

# HALF-YEAR FINANCIAL REPORT

**30 JUNE 2016**

At its meeting of 28 July 2016, EDF's Board of Directors approved this Half-year financial report and the condensed consolidated financial statements for the half-year ended on 30 June 2016 included in it.

This report 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the energy sector in France and worldwide, it is possible that this information could turn out to be mistaken or outdated. Developments in the Group's activities could consequently differ from those described in this Half-year financial report and the declarations and information appearing in this report could prove to be erroneous.

The forward-looking statements contained in this Half-year financial report, notably in section 11 ("Financial Outlook") of the Half-year management report, are based on assumptions and estimates that could evolve or be impacted by risks, uncertainties (relating particularly to the economic, financial, competitive, regulatory and weather environment) or other factors that may cause the future results, 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, regulations, and the factors discussed in section 2 of the EDF group's 2015 reference document ("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 gathered in the course of their activities to the other entities of the Group, including its Management. Similarly, certain data specific to generation and supply activities may not be communicated to the entities responsible for transmission and distribution. This Half-year financial report has been prepared by the EDF group in compliance with these rules.

## CONTENTS OF THE HALF-YEAR FINANCIAL REPORT

1. CERTIFICATION BY THE PERSON RESPONSIBLE FOR THE HALF-YEAR FINANCIAL REPORT
2. HALF-YEAR MANAGEMENT REPORT AT 30 JUNE 2016
3. CONDENSED CONSOLIDATED HALF-YEAR FINANCIAL STATEMENTS AT 30 JUNE 2016
4. STATUTORY AUDITORS' REVIEW REPORT ON THE FIRST HALF-YEAR FINANCIAL INFORMATION FOR 2016 (1 JANUARY TO 30 JUNE 2016)

## 1. CERTIFICATION BY THE PERSON RESPONSIBLE FOR THE 2016 HALF-YEAR FINANCIAL REPORT

I certify that, to the best of my knowledge, the condensed consolidated financial statements at 30 June 2016 are prepared in accordance with the applicable accounting standards and give a true and fair view of the assets and liabilities, financial position and income of the company and of all the companies included in the scope of consolidation, and that the attached Half-year management report presents a true and fair view of the important events of the first six months of the financial year and their impact on the financial statements, the main related party transactions and a description of the main risks and uncertainties for the remaining six months of the financial year.

Paris, 28 July 2016

Jean-Bernard Lévy  
Chairman and CEO of EDF

# HALF-YEAR MANAGEMENT REPORT

**30 JUNE 2016**

# MANAGEMENT REPORT CONTENT

<b>1</b>	<b>KEY FIGURES</b>	<b>8</b>
<b>2</b>	<b>ECONOMIC ENVIRONMENT</b>	<b>9</b>
2.1	TRENDS IN MARKET PRICES FOR ELECTRICITY AND THE PRINCIPAL ENERGY SOURCES	9
2.2	ELECTRICITY AND GAS CONSUMPTION	13
2.3	ELECTRICITY AND NATURAL GAS SALES	13
2.4	WEATHER CONDITIONS: TEMPERATURES AND RAINFALL	14
<b>3</b>	<b>SIGNIFICANT EVENTS</b>	<b>15</b>
3.1	EXTENSION TO 50 YEARS OF THE OPERATING LIFETIMES OF THE 900MW PWR UNITS IN FRANCE	15
3.2	EDF, THE CEA AND AREVA ESTABLISH THE FRENCH NUCLEAR PLATFORM	16
3.3	STATEMENT FOLLOWING THE BOARD OF DIRECTORS' MEETING OF 22 AVRIL 2016	16
3.4	FLAMANVILLE EPR: PROGRESS ON THE REACTOR VESSEL TESTING PROGRAMME	17
3.5	STRATEGIC DEVELOPMENT	18
3.6	RESULT OF THE SCRIP DIVIDEND OPTION FOR THE BALANCE OF THE 2015 DIVIDEND	19
3.7	NEW INVESTMENTS AND PARTNERSHIPS	19
3.8	INVESTMENT PROJECTS	21
3.9	INNOVATION	24
3.10	REGULATORY ENVIRONMENT	24
3.11	OTHER SIGNIFICANT EVENTS	29
3.12	GOVERNANCE – BOARD OF DIRECTORS	31
<b>4</b>	<b>ANALYSIS OF THE BUSINESS AND THE CONSOLIDATED INCOME STATEMENTS FOR THE FIRST HALF-YEARS OF 2015 AND 2016</b>	<b>32</b>
4.1	SALES	33
4.2	EBITDA	36
4.3	OPERATING PROFIT (EBIT)	38
4.4	FINANCIAL RESULT	40
4.5	INCOME TAXES	40
4.6	SHARE IN NET INCOME OF ASSOCIATES AND JOINT VENTURES	40
4.7	NET INCOME ATTRIBUTABLE TO NON-CONTROLLING INTERESTS	40
4.8	EDF NET INCOME	40
4.9	NET INCOME EXCLUDING NON-RECURRING ITEMS	40
<b>5</b>	<b>NET INDEBTEDNESS, CASH FLOWS AND INVESTMENTS</b>	<b>41</b>
5.1	OPERATING CASH FLOW	42
5.2	CHANGE IN WORKING CAPITAL	42
5.3	NET INVESTMENTS	42
5.4	DEDICATED ASSETS	43
5.5	CASH FLOW BEFORE DIVIDENDS	43
5.6	DIVIDENDS PAID IN CASH	44
5.7	GROUP CASH FLOW	44
5.8	EFFECT OF CHANGE IN EXCHANGE RATE	44
5.9	NET INDEBTEDNESS	44
5.10	FINANCIAL RATIOS	44
<b>6</b>	<b>MANAGEMENT AND CONTROL OF MARKET RISKS</b>	<b>45</b>

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6.1	MANAGEMENT AND CONTROL OF FINANCIAL RISKS.....	45
6.2	MANAGEMENT AND CONTROL OF ENERGY MARKET RISKS.....	51
<b>7</b>	<b>TRANSACTIONS WITH RELATED PARTIES .....</b>	<b>51</b>
<b>8</b>	<b>PRINCIPAL RISKS AND UNCERTAINTIES FOR THE SECOND HALF-YEAR OF 2016 .....</b>	<b>51</b>
<b>9</b>	<b>SIGNIFICANT EVENTS RELATED TO LITIGATION IN PROCESS.....</b>	<b>52</b>
9.1	PROCEEDINGS CONCERNING EDF.....	52
9.2	PROCEEDINGS CONCERNING ENEDIS .....	53
<b>10</b>	<b>SUBSEQUENT EVENTS .....</b>	<b>54</b>
10.1	HINKLEY POINT C: EDF'S BOARD OF DIRECTORS APPROVES THE FINAL INVESTMENT DECISION.....	54
10.2	UPDATE ON STRATEGIC PARTNERSHIP BETWEEN EDF AND AREVA.....	54
10.3	COMPENSATION ASSOCIATED WITH THE CLOSURE OF THE FESSENHEIM NUCLEAR PLANT: INFORMATION TO THE BOARD OF DIRECTORS AND DETAILS ON THE COMPANY CALENDAR .....	55
10.4	EDF - CAISSE DES DÉPÔTS AND CNP ASSURANCES: EXCLUSIVE NEGOTIATIONS FOR A LONG-TERM PARTNERSHIP WITH RTE.....	56
10.5	FINALISATION OF THE ACQUISITION BY EDF OF STUDSVIK'S WASTE MANAGEMENT ACTIVITIES IN SWEDEN AND IN THE UNITED-KINGDOM .....	56
10.6	THE FRENCH GOVERNMENT ANNOUNCES ITS CHOICE OF THE AZZURRA CONSORTIUM (ATLANTIA/AEROPORTI DI ROMA/EDF) AS PREFERRED BUYER .....	56
<b>11</b>	<b>FINANCIAL OUTLOOK .....</b>	<b>57</b>

## 1 KEY FIGURES

Pursuant to European regulation 1606/2002 of 19 July 2002 on the adoption of international accounting standards, the EDF group's condensed consolidated financial statements for the half-year ended 30 June 2016 are prepared using the presentation, recognition and measurement rules set forth in the international accounting standards published by the IASB and approved by the European Union for application at 30 June 2015. These international standards are IAS (International Accounting Standards), IFRS (International Financial Reporting Standards), and SIC and IFRIC interpretations.

The accounting methods applied by the Group are presented in note 1 to the condensed consolidated half-year financial statements at 30 June 2016.

The figures presented in this document are taken from the EDF Group's condensed consolidated half-year financial statements at 30 June 2016.

The condensed consolidated half-year financial statements comply with standard IAS 34 on interim financial reporting. They do not therefore include all the information required for full annual financial statements, and are to be read in conjunction with the consolidated financial statements at 31 December 2015.

The Group's key figures for the first half of 2016 are shown in the following table.

<i>(in millions of Euros)</i>	H1 2016	H1 2015 <sup>(1)</sup>	Variation	Variation (%)	Organic growth (%)
Sales	36,659	38,873	(2,214)	-5.7	-4.6
Operating profit before depreciation and amortisation (EBITDA)	8,944	9,147	(203)	-2.2	-0.7
Operating profit (EBIT)	4,512	4,536	(24)	-0.5	+1.5
Income before taxes of consolidated companies	3,288	3,388	(100)	-3.0	-0.6
EDF net income	2,081	2,514	(433)	-17.2	-14.3
Net income excluding non-recurring items <sup>(1)</sup>	2,968	2,928	40	+1.4	+3.9

(1) EDF Energy's transactions on the wholesale electricity markets (excluding trading activities), which showed a net short position at 30 June 2015, were reclassified in 2015 from energy purchases to sales in the amount of €477 million.

(2) Net income excluding non-recurring items is not defined by IFRS, and is not directly visible in the Group's consolidated income statements. It corresponds to the Group's share of net income (EDF net income) excluding the net change in fair value on Energy and Commodity derivatives, excluding trading activities, net of tax (see section 4.9, "Net income excluding non-recurring items").

### From EDF net income to net income excluding non-recurring items

<i>(in millions of Euros)</i>	H1 2016	H1 2015
EDF net income	2,081	2,514
Decision by the European Commission concerning the general network <sup>(1)</sup>	-	348
Other, including net changes in fair value on Energy and Commodity derivatives, excluding trading activities	156	(329)
Impairment	731	395
<b>NET INCOME EXCLUDING NON-RECURRING ITEMS</b>	<b>2,968</b>	<b>2,928</b>

(1) European commission decision on the tax treatment of provisions established between 1987 and 1996 for renewal of the general network.

Net income excluding non-recurring items adjusted for remuneration on hybrid bond issues recognised in equity amounts to €2,567 million and €2,531 million respectively for the first half of 2016 and the first half of 2015.

### Group cash flow

<i>(in millions of Euros)</i>	H1 2016	H1 2015	Variation	Variation (%)
Group cash flow <sup>(1)</sup>	107	(1,888)	1,995	+105.7

(1) Group cash flow is not an aggregate defined by IFRS as a measure of financial performance, and is not comparable with indicators of the same name reported by other companies. It is equivalent to the operating cash flow after changes in working capital and net investments, allocations and withdrawals from dedicated assets, and dividends (see section 5 of this half-year financial report).



## Details of net indebtedness

<i>(in millions of Euros)</i>	H1 2016	H1 2015	Variation	Variation (%)
Net indebtedness <sup>(1)</sup>	36,208	37,395	(1,187)	-3.1
Equity (EDF's share)	34,718	34,749	(31)	-0.1
Net indebtedness/EBITDA	2.1 <sup>(2)</sup>	2.1		

(1) Net indebtedness is not defined in the accounting standards and is not directly visible in the Group's 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 and are managed according to a liquidity-oriented policy. It also includes the Group's loan to RTE (see note 20.3 to the condensed consolidated half-year financial statements at 30 June 2016).

(2) The ratio at 30 June 2016 is calculated based on cumulative EBITDA for the second half-year of 2015 and the first half-year of 2016, using a numerator and denominator based on a comparable scope of consolidation.

## 2 ECONOMIC ENVIRONMENT

### 2.1 TRENDS IN MARKET PRICES FOR ELECTRICITY AND THE PRINCIPAL ENERGY SOURCES

In an increasingly interconnected European market, analysis of market prices in France and the rest of Europe provides vital context.

European spot electricity prices during the first half of 2016 showed a substantial year-on-year decrease. The downward pressure on prices caused by the drop in fuel prices was compounded by milder temperatures in first-half 2016.

#### 2.1.1 Spot electricity prices in Europe<sup>1</sup>

	France	United Kingdom	Italy	Germany	Belgium
Average baseload price for H1 2016 (€/MWh)	27.4	44.8	37.1	25.0	27.8
Variation in average H1 baseload prices, 2016/2015	-29.4%	-20.7%	-25.6%	-17.3%	-36.9%
Average peakload price for H1 2016 (€/MWh)	33.6	50.5	40.7	30.7	34.6
Variation in average H1 peakload prices, 2016/2015	-27.6%	-19.4%	-25.2%	-17.2%	-33.0%

The comments below concern baseload prices.

In **France**, spot electricity prices were stable at an average €27.4/MWh in the first half of 2016, €11.4/MWh lower than in the first half of 2015. This decline was mainly explained by lower coal and gas prices, and first-half temperatures that were an average 0.8°C milder in 2016 than 2015.

In the first quarter of 2016, the supply/demand balance reflected a downturn of more than 2GW in demand compared to the previous year, with lower use of fossil-fired thermal plants, a downturn in nuclear power output and a rise of almost 1GW in wind power output. Spot prices for the first quarter stood at an average €28.8/MWh baseload, a year-on-year decrease of €16.1/MWh between 2015 and 2016. In the second quarter, despite slightly higher demand than in 2015, prices were €6.7/MWh lower as a result of the marked drop in fuel prices. More extensive use of fossil-fired thermal plants made it possible to meet demand as nuclear power generation decreased and hydropower generation levels rose.

In the **United Kingdom**, average spot electricity prices fell by €11.7/MWh from their first-half 2015 level to reach an average €44.8/MWh. The decrease was sharper in the second quarter than the first quarter of 2016, with year-on-year differences of -€13.6/MWh and -€9.8/MWh respectively.

<sup>1</sup> **France and Germany:** Average previous day EPEXSPOT price for same-day delivery;  
**Belgium:** Average previous day Belpex 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.

In **Italy**, average first-half spot prices were €12.8/MWh lower in 2016 than 2015, at €37.1/MWh for the first half-year of 2016.

In **Germany**, spot prices stood at an average €25.0/MWh, €5.2/MWh lower than in first-half 2015. Wind power output was up by 0.8GW from first-half 2015 to 8.9GW in first-half 2016 due to the strong increase in both onshore and offshore installed capacity in north-west Germany. The total installed wind power capacity in Germany was around 45GW at 30 June 2016. Average photovoltaic solar power output was stable overall. There were several significant periods of wind and photovoltaic power generation in Germany in the first six months of 2016, leading to negative prices culminating at -€130/MWh on Sunday 8 May.

In **Belgium**, spot prices were down by €16.2/MWh compared to the first half of 2015, with an average price of €27.8/MWh. The available nuclear capacity was substantially higher than in first-half 2015 following resumption of operations on 30 December 2015 by the Doel 1 plant, which had been shut down since the previous February, and also in December 2015 by the two nuclear power plants (Doel 3 and Tihange 2) which had been shut down since late March 2014.

## 2.1.2 Forward electricity prices in Europe<sup>1</sup>

	France	United Kingdom	Italy	Germany	Belgium
Average forward baseload price under the 2017 annual contract for H1 2016 (€/MWh)	29.0	45.7	39.1	23.9	30.4
Variation in average H1 forward baseload price under the annual contracts, 2016/2015	-25.3%	-25.0%	-16.9%	-25.4%	-31.3%
Forward baseload price under the 2017 annual contract at 30 June 2016 (€/MWh)	33.1	49.2	41.9	26.3	33.3
Average forward peakload price under the 2017 annual contract for H1 2016 (€/MWh)	37.8	52.1	45.1	30.2	39.6
Variation in average H1 forward peakload price under the annual contracts, 2016/2015	-20.4%	-23.8%	-13.5%	-25.7%	-25.1%
Forward peakload price under the 2017 annual contract at 30 June 2016 (€/MWh)	43.1	55.7	47.0	33.2	43.0

Average annual contract prices for baseload and peakload electricity in Europe were lower than in first-half 2015, mainly due to the decrease in fuel prices.

In **France**, the average annual contract baseload price was 25.3% lower (-€9.8/MWh) than in the first half of 2015, primarily due to the year-on-year difference in coal prices. The 2017 annual contract baseload price gradually rose over the first half of 2016 in the wake of oil and coal prices. Discussions concerning the possible introduction of a carbon price floor in France, and several announcements by government ministers and the President, helped to push prices upwards.

In the **United Kingdom**, the April Ahead contract baseload price for 1 April Y+1 to 31 March Y+2 dropped by 25.0% (-€15.2/MWh) as a result of the fall in gas prices between the two years. Prices increased over the first half of 2016, following the upturn in natural gas prices in the UK: as gas-fired facilities account for a large portion of the British generation fleet, they make a significant contribution to the formation of the country's electricity prices.

In **Italy**, the annual contract baseload price also declined and was €8.0/MWh lower on average than in first-half 2015. This movement was caused by a marked decrease in gas prices, which are a major factor in electricity prices in Italy.

In **Germany**, the annual contract baseload price was down by an average €8.1/MWh compared to the first half of 2015. This decrease is attributable to falling year-on-year fuel prices, mainly for coal which greatly influences the formation of German electricity prices. The rise in renewable energy capacities, principally for wind power (onshore and offshore) reinforced downward pressure on prices. Rising coal prices then pushed the annual contract price back upwards during the first half of 2016.

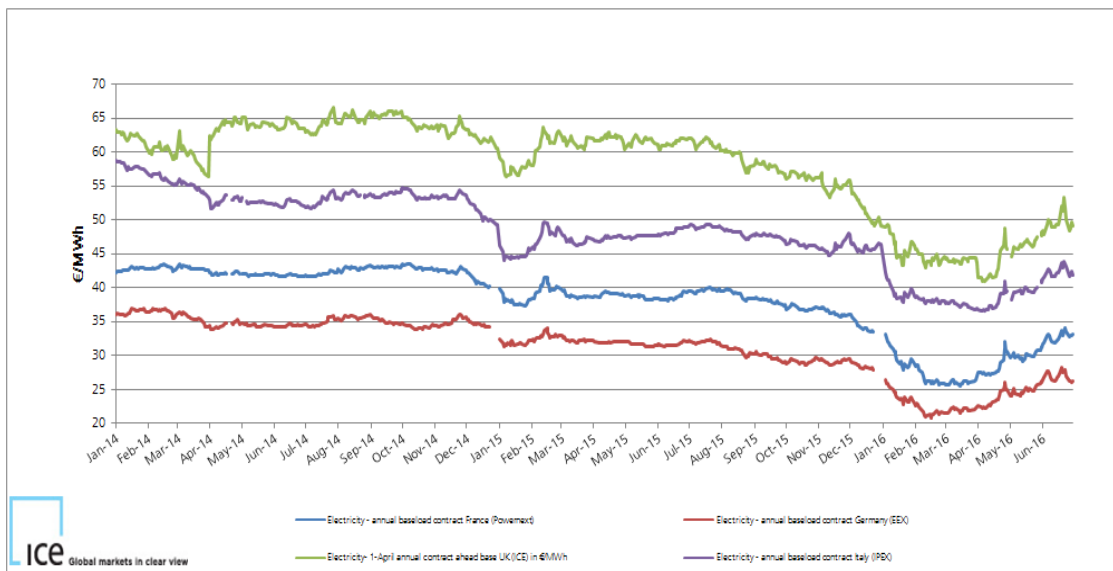
<sup>1</sup> **France and Germany:** average year-ahead EEX price;

**Belgium and Italy:** average year-ahead EDF Trading price;

**United Kingdom:** average ICE annual contract prices, April 2015 then April 2016 (in the UK, annual contract deliveries take place from 1 April to 31 March).

In **Belgium**, the annual contract baseload price was 31.3% lower on average than in first-half 2015. This decrease is explained by the fall in fuel prices, particularly gas prices which are a key factor in Belgian electricity prices, but also by the resumption of operations by the Doel 3 and Tihange 2 reactors, which had been shut down due to micro-cracks in the vessels. This helped to relax the country's forecast supply/demand balance, and therefore brought prices down substantially.

### Principal forward electricity prices in Europe (baseload)

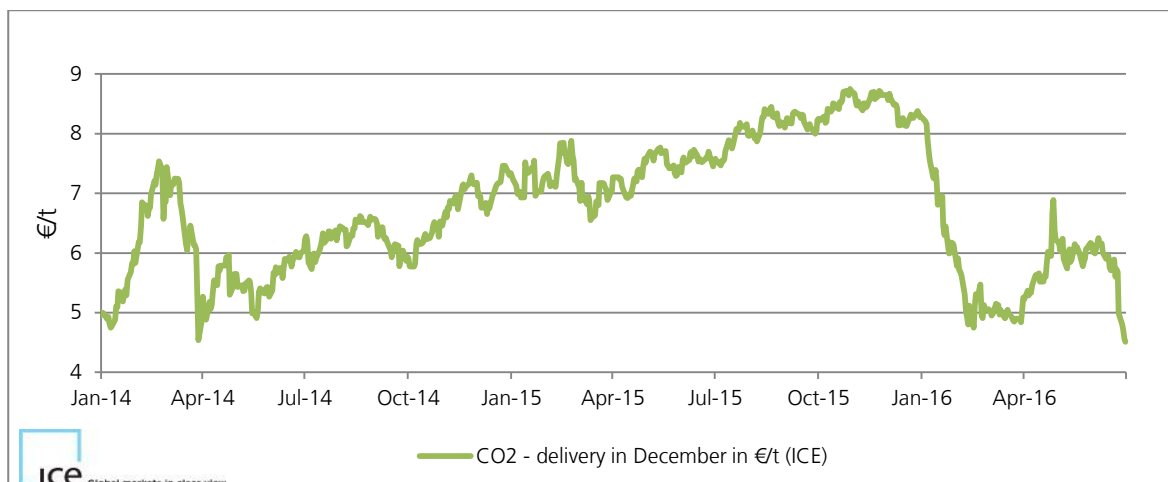


### 2.1.3 CO<sub>2</sub> emission rights prices<sup>1</sup>

The price of CO<sub>2</sub> emission rights for delivery in December 2017 decreased by €3.8/t to end the half-year at €4.5/t. There was a sharp drop at the start of the year following a fall in demand for quotas due to the slowdown in industrial activity in certain high-emission sectors such as chemicals and metallurgy, and the closure of several coal-fired plants in Europe, particularly in the United Kingdom.

This was followed by a recovery as discussions concerning the possible introduction of a carbon price floor in France suggested to market actors that there could be a knock-on effect at European level. At the end of the half-year, the result of the "Brexit" referendum led to a fall in CO<sub>2</sub> prices since economic actors were apprehensive about its consequences for the European economy. Ultimately, these developments explain why the average CO<sub>2</sub> price for the first half-year was 21% lower in 2016 than 2015.

### CO<sub>2</sub> emission rights prices



1. Average ICE prices for the annual contract, Phase III (2013-2020).

## 2.1.4 Fossil fuel prices <sup>1</sup>

	Coal (US\$/t)	Oil (US\$/bbl)	Natural gas (€/MWhg)
Average price for H1 2016	43.9	41.2	14.5
Average H1 price variation, 2016/2015	-25.7%	-30.4%	-33.2%
Highest price in H1 2016	58.8	52.5	17.5
Lowest price in H1 2016	36.6	27.9	12.9
Price at 30 June 2016	55.6	49.7	16.2
Price at 30 June 2015	60.4	63.6	21.6

Forward prices for **coal** delivered in Europe stood at an average US\$43.9/t in the first half of 2016, down by 25.7% from the first half of 2015 due to lower demand, particularly in China, and in line with oil price developments.

Coal prices nonetheless registered a notable increase over the half-year, for several reasons. The first was an upturn in the price of oil, which is a major cost factor especially in open-cast mining. Then there was a gradual shrinkage in the coal supply due to the bankruptcy of several coal operators in the United States, and the closure of a very large number of mines in China due to a move by the authorities to clean up the sector. Meanwhile demand held up, mainly in India and other growth countries such as Korea and Vietnam. These developments helped to reverse the downward trend observed in 2015, and coal prices ended first-half 2016 at an average US\$55.6/t.

The average crude **oil** price for the first half of 2016 was US\$41.2/bbl, a year-on-year decline of US\$18.0/bbl caused by a relatively greater supply, especially from Saudi Arabia, and the inability of OPEC members to agree on production quotas.

However, the general trend over first-half 2016 was clearly upwards, reflecting several factors. Supply-side tensions were accentuated by disturbances to oil production caused by sabotage in Nigeria, a troubled domestic political environment in Venezuela and ongoing fighting in Libya. Extensive closures of American shale oil wells that had become unprofitable in view of price levels also increased the pressure on prices. Demand was steady in Asia and the United States, and US oil stocks dipped below analyst forecasts several times. Brent oil prices ended first-half 2016 at US\$49.7/bbl, contrasting with the lowest price of US\$27.9/bbl recorded during the period.

**Natural gas** prices under the annual contract in France declined by €7.2/MWh during the first half of 2016 to an average €14.5/MWh. This 33% fall is explained by the relatively lower oil prices.

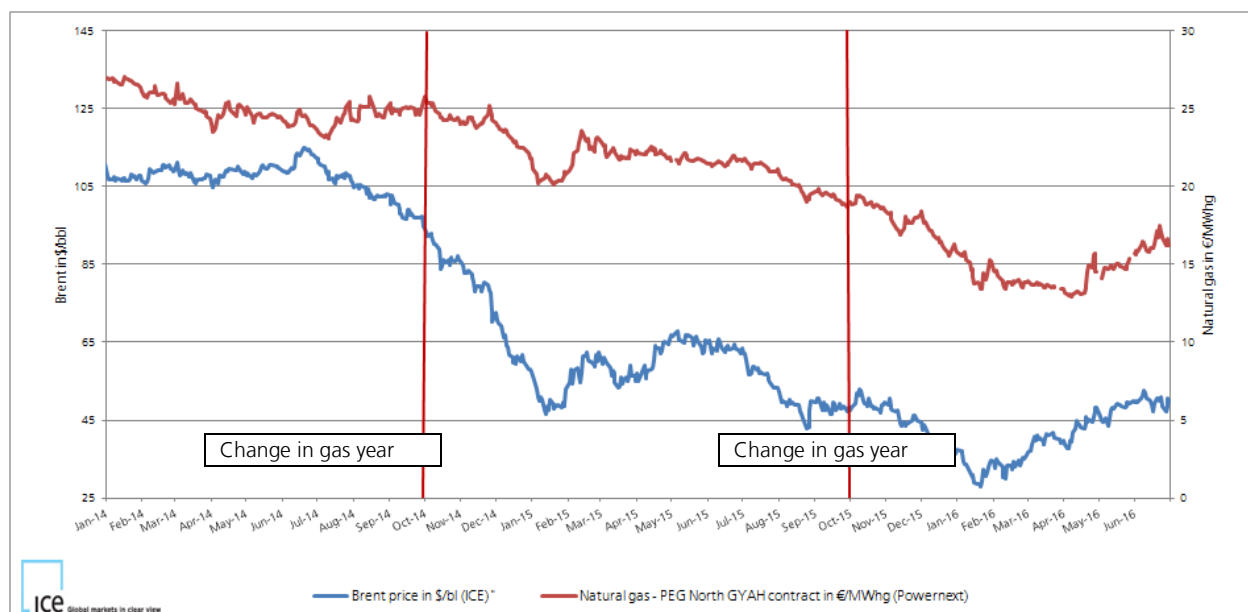
Yet the overall trend was still a rise between January and 30 June, similar to oil and coal. First, the increase in the price of oil products drove up the price of certain long-term supply contracts and this automatically caused a downturn in desired import quantities, leading to lower forecast gas supplies on the European market. Imports of LNG were also down, as part of the price of LNG in Asia is indexed on oil prices, and producers such as Qatar were thus more inclined to send cargoes to Asia where oil prices were rising. This helped to decrease the supply in Europe. Finally, the Dutch government's announcement of a further restriction on gas production by the Groningen gas field in the Netherlands contributed to tension on prices; at the end of the period, filling of the Rough gas facility in England also stopped, which will create pressure in the winter as there will be less gas available to cope with seasonal weather conditions.

<sup>1</sup> **Coal:** Average ICE prices for delivery in Europe (CIF ARA) for the next calendar year (US\$/t);

**Oil:** Brent first reference crude oil barrel, ICE index (front month) (US\$/barrel);

**Natural gas:** Average ICE OTC prices, for delivery starting from October of the following year in France (PEG Nord) (€/MWhg).

## Natural gas and oil prices



## 2.2 ELECTRICITY<sup>1</sup> AND GAS<sup>2</sup> CONSUMPTION

Overall electricity consumption in **France** for the first half-year was 0.1% lower in 2016 than 2015. Year-on-year, electricity consumption fell in January and February by around 4.5%, mainly as a result of mild weather, then rose due to cooler temperatures in March, April and May. Lower use of air conditioning in June contributed to a 1.1% decrease in electricity consumption, and in the end first-half consumption remained stable between 2015 and 2016.

In the **United Kingdom**, estimated electricity consumption was down by 1.2% compared to first-half 2015, principally as a result of improved energy efficiency and lower industrial production. In **Italy**, electricity consumption was down by 2.0% compared to first-half 2015. Stable thermal production and an increase in wind power production partly offset the downturn in hydropower and photovoltaic power output.

Estimated natural gas consumption in **France** rose by 1.2% in the first half of 2016 compared to the first half of 2015, mainly due to colder weather in March to June. However, gas consumption declined in the first two months of the year due to milder temperatures than the same period of the previous year.

Estimated natural gas consumption in the **United Kingdom** was down by 1.8% from first-half 2015 as a result of milder temperatures in the first quarter of 2016 and better energy efficiency. In **Italy**, domestic demand for natural gas increased by +1.3% as a result of higher thermal power output, partly offset by the effect of very mild winter temperatures.

## 2.3 ELECTRICITY AND NATURAL GAS SALES

For details of recent developments concerning tariffs in France, see section 3.10.1.4., "Regulated electricity sales tariffs in France".

In the **United Kingdom**, EDF Energy reduced its gas tariffs by 5% on 24 March 2016, due to falling gas prices on the wholesale markets. This reduction is consistent with the gas tariff cuts applied by the five other major energy suppliers in the United Kingdom.

1. Sources: France: unadjusted data and data adjusted for weather effects provided by RTE.

United Kingdom: Department of Energy and Climate Change for the first three quarters, local subsidiary estimation for the final quarter.

Italy: unadjusted data and data provided by Terna, the Italian national grid operator, and adjusted by Edison.

2. Sources: France: unadjusted data from Smart GRTgaz.

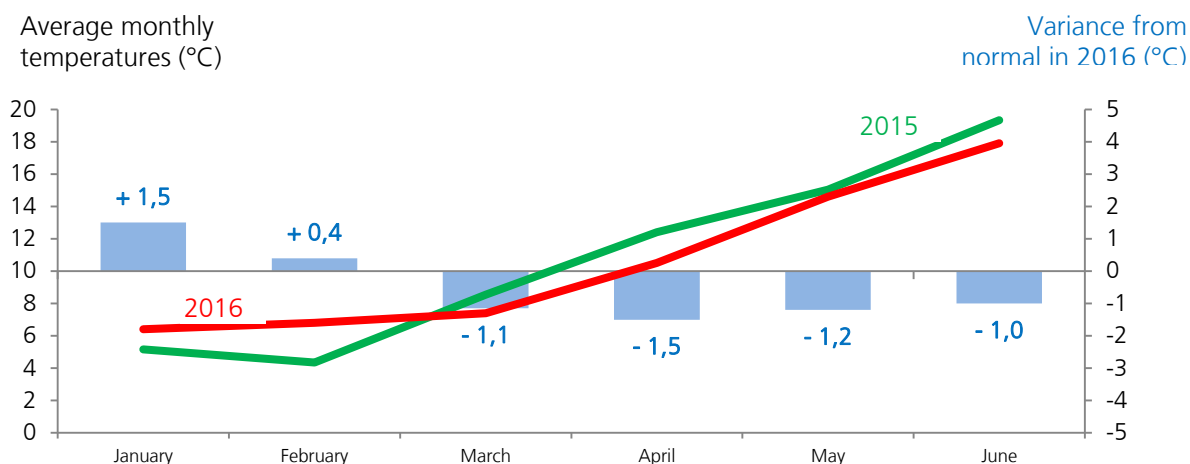
United Kingdom: Department of Energy and Climate Change data for the first three quarters, local subsidiary estimation for the final quarter.

Italy: Ministry for Economic Development (MSE), Snam Rete Gas data restated by Edison on the basis 1 Bcm = 10.76 TWh.

## 2.4 WEATHER CONDITIONS: TEMPERATURES AND RAINFALL

January and February 2016 registered rather mild temperatures for the season, continuing the trend of November and December 2015. Cool weather dominated in spring 2016, however: March, April, May and June temperatures remained between 1.0° and 1.5° below normal levels.

### Temperatures <sup>(1) (2)</sup> in France in first-half 2015 and first-half 2016

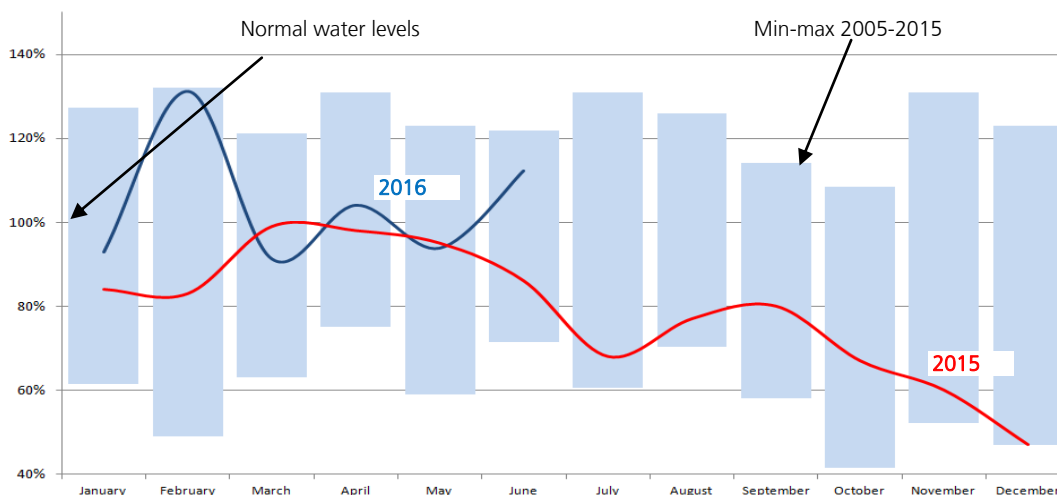


(1) Average temperatures recorded in 32 cities weighted by electricity consumption.

(2) Source: Miréor (data from Météo France).

The first half-year of 2016 was marked by surplus rainfall across much of Europe. The only regions sheltered from the successive disturbances were the basins of the Mediterranean arc, which registered below-normal rainfall.

### Water flow coefficients in France in 2015 and first-half 2016 <sup>(1)</sup>



(1) Weekly monitoring by the EDF group's Statistical Observatory energy observatory of French reservoir levels (Miréor) as far as the coast.

In France, except in the southern Alps and the eastern Pyrenees which registered shortfalls in precipitation, there was surplus precipitation everywhere in the first half of 2016, making up for the significant shortfall in water levels recorded at 31 December 2015.

As a consequence of these unusual weather conditions, on a cumulative basis French hydropower capacity for the first half of 2016 was slightly above normal.

### 3 SIGNIFICANT EVENTS <sup>1</sup>

#### 3.1 EXTENSION TO 50 YEARS OF THE OPERATING LIFETIMES OF THE 900MW PWR UNITS IN FRANCE<sup>2</sup>

As of the first half of 2016, the Group considers that all the technical, economic and governance conditions necessary to bring the accounting depreciation period of its 900MW PWR power plants in France into line with its industrial strategy are now fulfilled.

Based on studies and work already done, particularly concerning the replacement of components and good control of equipment ageing, the Group has sufficient assurance of the plants' technical capacity to operate for 50 years at least. This view is also bolstered by the international benchmark.

The Group has also made progress with the Nuclear Safety Authority (*Autorité de Sûreté Nucléaire* (ASN)) on the matter of the content of the fourth 10-year inspections of this series included in the "*Grand carénage*" overhaul programme. Although some points remain to be finalised, the components of these inspections are currently in a convergence process with the ASN. This is demonstrated by the Re-examination Orientation File response sent by the ASN to EDF in April 2016, in which the ASN indicated its agreement with the company's chosen themes and commitments for these inspections. This is an important step in the process, giving EDF secure grounds for industrial preparations for the 10-year inspections pending the ASN's generic opinion, which is expected to be issued a few months before the first of the inspections begins.

Once its fourth 10-year inspections are completed, the 900MW PWR series will have reached a level of safety that is both as close as possible to EPR safety level and one of the highest worldwide.

Extending the nuclear reactors' operating lifetime beyond 40 years also offers high profitability even in a low long-term price scenario, since the production cost of nuclear power is very competitive in relation to other types of power generation.

Furthermore, the principle of operating beyond 40 years is stated in the multi-year energy plan (*Programmation Pluriannuelle de l'Énergie* (PPE)) proposal of 1 July 2016, as a necessity for a secure energy supply. Extending the depreciation period of the 900MW series is consistent with the objectives of the PPE (particularly development of renewable energies and control of greenhouse gas emissions) and the related decree projects.

In view of all these factors, the Group considers that the best estimate for the accounting depreciation period of the 900MW power plants is currently 50 years. This change of accounting estimate does not predetermine the ASN's future decisions to authorise continued operation, which will be given individually for each unit after each 10-year inspection, as currently applied and required by law.

The Group therefore undertook this change in accounting estimate at 1 January 2016 for all its 900MW PWR power plants in France, except for Fessenheim.

This change of accounting estimate is applied prospectively, and has the following consequences for the Group's consolidated financial statements at 30 June 2016:

- At 1 January 2016, due to timing differences in the payment schedules, provisions relating to nuclear power generation were reduced by €2,044 million (see note 18.2), including €1,657 million covered by dedicated assets (see note 23). This reversal from provisions does not affect the income statements, but is allocated to the net book value of the assets in accordance with IFRIC 1 (see note 12). It is almost entirely taxable and generates a current tax liability of €679 million.
- In the first half of 2016:
  - the 10-year extension of the accounting depreciation period and the reduction in the value of assets at 1 January in line with the decrease in nuclear provisions, leads to a lower depreciation charge, compared to a useful life still set at 40 years, estimated at €445 million for the half-year;
  - the reduction in nuclear provisions at 1 January 2016 leads to a €45 million decrease in the cost of unwinding the discount;
  - the income related to partner advances made to EDF under the nuclear plant financing plans is lower by €18 million;
  - overall, the various effects lead to a €472 million increase in the income before taxes for the first half-year, and a €310 million increase in the consolidated net income.

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1. A full list of press releases is available from the EDF website [www.edf.fr](http://www.edf.fr).

2. Excluding Fessenheim

### 3.2 EDF, THE CEA AND AREVA ESTABLISH THE FRENCH NUCLEAR PLATFORM

On 31 March 2016, EDF, the CEA and AREVA decided to found the French Nuclear Platform (*Plateforme France Nucléaire* – PFN), a tripartite body for discussion the major transversal topics for the nuclear sector in France and internationally, in order to develop coherent responses to the major challenges facing the French nuclear sector and prepare the ground for appropriate decisions.

The PFN will hold quarterly meetings of six key managers from its three member entities, including the Chairmen of the CEA, EDF and AREVA. It will be chaired in rotation, with each Chairman's term of office lasting one year. The first Chairman of the PFN will be the Chairman of AREVA.

The PFN will aim to improve the joint effectiveness of the three entities, in particular to devise a shared vision of key issues in the medium- and long-term for the nuclear sector, which will contribute to the preparation and implementation of decisions taken by the French Presidential Nuclear Policy Council (*Conseil de politique nucléaire*).

The PFN is to set itself a working agenda by the end of 2016 that will cover the current priority topics: prospects for the French nuclear sector in accordance with France's Energy Transition law for green growth, the sector's international strategy established in cooperation with the French Ministry of Foreign Affairs and International Development and other relevant ministries, a review of technological options for the "EPR New Model" (EPR NM), consolidation of relations with SMEs in the sector in coordination with France's Nuclear Industry Strategic Committee (*Comité Stratégique de Filière Nucléaire*), and coordination of positions on regulatory changes, particularly regarding safety requirements and objectives. The PFN will also work on the future of the closed fuel cycle in France and internationally, optimisation of the Cigéo deep waste storage project, development of dismantling technologies, and the R&D programme for fourth-generation reactors.

EDF, the CEA and AREVA needed a joint body to address the profound changes currently under way in the highly competitive nuclear sector. The creation of the PFN will make a major contribution to the French nuclear sector.

### 3.3 STATEMENT FOLLOWING THE BOARD OF DIRECTORS' MEETING OF 22 AVRIL 2016

EDF's Board of Directors held a meeting on 22 April 2016 to review the Group's long-term financial trajectory under the new adverse market price conditions. As a responsible, efficient electricity producer that champions low carbon growth, the EDF Group's ambitions are consistent with its CAP 2030 strategy priorities:

- proximity to customers and local communities;
- low carbon generation, with a balanced mix of nuclear and renewable energy;
- international expansion.

An action plan was presented to the Board of Directors which includes:

- optimising net investments (excluding Linky meters and new developments) by close to €2 billion in 2018 compared to 2015. Net investments should thus reach €10.5 billion in 2018;
- reducing operating expenses by at least €1 billion between 2015 and 2019;
- an asset disposal plan of around €10 billion by 2020.

These measures will be included in the Group's Medium Term Plan to be presented to the Board of Directors in December, as every year.

The Board of Directors examined the need to reinforce the company's equity:

- EDF announced its intention to propose a scrip dividend option for the 2016 and 2017 dividend, and, market conditions permitting, to submit a capital increase proposal to the Board of Directors by the 2016 financial year-end, involving a market operation of around €4 billion;
- the French State informed the Board of its position on these two matters, and in a separate statement announced that it would support EDF in its development strategy. It has stated that it will opt for the scrip dividend for 2016 and 2017, and will subscribe to the capital increase via the market to the extent of €3 billion.

Wholesale power prices, which have ranged between €25 and €28/MWh since the beginning of 2016, are at record low levels, and prices could stay at this low level in France and Europe over the next two to three years. In



France, the end of regulated tariffs for businesses at end 2015 increases EDF's exposure to wholesale market prices. Around 65% of EDF's generation output in France is now exposed to market prices.

EDF has consequently announced an action plan<sup>1</sup> to enable the company to continue its strategic development within the CAP 2030 framework despite these adverse market conditions.

### **1. Optimising and selecting investments in coherence with the CAP 2030 strategy**

Investments in the current group will be reduced by close to €2 billion between 2015 and 2018, with a target level of €10.5 billion by the end of that period. Investments of close to €2 billion per year on average are planned in non-group entities in the regulated activities until 2018 (Linky meters, for which the rollout is already under way, construction of new generation units using renewable energy sources, the Hinkley Point C project).

As a result the total amount of Group investments should lie between €12.5 billion and €13.5 billion per year over the next three years.

### **2. Reducing operating expenses**

The EDF Group has already reduced costs by around €300 million between 2014 and 2015, and during the presentation of its annual results on 16 February 2016 announced a cost-cutting objective of €700m between 2015 and 2018.

Cost control is being strengthened and continued for the long term. The target reduction is at least €1 billion by 2019 compared to 2015 levels.

### **3. Asset disposal plan to finance new Group developments**

The divestment plan initiated in 2015 to contribute to financing of investments for new developments is being strengthened.

The Group has set itself the target of selling around €10 billion of assets between 2015 and 2020, including a sale of some of RTE's capital, thermal power generation assets outside France and minority shareholdings.

## **3.4 FLAMANVILLE EPR: PROGRESS ON THE REACTOR VESSEL TESTING PROGRAMME**

On 13 April 2016 AREVA, together with EDF, recommended to the French Nuclear Safety Authority (ASN) that adaptations should be made to the testing programme for the Flamanville 3 EPR reactor vessel head and bottom as decided at the end of 2015.

Initial analyses conducted on two parts similar to those at Flamanville 3 found that the carbon segregation issue extended beyond mid-thickness on one of them.

As planned in the initial strategy approved by the ASN, the material sampling and related tests will be extended to three-quarters of the thickness of the part concerned.

These initial analyses also led to better specification of the variability of the main manufacturing parameters between different parts. AREVA and EDF therefore proposed extending the testing programme to include a third part, for a more robust demonstration.

These adaptations to the testing programme will double the number of samples to be analysed. A total number of 1,200 material samples will be taken to consolidate the representative nature of the three forged parts tested, both for carbon content and required mechanical properties.

The ASN agreed to the inclusion of an additional part in the testing programme, which will continue until the end of 2016. AREVA will remit the final report on the vessel validation programme to the ASN in November 2016 and the ASN should issue its opinion during the first half-year of 2017.

EDF and AREVA have reaffirmed their confidence in their ability to demonstrate the quality and safety of the reactor vessel for the start-up of the Flamanville 3 reactor, which is scheduled for the last quarter of 2018. The assembly and testing activities are continuing at the construction site in line with the announced schedule.

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*1. These figures do not include the planned acquisition of a majority stake in AREVA NP.*

## 3.5 STRATEGIC DEVELOPMENT

### Progress on agreements for construction of the Hinkley point C nuclear power plant

EDF and China General Nuclear Power Corporation (CGN) signed a strategic investment agreement on 21 October 2015 setting out the main terms of their partnership for the construction and operation of two 1,600MW EPRs at the Hinkley Point C site (HPC). Since then, the European and Chinese antitrust authorities have approved the operation (on 10 March and 6 April 2016 respectively) and the contractual documentation has been finalised. Construction of the new nuclear reactors in the UK would be underpinned by EDF's longstanding industrial and strategic partnership with CGN.

The agreements cover three aspects:

- construction and operation of two EPRs at Hinkley Point under the leadership of EDF (66.5%), with CGN's share at 33.5%. Without reducing this initial stake below 50%, EDF intends to bring other investors into the project in due course.
- development of two EPRs at the Sizewell site, under the leadership of EDF (80%), in preparation for a possible final investment decision. CGN will take a 20% share.
- adaptation and certification in the United Kingdom of the HPR1000 technology (a 3rd-generation Chinese 1,000MW reactor), and its development on the Bradwell site, under the leadership of CGN (66.5%), in preparation for a possible final investment decision. The EDF group will take a 33.5% share.

EDF's share of development costs for the Sizewell and Bradwell projects is estimated at some £600 million maximum, spread over around 5 years.

EDF and CGN also intend to establish a protocol for industrial cooperation offering additional development opportunities for EDF, CGN and the French and Chinese nuclear industries in compliance with competition law.

The contracts with the UK authorities due to take effect when the final investment decision is made are also in final form and ready for signature, as are the contracts with the main suppliers, notably AREVA and GE/Alstom.

EDF's Chairman and CEO chose to consult the Central Works Council of EDF before asking the EDF Board of Directors to make the final investment decision, in order to reinforce social dialogue on what is a particularly important project for EDF. An information and consultation process was opened on 2 May 2016, and ended on 4 July 2016.

As stated in note 25.1 to the condensed consolidated financial statements at 30 June 2016, on 21 July 2016 a meeting of EDF's Board of Directors was called for 28 July 2016 to make the final investment decision.

#### Funding for the HPC project

Funding requirements until the new plant comes online are estimated at a nominal value of £18 billion, including £2.5 billion in development costs incurred up to 30 June 2016.

This investment will be equity financed by the partners, at least in an initial phase. The EDF group's share amounts to £12 billion and CGN's share is £6 billion. The equity commitment by the two partners includes an additional 15% margin of £2.7 billion, such that their commitment could reach a total £13.8 billion for the EDF group and £6.9 billion for CGN.

CGN's investment in the project should involve payment of an acquisition premium in addition to recovery of its share of costs already incurred. EDF is expected to commit to provide CGN with limited financial guarantees, in the case of cost overruns, delays in the project schedule, or in the event that the European authorities challenge the CfD (Contract for Difference).

The projected IRR is estimated at around 9% over the entire duration of the project.

The sensitivity of this IRR is approximately 20 base points for a six-month delay.

## 3.6 RESULT OF THE SCRIP DIVIDEND OPTION FOR THE BALANCE OF THE 2015 DIVIDEND

The option of receiving the balance of dividends for 2015 in the form of shares (scrip option) was very popular with EDF's shareholders: it was chosen for 92.22% of dividend rights (excluding bonus dividends) by the end of the option period which ran from 6 June to 20 June 2016 inclusive.

In accordance with article L.232-18 of the French commercial Code and article 25 of the company's Articles of Association, EDF's General Shareholders' Meeting of 12 May 2016 decided to distribute a dividend of €1.10 per share in respect of 2015, offering shareholders the option of receiving the outstanding amount of €0.53 per share in the form of new EDF shares.

The price of each new share transferred in payment of the dividend was set at €10.08, equal to 90% of the mean opening prices on the regulated Euronext Paris market for the twenty most recent trading sessions before 12 May 2016, the date of the combined General Shareholders' Meeting, less the outstanding amount of the dividend still to be paid, rounded up to the nearest Euro cent.

This operation resulted in the issuance of 93,112,364 new shares (representing approximately 4.62% of the share capital after their issue), which were delivered and admitted for trading on Euronext Paris from 30 June 2016. The balance in cash to be paid to shareholders who opted for the scrip dividend amounts to around €0.7 million.

## 3.7 NEW INVESTMENTS AND PARTNERSHIPS

### 3.7.1 New investments and partnerships concerning EDF

#### 3.7.1.1 Extension of a partnership agreement with China Datang Corporation

As part of its strategic partnerships, EDF and China Datang Power Corporation (CDT) announced on 26 May 2016 that they had entered into a new partnership agreement renewing the original partnership signed in 2013. The potential areas identified for cooperation concern skill-sharing in the fields of development strategy, training, supply and service opportunities, and opportunities for joint investments in electricity generation projects in China and other countries. A specific agreement will be required for each area before the cooperation begins.

#### 3.7.1.2 Memorandum of understanding between Mitsubishi Heavy Industries and EDF for collaboration in nuclear energy

On 28 June 2016, Mitsubishi Heavy Industries (MHI) and EDF signed a memorandum of understanding to strengthen the links between the French and Japanese nuclear industries. Acknowledging the strategic benefit of combining the forces of EDF and MHI in certain fields of civil nuclear energy, EDF and MHI have more specifically agreed to enhance their strategic cooperation in the following areas:

- updating the cooperation framework for the ATMEA joint venture, including EDF's involvement in commercial operations in support of ATMEA;
- mutual support for smooth execution of the ATMEA 1 projects, particularly in Turkey and Vietnam;
- the potential participation of MHI as a strategic partner in reorganisation of the French nuclear landscape, through the acquisition of a minority equity interest in AREVA NP;
- other potential collaborations leveraging the companies' respective technologies and special expertise in the global market.

### 3.7.2 New investments and partnerships concerning Group subsidiaries

#### 3.7.2.1 Dalkia

##### Acquisition of Techsim

On 20 January 2016 Dalkia, the Group's energy services subsidiary, announced its acquisition of 100% of Techsim, a company that specialises in design, installation and maintenance of compressed air production equipment. Techsim has 44 employees and generates sales revenues of approximately €8 million in 2015.

## Acquisition of TIRU

On 31 May 2016, Dalkia, announced its acquisition of a 75% stake in TIRU, through a takeover of the 51% and 24% investments held respectively by EDF and Veolia. This operation makes Dalkia and TIRU better equipped to meet the current challenges of the energy transition on a regional level, combining TIRU's expertise in waste-to-energy solutions with Dalkia's local presence, especially in heating networks.

### 3.7.2.2 EDF Énergies Nouvelles

#### Investments and disposals by EDF Énergies Nouvelles

EDF Énergies Nouvelles is continuing its expansion in India, and reinforced its positions in onshore wind energy by signing a partnership agreement with the SITAC Group in January 2016. Through this partnership EDF Énergies Nouvelles is to take a 50% share in the joint venture SITAC Wind Management and Development Private Limited. The aim of this joint venture is to construct four wind farms by the end of 2016 with total capacity of 142MW in the state of Gujarat, one of India's windiest.

On 26 April 2016, EDF Énergies Nouvelles announced its acquisition of Global Resource Options Inc. (groSolar), through its North American subsidiary EDF Renewable Energy. groSolar specialises in the installation and sale of solar photovoltaic plants and is one of the US market leaders on the specific distributed solar power segment.

On 7 June 2016 EDF Énergies Nouvelles announced that it was beginning construction of the Blyth offshore wind farm project in the United Kingdom. The project is managed by local subsidiary EDF Energy Renewables and could reach 100MW capacity. Offshore installation is scheduled for 2017.

EDF Énergies Nouvelles also sold several power plants, mainly wind farms (465MW net capacity). The principal operation was the sale of 50% of the Milo and Roosevelt wind farms (150MW net capacity) in North America.

#### Strategic partnership between EDF Énergies Nouvelles and Enbridge Inc.

On 10 May 2016 EDF Énergies Nouvelles announced a new partnership with Enbridge Inc., a leader in the North American energy sector, particularly on the renewable energies market.

The agreement covers the development of three French offshore wind farms, totalling 1,400MW of installed capacity. EDF Énergies Nouvelles was awarded these projects in the first call for tenders. It will be an equal 50/50 partner with Enbridge in Eolien Maritime France (EMF), the company in charge of constructing and operating these three wind farms.

#### Partnership between UPC Asia Wind Management and EDF Énergies Nouvelles in a wind farm project in China

On 12 July 2016 EDF Énergies Nouvelles announced its first project in the Chinese wind power sector when EDF Énergies Nouvelles acquired a majority stake in UPC Asia Wind Management (AWM), which develops and builds wind power projects in China.

Following this investment, EDF Énergies Nouvelles owns 80% of UPC AWM, based in Hong Kong. Its partners UPC China, a longstanding local developer, and the US-based investment fund Global Environment Fund (GEF) remain shareholders, with a 20% share of the company.

This new partnership venture has been made possible by the EDF group's strong foothold in China, where it has been present for over 30 years through its activities in nuclear, thermal and hydropower generation, as well as energy services.

China is a priority market for the EDF group, which is the first major European energy company to move into the Chinese renewable energy market, with high ambitions.

This new partnership agreement extends the Group's wind power portfolio in China – in development, under construction and in operation - by over 1.3GW, and the Group now operates more than 10GW in installed wind capacity worldwide.

#### Long-term power purchase agreements

##### ▪ **Between EDF Énergies Nouvelles and Southern California Edison**

On 7 April 2016 EDF Énergies Nouvelles announced that a long-term Power Purchase Agreement (PPA) had been signed between Southern California Edison and its North American subsidiary EDF Renewable Energy, concerning the electricity to be generated by the future 111MW Valentine solar power plant in California.

## ▪ Between EDF Énergies Nouvelles and IESO

On 18 April 2016 EDF Énergies Nouvelles announced the signature of three long-term Power Purchase Agreements (PPAs) between the IESO, Ontario's Independent Electricity System Operator, and the subsidiary EDF EN Canada. Power will be generated by the Pendleton (12MW) and Barlow (10MW) solar power plants located in eastern Ontario, and the Romney wind farm (60MW) located in the south-west of Ontario.

## 3.8 INVESTMENT PROJECTS

### 3.8.1 France

#### 3.8.1.1 Flamanville EPR: 1st milestone reached with finalisation of the primary circuit mechanical erection and continuation of the vessel testing programme

The mechanical erection of the Flamanville EPR's main primary circuit<sup>1</sup> has been completed, and the large components (four steam generators, reactor vessel, pressuriser and reactor coolant pumps) have been installed and assembled.

This stage marks the achievement of the first key milestone set by the EDF Group for the first quarter of 2016, in line with the site schedule as updated in summer 2015.

After completion of the main building structure at the end of 2015 and finalisation of the primary circuit mechanical erection, construction of the Flamanville EPR continues to advance at a steady pace towards the 2nd milestone, with a step-up in work on electromechanical erection and the start of plant system test phases (system by system).

These operations will intensify in the second half of the year, in coordination with the suppliers and the teams in charge of reactor operation in order to prepare for system performance testing in 2017.

Also during the first half of 2016 AREVA, in liaison with EDF, began the testing programme for the Flamanville 3 EPR reactor vessel head and bottom, in accordance with the requirements of the ASN set out in its letter of 12 December 2015.

This programme uses material samples and related tests on parts similar to the Flamanville 3 EPR reactor, and was adapted with the ASN's approval in order to arrive at a better specification of variability between the parts regarding the main manufacturing parameters.

Areva and EDF therefore proposed extending the testing programme to include a third part, in order to strengthen the robustness of the demonstration.

These adaptations to the testing programme will double the number of samples analysed. A total number of 1,200 material samples will be taken to confirm the representative nature of the three forged parts tested, both as regards carbon content and required mechanical properties.

The ASN has approved this addition to the testing programme, which will continue through to the end of 2016, when the final report will be submitted.

EDF and AREVA have reaffirmed their confidence in their ability to demonstrate the quality and safety of the reactor vessel for the start-up of Flamanville 3 scheduled for the last quarter of 2018.

The Flamanville 3 EPR is a safe, efficient third-generation reactor, the most powerful in the world. Every day 4,000 people including 2,000 local employees work on the site, one of Europe's largest.

The new schedule released in September 2015 had no direct impact on the balance sheet. The effects of the new industrial schedule will concern the pace and amount of investments between now and the end of the project, the plant's commissioning date, and consequently the date from which sales revenues will arise, together with the associated operating costs (including depreciation).

#### 3.8.1.2 Programme of investment in existing nuclear facilities in France

On 22 January 2015, EDF's Board of Directors approved the principle of the *Grand Carénage* major industrial overhaul programme to refurbish the French nuclear fleet, enhance reactor safety, and extend operating lives when the necessary conditions are met. The total investment is estimated at a maximum of €<sub>2013</sub>55 billion by

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*1. The primary circuit is a closed loop circuit containing pressurised water. This water heats up in the reactor vessel when in contact with the fuel assemblies. The acquired heat is transferred to the secondary cooling circuit in the steam generators to produce the steam that will drive the turbo generator.*

2025 for the 58 reactors currently in operation. This figure represents recurring maintenance investments of around €3 billion a year (including normal maintenance, ten-year inspections and periodic safety reviews) together with additional investment of between €1 and €2 billion a year on average, reflecting the non-recurring nature of the *Grand Carénage* programme (such as renovation of large components, midlife replacement of steam generators and integrating the lessons learned from Fukushima). After 2025, investments will gradually return to former normal levels.

EDF's estimated figures will be confirmed at a later date following optimisation of the solutions used to implement the programme, additional assessment work and consideration of the multi-year energy plans (PPEs) and the resulting strategic plan, as provided for in the French law on the Energy Transition for Green Growth. The optimisation work undertaken in 2015 has already led to a downward revision of the overall cost of the programme to €51 billion in current Euros over the period 2014-2025, a decrease of €<sub>2013</sub>9 billion. This revision was essentially made possible by constant optimisation of the chosen technical solutions, and finer-tuned implementation incorporating the capacities of the industrial framework.

This industrial programme will be activated gradually, in compliance with the objectives of the law on the Energy Transition for Green Growth, the multi-year energy plans, the opinions and orders of the ASN, and the authorisation procedures required for reactors to run for more than 40 years.

### **3.8.1.3 Inauguration of the natural gas combined cycle plant at Bouchain**

On 17 June 2016, EDF and General Electric (GE) inaugurated the first ever natural gas combined-cycle plant equipped with GE's 9HA turbine in Bouchain (French county Nord), attended by Jean-Bernard Lévy, CEO of EDF, and Steve Bolze, President and CEO of GE Power.

With a generating capability of more than 605MW, the 9HA turbine developed and produced by GE is the world's most efficient gas turbine, achieving an efficiency rate during commissioning performance tests of up to 62.22%. These record-breaking efficiency levels have created the world's most efficient combined-cycle power plant in Bouchain. In addition, the 9HA is highly flexible and capable of reaching full power in less than 30 minutes. EDF and GE are the first companies to introduce such a flexible and energy efficient new turbine.

With such an optimized energy yield, the Bouchain combined cycle plant contributes to improving EDF's carbon footprint. Its CO<sub>2</sub> emissions are reduced by approximately 55% compared to a standard thermal power plant. In addition, its considerable flexibility and responsiveness are major strengths that boost the power grid's security on top of the development of renewable energy technologie.

### **3.8.1.4 Rollout of "Linky" smart meters**

Following the first experiments and the start of the general rollout from 1 December 2015, work by Enedis on the Linky project continues. At 30 June 2016 the threshold of 1 million installed meters had been crossed (including the 300,000 experimental meters), and 22,000 concentrators had been installed in the substations. Rollout has begun in 500 towns across all areas of France.

Investments in connection with installation of Linky meters for the general rollout period of 2014-2021 will amount to €4,455 million in current Euros. This figure was stated in the paperwork for approval of phase 2 of the Linky programme, which was submitted to the Board of Directors on 21 June 2016.

## **3.8.2 Other international**

### **Jiangxi Datang International Fuzhou Power Generation Company Ltd. (Fuzhou)**

On 27 April 2016 the second generation unit at the Fuzhou ultra-supercritical coal-fired power plant in China came online, three months ahead of schedule. The second unit thus started operations four months after the first unit which came online on 29 December 2015. The Fuzhou plant (2 x 1,000MW), in which the EDF group owns a 49% stake, is now fully operational.

## **3.8.3 Other businesses**

### **3.8.3.1 Principal wind farms and photovoltaic power plants commissioned**

On 29 January 2016 EDF Énergies Nouvelles announced the commissioning of the Milo wind farm of almost 50MW, by its North American subsidiary EDF Renewable Energy. The Milo wind farm is located in Roosevelt County, eastern New Mexico. The electricity generated by this new facility is sold on the open market to local network operator Southwest Power Pool.

On 24 February 2016 EDF Énergies Nouvelles announced the commissioning by its North American subsidiary EDF Renewable Energy of an innovative storage system combining battery energy storage and a computerised control system. The McHenry plant is located in the north of Illinois state, and is able to supply almost 20MW in of capacity and manage an energy reserve to stabilise the local power grid frequency.

On 29 February 2016 EDF Énergies Nouvelles announced that its local subsidiary EDF Energy Renewables had commissioned three new wind farms in the United Kingdom: Park Spring (8.5MW), Burnhead (26MW) and Rhodders (12.3MW).

On 6 April 2016 EDF Énergies Nouvelles announced the commissioning of the Joncels wind farm in France with 11.9MW in installed capacity. The Group now operates 444.2MW in wind energy capacity in the Languedoc-Roussillon-Midi-Pyrénées region in the south of France, which is close to 45% of local wind farms.

On 26 April 2016 EDF Énergies Nouvelles announced the commissioning of extensions to two of its Portuguese wind power facilities, the Ventominho and Arga wind farms (an additional 23MW and 4.7MW respectively). EDF Énergies Nouvelles now operates total gross installed capacity of 535MW in Portugal.

On 22 May 2016, EDF Énergies Nouvelles announced the commissioning of the 50MWp Zmorot solar photovoltaic power plant by its local subsidiary EDF EN Israël. EDF Énergies Nouvelles now operates 11 solar power plants in Israel with a total 160 MWp in installed capacity.

On 24 June 2016 EDF Énergies Nouvelles announced the commissioning of the Ensemble Eolien Catalan located in the Languedoc-Roussillon-Midi-Pyrénées region in the south of France. This is a wind farm equipped with "stealth" wind turbines, the world's first solution to encourage coexistence between wind farms and weather radars. With installed capacity of 96MW, this facility is France's most powerful wind farm and takes the Group's total wind power capacity in France to over 1.1GW.

### **3.8.3.2 Industrial start-up of the Dunkirk methane terminal**

On 8 July 2016, the first liquefied natural gas (LNG) tanker docked at the Dunkirk methane terminal, marking the start of industrial operations by the facility.

After four and a half years of construction, the last few months were reserved for test runs before any gas was delivered. The terminal will be tested under normal operating conditions during the summer. By late September, it should be ready to begin commercial operations and will be made available to EDF and Total, customers of Dunkerque LNG.

### **3.8.3.3 Électricité de Strasbourg: inauguration of the Rittershoffen deep geothermal facility**

On 7 June 2016, the deep geothermal facility in Rittershoffen, north of Strasbourg, France, was opened by the French minister of the Environment, Energy, and the Sea, Ségolène Royal. This project is the world's first to use a geothermal resource for an existing industrial process. It will provide steam from 170°C water captured 2,500 metres underground for a factory belonging to the agri-food group Roquette, located 15 km away.

Électricité de Strasbourg, a subsidiary of the EDF group that has been very active in deep geothermal facilities for several years, was in charge of this project (handling geophysical studies, design of drilling and surface technical equipment, oversight of work, commissioning and operation).

With delivered thermal power of 24MW, which is enough to heat around 27,000 homes, this new facility will cut CO<sub>2</sub> emissions for the factory using it by 39,000 tonnes a year, equivalent to the annual emissions of 25,000 cars.

### **3.8.3.4 Green bonds**

In October 2015, EDF undertook its second US dollar "Green Bond" issue. With a maturity of 10 years, a total amount of US\$1.25 billion and an annual fixed coupon of 3.625%, this new Green Bond is supporting further investment by the Group in renewable energies. By 30 June 2016, US\$594 million had been allocated to construction of six wind farms.

The Group successfully issued its first "Green Bond" in Euros in November 2013, raising €1.4 billion to finance EDF Énergies Nouvelles' renewable energy projects. The total €1.4 billion had been allocated by 30 June 2015.

The funds raised by these two issues have financed a total of 18 renewable energy projects (wind power, photovoltaic solar power, and biomethane plants), located in France and North America and developed by EDF Énergies Nouvelles. These projects represent total capacity of some 2.6GW.

## 3.9 INNOVATION

On 2 June 2016 EDF Énergies Nouvelles announced that its subsidiary EDF ENR was introducing a new self-consumption offering called *Mon Soleil & Moi*.

*Mon Soleil & Moi* is now EDF ENR's sole offering for residential customers. Consumers are able to use the energy generated by their own solar panels, with the option of storing some of it for later use. A simple set of tools enables customers to maximise their self-consumption rate, with the size of the installation geared to their actual needs. They are able to monitor their consumption online using their tablet or smartphone. This means they can keep track of their energy expenditure and, if required, store the excess electricity produced by their battery.

Energy storage and decentralised energy generation are key priorities for EDF, which is making substantial investments to meet the needs of consumers and network operators alike. For example, EDF has launched the first 100%-solar microgrids project in the Cirque de Mafate on Reunion Island, helping to make remote villages self-sufficient in energy. EDF's R&D centres are also working on new battery technologies (zinc air, lithium air, etc.). EDF Énergies Nouvelles has commissioned a solar power plant featuring storage equipped with an electrical equipment control system to smooth electricity generation and help maintain network stability in French Guyana. In the United States, it has also installed an energy storage system using a combination of batteries and IT control software to regulate surges in frequency remotely across the electricity grid. The goal is to plan ahead for and support disruptive technologies in the energy and electricity industry.

## 3.10 REGULATORY ENVIRONMENT

### 3.10.1 France

#### 3.10.1.1 ARENH

As a result of the slump in wholesale market prices which made that market a more attractive source of energy supplies, no applications for the ARENH scheme (regulated access to historical nuclear electricity) were made at the end of 2015 for supplies in the first half of 2016.

In compliance with the applicable laws, the ARENH price remains unchanged at €42/MWh.

#### 3.10.1.2 CSPE

The system providing compensation for the charges involved in providing a public energy service was reformed by France's amended finance law for 2015 (law 2015-1786 of 29 December 2015).

In application of this law, from 2016 France's annual finance law will include the charges for the public energy service (electricity and gas) that are to be compensated, via two budget items:

- a special "Energy Transition" budget item of €4.4 billion, to cover the additional costs associated with contracts obliging suppliers to purchase renewable energies and biogas, the annual contribution to repayment of the accumulated shortfall due to EDF, and reimbursement of advances to industrial operators who were exempt prior to 2016;
- a "Public Energy Service" budget item of €2.0 billion to cover solidarity charges, purchase obligations excluding renewable energies, and the cost of applying the standard national tariffs to zones that are not connected to France's mainland network.

Funding for this system in 2016 mainly comes from the TICFE tax on consumption of electricity (*Taxe intérieure sur la consommation finale d'électricité*) which was reformed by the law of 29 December 2015 and is now called the *Contribution au Service Public de l'Électricité* (CSPE), plus 2.16% of income generated by the TICGN tax on gas consumption (*Taxe Intérieure de Consommation sur le Gaz Naturel*).

The CSPE is collected by the State from electricity suppliers. CSPE rates are set at €22.5/MWh for 2016, with 7 reduced rates of between €7.5/MWh and €0.5/MWh based on criteria of electro-intensiveness, business category and risks of carbon leaks from facilities.

In decree 2016-158 of 18 February 2016 concerning compensation for the charges of the public energy service, the State required the public financial organisation *Caisse des Dépôts et Consignations* (CDC) to make the payments to the relevant operators, one of which is EDF, and to keep the "Public Energy Service" and "Energy Transition" accounts. The same decree also required the CRE to determine the forecast and actual amounts of the charges for the public energy service, and set out the procedures for compensating operators for these charges.



The amount of expenses to be covered by compensation for EDF for first-half 2016 (excluding the annual contribution to repayment of the CSPE shortfall and the associated interest) is €3.6 billion, 10.8% more than in first-half 2015. The main explanation for this rise is the lower level of market prices, which increases the surplus costs of energy to be compensated by the CSPE, and a rise in the volume output by photovoltaic and wind power facilities. The amounts received during first-half 2016 (excluding the annual contribution to repayment of the CSPE shortfall and the associated interest) total €3.2 billion, stable compared to first-half 2015. This stability principally results from the CSPE increase applicable since 1 January 2016 (an increase of €3/MWh compared to 2015, taking the CSPE to €22.5/MWh for the year 2016), whose effect was neutralised by the volume effect on the amount of CSPE collected.

The arrangements for the progressive reimbursement to EDF of the receivable consisting of the CSPE shortfall at 31 December 2012 and the costs of bearing this shortfall, as set out in a letter of 8 January 2013 from the Ministers for the Ecology, the Economy and the Budget, were updated in late 2015 by a ministerial letter received on 26 January 2016. The State acknowledged the further shortfalls that had arisen between 2013 and 2015 and the associated interest, estimated at a total €644 million, and authorised EDF to allocate this receivable to dedicated assets in 2016. The amount of the receivable due to EDF was thus €5.9 billion at 31 December 2015 (see note 36.3 to the 2015 consolidated financial statements, "Loans and financial receivables"). The repayment scheduled was adapted such that the receivable will be repaid by 2020, and was the subject of a decision of 13 May 2016 made in application of article R 121-31 of France's Energy Code.

At 30 June 2016, EDF had received an amount of €123 million in repayment of the principal and related interest, in line with the ministerial decision of 13 May 2016 setting out the modalities for repayment of the compensation shortfall due to EDF.

The CRE's decision of 13 July 2016 concerning assessment of the public service energy charges for 2017 updates the forecast public service energy charges concerning EDF for 2016 to €7.1 billion and gives a forecast figure of €7.4 billion for 2017.

### **3.10.1.3 TURPE network access tariffs**

#### **TURPE 4 indexing**

On 2 June 2016 the CRE published its resolution on changes from 1 August 2016 in the TURPE distribution tariff, raising it by 1.11%, rounded down to 1.1%. This rise reflects stable inflation (0.03%) and 1.08% for the clearance of the income and expenses adjustment account (CRCP)<sup>1</sup>.

TURPE transmission tariffs will increase by 1.37%, rounded up to 1.4%, from 1 August 2016, again corresponding to stable inflation (0.03%), -0.81% for the clearance of the CRCP, and 2.15% for the interruptibility service.

#### **TURPE 5**

The CRE has begun to examine the future structure of tariffs for using the public electricity networks (the TURPE 5 tariffs). An initial consultation concerning its preliminary analyses on the TURPE 5 tariff structure was launched on 22 July 2015, and a second consultation process began on 24 May 2016, with responses to be received by 24 June 2016. This second consultation concerns the proposed tariff structure for the power extraction component, and the proposed orientations for the injection component and incorporation of balancing mechanism costs.

This will be followed by a public consultation on the regulation framework and level of TURPE 5 tariffs during the summer of 2016.

The CRE's final resolution is due to be issued in late 2016 and the TURPE 5 tariffs will take effect in summer 2017.

#### **Decisions by the Council of State**

On 13 May 2016 France's Council of State rejected the application by energy company Direct Énergie for cancellation of the CRE's decision of 12 December 2013 setting the tariffs for use of the very high voltage and low voltage public electricity distribution network (the TURPE 4 distribution tariffs), on the grounds that it had exceeded its powers.

Also, on 13 July 2016 the Council of State cancelled the CRE's decision of 10 December 2014 rejecting Engie's application for withdrawal of the decision of 26 July 2012 on management of customers under a single contract, which introduced an asymmetrical regulation system. The Council of State considers that remuneration paid to

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<sup>1</sup> A mechanism to measure and offset differences between the actual figures and the forecasts on which tariffs are based.

suppliers for customer management tasks executed on behalf of the electricity or gas distribution network operators cannot legally be transitional and limited to certain suppliers. The Group is currently analysing the scope of this decision, which entitles suppliers in general to apply for remuneration. The CRE will also take any consequences of this decision into consideration for the next TURPE tariff.

### 3.10.1.4 Regulated Electricity Sales Tariffs in France

#### “Blue” tariffs

In application of the NOME law, on 7 December 2015 responsibility for proposing tariff scales was transferred to the CRE.

On 13 July 2016 the CRE proposed an average 0.5% reduction in blue tariffs for residential customers and an average 1.5% reduction in blue tariffs for non-residential customers. The Ministry for the Environment, Energy and the Sea immediately announced that it would not object to this proposal and that the tariff change would take place on 1 August 2016.

The CRE’s proposal also gave details of the methodologies and options chosen to calculate regulated sales tariffs, following the two successive consultations instigated by the CRE in summer 2015 (efficient supplier and reasonable margin) and February 2016 (methodology for the regulated sales tariff structure), to which EDF had responded.

#### “Yellow” and “green” tariffs

31 December 2015 saw the end of the “yellow” and “green” regulated tariffs. By 1 January 2016 around three quarters of the sites concerned had signed a market-rate contract with their chosen supplier. The remaining quarter who had not yet signed up with a supplier continued to receive electricity from their former supplier, under a transitional contract that ended on 30 June 2016.

During the first half of 2016 the CRE organised calls for tenders from suppliers to allocate the sites that had not chosen a supplier at 30 June 2016 (approximately 20,000 sites at the beginning of June 2016). Suppliers bid for combinations of a contract and an electricity price set by the CRE, proposing an amount that would be repaid for each combination. No supplier could be awarded more than 15% of contract combinations.

EDF, like several other suppliers, was awarded 15% of these contracts and will supply the sites concerned from 1 July 2016 on the basis of the contract and the prices set by the CRE, while continuing to offer its own contracts.

#### Decisions by the Council of State

Several petitions for cancellation and repeal of the decisions of 28 July 2014 and 30 October 2014 and the decree of 28 October 2014 were brought before the Council of State by the ANODE (French association of energy retail operators).

After a public reading of the reporting officer’s (*Rapporteur’s*) conclusions on 13 May 2016 the Council of State issued its decisions on 19 May and 15 June 2016, in which:

- it dismissed the substance of the appeal against the decree of 28 October 2014, thereby validating the “stacking” method for constructing regulated sales tariffs;
- it overturned the decision of 28 July 2014 that cancelled the 5% increase in “blue” tariffs from 1 August 2014 planned in a previous decision of 26 July 2013, for reasons of unsound legal grounds. The French government is now required to issue a retroactive decision for the period 1 August 2014 to 31 October 2014 within three months starting from 15 June 2016;
- it cancelled the decision of 30 October 2014 due to the insufficient level of “blue” residential and “green” tariffs which had been set without including the total tariff shortfall to be recovered at that date. The French government is now required to issue a retroactive decision for the period 1 November 2014 to 31 July 2015 within three months starting from 15 June 2016.

EDF will remain extremely attentive to the way the retroactive decisions are constructed, and will implement them as soon as they are published, probably through retroactive invoices for customers concerned by the initial regulated sales tariffs.

### 3.10.1.5 Cigéo storage project

#### Description of the Cigéo project

Cigéo (standing for *Centre industriel de stockage géologique* or Industrial geological storage center) is the French deep storage plan for radioactive waste. It has been designed to store high-level, long-lived waste resulting from all France's current nuclear facilities until they are decommissioned, and from reprocessed spent fuel used in the nuclear power plants.

The principle of deep storage was selected by French law 2006-739 of 28 June 2006 on sustainable management of radioactive materials and waste, after 15 years of research, assessment and a public debate, as the only safe long-term solution for managing this type of waste without passing on the burden to future generations.

If approved, Cigéo will be established on the boundary between the Meuse and Haute-Marne *departments* in the east of France.

Cigéo will consist of surface installations, which among other uses will receive and prepare waste packages and carry out excavation and construction work for the underground facilities. The waste will be stored in underground installations at a depth of around 500 metres, in a layer of impermeable argillaceous rock selected for its ability to contain radioactivity over very long timescales.

Cigéo is designed to operate for at least 100 years while having the flexibility to offer future generations the fullest range of options for adaptations.

Subject to receiving the necessary authorisations, ANDRA (French Agency for Radioactive Waste Management) proposes the following schedule for Cigéo:

- 2016: remittal of a master plan for operation of Cigéo to the French government, a file of safety options to the ASN, and a file of technical recoverability options in preparation for examination of the application for authorisation to create Cigéo;
- 2018: filing of an application for authorisation by ANDRA;
- 2020: start of construction of the storage facility;
- 2025: start-up of Cigéo with a pilot industrial phase.

#### Decision concerning the cost of the Cigéo storage project

On 15 January 2016 the Ministry of the Environment, Energy and the Sea issued a decision setting the cost associated with implementation of long-term management solutions for long-lived medium and high-level radioactive waste under the Cigéo storage project at €25 billion under 2011 economic conditions. This cost valuation was required by article L542-12 of France's Energy Code.

The cost stated in the decision constitutes an objective to be met by ANDRA, in compliance with safety standards set by the ASN, working in close liaison with operators of nuclear installations. As indicated in note 29.1.2 to the consolidated financial statements at 31 December 2014, publication of this decision led to an adjustment of the provision in the Group's accounts.

The cost of the Cigéo project set by the decision is €25 billion under the economic conditions of 2011. This figure replaces the estimated benchmark cost of €20.8 billion used by the EDF Group for its consolidated financial statements at 31 December 2014 and 30 June 2015.

At 31 December 2015, consideration of the new cost figure resulted in an €820 million increase in the provisions for long-term radioactive waste management established to cover future expenses relating to the Cigéo deep storage project.

In application of this decision, the cost of the Cigéo project will be regularly updated, at least at each key milestone of the project's development (authorisation to create the facility, commissioning, end of the "pilot industrial phase", safety reviews) in accordance with the opinion of the ASN.

Five French environmental associations, including *Réseau Sortir du Nucléaire*, lodged an appeal before the Council of State in March 2016 to have this decision cancelled.

#### Allocation of costs by operator, to identify EDF's share for calculation of the provision

The studies conducted on the waste storage project cover the activities of Research and Development (R&D), project management and contract ownership for development and construction of the storage centre for medium and high-level long-lived waste. EDF provided 78% of the funding for ANDRA's high-level long-lived

waste studies until 2006 under the agreement of 6 June 2000 between ANDRA and waste producers. Since 2006, the same percentage has been used as a provisional interim measure to calculate EDF's share of study expenses.

Valuation of long-term waste management charges also requires determination of EDF's contribution to funding for investment and operation of the storage centre. The allocation of this funding between the three contributors to the storage centre (AREVA, CEA and EDF) has yet to be defined. Until an allocation method is found for sharing costs between producers, EDF has chosen as an interim measure to use the records of the *Programme Industriel de Gestion des Déchets VD* (PIGD VD):

- fixed specific investments for medium-level long-lived waste: 50.2%;
- fixed specific investments for vitrified high-level long-lived waste (CSD-V): 30%;
- fixed specific investments for high-level long-lived waste: 97.4%;
- expenses during the operating phase (operation excluding studies, investments, renovation, insurance): application of EDF's share year by year taken from the PIGD VD for the relevant category of waste, and shares laid down in the 2000 agreement;
- common investments: 78%;
- R&D, project management, contract ownership: 78%.

### 3.10.1.6 Fessenheim power plant

#### Closure of the power plant

Article L. 311-5-5 of the French Energy Code introduced by the energy transition law for green growth caps the total authorised nuclear generation capacity in France at 63.2GW. To respect this limit, the Flamanville EPR cannot be commissioned before the final shutdown of the two reactors at Fessenheim.

EDF stated in a letter of 9 October 2015 to France's Minister for the Environment, Energy and the Sea that the company was preparing "to examine the single scenario of closing down the two 900MW reactors on the Fessenheim site".

The permanent shutdown of the two reactors will take place at the date the Flamanville EPR is commissioned, in compliance with the regulations.

### 3.10.2 United Kingdom

On 19 March 2014, the British government confirmed that it was setting up a capacity market. EDF Energy took part in the second capacity auction in December 2015 for agreements starting from October 2019, securing capacity agreements for 8.8GW of capacity. In May 2016, the Government confirmed reforms to the capacity market including a new auction to be held in January 2017 for the year starting from October 2017 in addition to the already planned auction in December 2016 for the year starting from October 2020.

In 2011, to meet its objectives in the fight against climate change, the British government introduced a Carbon Price Support mechanism intended to guarantee a minimum price for carbon, consisting of a tax added to the price of CO<sub>2</sub> emission rights. The aim of this mechanism is to bring the overall carbon price (emission right and tax) to £30/t in 2020, a target set when the price of CO<sub>2</sub> stood at around £15/t. In March 2014, in view of the significant decline in CO<sub>2</sub> prices on the markets, the British government decided to cap the carbon tax at £18/t from April 2016 until 2020.

On 24 June 2016, the Competition and Markets Authority (CMA) concluded its two-year investigation into the energy market in Great Britain by publishing its Final Report. The investigation focussed on the "supply and acquisition of gas and electricity" and examined both retail and wholesale markets.

The CMA has confirmed that several aspects of the gas and electricity markets are working well for customers. For example, it has found that wholesale electricity prices are cost-reflective and that there is no evidence that generators are able to exploit market power, or that they have made excess profits over the period reviewed. In addition, the CMA has concluded that the common ownership of generation and supply businesses (i.e. vertical integration) does not have a detrimental impact on competition, and that some of the resulting efficiencies may be passed on to customers.

However, the CMA has identified issues in three main areas:

- a) a lack of customer engagement in the retail energy market ;
- b) a combination of regulations and technical constraints that restrict competition ;

c) the broader regulatory framework which hinders the timely development of policies and regulations that would be in the interests of customers.

The CMA will introduce over 30 remedies to address its concerns. These will be brought in by a number of different methods i.e. making its own orders, accepting undertakings from parties, or by making recommendations to the Government and Ofgem, the British regulator.

Notable remedies proposed include a transitional price cap (from 2017 to end 2020) for domestic customers with prepayment meters; an Ofgem-controlled database which will allow rival suppliers to contact domestic and microbusiness customers who have been on their supplier's 'default' tariff for three or more years with better deals; and the introduction of a locational pricing system for transmission losses.

The CMA will publish a timetable setting out its remedy implementation process over the next six months, and this will include further consultations on the detailed design of the individual remedies. EDF Energy believes that the industry now has an opportunity to implement the demanding and fair remedies without delay, and our aim is to continue to work with the CMA, policy-makers and consumer groups to help make the market work as effectively as possible for customers.

### 3.10.3 Belgium

#### Nuclear power plants

On 1 December 2015 the Belgian Minister of Energy announced an agreement with Electrabel (of the Engie group) concerning a transition period in 2015 and 2016. During this period the specific regimes introduced in connection with the extension of operations by the Tihange 1, Doel 1 and Doel 2 nuclear reactors will be phased in, and the nuclear operator's contribution will remain at a fixed amount (€200 million for 2015 and €130 million for 2016) for the other reactors, Tihange 2, Tihange 3, Doel 3 and Doel 4, in which EDF Luminus holds a 10.2% share. After this transition period, substantial changes will be made to the nuclear operator's contribution system.

From 2017 until the end of the nuclear plants' operating lifetime, which will be between 2022 and 2025, the nuclear operator's contribution will be a variable percentage (top rate 38%) of the margin generated by nuclear activities, with a guaranteed minimum for the State for each three-year period. For the period 2017-2019, this minimum amount has already been set at €150 million. For subsequent periods, it will be determined based on a calculation by the sector's regulator.

The legislation necessary to apply this system is in the process of being adopted. Once it is enacted, the EDF group will terminate the disputes currently ongoing with the Belgian government concerning taxation of nuclear activities.

#### Thermal power plants

The economic environment was particularly unfavourable in Belgium, and in compliance with national law that requires the authorities to be notified by 31 July 2016 of any possible permanent plant shutdown, EDF Luminus' Board of Directors validated a management proposal at its meeting of 24 June 2016 that such notification should be given for the following power plants: Seraing, Ham, Izegem and Angleur TG3.

The fall in demand for electricity, the rise of renewable energies and lower carbon prices are driving more extensive use of coal-fired plants in Europe, and ultimately certain EDF Luminus gas-fired plants have seen very little operation over the last few years.

The actual shutdown would not occur until 31 October 2017. In the meantime EDF Luminus will closely monitor the outcome of current discussions on remuneration systems for thermal plant capacities. The four plants concerned have combined installed power of 609MW, out of a total 1,215MW of thermal power, and occupy around forty people.

In the event of permanent closure, in view of the social impact EDF Luminus will work together with the unions to consider all possible outplacements

## 3.11 OTHER SIGNIFICANT EVENTS

### 3.11.1 Nuclear plants in Belgium

On 17 November 2015, the Federal Nuclear Control Agency (AFCN) authorised resumption of operations by Doel 3 and Tihange 2 until 2022 and 2023, the dates set for their final shutdown. Further tests are to be conducted during the next reactor outage in September 2016 and February 2017. Both plants were in operation in January 2016.

### 3.11.2 Opening of EDF Lab on the Paris-Saclay campus

After two years under construction, in March 2016 the first occupants moved into the new Paris-Saclay research centre dedicated to the EDF group's new energy technologies. EDF Lab comprises a research and development centre, and a campus with the capacity for more than 3,000 employees and 20,000 trainees every year, making it the biggest R&D centre specifically dedicated to European energy issues.

Located on the new Saclay plateau campus, EDF Lab covers more than 12 hectares and consists of four circular buildings of 76,000 m<sup>2</sup> devoted entirely to innovation and training. The choice of this location, which is already well-known for its technological potential and houses several schools and universities, was driven by EDF's ambition to keep close to the major scientific and academic actors of the sector, in a win-win approach.

### 3.11.3 Quality audit at the Le Creusot plant

The quality audit launched at the end of 2015 by AREVA at the Le Creusot plant revealed irregularities in the manufacturing records of equipment for nuclear reactors, and an internal analysis of these findings has been completed.

For EDF's fleet currently in operation, 70 cases (of more than 400 cases reviewed, across all customers) have been identified and analysed. Each case may involve several irregularities. 87 irregularities were detected, and all those relating to the fleet currently in operation in France have been specified.

The analysis, which is based on information supplied by AREVA for parts used in the EDF fleets and EDF's own expert assessment, confirms that the integrity of the equipment concerned is unaffected. In the case of Fessenheim 2, this specification initially demonstrates that the steam generator's integrity is unaffected. Nonetheless, EDF wants to confirm the demonstration of safety, particularly for metallurgical factors, and the absence of defects. To carry out further investigations, EDF therefore shut down the Fessenheim reactor 2 on 13 June and sent its initial analysis of the irregularity detected to the ASN on 15 June. In a decision of 18 July 2016 the ASN required AREVA NP, the maker of the steam generator, to send a file presenting the approach it intends to adopt to demonstrate the steam generator no. 335's compliance with the decree of 2 April 1926, so that the ASN could decide on its acceptability. The steam generator, and therefore the reactor, must remain shutdown until the test certificate suspension is lifted.

Analyses are continuing and have been extended beyond the cases reviewed.

The ASN is kept abreast of progress on these analyses. EDF's updated analysis on components that are significant for the safety of the current fleet was sent to the ASN on 13 July. The number of irregularities noted on parts made by Creusot Forge constitutes a failure in quality assurance terms.

This is a "generic" quality assurance failure because it concerns several nuclear plants. It was declared by EDF to the ASN as a Significant Safety Event on 13 June 2016 and classified as level 0, below the INES scale (the international nuclear event scale classifying nuclear event on seven levels).

The audit has been extended to the Saint-Marcel and Jeumont plants.

Finally, on 30 June, AREVA gave a progress report to France's High Committee for Transparency and Information on Nuclear Safety, which was complemented by a progress report by EDF.

### 3.11.4 Plant decommissioning strategy

The new industrial strategy for decommissioning of UNGG (natural uranium graphite gas-cooled) plants is based on the following points:

- revision of the chosen technical decommissioning approach: in-air dismantling for the entire UNGG plants;
- implementation of a "derisking" period before dismantling the first caisson, to address the risks identified in studies (additional specifications, tooling tests on models);
- in-air dismantling of one reactor, to draw on the experience before starting industrial dismantling of the others. The first reactor will be Chinon A2 or Chinon A3 (in around 2030) for reasons of progressive complexity and representativity.

The plants will be dismantled as soon as possible after the reactors' final shutdown.

Following updating of the industrial scenario for decommissioning of first-generation power plants, particularly UNGG plants, the decommissioning provision was increased by €590 million at 31 December 2015.

For the six UNGG reactors at Bugey, Saint Laurent and Chinon, and the other permanently shut-down power plants (one pressurised water reactor (PWR), Chooz A; one heavy water reactor, Brennilis, one sodium-cooled fast neutron reactor at Creys-Malville), EDF has opted for complete dismantling in as short a period as possible,

in compliance with the principles of the public health and environmental code, ensuring that the associated technical risks are well controlled. These sites still belong to EDF and EDF thus remains responsible for their management and surveillance.

As landlord and owner, EDF will be the decommissioning project owner.

The current state of progress on decommissioning is reported for each Basic Nuclear Facility in the 2016 three-yearly report.

### **3.11.5 ERDF: change of name**

On 31 May 2016, ERDF changed its name to Enedis.

## **3.12 GOVERNANCE – BOARD OF DIRECTORS**

The general shareholders' meeting of 12 May 2016 approved the appointment of Mrs Claire Pedini, Senior Vice-President in charge of Human Resources for the Saint Gobain Group, as a Director of EDF, to replace Mr Philippe Varin whose resignation took effect at that date. Mrs Pedini's term of office will expire at the end of the ordinary general shareholders' meeting called to approve the financial statements for the year ended 31 December 2019.

At its meeting of 30 March 2016, the Board of Directors examined Mrs Pedini's individual position in the light of the independence criteria laid down by the AFEP-MEDEF Corporate Governance Code, and classified her as an independent director. At the date of publication EDF's Board of Directors thus includes five independent directors (41.67% of the board) and six women including two of the directors elected by employees, (33.33% of the Board).

The Board of Directors also appointed Mrs Pedini to its Ethics Committee at its meeting of 3 June 2016.

## 4 ANALYSIS OF THE BUSINESS AND THE CONSOLIDATED INCOME STATEMENTS FOR THE FIRST HALF-YEARS OF 2015 AND 2016

Presentation and analysis of the consolidated income statements for the first half-years of 2015 and 2016 is shown at two levels of analysis for Sales and EBITDA: a first focusing on the Group, then a second reporting on the different business segments (France, United Kingdom, Italy, Other international and Other activities). EBIT (operating profit) and net income are analysed from a general standpoint

<i>(In millions of Euros)</i>	H1 2016	H1 2015 <sup>(1)</sup>
<b>Sales</b>	<b>36,659</b>	<b>38,873</b>
Fuel and energy purchases	(18,764)	(19,972)
Other external purchases	(3,991)	(4,082)
Personnel expenses	(6,333)	(6,401)
Taxes other than income taxes	(2,727)	(2,674)
Other operating income and expenses	4,100	3,403
<b>Operating profit before depreciation and amortisation (EBITDA)</b>	<b>8,944</b>	<b>9,147</b>
Net changes in fair value on Energy and Commodity derivatives, excluding trading activities	(77)	24
Net depreciation and amortisation	(3,916)	(4,375)
Net increases in provisions for renewal of property, plant and equipment operated under concessions	(15)	(55)
(Impairment)/Reversals	(300)	(474)
Other income and expenses	(124)	269
<b>Operating profit (EBIT)</b>	<b>4,512</b>	<b>4,536</b>
<b>Financial result</b>	<b>(1,224)</b>	<b>(1,148)</b>
<b>Income before taxes of consolidated companies</b>	<b>3,288</b>	<b>3,388</b>
Income taxes	(960)	(985)
Share in net income of associates and joint ventures	(162)	201
<b>GROUP NET INCOME</b>	<b>2,166</b>	<b>2,604</b>
EDF net income	2,081	2,514
Net income attributable to non-controlling interests	85	90
<b>EARNINGS PER SHARE (EDF SHARE) (IN EUROS)</b>		
Earnings per share	0.88	1.14
Diluted earnings per share	0.88	1.14

(1) EDF Energy's transactions on the wholesale electricity markets (excluding trading activities), which showed a net short position at 30 June 2015, were reclassified in 2015 from energy purchases to sales in the amount of €477 million.



## 4.1 SALES

Consolidated sales were down by 5.7% with an organic decline of 4.6%.

### 4.1.1 Change in Group sales

<i>(in millions of Euros)</i>	H1 2016	H1 2015 <sup>(1)</sup>	Variation	Variation (%)	Organic growth (%)
Sales	36,659	38,873	(2,214)	-5.7	-4.6

*(1) EDF Energy's transactions on the wholesale electricity markets (excluding trading activities), which showed a net short position at 30 June 2015, were reclassified from energy purchases to sales in the amount of €477 million.*

Sales amounted to €36,659 million in the first half of 2016, a year-on-year decrease of €2,214 million (-5.7%). Excluding the effects of exchange rates (-€442 million), principally the pound sterling's decline against the Euro, and changes in the scope of consolidation (+€6 million), sales showed an organic decline of 4.6%.

### 4.1.2 Change in Group sales by segment

<i>(in millions of Euros)</i>	H1 2016	H1 2015 <sup>(1)</sup>	Variation	Variation (%)	Organic growth (%)
France	20,381	20,791	(410)	-2.0	-2.0
United Kingdom <sup>(1)</sup>	4,985	6,030	(1,045)	-17.3	-11.4
Italy	5,551	5,811	(260)	4.5	-4.2
Other international	2,622	2,923	(301)	-10.3	-6.6
Other activities	3,120	3,318	(198)	-6.0	-7.3
<b>Total excluding France</b>	<b>16,278</b>	<b>18,082</b>	<b>(1,804)</b>	<b>-10.0</b>	<b>-7.6</b>
<b>GROUP SALES</b>	<b>36,659</b>	<b>38,873</b>	<b>(2,214)</b>	<b>-5.7</b>	<b>-4.6</b>

*(1) EDF Energy's transactions on the wholesale electricity markets (excluding trading activities), which showed a net short position at 30 June 2015, were reclassified from energy purchases to sales in the amount of €477 million.*

Sales outside France for the first half-year of 2016 represented 44.4% of the Group's consolidated sales, compared to 46.5% in first-half 2015.

#### 4.1.2.1 France

##### Change in sales in the France segment

France's contribution to Group sales amounted to €20,381 million, corresponding to an organic decline of €410 million (-2.0%) compared to first-half 2015.

This movement is essentially explained by the discontinuation of the "yellow" and "green" regulated tariffs at 31 December 2015, and by falling market prices. Sales revenues also benefited from the €218 million effect of the rise in tariffs from 1 August 2015.

Gas sales to final customers were up by €8 million, largely due to the rise in sales to final customers which increased by 2.2TWh (excluding the weather effect).

At 30 June 2016, EDF's volume market share for electricity sales to all final customers was 73.4%, down by 5.1 points from 30 June 2015. EDF's share of the natural gas market was 5.5%, up by 0.6 points from 30 June 2015.

## Breakdown of sales for the France segment between generation and supply (deregulated) activities<sup>1</sup>, network activities<sup>2</sup> and island activities<sup>3</sup>

<i>(in millions of Euros)</i>	H1 2016	H1 2015 <sup>(1)</sup>	Variation	Variation (%)	Organic growth (%)
Generation and supply (deregulated) activities	18,683	19,776	(1,093)	-5.5	-5.5
Distribution network activities	7,177	7,118	59	+0.8	+0.8
Island activities	555	539	16	+3.0	+3.0
Eliminations	(6,034)	(6,642)	608		
<b>SALES FOR THE FRANCE SEGMENT</b>	<b>20,381</b>	<b>20,791</b>	<b>(410)</b>	<b>-2.0</b>	<b>-2.0</b>

The 5.5% organic decline in sales by the **deregulated activities** is principally explained by the discontinuation of the “yellow” and “green” regulated tariffs, and by falling market prices

Sales by the **distribution network activities** rose by 0.8%.

### Electricity generation

Nuclear generation produced 205.2TWh in first-half 2016 compared to 210.4TWh in first-half 2015, a difference of -5.2TWh. This decline mainly relates to the extended outage at Bugey 5.

Based on nuclear generation at 30 June and extended outages scheduled for the second half of 2016, the Group is revising its nuclear generation objective for 2016 from 408-412TWh to 395-400TWh<sup>4</sup>.

Hydropower output stood at 25.5TWh<sup>5</sup>, up by 1.5TWh compared to first-half 2015 due to more favourable hydrological conditions (see section 2.4 “Weather conditions: temperatures and rainfall”).

Thermal generation produced 4.2TWh, +0.6TWh higher than in first-half 2015.

Sales volumes to final customers<sup>6</sup> were down by -21.2TWh, including -1.6TWh resulting from the temperature differential.

As a result of the lower market prices in first-half 2016, no electricity was supplied under the ARENH system. This corresponds to a year-on-year decline of 12.4TWh.

EDF was a net seller on the wholesale markets to the extent of 71.4TWh. The 38TWh increase in market sales compared to first-half 2015 is essentially explained by the lower level of both sales to final customers and deliveries under the ARENH system.

#### 4.1.2.2 United Kingdom

The **United Kingdom's** contribution to Group sales in first-half 2016 amounted to €4,985 million, a €1,045 million year-on-year downturn that includes a foreign exchange effect of -€355 million and corresponds to an organic change of -11.4% compared to first-half 2015.

The organic decline in UK sales is mainly explained by the lower volumes of electricity sales to final customers, which reflect the falling customer numbers resulting from strong competition, and lower gas tariffs

1. Generation, Supply and Optimisation in mainland France, and sales of engineering and consulting services.

2. Network activities now only include Distribution, as a result of application of the equity method to the Transmission activity since 31 December 2010. In mainland France, distribution 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, supply and distribution activities in the island energy systems (IES and PEI).

4. See the press release of 19 July 2016.

5. After deduction of pumped-storage hydropower volumes, hydropower production stood at 22.1TWh for the first half of 2016.

6. A market segment that excludes sales to foreign operators and includes Local Distribution Companies.

#### 4.1.2.3 Italy

Italy contributed €5,551 million to consolidated sales, 4.5% less than in first-half 2015 (-4.2% in organic terms).

This decrease was essentially driven by the market context, marked by the continued downward trends for Brent oil prices and average sale prices on the electricity and gas markets.

In the electricity business, sales were down by 19% due mainly to the lower average sale prices and the effect of changes in price scenarios.

In the hydrocarbon business, in contrast, sales increased by 8% thanks to a rise of over 13% in gas sales volumes which offset the lower prices for gas and Brent oil.

#### 4.1.2.4 Other international

The **Other international** segment principally covers operations in Europe, excluding the United Kingdom and Italy, and operations in the United States, Brazil and Asia (China, Vietnam and Laos).

This segment contributed €2,622 million to Group sales in the first half-year of 2016, €301 million or -10.3% less than in first-half 2015. Excluding foreign exchange effects (-€76 million) and changes in the scope of consolidation (-€33 million), sales declined by €192 million (-6.6%) in organic terms from first-half 2015.

The downturn essentially comes from:

- **Belgium** (-€149 million in organic terms), largely due to lower gas and electricity prices and a decline in purchase and resale operations on the market to balance positions (with no significant impact on the gross margin);
- **Asia** (-€135 million organic decline), where the decrease in sales is essentially explained by the handover of the Figlec concession in early September 2015.

However, sales were up in:

- **Brazil** (organic rise of +€52 million), essentially as a result of an operating performance that made it possible to benefit fully from the rise in the Power Purchase Agreement (PPA) sales tariff;
- **Poland** (organic rise of +€40 million), thanks to better plant availability, favourable price and volume effects on heat, and a positive weather effect.

#### 4.1.2.5 Other activities

**Other activities** comprise, among other entities, EDF Énergies Nouvelles, Dalkia, EDF Trading, and Electricité de Strasbourg.

The contribution by the **Other activities** segment to Group sales totalled €3,120 million for the first half-year of 2016, €198 million lower (-6.0%) or an organic decline of €243 million (-7.3%) than in first-half 2015.

**EDF Énergies Nouvelles'** contribution to Group sales showed an organic increase of €28 million (+6.7%) compared to first-half 2015. This increase is principally attributable to the generation activity, essentially boosted by the favourable impact of new facilities commissioned in the Americas zone during the second half of 2015.

Sales by **Dalkia** showed an organic decline of €56 million (-3.9%), essentially due to the decline in energy prices and a less favourable weather effect in first-half 2016 than first-half 2015, as well as lower activity in the works business.

**EDF Trading's** sales<sup>1</sup> also showed an organic decline of €114 million (-25.9%) compared to first-half 2015. This reflects the transfer of management of electricity sold under Purchase Obligations to the France segment<sup>2</sup>, and adverse market conditions.

The contribution by **Électricité de Strasbourg** to Group sales was down by €40 million (-9.2%) in organic terms, notably due to lower market prices for electricity and gas.

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1. EDF Trading's sales consist of its trading margin.

2. This has no impact at EDF group level.

## 4.2 EBITDA

EBITDA for the first half-year decreased by 2.2%, with an organic decline of -0.7%.

<i>(In millions of Euros)</i>	H1 2016	H1 2015 <sup>(1)</sup>	Variation	Variation (%)	Organic growth (%)
<b>Sales</b>	<b>36,659</b>	<b>38,873</b>	<b>(2,214)</b>	<b>-5.7</b>	<b>-4.6</b>
Fuel and energy purchases	(18,764)	(19,972)	1,208	-6.0	-4.6
Other external expenses	(3,991)	(4,082)	91	-2.2	-2.6
Personnel expenses	(6,333)	(6,401)	68	-1.1	-0.9
Taxes other than income taxes	(2,727)	(2,674)	(53)	+2.0	+2.3
Other operating income and expenses	4,100	3,403	697	+20.5	+20.4
<b>EBITDA</b>	<b>8,944</b>	<b>9,147</b>	<b>(203)</b>	<b>-2.2</b>	<b>-0.7</b>

*(1) EDF Energy's transactions on the wholesale electricity markets (excluding trading activities), which showed a net short position at 30 June 2015, were reclassified from energy purchases to sales in the amount of €477 million.*

### 4.2.1 Change in consolidated EBITDA and analysis

**Consolidated EBITDA** for first-half 2016 amounted to €8,944 million, a year-on-year decrease of 2.2% corresponding to an organic decline of 0.7%.

The Group's **fuel and energy purchases** amounted to €18,764 million in first-half 2016, down by €1,208 million (-6.0%) from first-half 2015, or an organic decline of €919 million (-4.6%). In **France**, the organic increase of €177 million (+2.1%) was essentially driven by obligations to purchase renewable energies. **Italy** registered an organic decline of €275 million (-5.5%), essentially due to the downturn in prices and renegotiation of the Libyan gas contract which concluded in June 2016: these factors compensated for the rise in volumes of fuel and energy purchases. The organic decrease observed in the **United Kingdom** (-€512 million or -14.7%) and **Belgium** (-€198 million or -13.7%) relates to the organic downturn in these area's sales.

**Other external expenses** amounted to €3,991 million, €91 million lower than in first-half 2015 (-2.2%) corresponding to an organic decline of €107 million (-2.6%). The €27 million decrease (-1.2%) in **France** reflects the cost-cutting drive across all areas of business, especially thermal and commercial activities. In **Italy**, the organic decline of €21 million principally relates to ongoing efforts to reduce operating costs. **Dalkia** registered an organic decrease of €58 million, mainly driven by performance improvement actions and a variation in the volume of works activity.

The Group's **personnel expenses** totalled €6,333 million, down by €68 million from first-half 2015, or an organic decline of €60 million (-0.9%). In **France**, personnel expenses totalled €4,755 million, an organic rise of €9 million (+0.2%) compared to first-half 2015. During the first half-year of 2016, the workforce excluding numbers working on the Linky project registered a year-on-year decrease of 0.9% as efforts were made across all functions. In the **United Kingdom**, personnel expenses showed an organic decline of €63 million (-9.7%) essentially reflecting good cost control.

**Taxes other than income taxes** amounted to €2,727 million for first-half 2016. The organic increase of €62 million in comparison to the first half-year of 2015 principally concerns **France**.

**Other operating income and expenses** generated net income of €4,100 million for the first half-year of 2016, up by €697 million from first-half 2015 (an organic rise of €694 million or +20.4%). In **France**, other operating income and expenses registered organic growth of €457 million, principally due to the increase in the CSPE.

**EDF Énergies Nouvelles** saw an organic increase of €182 million driven chiefly by high levels of business in Development and Sales of Structured Assets during first-half 2016.

## 4.2.2 Change in consolidated EBITDA and analysis by segment

<i>(In millions of Euros)</i>	H1 2016	H1 2015	Variation	Variation (%)	Organic growth (%)
<b>France</b>	<b>6,181</b>	<b>6,359</b>	<b>(178)</b>	<b>-2.8</b>	<b>-2.8</b>
United Kingdom	1,118	1,312	(194)	-14.8	-8.9
Italy	328	246	82	+33.3	+36.2
Other International	363	352	11	+3.1	+11.6
Other activities	954	878	76	+8.7	+12.0
<b>Total excluding France</b>	<b>2,763</b>	<b>2,788</b>	<b>(25)</b>	<b>-0.9</b>	<b>+4.2</b>
<b>GROUP EBITDA</b>	<b>8,944</b>	<b>9,147</b>	<b>(203)</b>	<b>-2.2</b>	<b>-0.7</b>

### 4.2.2.1 France

#### Change in EBITDA for the France segment

France contributed €6,181 million of consolidated EBITDA for the first half-year of 2016, an organic decline of 2.8% compared to first-half 2015.

This contribution accounted for 69.1% of Group EBITDA for the period, against 69.5% in first-half 2015.

#### Breakdown<sup>1</sup> of EBITDA for the France segment between deregulated activities, distribution network activities and island activities

<i>(In millions of Euros)</i>	H1 2016	H1 2015	Variation	Variation (%)	Organic growth (%)
Generation and Supply (deregulated) activities	3,450	3,885	(435)	-11.2	-11.2
Distribution network activities	2,200	2,085	115	+5.5	+5.5
Island activities	531	389	142	+36.5	+36.5
<b>EBITDA FOR THE FRANCE SEGMENT</b>	<b>6,181</b>	<b>6,359</b>	<b>(178)</b>	<b>-2.8</b>	<b>-2.8</b>

EBITDA for the **generation and supply** (deregulated) activities was down by 11.2% or €435 million.

The first half-year of 2016 was marked by the discontinuation of the “yellow” and “green” regulated tariffs and difficult market conditions, which had an impact of €718 million.

These effects were counterbalanced by the rise in regulated sales tariffs at 1 August 2015 which contributed +€185 million to EBITDA.

Other external purchases and personnel expenses decreased by 1.5%. Performance improvement actions were taken in all activities.

EBITDA for the **distribution network activities** increased by +5.5% or €115 million, notably due to reindexation of the TURPE network access tariffs as of 1 August 2015 (+0.4%), and the lower cost of purchases to compensate for network losses due to falling electricity market prices.

### 4.2.2.2 United Kingdom

The **United Kingdom's** contribution to Group EBITDA for first-half 2016 was €1,118 million, down by €194 million (-14.8%) or an organic decrease of €117 million (-8.9%) from first-half 2015. The Euro's rise against the pound sterling had an unfavourable impact of €77 million compared to first-half 2015. The organic decline in EBITDA results mainly from the organic decline in sales (-11.4%).

Nuclear generation output for the first half-year amounted to 30.9TWh in 2016, +0.5TWh higher than in 2015. This increase essentially resulted from a good operating performance by the nuclear fleet.

### 4.2.2.3 Italy

The **Italy** segment contributed €328 million to the Group's consolidated EBITDA, an organic increase of 36.2% over first-half 2015.

This result includes the positive effects of the agreement signed with ENI in June 2016, setting the formula for the long-term gas contract price applicable from 1 October 2015. EBITDA for first-half 2015 did not yet benefit

1. This breakdown is explained in section 5.1.2.1.

from the effects of the international arbitration court's decision in the dispute between Edison and ENI over revision of the long-term Libyan gas contract prices.

This growth in EBITDA nonetheless covers contrasting situations across the different activities.

EBITDA for the electricity activities reflects a contraction in margins on thermal power generation, less favourable hydrological conditions than in first-half 2015, and an adverse trend in average sale prices for electricity.

Conversely, EBITDA in the hydrocarbon activities registered a rise of €190 million. The positive effects of the renegotiated Libyan gas prices were partly mitigated by falling Brent oil prices which adversely affected exploration and production activities.

In this market environment, the cost-cutting plan launched in 2015 was continued.

#### 4.2.2.4 Other international

EBITDA for the **Other international** segment stood at €363 million, an organic rise of €41 million (+11.6%) compared to first-half 2015.

This change was essentially attributable to:

- **Brazil** (organic growth of +€52 million), thanks to the positive effect of the annual PPA (power purchase agreement) price revision that more than covers the rise in costs, and the favourable market conditions during maintenance periods;
- **Belgium** (organic growth of +€20 million), mainly due to resumption of operations by the Doel 3 and Tihange 2 nuclear plants in December 2015, new installed wind power capacity (267MW at 30 June 2016 against 194MW at 30 June 2015) and sustained activity in auxiliary services;
- **Poland** (organic growth of +€22 million), thanks to favourable price and volume effects on heat.

In **Asia**, however, EBITDA registered an organic decline of €50 million, essentially relating to the end of the Figlec concession in early September 2015.

#### 4.2.2.5 Other activities

**Other activities** contributed €954 million to Group EBITDA for first-half 2016, a year-on-year organic rise of €105 million (+12.0%) compared to first-half 2015.

**EDF Énergies Nouvelles'** contribution to consolidated EBITDA totalled €554 million. The organic growth of €182 million (+48.3%) from first-half 2015 was mainly driven by Development and Sales of Structured Assets, notably due to streamlining of the asset portfolio in Europe (sales of hydropower plants in France, wind farms in Greece and Portugal) and the new partnership for offshore wind farm projects in France that were awarded to EDF Énergies Nouvelles after the first call for tenders.

**Dalkia's** EBITDA was €135 million, corresponding to a year-on-year organic decline of €9 million (-6.7%) mainly resulting from unfavourable price effects and less favourable weather conditions in first-half 2016 than first-half 2015.

EBITDA at **EDF Trading** amounted to €188 million, an organic decline of €89 million (-28.6%) compared to first-half 2015. This decrease relates directly to a deterioration in the trading margin observed on sales (see section 4.1.2.5).

### 4.3 OPERATING PROFIT (EBIT)

EBIT decreased by 0.5%.

<i>(In millions of Euros)</i>	H1 2016	H1 2015	Variation	Variation (%)
<b>EBITDA</b>	<b>8,944</b>	<b>9,147</b>	<b>(203)</b>	<b>-2.2</b>
Net changes in fair value on Energy and Commodity derivatives, excluding trading activities	(77)	24	(101)	-
Net depreciation and amortisation	(3,916)	(4,375)	459	-10.5
Net increases in provisions for renewal of property, plant and equipment operated under concessions	(15)	(55)	40	-72.7
(Impairment)/reversals	(300)	(474)	174	-36.7
Other income and expenses	(124)	269	(393)	-146.1
<b>OPERATING PROFIT (EBIT)</b>	<b>4,512</b>	<b>4,536</b>	<b>(24)</b>	<b>-0.5</b>

The Group's consolidated **EBIT** amounted to €4,512 million for the first half-year of 2016, down by €24 million from the first half-year of 2015. The lower net depreciation and amortisation offset the unfavourable movements in EBITDA, net changes in fair value on Energy and Commodity derivatives (excluding trading activities), and other operating income and expenses.

#### 4.3.1 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, decreased from +€24 million in first-half 2015 to -€77 million in first-half 2016.

#### 4.3.2 Net depreciation and amortisation

Net depreciation and amortisation was down by €459 million compared to first-half 2015.

**France** registered a €192 million decrease in net depreciation and amortisation, notably explained by the extension to 50 years of the operating lifetimes of the 900MW PWR units currently in operation<sup>1</sup>, which had an impact of +€445 million. This was partly counterbalanced by a €253 million increase resulting essentially from investments in the generation fleet (industrial commissioning and nuclear maintenance) and distribution assets.

In the **United Kingdom**, the €127 million decrease in net depreciation and amortisation (an organic decrease of €87 million) mainly relates to impairment booked on coal and gas-fired facilities at 31 December 2015.

In **Italy**, net depreciation and amortisation was down by €86 million (an organic decline of €83 million), mainly due to the decline in exploration expenses and the reduction in depreciation and amortisation following the recognition of impairment at 31 December 2015.

In **Belgium**, the €63 million decrease in net depreciation and amortisation essentially relates to impairment recognised in respect of thermal assets at 31 December 2015.

#### 4.3.3 Net increases in provisions for renewal of property, plant and equipment operated under concessions

The €40 million decrease between first-half 2015 and first-half 2016 in the net increases in provisions for renewal of property, plant and equipment operated under concessions is attributable to **France**.

#### 4.3.4 (Impairment)/reversals

Impairment at 30 June 2016 amounted to €300, including €197 million concerning coal-fired plants in Poland. The Group also identified certain indications of loss of value on specific assets, and this led to recognition of impairment of €103 million.

Impairment at 30 June 2015 totalled €474 million and essentially related to non-nuclear assets in Belgium (€191 million), assets related to the exploration/production activity in Italy (€59 million) following the fall in Brent prices, assets owned in Greece by EDF Énergies Nouvelles (€30 million) and projects in France and the United States (€176 million).

#### 4.3.5 Other income and expenses

Other income and expenses amounted to €(124) million in the first half-year of 2016.

In the first half-year of 2015, other income and expenses totalled €269 million, and mainly resulted from the effects of the agreement signed with Engie concerning the compensation system for employee benefits in kind in the form of energy.

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*1. Excluding Fessenheim.*

## 4.4 FINANCIAL RESULT

<i>(In millions of Euros)</i>	H1 2016	H1 2015	Variation	Variation (%)
Cost of gross financial indebtedness	(953)	(1,086)	133	-12.2
Discount effect	(1,367)	(1,409)	42	-3.0
Other financial income and expenses	1,096	1,347	(251)	-18.6
<b>FINANCIAL RESULT</b>	<b>(1,224)</b>	<b>(1,148)</b>	<b>(76)</b>	<b>+6.6</b>

The financial result for first-half 2016 is a financial expense of €1,224 million, €76 million lower than in first-half 2015. This change is explained by:

- a decrease in the cost of gross financial indebtedness, due notably to a positive foreign exchange effect and the effect of variabilisation of the debt, which together offset the impact of issuance of new debts in October 2015;
- lower discount expenses, mainly resulting from the extension to 50 years of the depreciation period for the 900MW PWRs currently in operation<sup>1</sup>;
- a €251 million downturn in other financial income and expenses, chiefly caused by the lower capital gains on divestment of dedicated assets and an unfavourable foreign exchange result excluding indebtedness. These factors were partly counterbalanced by the adverse effect in 2015, which had no equivalent in 2016, of the financial interest paid following the European Commission's decision of 22 July 2015 concerning the tax treatment of provisions established between 1987 and 1996 for renewal of French general electricity network facilities.

## 4.5 INCOME TAXES

Income taxes amounted to €(960) million in the first half-year of 2016, corresponding to an effective tax rate of 29.2% (compared to an expense of €(985) million corresponding to an effective tax rate of 29.1% for the first half-year of 2015).

## 4.6 SHARE IN NET INCOME OF ASSOCIATES AND JOINT VENTURES

The Group's share in net income of associates and joint ventures was a negative -€162 million in first-half 2016, compared to a positive €201 million in first-half 2015. This €363 million change results primarily from impairment of €458 million booked in respect of CENG assets in the first half-year of 2016, and the recognition in first-half 2015 of impairment of €108 million on Alpiq's Swiss assets which had no equivalent at 30 June 2016.

## 4.7 NET INCOME ATTRIBUTABLE TO NON-CONTROLLING INTERESTS

Net income attributable to non-controlling interests amounted to €85 million at 30 June 2016, €5 million lower than at 30 June 2015.

## 4.8 EDF NET INCOME

EDF net income totalled €2,081 million at 30 June 2016, down by €433 million in comparison to first-half 2015 (-17.2%).

## 4.9 NET INCOME EXCLUDING NON-RECURRING ITEMS

The Group's net income excluding non-recurring items<sup>2</sup> stood at €2,968 million for first-half 2016, an increase of 1.4% compared to first-half 2015.

1. Excluding Fessenheim.

2 Group net after-tax 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:

- -€828 million for miscellaneous risks and impairment in first-half 2016, compared to -€429 million in first-half 2015.



## 5 NET INDEBTEDNESS, CASH FLOWS AND INVESTMENTS

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. It also includes the Group's loan to RTE.

Changes in the Group's net indebtedness were as follows:

<i>(In millions of Euros)</i>	H1 2016	H1 2015 restated <sup>(1)</sup>	Variation	Variation (%)
<b>Operating profit before depreciation and amortisation (EBITDA)</b>	<b>8,944</b>	<b>9,147</b>	<b>(203)</b>	<b>-2,2</b>
Cancellation of non-monetary items included in EBITDA	(1,042)	(942)	(100)	
Net financial expenses disbursed	(800)	(911)	111	
Income taxes paid	638	(781)	1,419	
Other items including dividends received from associates and joint ventures	219	225	(6)	
<b>Operating cash flow <sup>(2)</sup></b>	<b>7,959</b>	<b>6,738</b>	<b>1,221</b>	<b>+18,1</b>
Change in working capital	(1,720)	(588)	(1,132)	
Net investments <sup>(3)</sup>	(5,569)	(6,445)	876	
<b>Cash flow after net investments</b>	<b>670</b>	<b>(295)</b>	<b>965</b>	
Dedicated assets	39	213	(174)	
<b>Cash flow before dividends <sup>(4)</sup></b>	<b>709</b>	<b>(82)</b>	<b>791</b>	
Dividends paid in cash	(602)	(1,806)	1,204	
<b>Group cash flow</b>	<b>107</b>	<b>(1,888)</b>	<b>1,995</b>	
Issuance of perpetual subordinated bonds	-	-	-	
Other monetary changes	(129)	(330)	201	
<b>(Increase)/decrease in net indebtedness, excluding the impact of changes in exchange rate</b>	<b>(22)</b>	<b>(2,218)</b>	<b>2,196</b>	
Effect of change in exchange rate	1,036	(1,229)	2,265	
Effect of other non-monetary changes	173	153	20	
<b>(Increase)/decrease in net indebtedness</b>	<b>1,187</b>	<b>(3,294)</b>	<b>4,481</b>	
<b>NET INDEBTEDNESS AT BEGINNING OF PERIOD</b>	<b>37,395</b>	<b>34,208</b>		
<b>NET INDEBTEDNESS AT END OF PERIOD</b>	<b>36,208</b>	<b>37,502</b>		

(1) H1 2015 figures are restated following reclassification of investments in strategic operations as net investments.

(2) 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 where relevant for the impact of non-recurring effects, less net financial expenses disbursed and income taxes paid.

(3) Net investments are operating investments and financial investments for growth, net of disposals. They also include net debts acquired or transferred in acquisitions or disposals of securities, investment subsidies received, non-Group partner investments, and new developments including the Linky project and the asset disposals that finance them.

(4) Cash flow before dividends is not an aggregate defined by IFRS as a measure of financial performance, and is not comparable with indicators of the same name reported by other companies. It is equal to the operating cash flow defined in note (2) after the change in working capital, net investments (see note (3)) and net allocations to dedicated assets.

▪ -€59 million of net changes in fair value on Energy and Commodity derivatives, excluding trading activities, net of tax in first-half 2016, compared to +€15 million for first-half 2015.

## 5.1 OPERATING CASH FLOW

The operating cash flow amounted to €7,959 million in first-half 2016 compared to €6,738 million in first-half 2015, an increase of €1,221 million (+18.1%).

This change was mainly driven by the lower level of income taxes paid (+€638 million in first-half 2016, compared to -€781 million in first-half 2015), particularly due to the lower levels of advance and final instalments of French income taxes resulting from a decrease in 2015 taxable income.

This decrease in income taxes paid was partly offset by a -€203 million decline in EBITDA (-2.2%).

## 5.2 CHANGE IN WORKING CAPITAL

The change in working capital over the first half-year of 2016 amounted to -€1,720 million, and is mainly explained by:

- a mild weather effect in France in late 2015 (-€0.8 billion);
- the increase in the CSPE operating receivable (-€0.4 billion) ;
- an increase in stocks of green certificates in the United Kingdom (-€0.2 billion);
- a decrease in trade receivables, notably related to lower nuclear maintenance in the United Kingdom (-€0.2 billion) ;
- gains resulting from the working capital improvement plan, essentially on inventories and trade receivables (approximately +€0.4 billion).

The change in working capital compared to first-half 2015 is essentially explained by unfavourable effects in France relating to the CSPE receivable (-€0.6 billion).

## 5.3 NET INVESTMENTS

Net investments amounted to €5,569 million in the first half of 2016 compared to €6,445 million in the first half of 2015, a decrease of -€435 million (-6.7%). Details are as follows:

<i>(In millions of Euros)</i>	H1 2016	H1 2015 restated <sup>(1)</sup>	Variation	Variation (%)
Generation and Supply (deregulated) activities	2,844	2,839	5	0.2
Distribution network activities	1,532	1,501	31	2.1
Island activities	157	221	(64)	-29.0
<b>France</b>	<b>4,533</b>	<b>4,561</b>	<b>(28)</b>	<b>-0.6</b>
United Kingdom	402	532	(130)	-24.4
Italy	254	298	(44)	-14.8
Other International	322	267	55	20.6
<b>International</b>	<b>978</b>	<b>1,097</b>	<b>(119)</b>	<b>-10.8</b>
<b>Other activities</b>	<b>(320)</b>	<b>254</b>	<b>(574)</b>	<b>n.a.</b>
<b>NET INVESTMENTS EXCLUDING NEW DEVELOPMENTS AND ASSET DISPOSALS</b>	<b>5,191</b>	<b>5,912</b>	<b>(721)</b>	<b>-12.2</b>
<b>NEW DEVELOPMENTS AND ASSET DISPOSALS</b>	<b>378</b>	<b>533</b>	<b>(155)</b>	<b>-29.1</b>
<b>NET INVESTMENTS</b>	<b>5,569</b>	<b>6,445</b>	<b>(876)</b>	<b>-13.6</b>

*n.a. = not applicable.*

*(1) 2015 figures are restated, principally by eliminating net investments in the UK Nuclear New Build programme, which are now included in new developments.*

In France, net investments were down by -€28 million or -0.6%.

- In the Generation and Supply (deregulated) activities, net investments were practically stable (+€5 million).
- In the distribution network activities, the rise in net investments (+€31 million) primarily resulted from investments in connections and network modernisation (for coverage quality and network reinforcement).

- In the island activities, the lower level of investments resulted from commissioning of the Pointe Jarry thermal plant in Guadeloupe, which was opened in June 2015 to replace the Jarry-Nord power plant that was shut down in December 2014.

In the International segment, net investments were down by -€119 million or -10.8%.

- In the United Kingdom, net investments decreased by €130 million, as a result of lower maintenance expenditure on the coal-fired and nuclear fleets, and a favourable foreign exchange effect (€32 million).
- In Italy, the decrease of €44 million was principally due to a reduction in investments in exploration-production projects to adjust to the oil and gas market environment. In the first half-year of 2016 Edison consolidated its involvement in the hydropower sector through an asset swap operation and the acquisition of a mini-hydropower fleet.
- The higher level of net investments in the Other International segment (+€55 million) is notably explained by expenditure on the Taishan nuclear plant project (China) and the Sinop hydropower plant projects (Brazil).

In the Other activities segment, net investments were down by -€574 million. This change primarily concerned EDF Énergies Nouvelles, which benefited in 2016 from higher subsidies for wind farms in the United States. Operating investments were lower than in the first half of 2015, essentially in North America, reflecting the lower number of new plants commissioned during the period (186 MW in the first half of 2016 compared to 582 MW in the first half of 2015).

New developments and asset disposals correspond to the Group's new development projects and sales of assets undertaken to fund them. They also include Linky investments. These new developments mainly concerned New Nuclear investments in the United Kingdom, and to a smaller degree the investments in Linky meters and offshore wind farm projects.

## 5.4 DEDICATED ASSETS

In compliance with the French Law of 28 June 2006 on the sustainable management of radioactive materials and waste, EDF has built up a portfolio of dedicated assets for secure financing of its long-term nuclear obligations which amounted to €23,299 million at 30 June 2016.

Overall, the changes in dedicated assets comprise:

- allocations to reach full coverage of obligations;
- reinvestment of financial income (dividends and interest) generated by these assets;
- withdrawals of assets corresponding to the costs incurred over the period in application of long-term nuclear obligations falling within the scope of the Law of 28 June 2006;
- exceptional withdrawals proposed to the governance bodies in charge of managing dedicated assets when the value of the portfolio exceeds the amount of the obligations to be financed; such withdrawals must be validated by these bodies.

The net movement of €39 million in first-half 2016 corresponds to the second and third types of change described above.

## 5.5 CASH FLOW BEFORE DIVIDENDS

The cash flow before dividends in first-half 2016 was positive at +€709 million (compared to a negative -€82 million in first-half 2015) and is mainly explained by the following factors:

- operating cash flow of +€7,959 million;
- an unfavourable change of -€1,720 million in working capital;
- net investments of -€5,569 million.

The +€791 million improvement from first-half 2015 is essentially due to the rise in operating cash flow (+€1,221 million) and the decrease in net investments (+€876 million), mitigated by the unfavourable change in working capital (-€1,132 million).

## 5.6 DIVIDENDS PAID IN CASH

Dividends paid in cash during first-half 2016 (-€602 million) comprise:

- the balance of the 2015 dividends (-€81 million);
- payments made in 2016 to bearers of perpetual subordinated bonds for the “hybrid” bond issues of January 2013 and January 2014 (-€401 million);
- dividends paid by Group subsidiaries to their minority shareholders (-€120 million).

The +€1,204 million improvement from first-half 2015 is principally attributable to payment of the balance of the dividend for 2015 in the form of a scrip dividend to 92.22% of shareholders.

## 5.7 GROUP CASH FLOW

The Group cash flow amounted to +€107 million compared to -€1,888 million for first-half 2015. The +€1,995 million year-on-year improvement primarily reflects the +€791 million change in cash flow before dividends and a €1,204 million decrease in the amount of dividends paid in cash.

## 5.8 EFFECT OF CHANGE IN EXCHANGE RATE

The foreign exchange effect (essentially the decline of the pound sterling and US dollar against the Euro<sup>1</sup>) had a favourable impact of +€1,036 million on the Group’s net indebtedness at 30 June 2016.

## 5.9 NET INDEBTEDNESS

The Group’s net indebtedness stood at €36,208 million at 30 June 2016 compared to €37,395 million at 31 December 2015. The €1,187 million decrease is principally explained by a negative Group cash flow (+€107 million) and a favourable foreign exchange effect (+1,036 million).

## 5.10 FINANCIAL RATIOS

	30 June 2016	31 December 2015	31 December 2014
Net indebtedness/EBITDA	2,1	2,1	2,0
Net indebtedness/(Net indebtedness + equity) <sup>(1)</sup>	48%	48%	46%

(1) Equity including non-controlling interests.

1. The pound sterling fell by -11.2% against the Euro, from €1.362/£1 at 31 December 2015 to €1.210/£1 at 30 June 2016. The US dollar fell by -2.0% against the Euro, from €0.919/\$1 at 31 December 2015 to €0.901/\$1 at 30 June 2016.

## 6 MANAGEMENT AND CONTROL OF MARKET RISKS

This section sets forth the policies and principles for management of the Group's financial risks defined in the Strategic Financial management framework (liquidity, interest rate, foreign exchange rate and equity risks), and the Group counterparty risk management policy set up by the EDF group. These principles apply only to EDF and subsidiaries controlled by the Group or subsidiaries that do not benefit by law from specific guarantees of independent management such as Enedis. In compliance with IFRS 7, the following paragraphs describe the nature of risks resulting from financial instruments, based on sensitivity analyses and credit (counterparty) risk assessments.

Since 2002, a dedicated body – the Financial Risks Control Department (*Département Contrôle des Risques Financiers et Investissements* – CRFI) – has been in charge of financial risk control at Group level by ensuring correct application of the principles of the Strategic Financial Management Framework (July 2015). This department, which has reported to the Group's Risk Division since 2008, is an independent unit that also has the task of carrying out a second-level check (methodology and organisation) of EDF entities and subsidiaries controlled by the Group (excluding Enedis), and a first-level check of financing activities at parent company level, including trading room activities.

The CRFI Department 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 actually applied and are effective.

### 6.1 MANAGEMENT AND CONTROL OF FINANCIAL RISKS

#### 6.1.1 Liquidity position and management of liquidity risks

##### 6.1.1.1 Liquidity position

At 30 June 2016, the Group's liquidities, consisting of liquid assets, cash and cash equivalents, totalled €21,778 million and available credit lines amounted to €11,939 million.

At 30 June 2016, no Group company was in default on any borrowing

##### 6.1.1.2 Management of liquidity risk

There were no bond issues by EDF SA during the first half of 2016.

No drawings were made on EDF SA's syndicated loan or bilateral credit lines during the first half of 2016.

EDF's controlled subsidiaries are managed in compliance with EDF's Financing and Treasury Guide. Their cash is included in the Group's cash pooling. They may benefit from a stand-by credit line from the parent company EDF SA to cover intrayear liquidity requirements. They may also benefit from long-term credits from EDF Investissements Groupe to finance investments.

EDF Energy has an external credit line of £500 million which has been fully drawn.

EDF Investissements Groupe has an external syndicated credit line of €1,000 million (maturing in April 2020). No drawings had been made on this credit line at 30 June 2016.

Edison has an external credit line of €500 million with a pool of banks (maturing in November 2016). No drawings had been made on this credit line at 30 June 2016.

## 6.1.2 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 30 June 2016:

Company	Agency	Long-term rating	Short-term rating
EDF	Standard & Poor's	A, negative outlook <sup>(1)</sup>	A-1
	Moody's	A2, negative outlook <sup>(2)</sup>	P-1
	Fitch Ratings	A-, stable outlook <sup>(3)</sup>	F2
EDF Trading	Moody's	Baa2, negative outlook <sup>(4)</sup>	n.a.
EDF Energy	Standard & Poor's	BBB, negative outlook <sup>(5)</sup>	A-2
Edison	Standard & Poor's	BBB-, negative outlook <sup>(6)</sup>	A-3
	Moody's	Baa3, stable outlook <sup>(7)</sup>	n.a.

*n.a.* = not applicable.

<sup>(1)</sup> S&P downgraded EDF's rating from A+ to A on 13 May 2016. The rating for perpetual subordinated bonds was also downgraded to BB+.

<sup>(2)</sup> Moody's downgraded EDF's rating from A1 to A2 on 12 May 2016. The rating for perpetual subordinated was also downgraded to Baa2.

<sup>(3)</sup> Fitch downgraded EDF's rating from A to A- on 7 June 2016. The short-term rating downgraded from F1 to F2.

<sup>(4)</sup> Moody's downgraded EDF Trading's rating from Baa1 to Baa2 on 13 May 2016.

<sup>(5)</sup> S&P downgraded EDF Energy's rating from A- to BBB- on 13 May 2016. The short-term rating downgraded from A-1 to A-2.

<sup>(6)</sup> S&P downgraded Edison's rating from BBB+ to BBB- on 13 May 2016. The short-term rating downgraded from A-2 to A-3.

<sup>(7)</sup> Moody's downgraded Edison's rating from Baa2 to Baa3 on 13 May 2016.

## 6.1.3 Management of foreign exchange risk

The Group's gross debt at 30 June 2016 breaks down as follows by currency after hedging:

30 June 2016 <i>(In millions of Euros)</i>	Initial debt structure	Impact of hedging instruments <sup>(1)</sup>	Debt structure after hedges	% of debt
Borrowings in Euros (EUR)	31,403	18,255	49,658	78%
Borrowings in US dollars (USD)	19,774	(16,587)	3,187	5%
Borrowings in pounds sterling (GBP)	11,118	(1,437)	9,681	15%
Borrowings in other currencies	1,559	(231)	1,328	2%
<b>TOTAL BORROWINGS</b>	<b>63,854</b>	<b>-</b>	<b>63,854</b>	<b>100%</b>

<sup>(1)</sup> Hedges of liabilities and net assets of foreign subsidiaries.

The table below presents the impact of an unfavourable variation in exchange rates on the Group's gross debt at 30 June 2016.

30 June 2016 <i>(In millions of Euros)</i>	Debt after hedging instruments converted into Euros	Impact of a 10% unfavourable variation in exchange rates	Debt after a 10% unfavourable variation in exchange rates
Borrowings in Euros (EUR)	49,658	-	49,658
Borrowings in US dollars (USD)	3,187	319	3,506
Borrowings in pounds sterling (GBP)	9,681	968	10,649
Borrowings in other currencies	1,328	133	1,461
<b>TOTAL BORROWINGS</b>	<b>63,854</b>	<b>1,420</b>	<b>65,274</b>

The table below sets forth the foreign exchange position relating to net non-operating investments in foreign currencies of the Group's principal subsidiaries at 30 June 2016.

<i>(In millions of currency units)</i>	Net position after management (Assets) at 30 June 2016	Net position after management (Assets) at 31 December 2015
USD	3,158	2,916
CHF (Switzerland)	194	181
HUF (Hungary)	27,793	62,289
PLN (Poland)	820	807
GBP (United Kingdom)	8,415	7,401
BRL (Brazil)	1,183	1,065
CNY (China)	9,957	9,770

The assets in the above table are the net assets of the Group's foreign subsidiaries in foreign currencies at 31 March 2016, 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 30 June 2016.

#### 6.1.4 Management of interest rate risk

The Group's gross debt after hedging instruments at 30 June 2016 was structured as follows: 56% of debt bore interest at fixed rates and 44% at floating rates (54% at fixed rates and 46% at floating rates at 31 December 2015).

A 1% uniform rise in interest rates would generate an increase of approximately €281 million in annual financial expenses at 30 June 2016, based on gross floating-rate debt after hedging.

The average cost of Group debt (weighted interest rate on outstanding amounts after hedging) was 2.9% at 30 June 2016 against 2.92% at 31 December 2015.

The table below sets forth the structure of Group debt and the impact of a 1% variation in interest rates at 30 June 2016.

30 June 2016 <i>(In millions of Euros)</i>	Initial debt structure	Impact of hedging instruments	Debt structure after hedges	Impact on net income of a 1% variation in interest rates
Fixed rate	56,861	(21,148)	35,713	-
Floating rate	6,993	21,148	28,141	281
<b>TOTAL</b>	<b>63,854</b>	<b>-</b>	<b>63,854</b>	<b>281</b>

#### 6.1.5 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 6.1.6, "Management of financial risk on EDF SA's dedicated asset portfolio".

##### Coverage of EDF SA and EDF Energy's employee benefit obligations

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 would lead to a rise in balance sheet provisions.

28.2% of the assets covering EDF's employee benefit obligations were invested in equities at 30 June 2016, representing an amount of €3.4 billion of equities.

At 30 June 2016, the two pension funds sponsored by EDF Energy (EEGSG: EDF Energy Group Electricity Supply Pension Scheme and EEPS: EDF Energy Pension Scheme and) were invested to the extent of 36% in equities, representing an amount of £488 million of equities.

At 30 June 2016, EDF Energy's funds covering the British Energy pension funds were invested to the extent of 33% in equities, representing an amount of £1,882 million of equities.

### Direct investment

At 30 June 2016, EDF's investment in AREVA amounted to €28 million, with estimated volatility of 37.3% (annualised volatility of monthly returns observed over three years).

## 6.1.6 Management of financial risk on EDF SA's dedicated asset portfolio

### Content and performance of EDF's dedicated asset portfolio

At 30 June 2016, the total value of the dedicated asset portfolio was €23,328 million compared to €23,480 million at 31 December 2015. Details of portfolio content are shown below:

	30/06/2016	31/12/2015
Equities sub-portfolio	31.6 %	31.1 %
Bonds sub-portfolio	29.1 %	28.5 %
Cash sub-portfolio	0.8 %	1.2 %
CSPE after funding	22.1 %	22.3 %
Unlisted assets (EDF Invest)	16.4 %	16.9 %
<b>TOTAL</b>	<b>100 %</b>	<b>100 %</b>

### Portfolio content under the classification from article 4, decree 2007-243 of 23 February 2007

Categories (In millions of Euros)	30 June 2016		31 December 2015	
	Book value	Realisable value	Book value	Realisable value
OECD government bonds and similar	3,377	3,669	3,486	3,784
OECD corporate (non-government) bonds	442	492	595	630
Funds investing in the above two categories	2,841	3,045	2,701	2,840
Equities traded on a recognised market	-	-	-	-
Funds not exclusively invested in OECD bonds	5,980	7,161	5,643	7,019
Hedges, deposits, amounts receivable	-22	-22	7	7
<b>TOTAL FINANCIAL PRODUCT PORTFOLIO</b>	<b>12,618</b>	<b>14,345</b>	<b>12,432</b>	<b>14,280</b>
RTE <sup>(1)</sup>	2,015	2,444	2,015	2,580
Other unlisted securities	1,197	1,375	1,249	1,395
<b>TOTAL EDF INVEST</b>	<b>3,212</b>	<b>3,819</b>	<b>3,264</b>	<b>3,975</b>
CSPE after funding	5,164	5,164	5,225	5,225
<b>TOTAL DEDICATED ASSETS</b>	<b>20,994</b>	<b>23,328</b>	<b>20,921</b>	<b>23,480</b>

(1) The RTE shares are included at their equity value in the consolidated financial statements, to the extent of their allocation to the dedicated asset portfolio (50%).

Details of the coverage of nuclear liabilities by dedicated assets are provided in note 23 to the condensed consolidated half-year financial statements at 30 June 2016.



## Performance of EDF's dedicated asset portfolio

The table below presents the performance by portfolio at 30 June 2016 and 31 December 2015:

	30/06/2016 Stock market or realisable value	Performance for first-half 2016		31/12/2015 Stock market or realisable value	Performance for 2015	
		Portfolio	Benchmark index <sup>(1)</sup>		Portfolio	Benchmark index <sup>(1)</sup>
<i>(in millions of Euros)</i>						
Equities sub-portfolio	7,365	-2.4%	-0.9%	7,304	6.1%	4.9%
Bonds sub-portfolio	6,794	4.4%	5.1%	6,694	1.3%	0.8%
<b>TOTAL FINANCIAL PORTFOLIO</b>	<b>14,159</b>	<b>0.9%</b>	<b>2.2%</b>	<b>13,998</b>	<b>3.5%</b>	<b>3.0%</b>
Cash sub-portfolio	186	0.2%	-0.2%	282	0.4%	-0.1%
<b>TOTAL FINANCIAL AND CASH PORTFOLIO</b>	<b>14,345</b>	<b>0.9%</b>	<b>2.2%</b>	<b>14,280</b>	<b>3.5%</b>	<b>3.0%</b>
CSPE after funding	5,164	0.8%	-	5,225	1.7%	-
<b>EDF INVEST <sup>(2)</sup></b>	<b>3,819</b>	<b>-0.7%</b>	<b>-</b>	<b>3,975</b>	<b>5.3%</b>	<b>-</b>
<i>including RTE shares <sup>(3)</sup></i>	<i>2,444</i>	<i>-2.8%</i>	<i>-</i>	<i>2,580</i>	<i>4.6%</i>	<i>-</i>
<b>TOTAL DEDICATED ASSETS</b>	<b>23,328</b>	<b>0.7%</b>	<b>-</b>	<b>23,480</b>	<b>3.5%</b>	<b>-</b>

(1) Benchmark index: MSCI World AC DN hedged in Euros 50% (excluding emerging country currencies) for the equities sub-portfolio, composite index of 60% Citigroup EGBI and 40% Citigroup EuroBIG corporate for the bonds sub-portfolio, Eonia Capitalisé for the cash sub-portfolio, 49% equities index + 51% bonds index for the total financial portfolio.

(2) Performance for assets held at the start of the period. By limiting the value of certain investments in compliance with article 16 of decree 2007-243 concerning calculation of the regulatory realisable value of dedicated assets which must be equal to or greater than long-term nuclear provisions, the amount of this regulatory realisable value has been reduced to €3,784 million for EDF Invest assets and a total €23,293 million for all dedicated assets at 30 June 2016.

(3) The RTE shares are included at their equity value in the consolidated financial statements (to the extent of their allocation to the dedicated asset portfolio (50%).

## Change in unlisted assets

EDF Invest continued to build up its infrastructure, real estate and investment fund portfolio over the first half of 2016.

In June 2016, EDF Invest and the Dutch infrastructure fund DIF announced that they had signed an agreement for the acquisition through a 50/50 consortium of 100% of Thyssengas, Germany's third largest gas transporter. Thyssengas owns and operates 4,200km of natural gas pipelines that serve industrial and residential customers in the North Rhine-Westphalia region.

This operation still requires clearance by the relevant regulatory and competition authorities, and is expected to be finalised in the second half of 2016.

## Change in listed assets

The beginning of the stock market year 2016 was dominated by uncertainty from three sources: the UK's referendum on whether to remain in the European Union or leave ("Brexit"), the policies of the central banks (the Fed, the ECB, the BoJ, the BoE), and the behaviour of oil prices, which stoked fears of a sharp slowdown or even destabilisation for emerging countries.

On 23 June the UK voted to leave the European Union, and this marked the start of a particularly unstable episode for the markets which were already concerned about macro-economic fundamentals. It also affected action by certain central banks, at least in the short term. After much prevarication, the US Federal Reserve, in an indication of its concern over market volatility, declared it would refrain from opting to tighten up its monetary policy before the end of the year, even though America's robust labour market was an encouragement for rate normalisation. The ECB intensified its policy's flexibility, raising the amount of asset purchases which now include bonds by private issuers, and implementing a negative rate policy to support the budding recovery, which hopefully will not be hindered by the British referendum result. The BoJ was more hesitant, reinforcing the impression of powerlessness reflected in the strength of the Yen and mediocre economic results.

Finally, after a brief dip below US\$30 a barrel early in the year oil prices not only stabilised but ultimately returned to what is considered an equilibrium price of US\$50. As well as limiting aggravating factors such as the crisis in oil producing countries, this oil price stabilisation was welcome news for the US economy, which is expected to suffer marginal adverse effects with the collapse of its unconventional oil producers.

After a very restless start to the year, economic indicators prior to 23 June seemed overall to point to an improvement. However, growth will probably be limited and weakened by the situation in Europe. The markets will also have to cope with risks of a slowdown in China, a weak Yuan, difficulties in finding a stable government in Spain, and structural problems with European Union governance, which are amplified by what are expected to be long and complicated negotiations with the United Kingdom.

Against this background, the markets suffered high volatility in the first half of 2016, although ultimately the level attained by the equities markets (MSCI World AC DN index hedged in Euros 50%, excluding emerging country currencies) was close to equilibrium at  $-0.9\%$ . The European bond index (60% Citigroup EGBI and 40% Citigroup EuroBIG corporate) progressed by  $+5.1\%$  since rates moved downwards once again due to uncertainties and the ECB's very accommodating policy.

In this market environment, the financial portfolio performance was positive at  $+0.9\%$ . This should be compared with the composite benchmark, which rose by  $+2.2\%$ . This differential is attributable in equal proportions to the below-index performance by funds in the Americas zone and bond funds, and the very slight bias in favour of European and Japanese equities. However, foreign exchange positions on the US dollar and the yen were positive.

In first-half 2016, the overall after-tax performance of dedicated assets (impacts on reserves and net income) was  $+\text{€}64$  million:  $+\text{€}81$  million on the financial portfolio and cash ( $+\text{€}124$  million before tax),  $+\text{€}28$  million for the CSPE receivable after funding ( $+\text{€}43$  million before tax) and  $-\text{€}45$  million for EDF Invest (including  $-\text{€}71$  million for the RTE shares allocated to dedicated assets).

## Dedicated assets' exposure to risks

EDF is exposed to equity risks, interest rate risks and foreign exchange risks through its dedicated asset portfolio.

The market value of the equities sub-portfolio was  $\text{€}7,365$  million at 30 June 2016. The volatility of the equities sub-portfolio can be estimated through the volatility of its benchmark index, which at 30 June 2016 was  $18.4\%$  based on 52 weekly performances, compared to  $15.7\%$  at 31 December 2015. 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  $\text{€}1,355$  million. This volatility is likely to affect the Group's equity.

At 30 June 2016, the sensitivity of the bond sub-portfolio ( $\text{€}6,794$  million) was 5.91, i.e. a uniform 100 base point rise in interest rates would result in a  $\text{€}402$  million decline in market value which would be recorded in consolidated equity. The sensitivity was 5.52 at 31 December 2015. The sensitivity of the bond sub-portfolio was below the sensitivity of the benchmark index (6.63).

### 6.1.7 Management of counterparty/credit risks

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 the subsidiaries it controls. This policy, updated in September 2014, sets out the governance associated with monitoring for this type of risk, and organisation of the counterparty risk management and monitoring (including definition of limits and Group indicators). The policy also involves monthly consolidation of the Group's exposures, updated monthly for financial and energy market activities and quarterly for other activities. The financial risk control team closely monitors Group counterparties (daily review of alerts, special cautionary measures for certain counterparties).

The table below gives details, by rating, of the EDF group's consolidated exposure to counterparty risk. At 31 March 2016, 81% of the Group's exposure concerns "investment grade" counterparties, mainly as a result of the predominance of exposures generated by the Cash and asset management activity, with most short-term investments in low-risk assets:

	AAA	AA	A	BBB	BB	B	CCC/C	Unrated	Total
30/09/2015	2%	19%	37%	21%	11%	1%	0%	9%	100%
31/03/2016	3%	17%	35%	26%	3%	8%	0%	8%	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
30/09/2015	11%	1%	8%	70%	10%	100%
31/03/2016	9%	0%	11%	71%	9%	100%

Exposure in the energy trading activities is concentrated at the level of EDF Trading, where each counterparty is assigned a limit that depends on its financial robustness. A range of methods are used to reduce counterparty risk at EDF Trading, primarily position netting agreements, cash-collateral agreements and establishment of guarantees from banks or affiliates.

For counterparties dealing with EDF's trading room, the CRFI department has drawn up a framework specifying counterparty authorisation procedures and the methodology for calculation of allocated limits. 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 unfavourable development affecting a counterparty.

As the situation in the Euro zone is still unstable, EDF has continued to apply a prudent management policy for its cash investments in non-core countries. Apart from dedicated assets, purchases of sovereign debt are restricted to maximum maturities of three years for Italy and Spain (no exposure in Portugal, Greece, Cyprus, etc.). Only "investment grade" banking counterparties are authorised, for limited amounts and maturities.

## 6.2 MANAGEMENT AND CONTROL OF ENERGY MARKET RISKS

This section presents the main changes in energy market risks affecting the Group since 31 December 2015.

The principles for management and control of energy market risks are presented in section 2.1 of the 2015 reference document. They have not been changed since 31 December 2015.

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, backed by the Group's industrial assets. EDF Trading is therefore subject to a strict governance and control framework in compliance with European regulations on trading companies.

At Dalkia, EDF Énergies Nouvelles and Edison, the principles of the energy market risk policy are currently being rolled out. These entities are managed under a risk management framework approved by the Group's Executive Committee (Comex) and their respective Boards of Directors

At entities not operationally controlled by EDF, the risk management framework is reviewed by the governance bodies.

In 2016, EDF Trading's commitment on the markets is subject to a daily VaR limit of €36 million (with a daily confidence interval of 97.5%), and a stop-loss limit of €180 million<sup>1</sup>. The VaR and stop-loss limits were not exceeded during the first half of 2016, 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.

## 7 TRANSACTIONS WITH RELATED PARTIES

The types of transaction undertaken with related parties are detailed in note 24 "Related Parties" to the condensed consolidated half-year financial statements at 30 June 2016.

## 8 PRINCIPAL RISKS AND UNCERTAINTIES FOR THE SECOND HALF-YEAR OF 2016

The principal risks and uncertainties to which the EDF Group considers itself exposed are described in section 2 of the 2015 Reference Document.

<sup>1</sup> Five times the VaR: €180 million.

The Group's policies for risk management and control are described in section 2 of the 2015 Reference Document.

This presentation of the major risks remains valid at the date of publication of this report as regards assessment of the principal risks and uncertainties for the second half-year of 2016, and the Group remains subject to the usual risks specific to its business.

## 9 SIGNIFICANT EVENTS RELATED TO LITIGATION IN PROCESS

Litigations concerning the EDF group are described in section 2.4 of the 2015 reference document. This chapter reports on litigations which have seen significant developments since the release of the 2015 reference document.

### 9.1 PROCEEDINGS CONCERNING EDF

#### EnBW

In February 2012 EDF International received a request for arbitration filed with the International Chamber of Commerce by the German company Neckarpri GmbH, the vehicle for the Baden-Württemberg region's acquisition of the EDF group's stake in EnBW, which was agreed on 6 December 2010 and completed on 17 February 2011.

Neckarpri claimed that the price paid for the EDF group's investment in EnBW was excessive and therefore constituted illegal State aid. On those grounds, it sought reimbursement of the allegedly excess portion of the price. This was initially estimated at €2 billion in the request for arbitration, but was re-estimated at €834 million in July 2012 in an independent report on the valuation of EnBW commissioned by Baden-Württemberg. In September 2012, Neckarpri confirmed the reduction of its main claim to this amount. As an alternative, Neckarpri applied for cancellation of the sale of the EDF group's stake in EnBW.

EDF International made a counterpetition for compensation for the prejudice suffered as a result of these proceedings, which EDF considered unfounded and a misuse of law.

On 6 May 2016 the Court of Arbitration issued a decision in favour of EDF International and rejected all claims against it by Neckarpri. EDF International's counterpetition was not deemed admissible.

The Court ordered Neckarpri and the region to pay 75% of the costs of the arbitration, and to pay the sum of €4 million to EDF International for the legal costs incurred. Neckarpri proceeded to this payment on 3 June 2016.

#### Bugey 5

Following the third safety review of reactor 5 at the Bugey site with a view to continuing its operation for a further ten years, on 23 December 2014 the ASN adopted a decision establishing additional technical requirements. In March 2016, the Republic, Canton and City of Geneva filed an application before the French Council of State seeking cancellation of this ASN decision, and the implicit decision by the French Minister for the Environment, Energy and the Sea which, they argue, authorises a 10-year extension of operation by Bugey reactor 5. In an ordinance of 24 June 2016, the President of the 6<sup>th</sup> chamber of the Council of State dismissed this application as inadmissible.

#### Vent de Colère

Following an appeal by the association "Vent de Colère" against the decision of 17 November 2008 setting the purchase tariffs for wind power, the French Council of State suspended judgment and submitted a preliminary question to the Court of Justice of the European Union, on the point of whether the purchase obligation financing system based on the CSPE should be considered as intervention by the State or through State resources, as defined by the EU treaty provisions on State aid for the purposes of application of the treaty.

On 19 December 2013, the Court ruled that *"the new mechanism for offsetting in full the additional costs imposed on undertakings because of an obligation to purchase wind-generated electricity at a price higher than the market price that is financed by all final consumers of electricity (...) constitutes an intervention through State resources"*.

On 28 May 2014 the Council of State cancelled the decision of 17 November 2008 on the grounds that the tariffs set by that decision constituted State aid that had not been notified to the European Commission before taking effect. To replace this decision, the ministry for the Environment, Energy and the Sea signed a decision on 17 June 2014 setting the terms for purchases of electricity from onshore wind farms. This new decision adopted

the wind power purchase terms of the 2008 decision and the impact on the CSPE was unaffected. An appeal was lodged before the Council of State against the decision of 17 November 2008, but was dismissed on 9 March 2016. The judge considered in the ruling that it was not necessary to notify this new decision to the European Commission, and also rejected the argument that the return on capital for the wind power producers was too high.

In the “Praxair” opinion issued on 22 July 2015, the Council of State considered that CSPE income did not directly influence the extent of aid granted to producers using renewable energies, leading it to conclude that the CSPE could not be considered an integral part of the support mechanism for wind power which was judged illegal by the “Vent de Colère” ruling of 28 May 2014, or of any other mechanism to support renewable energies. As a result of the Council of State’s opinion, the Paris administrative appeal court issued a decision of 23 February 2016 rejecting Praxair’s claims for reimbursement of the CSPE. In general, all applications for reimbursement of the CSPE based on the same grounds should be rejected.

In a decision of 15 April 2016, the Council of State ordered the French government to pay €10,000 per day in late penalties if it cannot provide proof within six months that it has taken the necessary steps to ensure that the decision of 28 May 2014 is implemented, by sending a statement of income corresponding to the interest calculated on the amounts of aid during the period to each producer that benefited from the support between the date of the decision of 17 November 2008 and the date of the Commission’s decision of 27 March 2014.

### **Appeal against the European Commission decision authorising the Contract for Difference**

Austria and a coalition of German and Austrian operators headed by Greenpeace and other actors (Ecotricity, a British electricity supplier, and Greenpeace Energy) filed an appeal on 6 and 15 July 2015 before the European Union General Court against the European Commission’s decision that authorised the Contract for Difference negotiated with the British government concerning Hinkley Point C.

## **9.2 PROCEEDINGS CONCERNING ENEDIS**

### **Legal action against the TURPE 3 and TURPE 4 tariffs**

In a decision of 28 November 2012, the French Council of State cancelled the TURPE 3 tariff decision of 5 May and 5 June 2009 setting the prices for the use of the distribution network for 2010-2013.

The grounds for cancellation concerned the method used to determine the “weighted average cost of capital” (WACC): the Council of State deemed this method “legally incorrect”, because it did not take into account *“the special concession accounts, which correspond to the grantors’ rights to recover the assets belonging to the concession at the end of the contract, free of charge (...) and the provisions for the renewal of long-term assets”*.

In response to the Council of State’s decision, the State set a “TURPE 3bis” tariff based on the proposal submitted by the CRE to retroactively cover the period commencing on 1 August 2009 and ending on 31 July 2013. The effective date for TURPE 4 was then put back to 1 January 2014 and a “TURPE 3ter” was established to cover the period commencing on 31 July 2013 and ending on 31 December 2013.

On 12 December 2013 the CRE adopted the TURPE 4 decision. The chosen method for calculating the return on capital reflected the consequences of the Council of State’s decision of 28 November 2012 referred to above. Schematically, this method splits the basis for the return into two parts: (i) a “Regulated equity” base comprising only assets financed by Enedis and excluding assets financed by the authorities granting the concession, to which a risk-free rate is applied, and (ii) a Regulated Assets base comprising all assets operated by Enedis, whether or not they were financed by Enedis, to which a margin on assets (or risk premium) is applied.

After the CRE’s decision of 12 December 2013 on the TURPE 4, energy company Direct Énergie lodged an appeal against this decision before the Council of State on 17 February 2014, arguing that this method was contrary to article 14 of regulation No. 714/2009 of the European Parliament and of the Council of 13 July 2009 on conditions for access to the network for cross-border exchanges in electricity, which was incorporated into article L.341-2 of the French energy code. This article states that “Charges applied by network operators shall reflect actual costs”. Direct Énergie also claimed that the method used generated excessive remuneration for Enedis since the risk premium applied to items that had not been financed by the distributor itself.

In its decision of 13 May 2016, the Council of State validated the method for calculating the return on capital used in TURPE 4, and rejected Direct Énergie’s petition for cancellation. It judged that the TURPE 4 method for calculation of the remuneration complied with the measures described above and did not cause any excess remuneration for Enedis since the CRE had deliberately taken into consideration the specific nature of concession assets when setting the tariffs. The Council of State also confirmed that a risk premium should apply to assets

financed by the concession grantors in view of (i) Enedis' obligation to return the assets in good working order and (ii) the fact that Enedis pays a fee.

## Direct Énergie

On 31 December 2015, Direct Énergie filed a suit against Enedis before the Paris Commercial Court regarding the compensation for management of customers who entered into a single contract with suppliers. An amicable settlement was reached in May 2016.

## 10 SUBSEQUENT EVENTS

### 10.1 HINKLEY POINT C: EDF'S BOARD OF DIRECTORS APPROVES THE FINAL INVESTMENT DECISION

At its meeting on 28 July 2016, EDF's Board of Directors made the final investment decision and gave the President the authorisation to ensure its full execution in the framework of the signature process of all the contracts and agreements necessary to build the two nuclear reactors at Hinkley Point C (HPC) in Somerset, in south-west England.

Following this decision, the conditions have been met to allow EDF to sign the contracts with the British Government, EDF's historic partner China General Nuclear Power Generation (CGN), and the main suppliers of the project.

The HPC Project is a major element of the Group's CAP 2030 strategy. The two EPR reactors at Hinkley Point will strengthen EDF's presence in Britain, a country where its subsidiary EDF Energy already operates 15 nuclear reactors and is the largest electricity supplier by volume.

HPC will also enable the Group to mobilise all its significant nuclear engineering skills following the final investment decision. The first concrete of reactor 1 of HPC, scheduled for mid-2019, will coincide with perfect continuity with the start-up of the EPR at Flamanville, scheduled for the end of 2018.

HPC is a unique asset for French and British industries as it will benefit the whole of the nuclear sectors in both countries and will support employment at major companies and smaller enterprises in the industry.

### 10.2 UPDATE ON STRATEGIC PARTNERSHIP BETWEEN EDF AND AREVA

On 28 July 2016, EDF and AREVA signed a memorandum of understanding that formalised the status of the progress of discussions concerning their contemplated partnership. This memorandum has three sections.

Firstly, this non binding memorandum deals with the contemplated acquisition by EDF of an exclusive control of a new company, NEW AREVA NP (NEW ANP), to be set-up, which will be transferred existing AREVA NP's assets and activities relating to the design and supply of nuclear reactor and equipment, fuel design and supply and the services to the nuclear installed base, to the exclusion, in particular, of the assets, liabilities and staff related to the achievement of the Olkiluoto 3 EPR project.

It provides for a majority control (at least 51% of shares and voting rights) of NEW ANP by EDF, a minimum stake of 15% and a maximum stake of 25% held by AREVA as part of a strategic partnership, and the potential participation of other minority partners up to 34%.

This project enables to better secure the most critical activities of the "*Grand carénage*" for the existing fleet in France, and to improve the efficiency of engineering services, project management, and some manufacturing activities through EDF's experience feedback.

Secondly, the memorandum aims also to set-up a dedicated company - 80% owned by EDF and 20% owned by AREVA NP (then by NEW ANP) - in charge of the design and construction of the nuclear island for new build projects, in France and abroad. Its creation is targeted on the first quarter of 2017, regardless of the acquisition of an exclusive control of NEW AREVA NP by EDF.

The objective pursued by the setting up of this company is to improve the preparation and management of projects as well as the export offering of the French industry on the Nuclear Island by developing offers that are more competitive and adapted to client needs, all while ensuring the continuation of partnerships with the major industrial companies in Japan and China. This company will form part of a generator/supplier model, which has been tried and tested in several countries.

Lastly, EDF and AREVA restate their intent to enter into a comprehensive strategic and industrial agreement, in order to, in particular, improve and develop the efficiency of their cooperation in areas such as Research and Development, international sales of new reactors, the storage of spent fuel, and dismantling.

The parties agreed on an indicative price (100% of equity value<sup>1</sup>) for NEW ANP of 2.5 billion euros<sup>2</sup> at the closing date. This amount is likely to be adjusted, firstly, upward or downward depending on the financial statements prepared on the date of completion of the transaction, and secondly, with a possible price earn-out of up to 325 million euros subject to the achievement of certain performance objectives measured after the closing date, proportionate to the participation acquired by EDF in NEW ANP. This price corresponds to a 2017 forecasted EBITDA multiple of 8x<sup>3</sup>.

The memorandum also provides that EDF, NEW ANP and their affiliates will be fully immunised against risks and costs related to the achievement of the Olkiluoto 3 project and will receive proper protection against the risks resulting from irregular findings in the manufacturing tracking records of equipment and components at Le Creusot and Saint Marcel and Jeumont, if any.

On the basis of a 51% to 75% stake held by EDF, all the financial terms enable the Group to preserve its financial trajectory.

A specific due diligence regarding the manufacturing process at Le Creusot is currently run, and a complementary due diligence phase will begin starting from August in order to enable EDF and AREVA to sign binding agreements before the end of November 2016.

Prior to signing binding agreements, the Group will proceed with the consultation of its employee representative bodies.

The negotiation of the participation of other potential partners will progress in parallel and the closing of the transaction is planned before the end of 2017, subject in particular to approval from the relevant merger control authorities.

### **10.3 COMPENSATION ASSOCIATED WITH THE CLOSURE OF THE FESSENHEIM NUCLEAR PLANT: INFORMATION TO THE BOARD OF DIRECTORS AND DETAILS ON THE COMPANY CALENDAR**

EDF's CEO, Jean-Bernard Lévy, has informed the Board of Directors of 28 July 2016 on the progress of discussions with the government about the draft compensation protocol associated with the closure of the Fessenheim nuclear power plant.

These discussions have already allowed to define the principles for compensation, which would be based on:

- a fixed initial portion corresponding to the anticipated costs associated with the closure of the plant and covering the costs of retraining staff, decommissioning, the INB tax (Installation Nucléaire de Base - basic nuclear facilities) and "post-operation" costs,
- a variable portion resulting, when appropriate, in subsequent payments to cover the shortfall for EDF. This shortfall would be determined according to market prices until 2041 and would take into account the actual volumes generated by the 900MW series nuclear plants operating during this period.

This information has also been communicated to EDF's Works Council on 28 July 2016, in addition to the information that it has already received. The information-consultation process involving staff representative bodies will be launched, within the statutory timescales, so that, during the Works Council meeting on 14 September, this information may be examined and allow the council to issue an opinion at the end of the procedure.

As a reminder, the closure of the Fessenheim plant results in a right to compensation, as the French Constitutional Council pointed out in its decision on 13 August 2015 when examining the constitutionality of the law on energy transition for green growth of 17 August 2015.

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*1 Scope of the transaction, after excluding operations not acquired.*

*2 "Non binding" figure with no transfer of liability related to Olkiluoto 3, nor financial debt at the closing date, and including proper protection against the risks resulting from irregular findings in the manufacturing tracking records of equipment and components at Le Creusot and Saint Marcel and Jeumont, if any. The figure will be subject to adjustment at closing.*

*3 Normalised EBITDA pro forma of the acquired scope, excluding large projects.*

## **10.4 EDF - CAISSE DES DÉPÔTS AND CNP ASSURANCES: EXCLUSIVE NEGOTIATIONS FOR A LONG-TERM PARTNERSHIP WITH RTE**

On 28 July 2016, EDF has announced that it has started exclusive negotiations with Caisse des Dépôts and CNP Assurances to form a long-term partnership for the development of RTE. This partnership with major public players in infrastructure funding in France will strengthen RTE's public service remit. Caisse des Dépôts and CNP Assurances would also take a 49.9% stake in RTE on the basis of an indicative value of €8.45 billion for 100% of RTE equity.

If this operation is confirmed, the relevant employee representative bodies will be informed and consulted prior to the final agreements being signed. The transaction could be close in the first half of 2017, once the necessary regulatory approvals have been obtained.

EDF, Caisse des Dépôts and CNP Assurances intend to use the partnership to support RTE's ambitious investment strategy for the efficiency of electricity transmission infrastructure. This will provide a boost to the energy transition, while strengthening RTE's public footing and long-term economic and social model. As a result of the deal, RTE would retain its current regulatory status as independent transmission system operator under the EU Directive.

This announcement reflects the statement expressed to RTE and EDF's CEO by the Minister of Finance and the Public Accounts and the Minister of Economy, Industry and Digital in their joint statement of 22 April, 2016.

## **10.5 FINALISATION OF THE ACQUISITION BY EDF OF STUDSVIK'S WASTE MANAGEMENT ACTIVITIES IN SWEDEN AND IN THE UNITED-KINGDOM**

On 28 July 2016, EDF finalised the acquisition of Studsvik's assets and facilities for waste treatment by metal recycling, incineration and pyrolysis situated at the Nyköping site in Sweden, as well as the Workington Metal Recycling Facility (MRF) in the UK.

The finalisation of this transaction is part of the agreement on nuclear plant decommissioning and radioactive waste management activities announced on 20 April 2016 by EDF and Studsvik.

It follows the lifting of conditions precedent, in particular the obtaining of all necessary authorisations and permits from the relevant authorities for the waste treatment activities in question.

The finalisation of the acquisition of Studsvik's radioactive waste treatment activity significantly increases EDF's industrial treatment capabilities and represents a major milestone for the Group's development in radioactive waste management and the decommissioning of nuclear plants.

## **10.6 THE FRENCH GOVERNMENT ANNOUNCES ITS CHOICE OF THE AZZURRA CONSORTIUM (ATLANTIA/AEROPORTI DI ROMA/EDF) AS PREFERRED BUYER**

On 28 July 2016, the French government announced that the consortium formed by the Italian group Atlantia and EDF Invest had been selected as the favoured buyer for the State's 60% stake in Aéroports de la Côte d'Azur, the company that manages the airports of Nice, Cannes-Mandelieu and Saint Tropez.

The buyer should be confirmed in the next few months, once the final terms of the operation have been approved.

The Group plans to allocate this investment to the Infrastructures pocket of EDF Invest, alongside other investments including shareholdings in TIGF, Porterbrook, Géosel and RTE.



## 11 FINANCIAL OUTLOOK

In line with its announcement on 19 July 2016, which takes into account the expected tariff adjustment and the revision of the nuclear output targets in line with the outage extensions now planned in order to conduct additional inspections, the Group maintains its financial objectives for 2016:

- **Group EBITDA:** €16.3 - 16.8 billion ;
- **Net financial debt/EBITDA ratio:** between 2x and 2.5x;
- **Pay-out ratio, based on net income excluding non-recurring items<sup>1</sup>:** 55% to 65%.

The ambition of a positive cash flow in 2018 after dividends, excluding Linky, new developments and asset disposals is maintained.

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*1. Net income excluding non-recurring items adjusted for remuneration from hybrid emissions recognized in equity.*

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