditions were fulfilled and authorization was received, 50% of EDF's shares in RTE were allocated to dedicated assets on 31 December 2010.

19.2 Portfolio contents and measurement

EDF's dedicated assets consist of diversified bond and equity investments, and 50% of the shares in RTE since 31 December 2010.

19.2.1 Diversified bond and equity investments

Certain dedicated assets take the form of bonds held directly by EDF. The rest comprise specialized collective investment funds on leading international markets, managed by independent asset management companies. They take the form of open-end funds and small numbers of "reserved" funds established solely for the use of EDF (which does not participate in the fund management).

The dedicated asset portfolio is structured and managed according to a strategic allocation defined by the Board of Directors and reported to the administrative authorities. This strategic allocation is designed to meet the overall objective of long-term coverage of obligations, and determines the structure and management of the portfolio as a whole. It also takes into consideration international stock market cycles (for which the statistical inversion generally observed between equity market cycles and bond market cycles – as well as between geographical areas – has led EDF to define an overall composite benchmark indicator), and continuation of the long-term investment policy.

19.2.2 RTE shares

The allocation of RTE shares diversifies EDF's dedicated asset portfolio while reducing its volatility: infrastructure assets such as RTE offer predictable profitability and low correlation with other categories of financial assets such as equities or bonds.

Since RTE remains fully-owned by EDF, the shares remain classified as investments. The value of the shares allocated to dedicated assets is €2,368 million at 31 December 2011. This value corresponds to the net consolidated value of 50% of the Group's investment in RTE.

19.2.3 Valuation of the dedicated asset portfolio

Dedicated assets are classified in the balance sheet according to their accounting nature: investments, investment securities or marketable securities. They are valued under the accounting principles presented in note 1.

Details of the portfolio at 31 December 2011 are as follows:

	2011		2010	
(in millions of Euros)	Net book value	Fair value or realizable value	Net book value	Fair value or realizable value
RTE Shares	2,015	2,368	2,015	2,324
Investments Securities	12,058	12,734	12,405	13,423
Other financial investments	1	1	12	12
Dedicated asset portfolio – Investments	**14,074**	**15,103**	**14,432**	**15,759**
Marketable securities	578	576	69	70
Dedicated asset portfolio before hedge	**14,652**	**15,679**	**14,501**	**15,829**
Hedging instruments and other		(20)		(14)
DEDICATED ASSET PORTFOLIO	**14,652**	**15,659**	**14,501**	**15,815**

Net book value and fair value include unmatured accrued interest.

19.2.4 Changes in the dedicated asset portfolio over 2011

The cash allocation to the dedicated asset portfolio for 2011 amounts to €315 million (€1,343 million in 2010). In view of market conditions, allocations have been suspended since October 2011. In a context of tension on the European sovereign debt markets, EDF continued its prudent investment policy for these financial instruments in 2011, and as a result its exposure at year-end was limited for Italy and negligible for the most severely affected Euro-zone countries (Greece, Portugal, Ireland and Spain).

Withdrawals amounting to €378 million were made, equivalent to payments made in respect of the long-term nuclear obligations to be covered (€362 million in 2010).

19.3 Present cost of long-term nuclear obligations

Long-term nuclear obligations concerned by the regulations for dedicated assets are included in EDF's financial statements at the following values:

(in millions of Euros)	2011	2010
Provision for long-term radioactive waste management	6,722	6,508
Decommissioning provisions for nuclear plants	11,366	11,031
Provisions for last cores – portion of long-term radioactive waste management future costs	389	371
PRESENT COST OF LONG-TERM NUCLEAR OBLIGATIONS TO BE COVERED	**18,477**	**17,910**

Note 20. Investments

20.1 Movements in investments

(in millions of Euros)	Gross value at 31/12/2010	Increases	Decreases	Change	Reclassification	Gross value at 31/12/2011
Investments [1]	51,104	1,371	-	-	182	52,657
Receivables related to investments [2]	31	1,037	-	-	(23)	1,045
Investment securities	13,162	5,071	5,208	-	147	13,172
Other investments [3]	30	423	95	-	(324)	34
Loans	34	2	21	-	-	15
Loans to subsidiaries [4]	4,238	2,188	1,848	103	-	4,681
Other deposits and guarantees	137	13	19	-	3	134
Total	**68,736**	**10,105**	**7,191**	**103**	**(15)**	**71,738**

(in millions of Euros)	Gross value at 31/12/2010	Increases	Decreases	Change	Reclassification	Gross value at 31/12/2011
Provisions on investments and related receivables [5]	(928)	(222)	-	-	-	(1,150)
Provisions on investment securities [6]	(341)	(566)	84	-	-	(823)
Total	**(1,269)**	**(788)**	**84**	**-**	**-**	**(1,973)**
NET VALUE	**67,467**					**69,765**

(1) The net change in this item mainly results from the purchases and exchanges of EDF Énergies Nouvelles shares (€1,455 million) and the capital increase for EDF Production Électrique Insulaire (€211 million).

(2) In 2011, a €1 billion advance to EDF Environnement Développement, was recorded. The advance is intended to be capitalized.

(3) The change over the year mainly relates to treasury shares (see note 20.5).

(4) Loans to subsidiaries at 31 December 2011 total €4,681 million, including €1,993 million for EDF Trading, €1,400 million for RTE and €1,070 million for EDF Énergies Nouvelles.

(5) Increases to provisions mainly concern shares in the real estate subsidiary La Gérance Générale Foncière (GGF) (€212 million).

(6) Increases at 31 December 2011 include €293 million for dedicated assets and €272 million concerning shares in Veolia. The reversal of €84 million in 2011 concerns dedicated assets.

20.2 Subsidiaries and investments of at least 50% of capital

(in millions of Euros)	Gross book value of shares owned	Impairment recorded at 31/12/2011	% capital owned	Equity 2010	Net income 2010	Dividends received 2011	Sales 2010
I. Subsidiaries							
- Holding companies							
EDF Développement Environnement SA	1,268	-	100	1,549	10	-	2
EDF International	25,930	-	100	23,435	(1,307)	-	8
MNTC	2,095	275	100	2,268	46	-	-
EDF Production Électrique Insulaire SAS	496	-	100	273	-	-	-
EDF holding SAS	1,950	-	100	2,302	315	299	-
Société C3	7,727	-	100	7,862	129	122	-
Wagram 4	1,677	425	100	1,804	47	-	-
- Real estate companies							
La Gérance Générale Foncière	472	212	100	377	22	212	19
Société Foncière Immobilière et de location (Sofilo)	1,088	-	100	913	58	55	121
- Industrial and commercial companies							
France							
Centrale Électrique Rhénane de Gambsheim	3	-	50	11	-	-	5
Richemont	152	152	100	1	(10)	-	1
Dalkia Investissement	200	-	50	262	38	19	3
RTE Réseau de Transport d'Électricité (1)	4,030	-	100	5,239	313	188	4,389
Électricité Réseau Distribution France (ERDF)	2,700	-	100	31,504	121	92	12,189
Other countries							
Emosson	14	14	50	112	-	-	29
Rheinkraftwerk Iffezheim (RKI)	3	-	50	65	1	1	14
Forces Motrices du Chatelôt	1	-	50	12	nm	nm	4
- Financial companies							
Sapar Finance	3	-	100	1	-	-	nm
- Other (EIG EIFER)	**68**	**66**					
TOTAL I	**49,877**	**1,144**				**988**	

nm: not material (less than €500,000).

(1) 50% of shares are allocated to dedicated assets.

20.3 Subsidiaries and investments under 50% of capital

(in millions of Euros)	Gross book value of shares owned	Impairment recorded Gross value at 31/12/2011	% capital owned	Equity 2010	Net income 2010	Dividends received 2011
I. Subsidiaries						
TOTAL I carried forward	**49,877**	**1,144**				**988**
II. Investments						
II.1 Companies in which EDF has an interest of between 10% and 50%						
- Industrial and commercial companies						
France						
EDF Énergies Nouvelles	1,455	-	38	1,375	86	-
Dalkia International	425	-	24	1,530	(9)	58
Dalkia Holding	897	-	34	1,421	79	-
Total II.1	**2,777**	**-**				**58**
II.2 Companies in which EDF has an interest of less than 10%						
Other companies	2	-	-	-	-	1
Other countries						
Force Motrice de Mauvoisin	1	-	10	89	4	nm
Total II.2	**3**	**-**				**1**
Total II	**2,780**	**-**				**59**
Total investments, gross (I + II)	**52,657**	**1,144**				**1,047**
TOTAL INVESTMENTS, NET	**51,513**					

nm: not material (less than €500,000).

20.4 Investment securities portfolio

	At start of year			At year-end		
(in millions of Euros)	Gross book value	Net book value	Fair value	Gross book value	Net book value	Fair value
VALUE OF INVESTMENT SECURITIES	**13,162**	**12,828**	**13,846**	**13,172**	**12,357**	**13,073**

At 31 December 2011, the investment securities portfolio is mainly comprised of dedicated assets (€12,529 million) and an equities portfolio (€643 million).

20.5 Variation in treasury shares

(in millions of Euros)	Gross value at 31/12/2010	Increases	Decreases	Cancellations	Gross value at 31/12/2011
TREASURY SHARES	**16**	**423**	**92**	**(324)**	**23**

A total of 1,125,000 treasury shares held at 31 December 2011 are included in investment securities. Some of these shares were acquired under a liquidity contract with an investment services provider, and the rest were acquired through the purchase and exchange offer for shares in EDF Énergies Nouvelles. On 28 September 2011 EDF SA carried out a capital reduction by cancelling the shares purchased as a result of the offer for an amount of €324 million.

Note 21. Related companies

21.1 Relations with subsidiaries

Companies *(in millions of Euros)*	EDF's receivables [1]		EDF's liabilities [1]		Financial expenses	Financial income (excluding dividends)
	Loans	Trade receivables	Net liabilities included in current account	Trade liabilities		
RTE	1,400	297	-	167	-	81
EDF Développement Environnement SA	1,000	-		-	-	1
EDF Energy	-	93	-	213	-	-
EDF Énergies Nouvelles	1,070	-	-	-	-	20
EDF International	-	-	-	-	-	3
ERDF	-	98	-	2,432	-	-
EDF Trading	1,993	778	-	967	-	4
Dalkia International	82	-	-	-	-	2
EDF Gas Deutschland	57	-	-	-	-	1
EDF Energy UK Ltd	-	-	-	-	-	3
Current account ERDF	-	-	-	142	(1)	-
Group cash management agreement with subsidiaries [2]	-	-	7,069	-	(47)	-
Tax consolidation agreement [3]	-	224	-	1,094	-	-
Agreement for investment of subsidiaries' cash surpluses [4]	-	-	6,708	-	(85)	-

(1) Receivables and payables of more than €50 million.

(2) Including €3,990 million concerning EDF International (financial expenses of €26 million).

(3) Including €926 million of liabilities concerning EDF International.

(4) Including €3,385 million concerning ERDF's cash investments (financial expenses of €53 million).

21.2 Relations with the French State and state-owned entities

21.2.1 Relations with the French State

The French State holds 84.4% of the capital of EDF SA at 31 December 2011, and is thus entitled in the same way as any majority shareholder to control decisions that require approval by the shareholders.

In accordance with the legislation applicable to all companies having the French State as their majority shareholder, EDF is subject to certain inspection procedures, in particular economic and financial inspections by the French State, audits by the French Court of Auditors (*Cour des comptes*) and Parliament, and verifications by the French General Finance Inspectorate (*Inspection Générale des Finances*).

Under an agreement entered into by the French State and EDF on 27 July 2001 concerning the monitoring of external investments, procedures exist for prior approval by or notification (advance or otherwise) of the French State in respect of certain planned investments, additional investments or disposals by EDF. This agreement also introduced a procedure for monitoring the results of external growth operations.

The public service contract between the French State and EDF was signed on 24 October 2005. This contract is intended to form the framework for public service missions entrusted by the lawmaker to EDF for an unlimited period, since the law of 9 August 2004 simply requires presentation of a report every three years to the French parliament without stipulating the duration of the contract.

EDF, like other electricity producers, also participates in the multi-annual generation investment program defined by the Minister in charge of energy, which sets objectives for the allocation of generation capacity.

The French State intervenes through the regulation of electricity and gas markets, particularly for authorization to build and operate generation facilities, establishment of sales tariffs for customers that have stayed on the regulated tariffs, transmission and distribution tariffs, and also determination of ARENH price in accordance with the NOME law, and the level of the Contribution to the Public Electricity Service (*Contribution au Service Public de l'Électricité* or CSPE).

21.2.2 Relations with public sector entities

EDF enters into normal business transactions with public sector entities, mainly for electricity supplies.

Transactions with AREVA concern uranium purchases, uranium enrichment, nuclear fuel purchases, plant maintenance operations and equipment purchases, and transportation, storage, processing and recycling services for spent fuel.

EDF also owns shares in AREVA valued at €123 million at 31 December 2011.

Note 22. Inventories and work-in-progress

	Raw materials		Other raw materials	Work-in-progress for production of goods and services	Total
(in millions of Euros)	Nuclear fuel and materials	Other fuels			
Gross value at 31/12/2010	7,182	421	726	10	8,339
Provisions at 31/12/2010	(12)	-	(153)	-	(165)
Net value at 31/12/2010	**7,170**	**421**	**573**	**10**	**8,174**
Gross value at 31/12/2011	7,436	535	851	18	8,840
Provisions at 31/12/2011	(13)	-	(158)	-	(171)
NET VALUE AT 31/12/2011	**7,423**	**535**	**693**	**18**	**8,669**

Note 23. Receivables and prepaid expenses

	Liquidity			Gross value at 31/12/2011	Gross value at 31/12/2010
(in millions of Euros)	Within 1 year	Between 2 and 5 years	After 5 years		
Advances to subsidiaries and affiliates	1,045	-	-	1,045	31
Loans	2	8	5	15	34
Other investments	3,541	1,177	97	4,815	4,375
Fixed asset receivables	**4,588**	**1,185**	**102**	**5,875**	**4,440**
Operating receivables					
- Trade receivables:					
Amounts billed	2,547	-	-	2,547	2,608
Unbilled receivables (1)	9,373	-	-	9,373	9,974
- Other operating receivables (2)	6,543	19	132	6,694	6,038
Current asset receivables	**18,463**	**19**	**132**	**18,614**	**18,620**
Cash instruments (3)	**406**	**1,888**	**513**	**2,807**	**2,013**
Prepaid expenses	**577**	**19**	**7**	**603**	**483**
Advances and progress payments on orders	**773**	**23**	**-**	**796**	**688**
TOTAL	**24,807**	**3,134**	**754**	**28,695**	**26,244**

(1) Mainly receivables for energy delivered and measured but unbilled, and energy not yet delivered or billed.

(2) Including €2,032 million of receivables on the French State for taxes and €3,821 million for the Contribution to the Public Electricity Service (CSPE).

(3) Unrealized gains on foreign exchange instruments.

Note 24. Marketable securities

(in millions of Euros)	2011	2010	Change
Treasury shares marketable securities	3	3	-
Euro investment funds	2,190	4,853	(2,663)
Negotiable debt instruments (Euros or other currencies) maturing within 3 months [1]	777	726	51
Negotiable debt instruments (Euros or other currencies) maturing after 3 months [1]	2,722	4,253	(1,531)
Negotiable debt instruments medium and long-term	394	-	394
Euro bonds	2,908	172	2,736
Other marketable securities	56	9	47
Gross value	**9,050**	**10,016**	**(966)**
Provisions	**(1)**	**(2)**	**1**
NET VALUE	**9,049**	**10,014**	**(965)**

(1) At 31 December 2011 short-term negotiable debt instruments in Euros include €578 million of dedicated assets.

Note 25. Variation in cash and cash equivalents reported in the cash flow statement

(in millions of Euros)	2011	2010	Change
Marketable securities	9,050	10,016	(966)
Cash and cash equivalents	3,194	1,576	1,618
Sub-total in balance sheet assets	**12,244**	**11,592**	**652**
Euro investment funds	(2,190)	(4,853)	2,663
Negotiable debt instruments (Euro) maturing after 3 months	(2,722)	(4,079)	1,357
Negotiable debt instruments (non Euro) maturing after 3 months	-	(174)	174
Bonds	(2,908)	(172)	(2,736)
Marketable securities – treasury shares	(3)	(3)	-
Accrued interest on marketable securities maturing after 3 months	(56)	(7)	(49)
Negotiable debt instruments medium and long-term	(394)	-	(394)
Marketable securities included in financial assets in the cash flow statement	**(8,273)**	**(9,288)**	**1,015**
Purchases of exchange options classified as cash instruments in the balance sheet	**-**	**25**	**(25)**
Cash advances to subsidiaries (cash pooling agreements) included in "other operating receivables" in the balance sheet	**4**	**20**	**(16)**
Cash advances from subsidiaries (cash pooling agreements) included in "other operating liabilities" in the balance sheet	**(7,075)**	**(4,870)**	**(2,205)**
CASH AND CASH EQUIVALENTS, CLOSING BALANCE IN THE CASH FLOW STATEMENT	**(3,100)**	**(2,521)**	**(579)**
Elimination of the effect of currency fluctuations			**68**
Elimination of net financial income on cash and cash equivalents			**(94)**
NET VARIATION IN CASH AND CASH EQUIVALENTS IN THE CASH FLOW STATEMENT			**(605)**

Note 26. Unrealized foreign exchange gains and losses

Net unrealized foreign exchange gains and losses represent a net unrealized loss of €145 million. Unrealized exchange losses include €151 million related to unhedged borrowings in pounds sterling and €82 million related to unhedged loans and borrowings in US dollars while unrealized exchange gains include €128 million related to borrowings in pounds sterling partly hedged by currency swaps.

Note 27. Changes in equity

(in millions of Euros)	Capital	Reserves and premiums	Retained earnings and interim dividends	Net income	Investment subsidies received	Tax-regulated provisions	Total equity
At 31 December 2009	**924**	**7,796**	**4,448**	**4,580**	**86**	**6,927**	**24,761**
Allocation of 2009 net income	-	3,002	469	(3,471)	-	-	-
Dividend distribution	-	-	-	(1,109)	-	-	(1,109)
2010 net income	-	-	-	1,492	-	-	1,492
Interim dividend	-	-	(1,054)	-	-	-	(1,054)
Other changes	-	81	-	-	41	(193)	(71)
At 31 December 2010	**924**	**10,879**	**3,863**	**1,492**	**127**	**6,734**	**24,019**
Allocation of 2010 net income	-	-	420	(420)	-	-	-
Dividend distribution	-	-	3	(1,072)	-	-	(1,069)
2011 net income	-	-	-	1,118	-	-	1,118
Capital increase on 24 June 2011	6	300	-	-	-	-	306
Capital reduction on 28 September 2011	(6)	(318)	-	-	-	-	(324)
Interim dividend	-	-	(1,053)	-	-	-	(1,053)
Other changes	-	(46)	-	-	44	(185)	(187)
AT 31 DECEMBER 2011	**924**	**10,815**	**3,233**	**1,118**	**171**	**6,549**	**22,810**

Share capital

On 24 June 2011 the simplified alternative public cash or exchange offer for shares in EDF Énergies Nouvelles led to a capital increase for EDF, amounting to €6 million plus a share issue premium of €300 million following the issue of 11,945,448 new shares.

By decision of EDF's Board of Directors on 28 September 2011, EDF's share capital was reduced by cancellation of 11,945,448 treasury shares, and the difference between the acquisition price for the 11,945,448 shares and their par value was charged to the issue premium (€318 million).

At 31 December 2011, the share capital amounted to €924,433,331, comprising 1,848,866,662 fully subscribed and paid-up shares with nominal value of €0.50 each, owned 84.4% by the French State, 13.7% by the public (institutional and private investors) and 1.8% by current and retired Group employees, with 1,175,594 held by EDF as treasury shares (0.1%).

Changes in equity

The €1,209 million decrease in equity in 2011 was attributable to the following:

- €1,118 million of net income for 2011;
- €(1,069) million for the balance of dividend distributions from 2010 net income as decided at the General Shareholders' meeting of 24 May 2011 (€0.58 per share, paid on 6 June 2011);
- €(1,053) million for the interim dividend of €0.57 per share paid in cash from 2011 net income on 16 December 2011;
- €(18) million resulting from the change in the share premium account resulting from operations associated with the public cash or exchange offer for shares in EDF Énergies Nouvelles and cancellation in treasury shares;
- €(187) million in other changes, mainly corresponding to net reversals of €(185) million from tax-regulated provisions.

The €742 million decrease in equity in 2010 was attributable to the following:

- €1,492 million of net income for 2010;
- €(1,109) million for the balance of dividend distributions from 2009 net income as decided at the General Shareholders' meeting of 18 May 2010 (€0.60 per share, paid on 3 June 2010);
- €(1,054) million for the interim dividend of €0.57 per share paid in cash from 2010 net income on 17 December 2010;
- €81 million resulting from the change in accounting treatment for Hydropower concessions: transfer of the net 1959 revaluation difference from the grantor's rights to a special revaluation reserve on retirement of the assets concerned. €77 million was transferred in this way at 1 January 2010, and the impact for the year 2010 amounts to €4 million;
- €(152) million in other changes, mainly corresponding to net reversals of €(193) million from tax-regulated provisions and €41 million of subsidies received.

Note 28. Special concession accounts

(in millions of Euros)	2011	2010
Value in kind of assets	100	100
Revaluation difference	1,012	993
Additional depreciation	51	31
Rights in hydropower assets	**1,163**	**1,124**
Value in kind of assets	1,327	1,275
Unamortized financing by the operator	(772)	(731)
Amortization of grantor financing	237	226
Contributions received for concessionary plant assets under construction	13	15
Rights in public distribution concession assets [1]	**805**	**785**
TOTAL	**1,968**	**1,909**

(1) Rights in public distribution concession assets concern the Island Energy Systems (IES).

Note 29. Provisions for risks and contingent liabilities

	2010	Increases		Decreases			2011
(in millions of Euros) **Provisions for:**		Operating	Financial	Utilizations	Reversals	Financial	
Unrealized exchange losses	110	-	202	-	-	(17)	295
Risks related to investments	2	-	-	-	-	-	2
Losses on contracts	119	61	7	(38)	(1)	-	148
Other risks	118	29	1	(18)	(22)	-	108
PROVISIONS FOR RISKS	**349**	**90**	**210**	**(56)**	**(23)**	**(17)**	**553**

Contingent liabilities

Individual training entitlement (*Droit Individuel à la Formation* or DIF)

The French law of 4 May 2004 allows each employee an individual entitlement to a minimum of 20 hours of training per year, which may be accumulated over 6 years. The company agreement with unions signed on 24 February 2006 defines the conditions for exercising this entitlement, listing the types of training eligible. Expenses for such training are recorded as incurred.

DIF entitlements earned at 31 December 2011 total 6,993,986 hours, including 6,965,585 for which no application has been made.

General Network – European Commission decision of December 16, 2003

On 15 December 2009 the European Union Court cancelled the European Commission's decision of 16 December 2003 that had classified the tax treatment of provisions created for the renewal of the General Network at the time of EDF's capital increase in 1997 as state aid, and ordered repayment to the French State of the discounted value, *i.e.* €1,224 million (paid by EDF in February 2004). The State therefore reimbursed this amount to EDF on 30 December 2009, then in February 2010 the European Commission filed an appeal before the Court of Justice of the European Union. A hearing was held in July 2011 and on 20 October, 2011 the Advocate General issued his opinion, upon which he considered that the decision of 15 December 2009 should be overturned and the case should be referred back to the Court. However, this opinion cannot be considered indicative of the final decision of the Court of Justice, which is expected in 2012.

Labor litigation

EDF is party to a number of labor lawsuits with employees, primarily regarding the calculation and implementation of rest periods. EDF estimates that none of these lawsuits, individually, is likely to have a significant impact on its profits and financial position. However, because they concern situations likely to involve a large number of EDF's employees in France, any increase in such litigations could present a risk with a potentially significant, negative impact on the Group's financial results.

Tax inspections

In 2008 and 2009 EDF underwent a tax inspection covering the tax years 2004, 2005 and 2006. At the end of 2011, EDF received a tax reassessment notice. One of the grounds for the reassessment concerns the tax-deductibility of the provision for annuities following work-related accidents and illness.

EDF is contesting the tax authorities' position on the deductibility of this provision. In late 2011 France's National Commission for Direct Taxes and Sales Taxes issued an opinion in favor of EDF on the main grounds for reassessment resulting from the inspection covering the years 2004 to 2006, notably confirming the deductibility of the provision for annuities following work-related accidents and illness. If the outcome of this dispute is unfavorable, the financial risk for the Group associated with payment of income taxes could amount to some €150 million.

During 2010, a further inspection was begun of the years 2007 and 2008, and in late 2011 EDF was notified of a proposed tax reassessment for 2008.

EDF is contesting most of the tax reassessments, amounting to approximately €900 million, concerning deductibility of certain long-term liabilities. The Company considers it is likely to win this dispute, and no provision has been established for the principal grounds for tax reassessment.

Note 30. Provisions for back-end nuclear cycle, plant decommissioning and last cores

Provisions for back-end nuclear cycle expenses, plant decommissioning and last cores are calculated under the principles presented in note 1.14, and comply with the instructions of the law of 28 June 2006 and its implementing provisions. In compliance with the regulation on secure financing of nuclear expenses:

- EDF books provisions to cover all obligations related to the nuclear facilities it operates;
- EDF is building up a portfolio of dedicated assets to secure long-term obligations.

The relevant expenses are estimated based on the economic conditions of the year-end. They are spread over a forecast disbursement schedule and valued on the basis of the expected conditions at the time of payment, through application of a forecast long-term inflation rate. They are then discounted to present value for calculation of the provisions, using a nominal discount rate.

30.1 Provisions for the back-end nuclear cycle

Changes in provisions for the back-end nuclear cycle break down as follows:

	2010	Increases		Decreases		Others [2]	2011
(in millions of Euros)		Operating	Financial [1]	Utilizations	Reversals		
Provisions for spent fuel management	8,852	396	438	(540)	(22)	19	9,143
Provisions for long-term radioactive waste management	6,508	36	322	(150)	-	6	6,722
PROVISIONS FOR BACK-END NUCLEAR CYCLE	**15,360**	**432**	**760**	**(690)**	**(22)**	**25**	**15,865**

(1) Financial discounting expenses.

(2) This corresponds to the portion of fuel in the reactor but not yet irradiated, with an associated entry in inventories.

Expenses are estimated based on the economic conditions at the year-end, discounted to present value as follows:

	2011		2010	
(in millions of Euros)	Costs based on economic conditions at year-end	Amounts in provisions at present value	Costs based on economic conditions at year-end	Amounts in provisions at present value
Provisions for spent fuel management	14,844	9,143	14,386	8,852
Provisions for long-term radioactive waste management	23,801	6,722	23,017	6,508
PROVISIONS FOR BACK-END NUCLEAR CYCLE	**38,645**	**15,865**	**37,403**	**15,360**

30.1.1 Provisions for spent fuel management

This covers services in connection with the following:

- removal of spent fuel from EDF's generation centers, reception, and interim storage;
- processing, including conditioning and storage of recyclable matter and waste resulting from this processing.

Processing expenses exclusively concern spent fuel that can be recycled in existing facilities, including the portion in reactors but not yet irradiated.

Expenses are calculated based on forecast physical flows at the balance sheet date. Valuation is based on the contracts signed with AREVA.

For fuel in reactors but not yet irradiated, provisions are booked against an increase in the value of the fuel included in inventories.

30.1.2 Provisions for long-term radioactive waste management

This includes future expenses for:

- removal and storage of radioactive waste resulting from decommissioning of regulated nuclear installations operated by EDF;
- removal and storage of radioactive waste packages resulting from spent fuel processing at La Hague;
- long-term and direct storage of spent fuel that cannot be recycled on an industrial scale in existing installations: plutonium or uranium fuel derived from enriched processing, fuel from Creys-Malville and Brennilis;
- EDF's share of the costs of studies, coverage, shutdown and surveillance of storage centers:
  - existing centers, for very low-level waste, and low and medium-level waste,
  - new centers to be opened, for long-life low-level waste and long-life medium and high-level waste.

The volumes of waste concerned by provisions include packages of existing waste and all waste to be conditioned, resulting from decommissioning or spent fuel processing at La Hague (based on all fuel in reactors at 31 December spent or otherwise). These volumes are regularly reviewed, in keeping with the data declared for the purposes of the national waste inventory undertaken by the French agency for radioactive waste management ANDRA (*Agence nationale pour la gestion des déchets radioactifs*).

For waste resulting from decommissioning of plants in operation, the accounting treatment is identical to the treatment of decommissioning expenses, with recognition of an asset corresponding to the provision.

For future waste that will result from fuel currently in reactors but not yet irradiated, provisions are booked against an increase in the value of the fuel included in inventories.

The provision for long-life medium and high-level waste is the largest component of the provisions for long-term radioactive waste management. The French law of 28 June 2006 on the sustainable management of radioactive materials and waste has confirmed EDF's assumption of geological storage. Provisions are based on that assumption.

Since 2005, the gross value and disbursement schedules for forecast expenses have been based on a scenario of industrial geological waste storage, following conclusions presented in the first half of 2005 by the task force set up by the French department for Energy and Raw Materials (*Direction Générale de l'Énergie et des Matières Premières* – DGEMP, which has since become the French department for Energy and Climate – *Direction Générale de l'Énergie et du Climat* or DGEC) comprising members representing the relevant Government departments (DGEMP, the French State investment agency APE and the Budget Department), ANDRA and the producers of waste (EDF, AREVA, CEA). The approach applied by EDF to the working party's conclusions is reasonable and coherent with information available internationally.

In 2011 ANDRA and waste producers set up a partnership aiming to bring the geological storage project to completion by contributing all the skills involved in the French nuclear industry. This partnership will conduct joint studies on targeted issues and organize an interface between the ANDRA project team and nuclear operators, such that they can make well-informed, relevant contributions to governance of the project. The ANDRA has drawn up specifications for conceptional studies to be carried out in 2012, with project management taking into consideration many of the design options proposed by the waste producers, either as the benchmark solution or variations. Estimation of the cost will only be resulted after completion of these studies. Ultimately, the new benchmark cost for storage of long-life medium and high-level waste is due to be established before the public debate scheduled for 2013.

Regarding the provision for long-life low-level waste, the search for a storage site has been suspended following withdrawal of two sites selected by ANDRA. ANDRA is due to submit a report to the French government in late 2012 with various proposals for management of this type of waste and the conditions for resuming the search for a site (2013 at the earliest). Despite significant delays, due to the financial risks involved, the calculation method for the provision for storage of long-life low-level waste remains unchanged and should cover most of the alternative scenarios that are currently being examined jointly by EDF and ANDRA.

30.2 Provisions for decommissioning and last cores

The change in decommissioning and last core provisions breaks down as follows:

(in millions of Euros)	2010	Increases		Decreases		Others	2011
		Operating	Financial (1)	Utilizations	Reversals		
Decommissioning provisions for fossil-fired plants	482	-	25	(62)	(1)	32	476
Decommissioning provisions for nuclear plants	11,031	-	552	(224)	-	7	11,366
Provisions for last cores	1,906	11	95	-	-	-	2,012
TOTAL	**13,419**	**11**	**672**	**(286)**	**(1)**	**39**	**13,854**

(1) Financial discounting expenses.

Expenses are estimated based on the economic conditions at the year-end, discounted to present value as follows:

(in millions of Euros)	2011		2010	
	Costs based on economic conditions at year-end	Amounts in provisions at present value	Costs based on economic conditions at year-end	Amounts in provisions at present value
Decommissioning provisions for fossil-fired plants	662	476	657	482
Decommissioning provisions for nuclear plants	21,108	11,366	20,903	11,031
Provisions for last cores	3,888	2,012	3,792	1,906
TOTAL PROVISIONS FOR DECOMMISSIONING AND LAST CORES	**25,658**	**13,854**	**25,352**	**13,419**

30.2.1 Decommissioning provisions for fossil-fired and hydropower plants

The expenses related to decommissioning of these power plants are determined based on regularly updated studies based on estimated future costs, measured by reference to the charges recorded on past operations and the most recent estimates for plants still in operation.

The provision recorded at 31 December 2011 reflects the most recent known contractor quotes and commissioning of new generation assets.

For plants still in operation, a tangible fixed asset has been created against the provision.

30.2.2 Decommissioning provisions for nuclear power plants

These provisions concern the decommissioning of pressurized water reactor (PWR) nuclear power plants currently in operation and nuclear power plants that have been permanently shut down.

The underlying assumption is that once decommissioning is complete, the sites will be returned to their original state and the land reused for industrial purposes.

For plants still in operation, an asset corresponding to the provision is recognized.
When some of the decommissioning costs for a plant are to be borne by a partner, the expected reimbursement is recognized as accrued income in the assets. The difference between the provision and the accrued income is recorded as a tangible asset, and subsequent payments made by the partner are deducted from the accrued income.

For nuclear power plants currently in operation (PWR plants with 900 MW, 1300 MW and N4 reactors)

Provisions are estimated based on a 1991 study by the French Ministry of Trade and Industry, which set an estimated benchmark cost in €/MW, confirming the assumptions defined in 1979 by the PEON commission. This estimate was confirmed by further studies carried out by EDF in 1999 focusing on a specific site, and a further valuation in 2009 involving the following stages:

- measurement of the decommissioning cost for a PWR plant with four 900 MW units, taking into consideration the most recent developments in regulations, past experience in decommissioning of shut-down plants and recommendations issued by the French Nuclear Safety Authority;
- a review of the schedule for decommissioning operations over time;
- determination of the rules for extrapolation of costs for the entire fleet of PWR plants in operation.

International intercomparison studies carried out by a specialist firm supported the results of this study.

This study resulted in a figure for decommissioning costs that confirms the amount of the provision booked to date, and validates the benchmark costs used, expressed in €/MW.

For permanently shut-down nuclear power plants (UNGG power plants, Creys-Malville, Brennilis and Chooz A)

The provision is based on contractor quotes (costs and schedules) updated in 2008, which take into account changes in technical and financial assumptions, experience of decommissioning operations currently in process and an intercomparison study. The quotes will be re-examined during 2012.

30.2.3 Provision for last cores

This provision covers the future expenses resulting from scrapping fuel that will only be partially used when the reactor is shut down. It is measured based on:

- the cost of the loss on fuel in the reactor that is not totally spent at the time of final reactor shutdown and cannot be reused due to technical and regulatory constraints;
- the cost of fuel processing, disposal and waste storage operations. These costs are valued in a similar way to provisions for spent fuel management and long-term radioactive waste management.

These unavoidable costs are components of the cost of nuclear reactor shutdown and decommissioning. As such, they are fully covered by provision from the commissioning date and an asset associated with the provision is recognized.

30.3 Discounting of provisions related to nuclear generation and sensitivity analyses

30.3.1 Discount rate

EDF applies a nominal discount rate of 5% in calculating its provisions, together with assumed inflation of 2%, resulting in an effective rate of close to 3%.

Calculation of the discount rate

The discount rate is determined based on long series data for a sample of bonds with maturities as close as possible to that of the liability. However, some expenses covered by these provisions will be disbursed over periods significantly longer than the duration of instruments generally traded on the financial markets.

The benchmark used to determine the discount rate is the sliding average over 10 years of the return on French treasury bonds over the longest time horizons, plus the spread of corporate bonds rated A to AA, which include EDF.

The assumed inflation rate used is coherent with the forecasts provided by consensus and expected inflation based on the returns on inflation-linked bonds.

Revision of the discount rate

The methodology used to determine the discount rate gives priority to long-term trends in rates, in keeping with the long-term horizon for disbursements. The discount rate is revised on the basis of structural developments in the economy leading to medium- and long-term changes.

The discount rate applied complies with the two limits set by the decree of 23 February 2007 and the decision of 21 March 2007. It must remain below:

- a regulatory maximum "equal to the arithmetic average over the forty-eight most recent months of the constant 30-year rate *(TEC 30 ans)*, observed on the last date of the period concerned, plus one point";
- and the expected rate of return on assets covering the liability (dedicated assets).

30.3.2 Analyses of sensitivity to macro-economic assumptions

This sensitivity to assumptions concerning costs, inflation rate, long-term discount rate, and disbursement schedules can be estimated through comparison of the gross amount estimated under year-end economic conditions with the discounted value of the amount.

This approach can be complemented by estimating the impact of a change in the discount rate on the discounted value.

In application of article 11 of the decree of 23 February 2007, the following table reports these details for the main components of provisions for the back-end nuclear cycle, decommissioning of nuclear power plants and last cores.

	Amounts in provisions at present value		Sensitivity to discount rate			
	2011	2010	2011		2010	
(in millions of Euros)			0.25%	-0.25%	0.25%	-0.25%
Back-end of nuclear cycle						
Spent fuel management	9,143	8,852	(200)	213	(197)	210
Long-term radioactive waste management	6,722	6,508	(412)	471	(401)	457
Decommissioning and last cores						
Decommissioning of power plants	11,366	11,031	(544)	576	(543)	577
Provision for last cores	2,012	1,906	(81)	87	(81)	87
TOTAL	**29,243**	**28,297**	**(1,237)**	**1,347**	**(1,222)**	**1,331**

Note 31. Provisions for employee benefits

Changes in provisions for employee benefits were as follows:

	31/12/2010	Increases		Decreases		31/12/2011
(in millions of Euros)		Operating expenses [1]	Financial expenses	Operating reversals [2]	Financial reversals [3]	
Provisions for post-employment benefits	9,560	435	865	(687)	(321)	9,852
Provisions for long-term benefits	707	80	34	(79)	-	742
PROVISIONS FOR EMPLOYEE BENEFITS	**10,267**	**515**	**899**	**(766)**	**(321)**	**10,594**

(1) Including past service cost of €343 million and amortization of actuarial losses amounting to €164 million.
(2) Including €738 million for benefits paid out and €28 million for actuarial gains and losses.
(3) Including €321 million for the expected return on fund assets.

Details of changes in provisions

(in millions of Euros)	Obligations	Net value of fund assets	Obligations net of fund assets	Unrecognized past service cost	Unrecognized actuarial gains and losses	Provision in the balance sheet
Balance at 31/12/2010	**17,821**	**(6,712)**	**11,109**	**(82)**	**(760)**	**10,267**
Net expense for 2011	1,319	(322)	997	8	60	1,065
Unrecognized actuarial gains and losses	359	(92)	267	-	(267)	-
Contributions to funds	-	(441)	(441)	-	-	(441)
Benefits paid	(732)	435	(297)	-	-	(297)
BALANCE AT 31/12/2011	**18,767**	**(7,132)**	**11,635**	**(74)**	**(967)**	**10,594**

The experience adjustment represents an actuarial loss of €122 million.

Post-employment and long-term employee benefit expenses

(in millions of Euros)	31/12/2011	31/12/2010
Current service cost	343	300
Interest expenses (discount effect)	899	841
Expected return on fund assets	(321)	(328)
Amortization of unrecognized actuarial gains and losses – post-employment benefits	59	25
Change in actuarial gains and losses - long-term benefits	76	104
Effect of plan curtailment or settlement	1	3
Past service cost	8	10
NET CHARGES RELATED TO POST-EMPLOYMENT BENEFITS AND LONG-TERM BENEFITS	**1,065**	**955**
including:		
Operating expenses [1]	487	442
Financial expenses	578	513

(1) Operating provisions (€515 million) net of reversals for actuarial gains and losses (€28 million).

31.1 Provisions for post-employment benefits

Details of these provisions are shown below:

(in millions of Euros) Provisions for post-employment benefits	31/12/2010	Increases		Decreases		31/12/2011
		Operating expenses	Financial expenses	Operating reversals	Financial reversals	
Pensions	8,088	317	720	(562)	(305)	8,258
CNIEG expenses	400	6	19	(14)	-	411
Benefits in kind (energy)	699	73	84	(58)	-	798
Retirement gratuities	1	29	24	(41)	(16)	(3)
Other benefits	372	10	18	(12)		388
TOTAL	**9,560**	**435**	**865**	**(687)**	**(321)**	**9,852**

(in millions of Euros) Provisions for post-employment benefits at 31/12/2011	Obligations	Net value of fund assets	Unrecognized past service cost	Unrecognized actuarial gains and losses	Provision in the balance sheet
Pensions	14,912	(6,762)	-	108	8,258
CNIEG expenses	338	-	-	73	411
Benefits in kind (energy)	1,875	-	-	(1,077)	798
Retirement gratuities	501	(357)	(72)	(75)	(3)
Other benefits	399	(13)	(2)	4	388
TOTAL	**18,025**	**(7,132)**	**(74)**	**(967)**	**9,852**

The increase in 2011 in obligations related to the electricity/gas benefit principally results from the fact that the employer has borne the rise in electricity taxes (including the CSPE and local taxes on electricity). This effect has been considered as a change in assumptions, and therefore leads to an increase in unrecognized actuarial gains and losses.

(in millions of Euros) Provisions for post-employment benefits at 31/12/2010	Obligations	Net value of fund assets	Unrecognized past service cost	Unrecognized actuarial gains and losses	Provision in the balance sheet
Pensions	14,529	(6,344)	-	(97)	8,088
CNIEG expenses	376	-	-	24	400
Benefits in kind (energy)	1,340	-	-	(641)	699
Retirement gratuities	490	(355)	(79)	(55)	1
Other benefits	379	(13)	(3)	9	372
TOTAL	**17,114**	**(6,712)**	**(82)**	**(760)**	**9,560**

31.2 Provisions for other long-term benefits for current employees

The amount of obligations for other long-term benefits awarded to current employees is identical to the corresponding balance sheet provisions. Details are as follows:

(in millions of Euros)	31/12/2010	Increases		Decreases		31/12/2011
		Operating expenses	Financial expenses	Operating reversals	Financial reversals	
Annuities following work-related accident and illness	595	73	29	(65)	-	632
Long service awards	85	5	4	(9)	-	85
Other	27	2	1	(5)	-	25
TOTAL	**707**	**80**	**34**	**(79)**	**-**	**742**

31.3 Fund assets

These assets comprise funds to cover employee benefits amounting to €7,132 million at 31 December 2011, principally specific benefits of the special pension system and retirement gratuities. They consist of insurance contracts.

Investments under these contracts break down as follows:

(in millions of Euros)	31/12/2011	31/12/2010
Assets funding special pension benefits	**6,762**	**6,344**
(%)		
Equities	25,7%	30,1%
Bonds and monetary instruments	74,3%	69,9%
Assets funding retirement gratuities	**357**	**355**
(%)		
Equities	39,4%	46,8%
Bonds and monetary instruments	60,6%	53,2%
Assets funding other benefits	**13**	**13**
TOTAL	**7,132**	**6,712**

31.4 Actuarial assumptions

The main actuarial assumptions used for provisions for post-employment benefits and long-term employee benefits under the IEG system are summarized below:

- the discount rate is 5% at 31 December 2011 (identical to 2010);
- the inflation rate is estimated at 2%;
- the rise in the basic national salary is estimated at 2% excluding inflation;
- the average residual period of employment is 15.7 years;
- the staff turnover rate is considered non-significant;
- the *"tarif agent"* (special energy price for EDF employees) at 1 January 2011 includes changes in taxes based on that tariff;
- the expected return on fund assets covering specific benefits under the special pension system is 4.7%;
- the expected return on fund assets covering retirement gratuities is 4.61%.

The discount rate for long-term obligations to employees is determined based on the return on a government bond of comparable duration – the 2032 French Treasury bond, which has a duration of 14 years consistent with the duration of employee benefit obligations plus a spread calculated on the leading non financial companies, also over a comparable duration.

EDF kept the same discount rate of 5% for 2011 as a result of this method.

Note 32. Provisions for other expenses

(in millions of Euros)	2010	Increases	Decreases		2011
			Utilizations	Reversals	
Provisions for:					
personnel expenses	105	67	(76)	(3)	93
repairs and maintenance [1]	236	81	(78)	-	239
other expenses [2]	408	184	(227)	(60)	305
PROVISIONS FOR OTHER EXPENSES	**749**	**332**	**(381)**	**(63)**	**637**

(1) This concerns the ten-yearly inspections and servicing of nuclear and fossil-fired power plants.

(2) At 31 December 2011, this mainly includes €132 million to cover expenses related to social security bodies (€125 million at 31 December 2010). The provision related to the TaRTAM transition tariff system was totally reversed in 2011 (€173 million).

Note 33. Financial and operating liabilities

(in millions of Euros)	Maturity			Gross value at 31/12/2011	Gross value at 31/12/2010
	Within 1 year	2 to 5 years	After 5 years		
Bonds	667	12,038	23,563	36,268	34,483
Borrowings from credit institutions	-	-	450	450	100
Other borrowings	3,373	1	1	3,375	3,276
Other financial liabilities					
Advances on consumption	21	49	20	90	134
Other	1,176	2	-	1,178	1,385
Financial liabilities	**5,237**	**12,090**	**24,034**	**41,361**	**39,378**
Advances and payments received from customers (1)	**5,444**	**-**	**-**	**5,444**	**4,873**
Trade receivables and related accounts					
Invoices received	2,518	-	-	2,518	2,782
Invoices to be received	5,270	5	-	5,275	6,176
Tax and social security (2)	**5,575**	**-**	**-**	**5,575**	**5,335**
Debts related to fixed assets and related accounts					
Invoices received	606	-	-	606	494
Invoices to be received	775	-	-	775	929
Other liabilities					
Credit balances on customer accounts	51	-	-	51	82
Other credit balances (3)	15,706	-	-	15,706	11,415
Operating, investment and other liabilities	**30,501**	**5**		**30,506**	**27,213**
Cash instruments (4)	**619**	**794**	**476**	**1,889**	**1,259**
Deferred income (5)	**695**	**1,225**	**3,265**	**5,185**	**5,244**
TOTAL	**42,496**	**14,114**	**27,775**	**84,385**	**77,967**

(1) Advances and progress payments received principally comprise monthly standing order payments by residential and business customers.

(2) In 2011 this item includes an amount of €579 million for the CSPE income on energy delivered but not yet billed (€344 million in 2010).

(3) The amount of cash pooling and cash management agreements with subsidiaries is €13,782 million in 2011 compared to €9,323 million in 2010. The balance of cash management agreements includes €3,370 million with the subsidiary ERDF (€2,960 million in 2010), €1,137 million with EDF Energy (€116 million in 2010) and €1,180 million with EDF Trading. The balance of the cash pooling agreement with the subsidiary EDF International is €3,990 million in 2011 (€277 million in 2010).

(4) This item essentially relates to unrealized gains on foreign exchange instruments.

(5) Deferred income at 31 December 2011 comprises €2,818 million (€2,724 million at 31 December 2010) of partner advances received under the nuclear plant financing plans. This includes an advance of €513 million paid by Enel under the industrial partnership agreement for the Flamanville EPR. This advance is subject to specific contractual conditions that could in certain circumstances allow Enel to withdraw its financial and operational contribution from the project, in which case EDF would be obliged to repay the advance.

Deferred income also includes the €1.7 billion advance paid to EDF in 2010 under the agreement with the Exeltium consortium.

Note 34. Financial liabilities

(in millions of Euros)	Balance at 31/12/2010	New borrowings	Repayments	Translation adjustments	Other	Balance at 31/12/2011
Bonds in Euros	737	188	-	-	-	925
Bonds in other currencies	8,602	-	-	324	-	8,926
Euro-Medium Term notes (EMTN) in Euros	19,688	300	656	-	-	19,332
Euro-Medium Term notes (EMTN) in other currencies	5,456	1,427	62	264	-	7,085
Bonds	**34,483**	**1,915**	**718**	**588**	**-**	**36,268**
Long-term loans in Euros	100	350	-	-	-	450
Borrowings from credit institutions	**100**	**350**	**-**	**-**	**-**	**450**
French commercial paper in Euros (BTR) (1)	480	1,009	-		-	1,489
Commercial paper in foreign currencies (2)	2,791	-	978	69	-	1,882
Contractual financial borrowings	5	-	1	-	-	4
Other borrowings and securitisation of receivables	**3,276**	**1,009**	**979**	**69**	**-**	**3,375**
Total borrowings	**37,859**	**3,274**	**1,697**	**657**	**-**	**40,093**
Advances on consumption	**134**	**-**	**-**	**-**	**(44)**	**90**
Miscellaneous advances	404	-	-	-	(286)	118
Bank overdrafts	1	-	-	-	86	87
Deferred bank debits	39	-	-	-	17	56
Interest payable	941	-	-	-	(24)	917
Total other financial liabilities	**1,385**	**-**	**-**	**-**	**(207)**	**1,178**
TOTAL FINANCIAL LIABILITIES	**39,378**	**3,274**	**1,697**	**657**	**(251)**	**41,361**

(1) Issues net of repayments.
(2) Repayments are reported net of issues for the period.

In 2011, EDF undertook several bond issues totaling €1,915 million for French and international institutional investors.

Details of bond issues in Euros, totaling €188 million, are as follows:
- €144 million at the fixed rate of 4.8%, maturing in December 2031;
- €44 million at the fixed rate of 4.6%, maturing in December 2031.

Details of EMTN issues, totaling €1,727 million, are as follows:
- €300 million at the fixed rate of 3.9%, maturing in December 2019;
- £1,250 million (€1,427 million) at the fixed rate of 5.5% maturing in October 2041.

Reimbursements of EMTN totaled €718 million as follows:
- €545 million on maturity;
- €173 million redeemed in advance.

34.1 Breakdown of loans by currency, before and after hedging instruments

	Structure of liability in balance sheet				Impact of instruments		Structure of liability after hedging			
(in millions of Euros)	Non-Euro	In Euros	% Non-Euro	% of debt	Non-Euro	In Euros	Non-Euro	In Euros	% Non-Euro	% of debt
I- In Euros		**22,200**		**55**		**10,660**		**32,860**		**84**
II- Non-Euro										
CHF	2,760	2,271	13	6	(2,760)	(2,271)	-	-	-	-
GBP	5,285	6,327	35	16	(1,551)	(1,856)	3,734	4,471	71	11
JPY	177,400	1,771	10	4	(177,400)	(1,771)	-	-	-	-
USD	9,735	7,524	42	19	(7,325)	(5,661)	2,410	1,863	29	5
Total II		**17,893**	**100**	**45**		**(11,559)**		**6,334**	**100**	**16**
TOTAL I+II		**40,093**		**100**		**(899)**		**39,194**		**100**

The nominal value of hedging instruments included in commitments has no effect on loans in the balance sheet. The effect of these instruments on loans in Euros was an increase of €10,660 million, and a decrease of €11,559 million for loans in other non-Euro zone currencies. The volume of long-term loans is therefore down by €899 million, from €40,093 million to €39,194 million.

34.2 Breakdown of loans by type of interest rate before and after hedging instruments

	Structure of liability in balance sheet			Impact of instruments	Structure of liability after hedging		
(in millions of Euros)	Total	% at 31/12/2011	% at 31/12/2010	Total	Total	% at 31/12/2011	% at 31/12/2010
Long-Term borrowings and EMTN	35,713			(5,565)	30,148		
Short-term borrowings	3,371			(1,424)	1,947		
Borrowings at fixed rate	**39,084**	**97**	**98**	**(6,989)**	**32,095**	**82**	**92**
Long-Term borrowings and EMTN	1,009			4,667	5,676		
Short-term borrowings	-			1,423	1,423		
Borrowings at floating rate	**1,009**	**3**	**2**	**6,090**	**7,099**	**18**	**8**
TOTAL	**40,093**	**100**	**100**	**(899)**	**39,194**	**100**	**100**

Note 35. Financial instruments

EDF uses financial instruments to limit the impact of the foreign exchange rate risk on equity and the income statement, and to hedge its interest rate risk.

	31/12/2011		31/12/2010	
(in millions of Euros)	To be received (notional)	To be given (notional)	To be received (notional)	To be given (notional)
1-Interest rate transactions				
Currencies other than the Euro				
Purchases of FRA GBP contracts	-	-	-	-
Purchases of FRA EUR contracts	-	-	600	550
Interest rate swaps - short-term				
EUR	3,428	3,428	3,220	3,220
Interest rate swaps - long-term				
EUR	6,113	6,113	4,311	4,311
USD	271	271	-	-
CHF	494	494	480	480
GBP	1,246	1,246	1,211	1,211
JPY	469	469	433	433
Sub-total	**12,021**	**12,021**	**10,255**	**10,205**
2-Exchange rate transactions				
Forward transactions				
EUR	16,684	17,428	15,797	21,672
CAD	480	480	-	-
USD	3,199	2,267	6,133	1,277
GBP	13,968	14,283	14,927	14,264
CHF	-	-	-	5
HUF	397	362	355	314
PLN	479	390	523	254
JPY	-	100	18	98
Other	377	378	-	-
Currency options				
Purchases of options				
EUR	-	-	2,072	626
GBP	-	-	407	1,290
HUF	-	-	-	44
PLN	-	-	-	296
USD	-	-	214	439
Sales of options				
EUR	-	-	1,554	622
GBP	-	-	418	883
HUF	-	-	36	44
PLN	-	-	101	340
USD	-	-	75	262
Currency swaps – long-term				
EUR	7,417	23,374	8,225	24,348
JPY	1,770	-	1,682	-
USD	5,642	-	5,837	225
GBP	14,689	6,933	15,067	7,540
CHF	2,603	332	2,207	-
HUF	26	26	109	109
PLN	-	72	-	-
Sub-total	**67,731**	**66,425**	**75,757**	**74,952**
3- Securitization swaps	**1,125**	**1,125**	**1,193**	**1,193**
TOTAL FINANCIAL OFF BALANCE SHEET COMMITMENTS	**80,877**	**79,571**	**87,205**	**86,350**

The amounts shown in the above table represent the nominal value of contracts, translated where necessary using year-end exchange rates (regardless of whether they are classified as hedges).

35.1 Impacts of financial instrument transactions on net income

(in millions of Euros)	2011	2010
Instruments not classified as hedges		
Realized gains and losses	66	141
Unrealized gains and losses	(71)	(73)
Interest rate instruments (swap, cap and floor, FRA, option) (1)	(67)	(20)
Instruments classified as hedges		
Interest rate instruments (swap, cap and floor, FRA)	100	60
Exchange rate instruments (currency swap)	(7)	6

(1) Including interest on swaps.

35.2 Fair value of derivative financial instruments

The fair value of currency and interest rate swaps was calculated by discounting future cash flows using year-end market exchange and interest rates, over the remaining term of the contracts (market value includes accrued interest).

The book value of off-balance sheet derivatives includes accrued interest, equalization payments and premiums paid or received, and translation adjustments, which are already booked in EDF's accounts. The difference between book value and market value is the unrealized gain or loss.

The fair value of derivative financial instruments reported off-balance sheet at 31 December 2011 as calculated by EDF is as follows:

(in millions of Euros)	Book value	Fair value
Interest rate hedges		
Long-term caps and floors	61	697
Short-term swaps	(2)	(3)
Exchange rate hedges		
Forward exchange transactions	(167)	(94)
Long-term currency swaps	1,245	1,503
TOTAL	**1,137**	**2,103**

Note 36. Off-balance sheet commitments and operations

At 31 December 2011, off-balance sheet commitments related to operations, financing and investments (other than electricity supply commitments and partnership agreements) comprised the following:

	Maturity				2011	2010
(in millions of Euros)	< 1 year	1 to 5 years	5 to 10 years	> 10 years		
Off-balance sheet commitments given	**12,705**	**19,254**	**11,325**	**15,439**	**58,723**	**49,619**
Operating commitments						
- Commitments related to fuel and energy purchases	5,090	12,978	10,301	14,735	43,104	34,603
- Commitments related to orders for operating items and fixed assets	3,865	4,803	529	112	9,309	7,249
- Other operating commitments [1]	822	1,341	379	589	3,131	2,838
Financing commitments	2,928	132	116	3	3,179	4,917
Investment commitments	-	-	-	-	-	12
Off-balance sheet commitments received	**3,932**	**7,806**	**34**	**6**	**11,778**	**12,209**
Operating commitments [1]	880	951	33	6	1,870	1,939
Financing commitments	3,052	6,855	1	-	9,908	10,270

(1) Commitments are identified without reference to their reciprocal nature.

36.1 Off-balance sheet commitments given

36.1.1 Operating commitments

36.1.1.1 Fuel and energy purchase commitments

In the course of its generation and supply activities, EDF has entered into long-term and "Take or pay" contracts involving commitments to purchase electricity, gas, other energies and commodities, and nuclear fuel for periods of up to 20 years.

In almost all cases, these are reciprocal commitments, and the third parties concerned are under an obligation to supply or purchase the quantities specified in the contracts.

At 31 December 2011, fuel and energy purchase commitments mature as follows:

	Maturity				2011	2010
(in millions of Euros)	< 1 year	1 to 5 years	5 to 10 years	> 10 years		
Purchases of electricity	1,587	3,617	3,332	8,952	17,488	13,652
Purchases of gas and other energies	1,391	4,040	1,797	1,938	9,166	5,333
Purchases of nuclear fuel	2,112	5,321	5,172	3,845	16,450	15,618
PURCHASE COMMITMENTS	**5,090**	**12,978**	**10,301**	**14,735**	**43,104**	**34,603**

Electricity purchases

Electricity purchase commitments mainly concern:

- Island Energy Systems (IES), which undertook to purchase electricity generated from bagasse and coal, and electricity generated by the plants of EDF's Island Electricity Production subsidiaries;
- hedging contracts: these are forward purchases, for which the volumes and prices are set in contracts with EDF Trading.

In addition, under article 10 of the law of February 10, 2000, in mainland France EDF is obliged, at the producer's request and subject to compliance with certain technical features, to purchase the power produced by co-generation plants and renewable energy generation units (wind turbines, small hydropower and photovoltaic plants) or operations recycling organic waste.

The purchase volumes for 2011 totaled 32.8 TWh, comprising 11.7 TWh for co-generation, 11.6 TWh for wind power, 3 TWh for hydropower, 2.8 TWh for waste-burning power and 1.8 TWh for photovoltaic solar power.

The additional costs generated by this obligation are offset, after validation by the CRE, by the Contribution to the Public Electricity Service (*Contribution au Service Public de l'Électricité* or CSPE).

Gas and other energy purchases

Gas purchases for supply and delivery are mostly undertaken through long-term contracts.

In 2011, EDF also signed a capacity subscription contract for the Dunkirk methane terminal, which is due to start operation in 2015.

Purchase commitments for other energies and commodities mainly concern coal and oil used to operate the fossil-fired plants.

Nuclear fuel purchases

Commitments for purchases of nuclear fuel arise from supply contracts for the nuclear plants designed to cover EDF's needs for uranium, enrichment and fluoration services and fuel assembly production. The increase in commitments results mainly from signature of new contracts in 2011.

36.1.1.2 Commitments related to orders for operating items and fixed assets

These are commitments totaling €9.3 billion undertaken upon signature of orders for fixed assets and operating items, or orders currently in progress, which include €1.3 billion for the construction of the EPR plant at Flamanville.

36.1.1.3 Other operating commitments

These are mostly commitments by EDF as lessee under operating lease contracts for premises, equipment and vehicles used in the normal course of business. The corresponding payments are subject to renegotiation at intervals defined in the contracts.

36.1.2 Financing commitments

These are commitments by EDF to subsidiaries, primarily €2.1 billion to EDF Energy.

36.1.3 Investment commitments

Agreement with Veolia Environnement: Veolia Environnement has granted EDF a call option on all its Dalkia shares in the event that a competitor of EDF would take control over Veolia Environnement. EDF has also granted Veolia Environnement a call option over all its Dalkia shares in the event of a change in EDF's statutes and if a competitor of Veolia Environnement were to take control over EDF, individually or with other parties. If the parties fail to agree on the sale price of the shares, it would be fixed by an independent expert.

36.2 Off-balance sheet commitments received

36.2.1 Operating commitments

These mainly concern:

- contracts for sales of services to foreign subsidiaries, totaling €852 million;
- greenhouse gas emission quotas still receivable as part of the State allocation for the period 2012, valued at €161 million (22 million tonnes of CO_2);
- guarantees received in connection with sales under the ARENH system. Electricity supplied by EDF to operators under the NOME law is covered by a stand-alone guarantee enforceable on demand. This guarantee amounts to 1.5 times the average monthly volume of electricity as stated in the CRE's notification of the annual volume of electricity to be sold, valued at the ARENH price in force.

36.2.2 Financing commitments

These commitments correspond to the value of credit lines available to EDF from various banks (€9.9 billion), including one €4 billion credit line that was renegotiated in 2010 to raise maturity to 5 years, and one credit line of €3 billion with a banking pool, for liquidity risk management.

36.3 Other types of commitments

36.3.1 Electricity supply commitments

EDF has signed several long-term contracts with a number of European electricity operators, undertaking to supply electricity. These contracts are of two types:

- co-financing agreements for nuclear power plants, either for a specific plant or for a defined group of plants. Companies participating in this financing are entitled to a share of the power generated by the plants concerned, in proportion to their initial contribution;
- long-term commercial sales contracts, generally covered by the nuclear power plants.

In application of the partnership agreement signed in 2008 with Exeltium, EDF began to supply electricity to electricity-intensive industrial operators on 1 May 2010. Total deliveries will amount to approximately 310 TWh spread over a period of up to 24 years.

In execution of the NOME law on organization of the French electricity market (see note 2.1), the French Energy Regulation Commission *(Commission de Régulation de l'Énergie)* notified EDF of the total volume to be sold to other suppliers for the delivery period running from 1 January 2012 to 31 December 2012: 60.73 TWh.

Finally, following the dispute between EDF and Direct Energie, the French competition authorities *(Conseil de la concurrence)* issued a ruling on 10 December 2007 accepting and requiring compliance with EDF's proposed commitments to tender a significant capacity of electricity (1,500 MW, *i.e.* approximately 10 TWh per year for 15 years) to alternative suppliers at prices enabling them to compete effectively with EDF's offers on the deregulated mass market.

For the initial 5-year period, 2008-2012, EDF proposed to apply an average baseload supply price of €44.6/MWh in current Euros in 2011 (€42/MWh in 2010) which will rise to €47.2/MWh in 2012. For the second 10-year period, the price has been fixed at a level that covers EDF's development costs for the Flamanville EPR.

When it invested in EnBW in 2001, EDF made a commitment to the European Commission to make some of its generation capacity available to the market up to a volume of 5.4 GW, or approximately 40 TWh a year.

This commitment began in 2001 and was intended to make it easier for competitors to enter the French market at a time when no wholesale market existed, for an estimated initial 5 year period, in principle until 7 February 2006.

After the sale of EDF International's investments in EnBW to the Baden-Württemberg region on 17 February 2011, EDF applied to the European Commission for termination of the commitments accepted in 2001 when EDF first invested in EnBW. These commitments mainly concern VPP or Virtual Power Plant capacity auctions.

On 30 November 2011 the Commission informed EDF that its request was accepted. This decision permanently terminated the auction sales undertaken in this context from that date.

Release from these commitments does not affect the rights acquired in past auctions, including the auction of 30 November 2011.

Note 37. Environment

37.1 Greenhouse gas emission quotas

EDF's total greenhouse gas emission quota allocation for 2011 is 17 million tonnes.

The volume of emissions at 31 December 2011 stood at 14 million tonnes (19 million tonnes at 31 December 2010).

The greenhouse gas emission quotas receivable for 2012 under the National Allocation Plan are estimated at 22 million tonnes.

37.2 Energy savings certificates

The energy savings obligations required of EDF for the three-year period 1 July 2006 to 30 June 2009 amounted to 29,849 GWh in final energy cumulated and discounted (*"cumac"*). EDF complied with this obligation.

A transitional period running from 1 July 2009 to 31 December 2010 was necessary to prepare the laws and regulations for the second period: French law 2010-788 on the national commitments for the environment, known as *Grenelle 2*, was enacted on 12 July 2010. The two implementation decrees for this law, and the relevant decisions, were published on 30 December 2010, officializing the start of the second 3-year period on 1 January 2011. The volumes of energy savings certificates obtained during the transition period count towards the obligation for the second period.

This second period extends the system to new obligated actors (fuel distributors) and applies stricter requirements for obtaining energy savings certificates. EDF's obligation will be calculated retrospectively, based on the volumes of gas and electricity sales to households and service sector businesses for the period 2010-2012.

EDF is well-placed to meet its obligation thanks to energy-efficient offers for each market segment: residential customers, business customers, local authorities and organizations funding social projects.

37.3 Carbon fund

As part of the Clean Development Mechanism defined in the Kyoto protocol, the Group set up a Carbon Fund in late 2006, with the aim of supporting projects to reduce greenhouse gas emissions in emerging countries, and benefiting from carbon emission permits known as carbon emission reduction (CER) credits.

The Carbon Fund involves EDF and certain European subsidiaries which will use the CER credits obtained. Credits can be surrendered in replacement of greenhouse gas emission quotas up to a certain limit, fixed at a percentage of the allocation from each State: 13.5% under the current National Quota Allocation Plan. EDF's carbon fund is managed by EDF Trading.

The carbon fund has no significant impact on EDF's financial statements at 31 December 2011.

Note 38. Management compensation

The Company's key management and governance personnel are the Chairman of the Board of Directors and the Directors. In application of law 83-675 of 26 July 1983 on democratization of the public sector, directors representing the government and employee representative directors receive no fees for their services as directors.

The total gross compensation paid by EDF (salaries, all types of benefits and director's fees, excluding employer contributions) to the Company's key management personnel is as follows:

(in Euros)	2011	2010
Management	1,560,528	1,168,864 (1)
Governance bodies	147,000	147,000

(1) Including €10,000 of directors' fees for 2009 (up to Henri Proglio's appointment as Chairman and CEO) paid in 2010.

Note 39. Subsequent events

39.1 Bond issue

On 18 January 2012, EDF received the funds from a 10-year €2 billion euro bond issue, with annual coupon of 3.875%.

39.2 Long term partnership for natural uranium with AREVA

On 10 February 2012, EDF and AREVA have reached an agreement on the principles of a long-term partnership to supply natural uranium over the 2014-2030 period, ensuring the security of supply and the competitiveness of the French nuclear fleet.

Covering a total volume which can reach more than 20,000 metric tons, the agreed principles foresee the extension of the supply contract from AREVA's existing mines, and open up the possibility of EDF part-funding the development of a new mining project in exchange for a share of its future production. These principles will provide the basis for a series of agreements which will be subject to approval by the management bodies of the two Groups.

This new industrial and financial partnership consolidates AREVA's status as leading partner of EDF for the supply of natural uranium. AREVA currently provides EDF with nearly 40% of its annual requirements in this area.

Statutory Auditors' Report on the financial statements

This is a free translation into English of the Statutory Auditors' report issued in French and is provided solely for the convenience of English-speaking readers. The Statutory Auditors' Report includes information specifically required by French law in such reports, whether qualified or not. This information is presented below the opinion on the financial statements and includes an explanatory paragraph discussing the auditors' assessments of certain significant accounting and auditing matters. These assessments were considered for the purpose of issuing an audit opinion on the financial statements taken as a whole and not to provide separate assurance on individual account balances, transactions, or disclosures.

This report also includes information relating to the specific verification of information given in the Group management report and in the documents addressed to shareholders.

This report should be read in conjunction with, and construed in accordance with, French law and professional auditing standards applicable in France.

Year ended 31 December 2011

To the shareholders,

Following our appointment as Statutory Auditors by your Annual General Meeting, we hereby report to you, for the year ended 31 December 2011, on:
- the audit of the accompanying financial statements of Électricité de France S.A. ("the Company");
- the justification of our assessments;
- the specific verifications and information required by law.

These financial statements have been approved by the Board of Directors. Our role is to express an opinion on these financial statements based on our audit.

1. Opinion on the financial statements

We conducted our audit in accordance with professional standards applicable in France; those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, using sample testing techniques or other selection methods, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting policies used and significant accounting estimates made, as well as the overall presentation of the financial statements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

In our opinion, the financial statements give a true and fair view of the assets and liabilities and of the financial position of the Company as at 31 December 2011 and of the results of its operations for the year then ended in accordance with French accounting principles.

Without qualifying our opinion, we draw your attention to the valuation of long-term provisions relating to nuclear electricity production, as described in notes 1.14 and 30 to the financial statements, which results as indicated in note 1.2 from management best estimates. This valuation is sensitive to the assumptions made concerning technical processes, costs, inflation rates, long-term discount rates, and forecast cash outflows. Changes in these parameters could lead to a material revision of the level of provisioning.

2. Justification of our assessments

The preparation of the financial statements requires the use of accounting estimates, which have been made by the Company in an uncertain environment, due to the crisis of public finances affecting certain countries of the Euro zone. This crisis is coupled with an economic and liquidity crisis as well as uncertainties related to commodities and power prices, thus resulting in difficulties to determine the economic outlook. In this context, in accordance with the requirements of article L.823-9 of the French Commercial Code ("*Code de commerce*"), we have made our own assessments which are brought to your attention, in relation to the following matters:

Accounting principles and policies

Notes 1.3, 1.7 and 1.15 to the financial statements describe the principles and policies used for the accounting and valuation of revenues related to energy delivered but not yet measured nor billed, the valuation of financial investments and the determination of provisions for employee benefits.

As part of our assessment of the Company's accounting principles and methods, we have verified the appropriateness of the accounting methods used by the Company and the information disclosed in the notes to the financial statements, as well as the accuracy of the implementation of these accounting methods.

Accounting estimates
Notes 1.2, 1.14 and 29 as well as 1.15 and 31 to the financial statements, respectively disclose management estimates as well as the underlying assumptions on which the valuation of provisions for risks and contingent liabilities and the valuation of provisions and obligations for employee benefits are based.

Our procedures consisted in assessing these estimates in the context specified above, including the data and assumptions on which they are based, reviewing, on a test basis, the calculations performed by the Company, comparing accounting estimates of prior periods with corresponding actual amounts, reviewing the procedures for approving these estimates by management and finally verifying that the notes to the financial statements provide appropriate disclosures.

With respect to litigations and dispute procedures, our appreciation of the validity of the provisions recognized has been based, among other things, on available legal opinions and our own assessment of the facts and circumstances related to them.

Verification procedures
Note 2.1 to the financial statements describes the regulatory framework related to the principle of regulated access to historical nuclear energy (*Accès Régulé à l'Énergie Nucléaire Historique or ARENH*) as established by the NOME law in France, that is effective 1 July 2011. The procedures we performed in relation to these transactions are based upon, on the one hand, the information available from your Company, or released by the Regulatory Energy Commission (*Commission de Régulation de l'Énergie*), and, on the other hand, the findings resulting from agreed-upon procedures performed by independent third parties that had access to the underlying transactions.

These assessments were made as part of our audit of the financial statements, taken as a whole, and therefore contributed to the opinion we formed which is expressed in the first part of this report.

3. Specific verifications and information

We have also performed, in accordance with professional standards applicable in France, the specific verifications required by French law.

We have no matters to report as to the fair presentation and the consistency with the financial statements of the information given in the management report of the Board of Directors, and in the documents addressed to shareholders with respect to the financial position and the financial statements.

Concerning the information given in accordance with the requirements of article L.225-102-1 of the French Commercial Code ("*Code de commerce*") relating to remunerations and benefits received by the directors and any other commitments made in their favour, we have verified its consistency with the financial statements or with the underlying information used to prepare these financial statements and, where applicable, with the information obtained by your Company from companies controlling or controlled by your Company. Based on this work, we attest the accuracy and fair presentation of this information.

In accordance with French law, we have verified that the required information concerning the acquisition of shares and controlling interests and the identity of the shareholders or the voting rights has been properly disclosed in the management report.

Paris La Défense and Neuilly-sur-Seine, 15 February 2012

The Statutory Auditors

KPMG Audit **Department of KPMG S.A.**		**Deloitte & Associés**	
Bernard Cattenoz	Jacques-François Lethu	Alain Pons	Patrick E. Suissa

E.

Concordance table Annual financial report

Concordance table
Annual financial report

The 2011 annual financial report contained in this reference document, prepared pursuant to Articles L. 451-1-2 of the French Monetary and Financial Code (*Code monétaire et financier*) and 222-3 of the AMF General Regulations. The annual financial report is composed of the sections of the reference document referred to in the following table:

	Reference Document sections
Certification from the person responsible of the annual financial report	Section 1.2
EDF annual financial statements	Appendix D
EDF group consolidated financial statements	Section 20.1
Extracts from the management report	Chapter 9 (Group's businesses) Chapter 4 (risk factors) Section 21.1.4 (financial authorities) Chapters 18 to 21 (information on share capital and capital composition, the exercise of voting rights) Chapters 14 and 16 (powers of the Board of Directors and Corporate Governance) Chapter 15 (compensation) Section 21.1.3 (stock repurchase program)
Statutory Auditors' Report on the EDF annual financial statements	Appendix D
Report from the Auditors on the EDF group's consolidated financial statements	Section 20.2

F.

Draft resolutions to be submitted to the Combined Shareholders' Meeting of 24 May 2012 and Statutory Auditors' Report on capital transactions

F. Appendix

Draft resolutions to be submitted to the Combined Shareholders' Meeting of 24 May 2012 and Statutory Auditors' Report on capital transactions

Meeting agenda

Ordinary meeting agenda:

- Approval of the reports and annual financial statements for the year ended on 31 December 2011.
- Approval of the reports and consolidated financial statements for the year ended on 31 December 2011.
- Allocation of the net income for the year ended on 31 December 2011 as reported in the financial statements, and determination of the dividend amount.
- Agreements governed by article L. 225-38 of the French commercial code.
- Authorization for the Board of Directors to carry out transactions on the Company's shares.

Extraordinary meeting agenda:

- Delegation of authority to the Board of Directors to issue shares or securities, maintaining the shareholders' preferential subscription right.
- Delegation of authority to the Board of Directors to issue, by means of public offerings, shares or securities with no preferential subscription rights for shareholders.
- Delegation of authority to the Board of Directors to issue, by means of offers referred to in article L. 411-2 II of the French monetary and financial code, shares or securities, with no preferential subscription rights for shareholders.
- Authorization for the Board of Directors to increase the number of shares to be issued in the event of a capital increase, with or without preferential subscription rights for shareholders.
- Delegation of authority to the Board of Directors to increase the share capital by capitalization of reserves, profits, premiums or other amounts eligible for capitalization.
- Delegation of authority to the Board of Directors to increase the capital as a result of a public exchange offer instigated by the Company.
- Authorization for the Board of Directors to increase the capital in return for contributions in kind granted to the Company.
- Delegation of power to the Board of Directors to increase the capital to the benefit of members of savings plans.
- Authorization for the Board of Directors to reduce the share capital through the cancellation of treasury shares.
- Amendment of article 18 of the bylaws.
- Amendment of article 20 of the bylaws.

Ordinary and extraordinary meeting agenda:

- Powers for completion of formalities.

Draft resolutions to be submitted to the Combined Shareholders' Meeting of 24 May 2012

Ordinary resolutions

First resolution

(Approval of the reports and annual financial statements for the year ended on 31 December 2011)

The Shareholders' Meeting, deliberating in compliance with the quorum and majority requirements for Ordinary Shareholders' Meetings, having reviewed the management report of the Board of Directors and the report of the Statutory Auditors, approves the annual financial statements for the financial year ended on 31 December 2011, comprising the balance sheet, income statement and appendix, as presented, and the transactions reflected in those financial statements and summarized in those reports. It sets the profit for the financial year at €1,118,380,266.99.

It is emphasized that the overall sum of expenses and charges concerned by article 223 *quater* of the French tax code is €1,822,405 for the financial year 2011 and that the related tax amounts to €657,888.

Second resolution

(Approval of the reports and consolidated financial statements for the year ended on 31 December 2011)

The Shareholders' Meeting, deliberating in compliance with the quorum and majority requirements for Ordinary Shareholders' Meetings, having reviewed the management report of the Board of Directors and the report of the Statutory Auditors on the consolidated financial statements, approves the consolidated financial statements for the financial year ended on 31 December 2011, comprising the consolidated balance sheet, consolidated income statement and appendix, as presented, and the transactions reflected in those financial statements and summarized in those reports.

Third resolution

(Allocation of the net income for the year ended on 31 December 2011 as reported in the financial statements, and determination of the dividend amount)

Dividends distributed in the past three years were as follows:

Financial Year	Number of shares	Dividend per share (€)	Total dividends distributed [1] (€)	Portion dividend eligible for the tax allowance [2]
2008	1,822,171,090	1.28	2,328,200,485.12	100%
2009	1,848,866,662	1.15	2,111,146,365.85	100%
2010	1,848,866,662	1.15	2,122,291,972.68	100%

(1) After deduction of treasury shares.

(2) 40% tax allowance under paragraph 3-2° of article 158 of the French tax code.

The Shareholders' Meeting, deliberating in compliance with the quorum and majority requirements for Ordinary Shareholders' Meetings, having reviewed the report of the Board of Directors and the report of the Statutory Auditors on the financial statements:

- notes that the distributable profit, taking into account the positive amount of retained earnings of €4,287,642,243.92 and before deducting the interim dividend described below, amounts to €5,406,022,510.91;
- decides to set the dividend at €1.15 per share;
- notes that, given that an interim dividend of €0.57 per share was paid out on 16 December 2011, the balance of the dividend to be distributed for the 2011 financial year amounts to €0.58 per share;
- decides to allocate the balance of the distributable profit to retained earnings.

The total dividend amount (including the total amount of the interim dividend mentioned above), based on the number of shares as of 31 December 2011, amounts to a maximum of €2,126,196,661.30, given that any shares held by the Company at the date of distribution of the dividend will not confer rights to the dividend.

The Shareholders' Meeting gives all powers to the Board of Directors to determine, in particular in light of the number of shares held by the Company at the date of the distribution of the dividend, the total amount of the dividend and, consequently, the amount of the balance of distributable profits allocated to the "retained earnings" account.

The ex-dividend date is 1 June 2012 and the balance of the dividend to be distributed will be paid out on 6 June 2012.

In the event the dividend is paid to individuals who have their tax domicile in France, the total dividend is eligible for the special 40% tax allowance under paragraph 3-2° of article 158 of the French tax code. In addition, it is possible to elect that the gross amount of the dividend be subject to a fixed levy in final discharge at the rate of 21%, under the conditions of article 117 *quater* of the French tax code.

F. Appendix

Draft resolutions to be submitted to the Combined Shareholders' Meeting of 24 May 2012 and Statutory Auditors' Report on capital transactions

Fourth resolution

(Agreements governed by article L. 225-38 of the French commercial code)

The Shareholders' Meeting, deliberating in compliance with the quorum and majority requirements for Ordinary Shareholders' Meetings, having reviewed the special report of the Statutory Auditors on agreements governed by article L. 225-38 of the French commercial code, takes note of the conclusions of this report and approves the agreements mentioned therein.

Fifth resolution

(Authorisation for the Board of Directors to carry out transactions on the Company's shares)

The Shareholders' Meeting, deliberating in compliance with the quorum and majority requirements for Ordinary Shareholders' Meetings, having reviewed the report of the Board of Directors,

- terminates, with immediate effect, for the unused portion, the authorization to purchase shares in the Company given by the Shareholders' Meeting of 24 May 2011 in the tenth resolution;
- authorizes the Board of Directors to purchase shares of the Company with a view to:
  - delivering shares when exercising rights attached to securities giving access to the share capital by reimbursement, conversion, exchange, submission of a warrant or by any other means, immediately or at a later date, as well as carrying out all hedging transactions with respect to the Company's (or one of its subsidiaries') obligations in connection with such securities;
  - holding shares for their subsequent delivery as a means of exchange or payment in the context of any external growth or contribution transactions;
  - ensuring the liquidity of EDF's share by an investment service provider through a liquidity agreement in accordance with the code of ethics recognized by the French market authority;
  - attributing shares to employees of the EDF group, notably under any share purchase or free share allocation plan benefiting to current or former employees under the conditions laid down by the law, in particular under articles L. 225-197-1 and following of the French commercial code, articles L. 3332-18 and following of the French labor code (including any transfer of shares covered by these articles of the French labor code);
  - reducing the Company's capital by canceling all or some of the shares purchased, subject to the approval by the Shareholders' Meeting of the 14th resolution.

Purchases of shares in the Company may concern a number of shares such that:

- the number of shares acquired by the Company during the repurchase program may not exceed 10% of shares which constitute the share capital as of the day of this Shareholders' Meeting, it being specified that when shares are redeemed to ensure the liquidity of the EDF share under the conditions defined above, the number of shares taken into account for calculating the 10% limit is the number of shares purchased net of the number of shares sold during the term of this authorization;
- the number of shares the Company holds directly or indirectly at any time must not exceed 10% of the shares constituting the Company's share capital.

Acquisitions or transfers of these shares may be carried out by all means, particularly on a market or over the counter, including through acquisition or transfer of blocks, use of derivative financial instruments or notes or securities giving access to the Company's shares, or by implementing stock option strategies, at such times when the Board of Directors or the person acting by delegation of the Board of Directors shall decide.

The maximum amount of funds dedicated to the execution of this share repurchase program shall be €2 billion.

The purchase price shall not exceed €90 per share; however, the Board of Directors may adjust the maximum purchase price in the event of capitalization of premiums, reserves or profits resulting in either a rise in the nominal value of shares or in creation and attribution of free shares, and in the event of a share split or reverse share split, or any other operation affecting equity, to reflect the effect of these transactions on the share value.

This authorization is granted for a maximum duration of 18 months from the date of this meeting.

The Shareholders' Meeting grants all powers to the Board of Directors to implement this authorization, and may delegate its authority, in order to place all orders in the stock exchange or off-market, allocate or reallocate the shares acquired to the various objectives pursued, under the applicable legal and regulatory conditions, complete all formalities, and in general do everything that is necessary.

The Board of Directors must inform the Shareholders' Meeting each year of the transactions undertaken pursuant to this resolution.

Extraordinary resolutions

Sixth resolution

(Delegation of authority to the Board of Directors to issue shares or securities, maintaining the shareholders' preferential subscription right)

The Shareholders' Meeting, deliberating in compliance with the quorum and majority requirements for Extraordinary Shareholders' Meetings, having reviewed the report of the Board of Directors and the report of the Statutory Auditors, in accordance with articles L. 225-129 to L. 225-129-6 and L. 228-91 to L. 228-97 of the French commercial code:

- terminates, with immediate effect, the unused portion of the delegation of authority given by the Combined Shareholders' Meeting of 18 May 2010 in its 8th resolution;
- authorizes the Board of Directors to decide to issue, in one or more issuances, while maintaining the shareholders' preferential subscription right, (i) shares of the Company, (ii) securities giving access by any means, immediately or at a later date, to shares existing or to be issued in the Company, (iii) securities giving access by any means, immediately or at a later date, to shares existing or to be issued in a company of which the Company directly or indirectly holds more than half of the capital (the "Subsidiary"), for subscription in cash or by offsetting against existing debt;
- also authorizes the Board of Directors to decide to issue securities carrying a right to allocation of Company debt instruments in one or more issuances.

The total nominal value of the capital increase, immediately or at a later date, resulting from all issues undertaken under this resolution shall not exceed €45,000,000 (the "Ceiling").

It is emphasized that (i) this Ceiling is common to all capital increases undertaken immediately or at a later date under the 6th, 7th, 8th, 9th, 11th and 12th resolutions proposed at this Shareholders' meeting, and the nominal value of such increases shall therefore be deducted from the Ceiling; (ii) the Ceiling does not include shares in the Company that may be issued in connection with adjustments to preserve the rights of holders of securities giving access to the capital of the Company.

The securities giving access to the capital of the Company or a Subsidiary issued in this way may consist of debt instruments or be associated with issuance of such instruments, or allow their issuance as intermediary securities.

Debt instruments issued under this delegation of authority may take the form of subordinated securities, perpetual or otherwise, issued in Euros or other currencies.

Shares issued may carry warrants for attribution, acquisition or subscription of bonds or other securities representative of debt instruments.

The nominal value of debt instruments issued shall not exceed €4,500,000,000. It is emphasized that this maximum is common to all debt instruments issued under the 6th, 7th, 8th, 9th, 11th and 12th resolutions proposed at this Shareholders' meeting.

Company share subscription warrants may be issued through a subscription offer, but also through free attribution to holders of existing shares. In the case of free award of autonomous subscription warrants, the Board of Directors may decide that fractional subscription rights will be non transferable and that the corresponding shares will be sold.

The Board of Directors may take any and all measures to protect the rights of holders of securities giving access to the capital existing at the day of the capital increase.

Shareholders may, under the conditions set forth by the law, exercise their full preferential subscription right for new shares. In addition, the Board of Directors shall also be entitled to award shareholders a subscription right for excess shares, concerning a higher number of shares or securities giving access to the capital than the number they could subscribe as of right, proportionally to the subscription rights held and in any event up to the limit of their share application.

If the subscriptions as of right, together where relevant with subscriptions for excess shares, do not absorb the entire issue of securities, the Board of Directors may take one or more of the following steps, in the order of its choice:
- limit the issue to the quantity of subscriptions received, provided this quantity is at least three quarters of the planned issue;
- freely allocate all or some of the shares unsubscribed as of right, and where relevant excess unsubscribed shares;
- offer all or some of the unsubscribed shares to the public.

The Shareholders' Meeting notes that, to the benefit of holders of the securities giving access to the Company's capital issued under this resolution, this delegation of authority automatically entails a waiver by the shareholders of their preferential subscription right to the shares associated with those newly-issued securities.

The Board of Directors shall have all powers to implement this authorization, and in particular to determine the characteristics of the securities to be issued by the Company, to set the date of holding, which may be retroactive, of the securities to be issued and, if applicable, the conditions of their redemption, to suspend, if applicable, the exercise of the right to share allocation attached to the Company's securities according to the applicable laws and regulations, to perform any adjustments designed to take into account the impact of transactions on the capital of the Company, to set the terms and conditions allowing to secure the rights of holders of securities giving access at a later date to the share capital of the Company, to modify the terms and conditions of the securities to be issued under this resolution while such securities remain outstanding in compliance with the applicable formalities, to perform all necessary deductions on the issuance premium and more generally to take all appropriate actions to complete the issuances.

The delegation of authority given to the Board of Directors under this resolution is valid for a duration of 26 months from the date of this meeting.

Seventh resolution

(Delegation of authority to the Board of Directors to issue, by means of public offerings, shares or securities, with no preferential subscription rights for shareholders)

The Shareholders' Meeting, deliberating in compliance with the quorum and majority requirements for Extraordinary Shareholders' Meetings, having reviewed the report of the Board of Directors and the report of the Statutory Auditors, in accordance with articles L. 225-129 to L. 225-129-6, L. 225-135 and L. 225-136, and L. 228-91 to L. 228-97 of the French commercial code:
- terminates, with immediate effect, the unused portion of the delegation of authority given by the Combined Shareholders' Meeting of 18 May 2010 in its 9th resolution;
- authorizes the Board of Directors to decide to issue, through public offers, in one or several issuances, with no preferential subscription rights for shareholders, (i) shares of the Company, (ii) securities giving access by any means, immediately or at a later date, to shares existing or to be issued in the Company, (iii) securities giving access by any means, immediately or at a later date, to shares existing or to be issued in a company of which the Company directly or indirectly holds more than half of the capital (the "Subsidiary"), for subscription in cash or by offsetting against existing debt;
- also authorizes the Board of Directors to decide to issue securities carrying a right to attribution of Company debt instruments.

Public offer(s) decided under this resolution may be associated, as part of a single issuance or as separate issuances occurring at the same time, to (an) offer(s) defined in Article L. 411-2, II, of the French monetary and financial code, decided based on the 8th resolution proposed at this Shareholders' Meeting.

The total nominal value of the capital increase, immediately or at a later date, resulting from all issues undertaken under this resolution shall not exceed €45,000,000.

It is emphasized that (i) the total nominal value of all capital increases undertaken immediately or at a later date under this resolution shall not exceed, and shall be deducted from, the Ceiling for capital increases defined in the 6th resolution proposed at this Shareholders' Meeting and (ii) this ceiling does not include shares in the Company that may be issued in connection with adjustments to preserve the rights of holders of securities giving access to the capital of the Company.

The securities giving access to shares in the Company or in a Subsidiary issued in this way may consist of debt instruments or be associated with the issuance of such instruments, or allow their issuance as intermediary securities.

Debt instruments issued under this delegation of authority may take the form of subordinated securities, perpetual or otherwise, issued in Euros or other currencies.

The total nominal value of all debt instruments issued under this resolution shall not exceed, and shall be deducted from, the Ceiling for debt securities defined in the tenth paragraph of the 6th resolution proposed at this Shareholders' Meeting.

The Shareholders' Meeting decides to eliminate the shareholders' preferential subscription right for shares and securities to be issued based on this resolution, but the Board of Directors shall be entitled to grant to the shareholders a priority subscription right for shares in excess or subscriptions as of right, for a duration to be determined in compliance with applicable laws and regulations, for all or part of the issuance, in accordance with the fifth paragraph of article L. 225-135 of the French commercial code. This subscription priority would not lead to the creation of negotiable rights.

If the subscriptions, including, if necessary, any subscription by shareholders, do not absorb the entire issue of securities, the Board of Directors may limit the issue to the quantity of subscriptions received, provided this quantity is at least three quarters of the planned issue.

The Shareholders' Meeting notes that, to the benefit of holders of the securities giving access to the Company's capital issued under this resolution, this delegation of authority automatically entails a waiver by the shareholders of their preferential subscription right to the shares concerned by those newly-issued securities.

The Shareholders' Meeting decides that:
- the issue price of shares issued directly shall be at least equal to the minimum price provided for by the applicable regulatory provisions (to date, the weighted average of the opening price of the Company's shares for the three trading sessions of the Euronext Paris market preceding the date at which the subscription price for the capital increase is set, less a discount of a maximum of 5%) after correction if necessary due to differences in the shares' issue dates;
- the issue price of securities giving access to the capital shall be such that the sum immediately received by the Company, plus any further sum likely to be received if applicable, is no less than the minimum subscription price defined in the previous paragraph for each share issued as a result of issuance of these securities.

The Board of Directors shall have all powers to implement this authorization, and in particular to determine the characteristics of the securities to be issued by the Company, to set the date of holding, which may be retroactive, of the securities to be issued and, if applicable, the conditions of their redemption, to suspend, if applicable, the exercise of the right to share allocation of the Company's shares attached to the securities according to the applicable laws and regulations, to perform any adjustments designed to take into account the impact of transactions on the capital of the Company, to set the terms and conditions allowing to secure the rights of holders of securities giving access at a later date to the share capital of the Company, to modify the terms and conditions of the securities to be issued under this resolution while such securities remain outstanding in compliance with the applicable formalities, to perform all necessary deductions on the issuance premium(s) and more generally to take all appropriate actions to complete the issuances.

The delegation of authority given to the Board of Directors under this resolution is valid for a duration of 26 months from the date of this meeting.

Eighth resolution

(Delegation of authority to the Board of Directors to issue by means of offers referred to in article L. 411-2 II of the French monetary and financial code, shares or securities, with no preferential subscription rights for shareholders)

The Shareholders' Meeting, deliberating in compliance with the quorum and majority requirements for Extraordinary Shareholders' Meetings, having reviewed the report of the Board of Directors and the report of the Statutory Auditors, in accordance with articles L. 225-129 to L. 225-129-6, L. 225-135 and L. 225-136, L. 228-91 to L. 228-97 of the French commercial code:
- terminates, with immediate effect, the unused portion of the delegation of authority given by the Combined Shareholders' Meeting of 18 May 2010 in its 10th resolution;
- authorizes the Board of Directors to decide to issue, by means of offers pursuant to article L. 411-2 II of the French monetary and financial code, in one or more issuances, with no preferential subscription rights for shareholders, (i) shares in the Company, (ii) securities giving access by any means, immediately or at a later date, to shares existing or to be issued in the Company, (iii) securities giving access by any means, immediately or at a later date, to shares existing or to be issued in a company of which the Company directly or indirectly holds more than half of the capital (the "Subsidiary"), for subscription in cash or by offsetting against existing debt;
- also authorizes the Board of Directors to decide to issue securities carrying a right to attribution of Company debt instruments.

Offer(s) pursuant to article L. 411-2 II of the French monetary and financial code, decided under this resolution, may be associated, as part of a single issuance or as separate issuances occurring at the same time, to (a) public offer(s), decided based on the 7th resolution proposed at this Shareholders' Meeting.

The total nominal value of the capital increase, immediately or at a later date, resulting from all issues undertaken pursuant to this resolution shall not exceed €45,000,000 on the one hand, and the legal ceiling (i.e., as of the date of this meeting, 20% of the share capital per year) on the other hand.

It is emphasized that (i) the total nominal value of all capital increases undertaken immediately or at a later date under this resolution shall not exceed, and shall be deducted from, the ceiling for capital increases set

forth in the 6th resolution proposed at this Shareholders' Meeting on the one hand, and the ceiling for capital increases set forth in the 7th resolution proposed at this Shareholders' Meeting on the other hand, and (ii) these ceilings do not include shares in the Company that may be issued in connection with adjustments to preserve the rights of holders of securities giving access to the capital of the Company.

The securities giving access to the share capital of the Company or of a Subsidiary issued in this manner may consist of debt instruments or be associated with the issuance of such instruments, or allow their issuance as intermediary securities.

Debt instruments issued under this delegation of authority may take the form of subordinated or unsubordinated securities, perpetual or otherwise, issued in Euros or other currencies.

The total nominal value of all debt instruments issued under this resolution shall not exceed, and shall be deducted from, the ceiling for debt securities set forth in the 10th paragraph of the 6th resolution proposed at this Shareholders' Meeting.

The Shareholders' Meeting decides to eliminate the shareholders' preferential subscription right with respect to the shares and securities to be issued, based on this resolution.

If the subscriptions do not absorb the entire issue of securities, the Board of Directors may limit the issue to the amount of subscriptions received, provided this amount is at least three quarters of the planned issue.

The Shareholders' Meeting notes that, to the benefit of holders of the securities giving access to the Company's capital issued under this resolution, this delegation of authority automatically entails a waiver by the shareholders of their preferential subscription right with respect to the shares to which those newly-issued securities give right.

The Shareholders' Meeting decides that:
- the issue price of shares issued directly shall be at least equal to the minimum price provided for by the applicable regulatory provisions (to date, the weighted average of the opening price of the Company's shares for the three trading sessions of the Euronext Paris market preceding the date at which the subscription price for the capital increase is set, less a discount of a maximum of 5%) after correction if necessary due to differences in the shares' delivery dates;
- the issue price of securities giving access to the capital shall be such that the sum immediately received by the Company, plus any further sum likely to be received if applicable, is no less than the minimum subscription price defined in the previous paragraph for each share issued as a result of issuance of these securities.

The Board of Directors shall have all powers to implement this authorization, and in particular to determine the characteristics of the securities to be created by the Company, to set the date of holding, which may be retroactive, of the securities to be issued and, if applicable, the conditions of their redemption, to suspend, if applicable, the exercise of the right to shares allocation attached to the Company's securities according to the applicable regulations, to perform any adjustments designed to take into account the impact of transactions on the capital of the Company, to set the modalities according to which the rights of holders of securities giving access at a later date to the share capital of the Company shall be secured, to modify the modalities of the securities to be issued under this resolution during the lifetime of such securities in compliance with the applicable formalities, to perform all necessary deductions on the issuance premium(s) and more generally to take all appropriate actions to complete the issuances.

The delegation of authority given to the Board of Directors under this resolution is valid for a duration of 26 months from the date of this meeting.

Ninth resolution

(Authorisation for the Board of Directors to increase the number of shares to be issued in the event of a capital increase, with or without preferential subscription rights for shareholders)

The Shareholders' Meeting, deliberating in compliance with the quorum and majority requirements for Extraordinary Shareholders' Meetings, having reviewed the report of the Board of Directors and the report of the Statutory Auditors, in accordance with article L. 225-135-1 of the French commercial code:
- terminates, with immediate effect, the unused portion of the delegation of authority given by the Combined Shareholders' Meeting of 18 May 2010 in its 11th resolution;
- authorizes the Board of Directors to decide, within the periods and limits prescribed by the law and regulations applicable on the date of the issue (currently, within thirty days after subscription is closed, up to a limit of 15% of the initial issue and at the same price as the initial issue), to increase the number of shares to be issued for each of the issuances undertaken in application of the 6th, 7th and 8th resolutions proposed to this Shareholders' Meeting subject to respect of the ceiling(s) defined in the resolution under which the issue is undertaken.

The authorization given to the Board of Directors under this resolution is valid for a duration of 26 months from the date of this meeting.

Tenth resolution

(Delegation of authority to the Board of Directors to increase the share capital through the capitalisation of reserves, profits, premiums or other amounts eligible for capitalisation)

The Shareholders' Meeting, deliberating in compliance with the quorum and majority requirements for Extraordinary Shareholders' Meetings, having reviewed the report of the Board of Directors, in accordance with articles L. 225-129 to L. 225-129-6 and L. 225-130 of the French commercial code:
- terminates, with immediate effect, the unused portion of the delegation of authority given by the Combined Shareholders' Meeting of 18 May 2010 in its 12th resolution;
- delegates its authority to the Board of Directors to increase the capital, in one or more action(s), by capitalization of reserves, profits, premiums or other amounts eligible for capitalization, in the form of attribution of free shares or an increase in the nominal value of existing shares, or in a combination of the two.

It is emphasized that transactions undertaken under this resolution may be combined with capital increases in cash carried out under the preceding resolutions.

The total nominal value of the capital increase, immediately or at a later date, undertaken under this resolution shall not exceed €1,000,000,000.

It is emphasized that (i) this ceiling is separate from and independent of the ceilings for capital increases resulting from issues of shares or securities authorized by the 6th, 7th, 8th, 9th, 11th and 12th resolutions proposed at this Shareholders' Meeting, and (ii) this ceiling does not include shares in the Company that may be issued in connection with adjustments to preserve the rights of holders of securities giving access to the capital of the Company.

The Board of Directors may decide that fractional subscription rights will be non negotiable and non transferrable and that the corresponding securities will be sold; the proceeds of such sale will be allocated to holders of the rights within the period defined by the regulations.

The Board of Directors shall have all powers to determine, in particular, the characteristics and conditions of the authorized transactions and in particular to set the amount and nature of the reserves and premiums to be incorporated in the share capital, to set the number of new shares to be issued or the amount by which the nominal value of the existing shares will be increased, to set the date of holding, which may be retroactive, of the securities to be issued or the date at which the increase in the nominal value of the existing shares will be effective, and more generally to take all appropriate actions to complete the issuances.

The delegation of authority given to the Board of Directors under this resolution is valid for a duration of 26 months from the date of this meeting.

Eleventh resolution

(Delegation of authority to the Board of Directors to increase the capital as a result of a public exchange offer instigated by the Company)

The Shareholders' Meeting, deliberating in compliance with the quorum and majority requirements for Extraordinary Shareholders' Meetings, having reviewed the report of the Board of Directors and the report of the Statutory Auditors, in accordance with articles L. 225-129-2, L. 225-148 and L. 228-91 to L. 228-97 of the French commercial code:

- terminates, with immediate effect, the unused portion of the delegation of authority given by the Combined Shareholders' Meeting of 18 May 2010 in its 13th resolution ;
- delegates its authority to the Board of Directors, on the basis and terms defined in the 7th resolution (except for price related matters set forth in this resolution), to decide to issue shares in the Company or securities giving access to shares in the Company already issued or to be issued, in exchange for securities tendered to a public offer which includes an exchange component (as a principal or subsidiary) instigated by the Company in or outside France, in accordance with local rules, in respect of shares in a company whose shares are admitted to trading on a regulated market as concerned by article L. 225-148 mentioned above, and decides, to the benefit of bearers of the newly-issued securities, to eliminate, if necessary, the shareholders' preferential subscription right for those shares and securities;

The Shareholders' Meeting notes that this delegation of authority automatically entails a waiver by the shareholders of their preferential subscription right to shares associated with any securities to be issued under this delegation of authority.

The total nominal value of the capital increase, immediately or at a later date, resulting from all issues undertaken under this resolution shall not exceed €45,000,000.

It is emphasized that (i) the total nominal value of all capital increases undertaken immediately or at a later date under this resolution shall not exceed, and shall be deducted from, the Ceiling for capital increases set forth in the 6th resolution proposed at this Shareholders' Meeting on the one hand, and the ceiling for capital increases set forth in the 7th resolution proposed at this Shareholders' Meeting on the other hand, and (ii) these ceilings do not include shares in the Company that may be issued in connection with adjustments to preserve the rights of holders of securities giving access to the capital of the Company.

The total nominal value of the debt instruments issued under this resolution shall not exceed, and shall be deducted from, the ceiling for debt instruments defined in the tenth paragraph of the 6th resolution proposed at the present Meeting.

The Board of Directors shall have all powers to implement this authorization, and in particular to carry out the public offers concerned by this resolution, set the exchange ratio and the amount of cash payment if applicable, set the dates and issue conditions, particularly the price and the date of holding, of shares or where relevant securities giving access to shares in the Company and, where necessary, amend the characteristics of the securities issued under this resolution during the lifetime of the securities concerned in compliance with the applicable formalities, register in the "Contribution premium" account in the balance sheet liabilities, relative to the rights of all shareholders, the difference between the issue price and nominal price of the new shares, and if necessary deduct from this contribution premium account all expenses incurred in connection for the purpose of the authorized operation, and in general take all appropriate action and enter into any and all agreements.

The delegation of authority to the Board of Directors under this resolution is valid for a duration of 26 months from the date of this meeting.

Twelfth resolution

(Authorisation to the Board of Directors to increase the capital in return for contributions in kind granted to the Company)

The Shareholders' Meeting, deliberating in compliance with the quorum and majority requirements for Extraordinary Shareholders' Meetings, having reviewed the report of the Board of Directors and the report of the Statutory Auditors, in accordance with article L. 225-147 and articles L. 228-91 to L. 228-97 of the French commercial code:

- terminates, with immediate effect, the unused portion of the delegation of authority given by the Combined Shareholders' Meeting of 18 May 2010 in its 14th resolution;
- authorizes the Board of Directors to increase the capital by a maximum of 10% of the existing capital at the date of the issuance, in view of the report of the appraiser(s) *(commissaire(s) aux apports)*, in remuneration of contributions in kind made to the Company, in the form of shares or securities giving access to the capital when the provisions of article L. 225-148 of the French commercial code do not apply.

Under this authorization, the Board of Directors will decide after having reviewed the report of the Statutory Auditor(s), in accordance with article L. 225-147 of the French commercial code.

The total nominal value of the capital increase, immediately or at a later date, resulting from all issues undertaken under this resolution shall not exceed €45,000,000 on the one hand, and the legal ceiling (at the date of the present Meeting, 10% of the share capital), on the other hand.

It is emphasized that (i) the total nominal value of all capital increases undertaken immediately or at a later date under this resolution shall not exceed, and shall be deducted from, the Ceiling for capital increases set forth in the 6th resolution proposed at this Shareholders' Meeting on the one hand, and the ceiling for capital increases set forth in the 7th resolution proposed at this Shareholders' Meeting on the other hand, and (ii) these ceilings do not include shares in the Company that may be issued in connection with adjustments to preserve the rights of holders of securities giving access to the capital of the Company.

The total nominal value of all debt instruments issued under this resolution shall not exceed, and shall be deducted from, the Ceiling for debt securities defined in the tenth paragraph of the 6th resolution proposed at this Shareholders' Meeting.

The Shareholders' Meeting decides, where necessary, to the benefit of holders of the shares or securities issued in exchange for the contribution in kind, to eliminate the shareholders' preferential subscription right to the shares and securities issued in this way, and records the fact that this delegation of authority automatically entails a waiver by the shareholders of their preferential subscription right to the shares associated with any securities to be issued under this delegation of authority.

The Board of Directors shall have all powers to implement this authorization, and in particular to determine the terms and conditions of the authorized transactions, including valuing the contribution and where relevant granting special benefits and acknowledging execution of the capital increase and amending the bylaws accordingly.

The delegation of authority to the Board of Directors under this resolution is valid for a duration of 26 months from the date of this meeting.

Thirteenth resolution

(Delegation of power to the Board of Directors to increase the capital to the benefit of members of savings plans)

The Shareholders' Meeting, deliberating in compliance with the quorum and majority requirements for Extraordinary Shareholders' Meetings, having reviewed the report of the Board of Directors and the report of the Statutory Auditors, in accordance with article L. 225-129-6, L. 225-138 I and II and L. 225-138-1 of the French commercial code and articles L. 3332-18 and following of the French labor code:

- terminates, with immediate effect, the unused portion of the delegation of power given by the Combined Shareholders' Meeting of 18 May 2010 in its 15th resolution;
- delegates to the Board of Directors full powers in order to increase the capital of the Company, in one or several issuances, by an issue of shares or securities giving access to the shares in the Company already issued or yet to be issued, reserved for members of one or more company savings plan(s) (or other plan for which article L. 3332-18 of the French labor code would allow a capital increase in similar conditions) at the level of the Company or the EDF group, established by the Company or other French or foreign companies consolidated in the accounts of the Company according to Articles L. 3344-1 and L. 3344-2 of the French labor code.

The total nominal value of the capital increase, immediately or at a later date, resulting from all issues undertaken under this resolution shall not exceed €10,000,000. This limit does not include shares in the Company that may be issued in connection with adjustments to preserve the rights of holders of securities giving access to the capital of the Company.

The Shareholders' Meeting fixes the discount at 20% relative to the average opening price of the Company's share over the twenty trading sessions of the Euronext Paris market preceding the date of the decision fixing the opening date for subscriptions. However, the Shareholders' Meeting expressly authorizes the Board of Directors to reduce or eliminate this reduction if it deems such action appropriate, in view of factors such as locally applicable legal, accounting, tax or social systems.

The Board of Directors may, within the limits prescribed by the law and regulations applicable, attribute for no consideration shares already issued or to be issued, or other securities giving access to the Company's capital already issued or to be issued, in conformance with the company's additional contribution for employees, or if need be with the reduction.

The Shareholders' Meeting decides, to the benefit of the beneficiaries mentioned above, to eliminate the shareholders' preferential subscription right concerning the shares and securities giving access to shares to be issued under this resolution, and to waive all rights to shares or other securities attributed for no consideration in application of this delegation of power.

The Board of Directors shall have all powers to implement this resolution, and in particular to determine the scope, the terms and conditions of transactions and set the dates and conditions of the issues to be made under this authorization, set the opening and closing dates for subscriptions, the dates of holding, the methods for payment of the shares and other securities giving access to the Company's capital, decide that subscriptions may be carried out directly by the beneficiaries, members of a company saving plan (or assimilated plan) or by the intermediary of mutual funds of the company or other structures or entities permitted by the applicable regulations, grant extensions for settlement of the shares and, where relevant, other securities giving access to the Company's capital, and apply for admission to trading for the newly issued securities in any place it wishes.

The delegation of power given to the Board of Directors under this resolution is valid for a duration of 26 months from the date of this meeting.

Fourteenth resolution

(Authorisation to the Board of Directors to reduce the share capital through the cancellation of treasury shares)

The Shareholders' Meeting, deliberating in compliance with the quorum and majority requirements for Extraordinary Shareholders' Meetings, having reviewed the report of the Board of Directors and the report of the Statutory Auditors, in accordance with article L. 225-209 of the French commercial code:

- terminates, with immediate effect, the unused portion of the delegation of authority given by the Combined Shareholders' Meeting of 24 May 2011 in its 11th resolution;
- authorizes the Board of Directors to reduce the capital by cancellation of all or some of the shares purchased under the Company's own share repurchase program, by up to 10% of the existing capital in 24-month periods. This 10% limit applies to the amount of the Company's capital, adjusted if necessary to take into account transactions affecting the share capital after the date of this meeting;

- authorizes the Board of Directors to allocate the difference between the repurchase value and nominal value of cancelled shares to the available premiums and reserves;
- grants all powers to this end to the Board of Directors, with the possibility of subdelegation as permitted by the law and regulations applicable, to set the terms and conditions and amend the Company's bylaws accordingly, and more generally to take all necessary action.

The authorization given to the Board of Directors under this resolution is valid for a duration of 26 months from the date of this meeting.

Fifteenth resolution

(Amendment of article 18 of the bylaws)

The Shareholders' Meeting, deliberating in compliance with the quorum and majority requirements for Extraordinary Shareholders' Meetings, having reviewed the report of the Board of Directors, decides to amend article 18 (Related party agreements) of the bylaws of the Company as follows:

"All agreements entered into directly, or through an intermediary, between the Company and its chief executive officer, one of its executive directors, one of its directors, one of its shareholders holding more than 10% of the voting rights or in the case of an entity shareholder, its controlling Company in the sense of article L. 233-3 of the French commercial code, whether directly or through an intermediary, must be subject to the prior authorisation of the Board of Directors.

The same applies to agreements in which one of the persons mentioned in the preceding paragraph have an indirect interest, as well as agreements which take place between the Company and an entity, if the chief executive officer, one of its executive directors or one of the directors of the company is the owner, general partner, manager, director, member of the supervisory board or, generally, a senior manager of such entity.

The provisions of the preceding paragraphs do not apply to agreements concerning standard transactions concluded under normal conditions."

Sixteenth resolution

(Amendment of article 20 of the bylaws)

The Shareholders' Meeting, deliberating in compliance with the quorum and majority requirements for Extraordinary Shareholders' Meetings, having reviewed the report of the Board of Directors, decides to delete paragraph 7 of point 1 of article 20 of the bylaws of the Company.

The rest of the article remains unchanged.

Ordinary and extraordinary agenda

Seventeenth resolution

(Powers for completion of formalities)

The Shareholders' Meeting grants all powers to the bearer of an original, a copy or an extract of the minutes of this meeting to carry out all legal and administrative formalities, and file and register all information required by the laws in force.

Statutory Auditors' Report on capital transactions set forth in resolutions 6, 7, 8, 9, 11, 12, 13 and 14 of the Combined Shareholders' Meeting of 24 May 2012

This is a free translation into English of the Statutory Auditors' Report issued in French and is provided solely for the convenience of English speaking readers. This report should be read in conjunction with, and construed in accordance with, French law and professional auditing standards applicable in France.

Combined Shareholders' Meeting of 24 May 2012

To the Shareholders,

Following our appointment as Statutory Auditors of your Company and in accordance with the engagements set forth in the French Commercial Code *(Code de commerce)*, we hereby report to you on the transactions, which are submitted to you for approval.

Issues of shares and/or securities with or without shareholders' preferential subscription rights (resolutions 6, 7, 8, 9, 11 and 12)

In accordance with Articles L. 228-92 and L. 225-135 *et seq.* of the French Commercial Code *(Code de commerce)*, we hereby report to you on the proposed delegation of authority to the Board of Directors to carry out various issues of shares and/or securities, which is submitted to you for approval.

The Board of Directors proposes that, based on its report, the shareholders:

- delegate to the Board of Directors for a period of 26 months, the authority to decide and set the final terms and conditions of the following transactions:
  - issue of ordinary shares of the Company, of securities granting access to the share capital of the Company or of a company in which your Company directly or indirectly holds more than half of the share capital, or of securities carrying a right to attribution of Company debt securities, with shareholders' preferential subscription rights (resolution 6);
  - issue, by public offering, of ordinary shares of the Company, of securities granting access to the share capital of the Company or of a company in which your Company directly or indirectly holds more than half of the share capital, or of securities carrying a right to attribution of Company debt securities, without shareholders' preferential subscription rights, with the possibility given to the Board of Directors to create a priority subscription period open to the shareholders (resolution 7);
  - issue, in the form of an offering as set out in paragraph II of Article L.411-2 of the French Monetary and Financial Code *(Code monétaire et financier)*, of ordinary shares of the Company, of securities granting access to the share capital of the Company or of a company in which your Company directly or indirectly holds more than half of the share capital, or of securities carrying a right to attribution of Company debt securities, without shareholders' preferential subscription rights (resolution 8);
  - issue of ordinary shares or securities granting access to ordinary shares of the Company as payment to shareholders in the event of a public exchange offer initiated by the Company (resolution 11), under the conditions set forth in resolution 7, except for the price rules set forth in resolution 11;
- authorize the Board of Directors for a period of 26 months, to decide on the number of shares to be issued, for the issues described in resolutions 6, 7 and 8, within the deadlines and limits prescribed by applicable law and regulations as of the date of these issues and provided that the ceilings set forth in each resolution are complied with (resolution 9);
- delegate to the Board of Directors for a period of 26 months the authority to set the terms and conditions of issues of ordinary shares and of securities granting access to ordinary shares, as payment for contributions in kind made to the Company comprised of shares or securities granting access to share capital for up to 10% of the Company's share capital as of the date of the issue (resolution 12).

The total par value amount of the capital increases that may be carried out, immediately or in the future, pursuant to resolutions 6, 7, 8, 9, 11 and 12, may not exceed €45 million for each resolution, up to the overall maximum of the same amount for all capital increases likely to be carried out pursuant to these resolutions.

The total nominal amount of issues of debt securities that may be carried out, immediately or in the future, pursuant to resolutions 6, 7, 8, 9, 11 and 12 may not exceed €4.5 billion for each resolution, up to the overall maximum of the same amount for all issues of debt securities likely to be carried out pursuant to these resolutions.

These ceilings also include the additional securities to be issued as part of the implementation of the delegations referred to in resolutions 6, 7 and 8, under the conditions set forth in Article L. 225-135-1 of the French Commercial Code *(Code de commerce)* should you adopt resolution 9.

The Board of Directors is responsible for preparing a report in accordance with Articles R. 225-113 *et seq.* of the French Commercial Code. It is our responsibility to express an opinion on (i) the fairness of the financial information taken from the financial statements, (ii) the proposed cancellation of shareholders' preferential subscription rights and (iii) other information concerning the transactions, presented in this report.

We performed the procedures we considered necessary with regard to the professional guidelines of the French Institute of Statutory Auditors *(Compagnie Nationale des Commissaires aux Comptes)* applicable to this engagement. These procedures consisted in reviewing the content of the Board of Directors' report relating to these transactions and the methods used to determine the share issue price.

Subject to a subsequent examination of the terms and conditions of the proposed issues, we have no comments as regards the methods used to set the share issue price as presented in the Board of Directors' report pursuant to the 7th and 8th resolutions.

Since the Board of Directors' report does not specify the final terms and conditions under which the issues will be carried out, we do not express an opinion on the proposed cancellation of your preferential subscription rights pursuant to the 7th and 8th resolutions.

In addition, since the Board of Directors' report does not specify the methods for determining the issue price of shares to be issued in connection with the implementation of the 6th, 11th and 12th resolutions, we do not express an opinion on the elements used to calculate the share issue price.

In accordance with Article R. 225-116 of the French Commercial Code, we will issue a supplementary report, if necessary, when the Board of Directors uses these authorizations in the event of issues of ordinary shares without shareholders' preferential subscription rights or issues of securities granting access to share capital or carrying a right to attribution of debt securities.

Issues of ordinary shares or securities granting access to share capital, reserved for members of a company savings plan pursuant to the provisions of the French Commercial Code *(Code de commerce)* and Articles L. 3332-18 *et seq.* of the French Labor Code (resolution 13)

In accordance with Articles L. 225-135 *et seq.* of the French Commercial Code *(Code de commerce)*, we hereby report to you on the proposed capital increase, on one or more times, by the issue of ordinary shares or securities granting access to existing or new shares of the Company, without shareholders' preferential subscription rights, for a maximum amount of €10 million, reserved for members of one or more company savings plans (or another plan pursuant to which Article L. 3332-18 of the French Labor Code that would allow capital increases to be reserved to members under equivalent conditions) set up in the Company or within the EDF group comprising the Company and its French or foreign entities, within the Company's scope of consolidation pursuant to Articles L. 3344-1 and L. 3344-2 of the French Labor Code, which is submitted to you for approval.

This capital increase is submitted to the shareholders for approval in accordance with the provisions of Article L. 225-129-6 of the French Commercial Code and Article L. 3332-18 *et seq.* of the French Labor Code.

The Board of Directors proposes that, based on its report, shareholders delegate to it for a period of 26 months, the authority to set the terms and conditions of this transaction and that you cancel your preferential subscription right to shares or securities that will be issued.

The Board of Directors is responsible for preparing a report in accordance with Articles R. 225-113 and R. 225-114 of the French Commercial Code *(Code de commerce)*. It is our responsibility to express an opinion on (i) the fairness of the financial information taken from the financial statements, (ii) the proposed cancellation of shareholders' preferential subscription rights and (iii) other information concerning the transactions, presented in this report.

We performed the procedures we considered necessary with regard to the professional guidelines of the French Institute of Statutory Auditors *(Compagnie Nationale des Commissaires aux Comptes)* applicable to this engagement. These procedures consisted in reviewing the content of the Board of Directors' report relating to these transactions and the methods used to determine the share issue price.

Subject to a subsequent examination of the terms and conditions of the proposed capital increase, we have no comments as regards the methods used to set the share price of ordinary shares or securities to be issued as presented in the Board of Directors' report.

Since the Board of Directors' report does not specify the final terms and conditions under which the capital increase will be carried out, we do not express an opinion on the proposed cancellation of your preferential subscription rights.

In accordance with Article R. 225-116 of the French Commercial Code *(Code de commerce)*, we will issue a supplementary report when the Board of Directors uses this authorization.

Capital decrease by cancellation of shares bought back by the Company (resolution 14)

In accordance with Article L. 225-209 of the French Commercial Code *(Code de commerce)* relating to the cancellation of shares bought back by the Company, we hereby present our report with our comments on the reasons for and terms of the proposed capital decrease.

Shareholders are asked to grant the Board of Directors for a period of 26 months commencing on the date of this Shareholders' Meeting, full powers to cancel the shares acquired under the Company's share buyback program pursuant to the provisions of the aforementioned article, provided that the aggregate number of shares cancelled does not exceed 10% of the Company's share capital.

We performed the procedures we considered necessary with regard to the professional standards of the French Institute of Statutory Auditors *(Compagnie Nationale des Commissaires aux Comptes)* applicable to this engagement. These procedures consisted in verifying that the reasons for and terms of the proposed capital decrease, which does not undermine shareholder equality, comply with applicable legal provisions.

We have no comments to make on the reasons for and terms and conditions of the proposed capital reduction, it being recalled that this transaction may only be carried out if the shareholders give their prior approval to the Company to buy back its own shares.

Paris La Défense and Neuilly-sur-Seine, 5 March 2012

The Statutory Auditors

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