



2014

FACTS & FIGURES

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Detailed information regarding these uncertainties and potential risks are available in the reference document (Document de référence) of EDF filed with the Autorité des marchés financiers on 14 April 2015, which is available on the AMF's website at www.amf-france.org and on EDF's website at www.edf.com.

EDF does not undertake nor does it have any obligation to update forward-looking information contained in this presentation to reflect any unexpected events or circumstances arising after the date of this presentation.

Before starting...

WHAT'S NEW ?

- A focus on the various **capacity markets** in France, the UK, Italy and Poland in the “EDF group” section
- A focus on the **Electranova funds** in the “Research & Development” section
- A focus, in the “EDF main businesses” section on **commercial strategies of EDF in France, EDF Energy, Edison, EDF Luminus, EDF Polska and Dalkia**
- A special focus on Dalkia’s activities in the “Energy Services” part

Reading suggestions

- To help you understand the terms used, you will find a **glossary** at the end of the document
- Moreover, you will find throughout the document some “**Did you know?**” take-away boxes, which enlighten a specific concept
- Many other information are available in our Reference Document, which you can download under:
<http://shareholders-and-investors.edf.com/news-and-publications/publications/regulatory-information/reference-documents-45430.html>

Navigation suggestions

- To help you navigate through this document, **hypertext links** have been incorporated
- **A click on the EDF logo** will bring you back to the main table of contents (page 4)
- Within the document, a “title bar” indicates in which part of the document you are in.
A click on the arrow with the name of the part will bring you back to the beginning of this part



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2014

**FACTS
& FIGURES**

THE EDF GROUP

The EDF group

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Key success factors in 2014

A diversified mix making the Group the leader in low-carbon energy generation

- Record level of low-carbon energies in the electricity generation mix and reduction of carbon emissions to 102g/kWh at Group level and 17g/kWh in mainland France, reaching the lowest carbon emission level of the last 8 years
- 3% rise in nuclear output in France to 415.9TWh, thanks to a better management of planned outages: average duration of the extension of planned outages cut by half between 2013 and 2014

The industrial dimension at the core of the strategy

- Stronger ongoing efforts to control Opex at +0.9%⁽¹⁾ in 2014 vs. +1.1%⁽¹⁾⁽²⁾ in 2013
- Control over net investments, stable at €12bn in 2014
- Sustaining of a high level of skills

Ongoing efforts to strengthen the financial structure and roadmap to a positive Cash Flow after dividends in 2018

- Net financial debt/EBITDA ratio at 2x at the end of 2014 vs. 2.1x at the end of 2013, in the lower range of the Group's 2-2.5x target
- Roadmap to a positive Cash Flow in 2018: maximisation of the gross margin, WCR improvement plan of €1.8bn over 2015-2018, control over net investments

EDF group 2014 key figures

Operational figures

- **~38.5 million** customers accounts worldwide
- **136.2GW⁽¹⁾** worldwide installed capacity, of which
 - 72.9GW nuclear
 - 35.0GW thermoelectric
 - 28.3GW hydro and other new renewables
- **623.5TWh⁽²⁾** generated worldwide, of which
 - ~77% nuclear
 - ~7% thermal excluding gas
 - ~6% CCGT
 - ~10% hydro and other new renewables
- **~158,000** employees, o/w ~39,000 in French distribution, ~41,500 in French generation and engineering and ~14,700 in EDF Energy

Financials

- Sales: **€72.9bn**
- EBITDA: **€17.3bn**
- Net income excluding non-recurring items: **€4.9bn**
- Net financial debt: **€34.2bn**
- Ratings⁽³⁾: **A+ negative** (S&P) / **A1 negative** (Moody's) / **A+ negative** (Fitch) / **AA+ stable** (JCR)

Extra-financial ratings

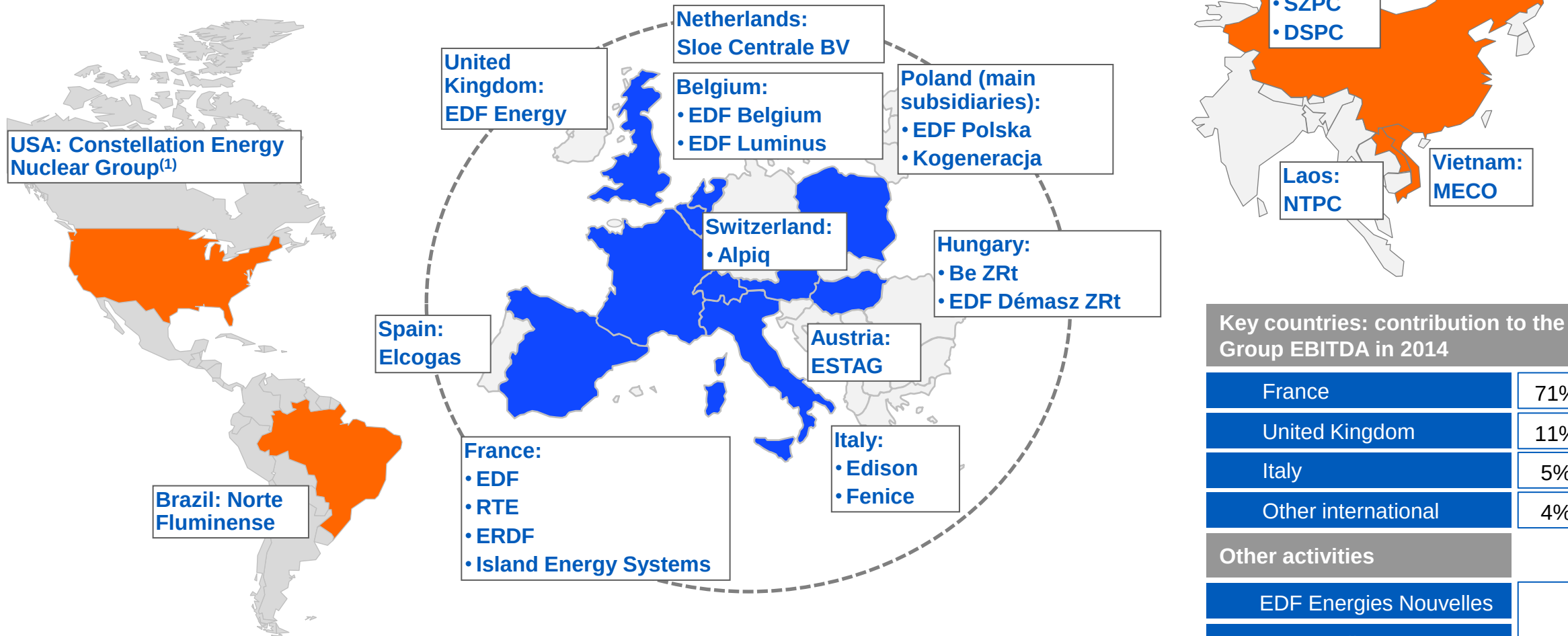
- **Vigeo**: overall score of **58/100** (vs. 55/100 in 2013)
- **Robeco Sam**: overall score of **79/100** (vs. 66/100 in 2013)
- **Carbon Disclosure Project**: score of **98/100 – B** (vs. 95/100 – B in 2013)

(1) Net capacity: Group's generation capacity on the basis of the consolidation accounting rules

(2) Consolidated data in accordance with IFRS accounting rules in effect in 2014 (CENG, SLOE Centrale and ESTAG are treated as joint ventures and therefore consolidated through the equity method from 1 January 2014)

(3) Last information on 07/05/2015

EDF global footprint



Key countries: contribution to the Group EBITDA in 2014

France	71%
United Kingdom	11%
Italy	5%
Other international	4%
Other activities	
EDF Energies Nouvelles	9%
EDF Trading	
Energy Services ⁽²⁾	
Other	

Presence across the whole electricity value chain

		Electric capacity ⁽¹⁾	Transmission	Distribution	Supply (# of costumers electricity and gas)
		Networks			
Other international	France (excl. Island Energy Systems)	EDF SA: 96.8GW	RTE ⁽²⁾ (100%): more than 100,000km	ERDF (100%): ~1.3mkm	EDF SA: ~27.2m
	United Kingdom	EDF Energy: 14.4GW			EDF Energy: ~5.9m
	Italy	Edison: 7.3GW Fenice: 0.4GW			Edison: ~1.2m
	Belgium	EDF Luminus: 1.95GW EDF Belgium: 0.5GW			EDF Luminus: ~1.7m
	Other	Other: 5.7GW (o/w Poland, Hungary, Brazil)		Démász (100%): 32,200km	Démász: ~740,000
	Other activities	Other activities: 7.1GW o/w EDF EN: 5.1GW		Electricité de Strasbourg: 14,000km	
Supporting activities					
Trading: EDF Trading Energy services: Dalkia, Fenice					

EDF group's major challenges

- Making the new nuclear strategy successful
- Preserving the Group's financial balance
- Retaining customers
- Playing a major role in the energy transition
- Laying out a consistent and ambitious international strategy

Major challenges: making the new nuclear strategy successful

- Commissioning EPRs currently under construction:
 - Flamanville
 - Taishan
- Finalising negotiations on Hinkley Point C
- Reinforcing the Areva-EDF partnership
- Consolidating and expand our partnerships in China
- Optimising the range of reactors:
 - EPR
 - New models

Major challenges: preserving the Group's financial balance

- France: addressing the need for a tariff trajectory covering the Group's costs
 - Tariffs
 - Coverage of nuclear full cost (ARENH)
 - CSPE
- Sticking with the Group's efforts to control costs
- Making more selective investment choices
- Managing cash better



Ambition: positive cash flow after dividends⁽¹⁾ in 2018

Major challenges: retaining clients

- In France:
 - End of the yellow and green tariffs: being ready to respond to business and local government customers
- In Europe:
 - Commercial expansion in the Group's key countries: the UK, Italy, Poland, Belgium
- In energy services:
 - Supplying our customers with a wider range of offers, thanks to Dalkia
 - Innovating in our service offers

Major challenges: playing a major role in the energy transition

- In renewables
 - Raising our market share by tapping into our technical skills
- Locally
 - Developing decentralised production, through Dalkia's know-how
- Putting the R&D at the service of innovation in the energy transition

Major challenges: laying out a consistent and ambitious international strategy

- Setting up the new international division:
 - Economic and strategic consistency
 - Selectivity
- Capex aligned with the Group's strategic challenges:
 - Consolidating our positions in countries where we already have a big footprint
 - Strong development potential in emerging markets

➤ Competitive edges: our engineering skills and our service offers

EDF since 1946

Structural changes in the EDF group

Nationalisation of the electricity and gas sectors
Creation of EDF as an EPIC by the Law of 8 April 1946

Opening of the French market, first for B2B (2000 to 2004), then for B2C from 2007 onwards

On 20 November 2004, EDF becomes a French SA

IPO in 2005 and creation of RTE to guarantee non-discriminatory access to the market

1946 // 1963 // 1990 // 1999 // 2004 2005 // 2009 2010 2011 2012 // 2014

Development in France

Launch of the commercial-scale nuclear program

Development of the French industrial base, including hydro and nuclear facilities

March 2014: acquisition by EDF of Dalkia's activities in France

International development

Acquisition of British Energy

Disposal of EnBW and of the UK networks

Buy-out of EDF Energies Nouvelles

Edison's takeover

Start of the international development, first in South America, then in Europe with the UK (from 1998 onwards), Germany (2001) and Italy (2005)

April 2014: delegation to Exelon of the operational management of the nuclear reactors owned by CENG

Remaining a benchmark employer (1/2)

Being an industrial Group with a strong technological expertise, long-term activities and missions of general interest, EDF is keen to invest in a lasting way into the competencies and the performance of its staff

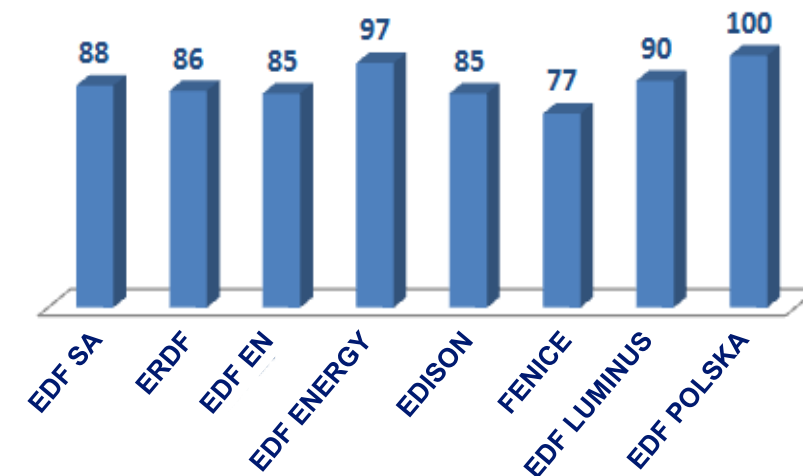
Men and woman play a key role in the Group's performance: focus on training

- A landmark investment to provide to all employees of the Group professionalization programs and in order to ensure the transmission of necessary skills for the industrial Group project: 85% of employees in the Group attended at least one training session in 2014 (average of 66h of training received per employee trained)
- 9% of the payroll was allocated to training (€685m)

Being a benchmark employer in terms of employee commitment and social performance

- A pioneer Group-level agreement "Corporate Social Responsibility" (signed in 2004)
- 11 Group Corporate Responsibility commitments adopted in June 2013 o/w 3 are related to the employer's responsibility:
 - Maintaining the professional excellence and teams' performance through training and diversity promotion, with 2 objectives: a proportion of women of 30% by 2015 in the future executive management category, and over 75% of Group employees receiving at least one training session every year
 - Strongly reducing industrial accidents among employees and subcontractors by halving the lost-time accident frequency rate within five years
 - Refusing any violation of human rights, fraud or corruption in any of its subsidiaries or among suppliers

85% of the employees attended at least one training session during the year



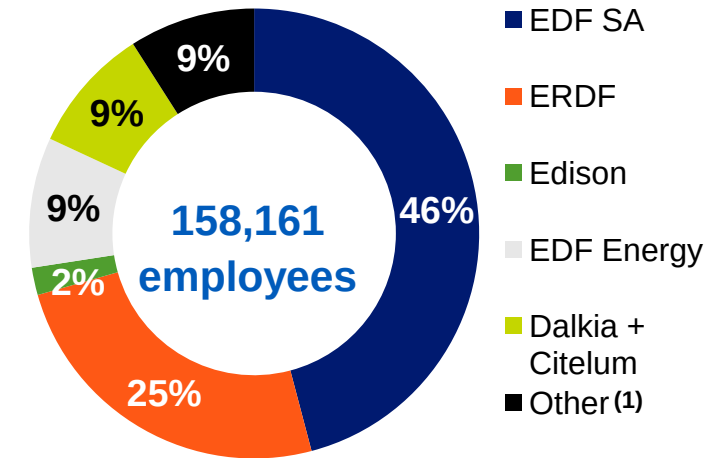
Remaining a benchmark employer (2/2)

Having both a local footprint and an international profile

- 158,161 employees in the Group of which 41,579 women (26%)
- Retirements that remain at a high level (around 3% in 2014), in particular in the maintenance and operation staff of the generation, engineering and distribution divisions
- An adapted recruitment rate to address those challenges: in 2014, more than 10,000 people were recruited, almost half of which at EDF SA and ERDF
- EDF remains the benchmark employer on technical profiles
 - 6th place at the Universum engineer rating in 2015 and 1st place at the Universum Alumni rating in 2015
 - 3rd place at the Trendence engineer rating in 2014
 - 1st employer of the Randstad Awards 2015 (in the “building, energy and environment” sector) for the 6th consecutive year
- Development of the employer brand’s international scope
- Around 6,000 work-study trainees at Group level in 2014

Managing change smoothly and accountably

- Development of managerial training by the Group’s Management University (UGM)
 - Broadening of the access to the e-learning platform: 20,186 employees entitled (o/w the 14,000 Group’s managers) and 13,000 training hours in 2014 (+31% vs. 2013)
 - Training of 1,718 managers in 2014 through 45 courses. New training sessions have been developed with the Asia Pacific Unit and Edison
 - Training of 250 directors and 400 Group’s talents in 2014
- Internal opinion survey “My EDF”: 73% of employees answered for the third edition of 2014 (up sharply vs. 64.3% in 2013)
 - 81% of employees trust in the Group’s future
 - 85% of employees claim to be proud to work for their division within EDF



Did you know?

In France, one-third of employees are in distribution and one-third in generation and engineering

(1) EDF Trading, Électricité de Strasbourg, Tiru, EDF EN, SOCODEI, CHAM, EDF PEI and other international subsidiaries

Impact on EDF governance of the executive order of 20 August 2014 on companies with public shareholders

- Impact on Board membership
 - No longer any requirement to have an 18-member Board
 - Ratio of one third employee-elected representatives maintained
 - A representative of the French state chosen from among the civil servants
 - The French state's option to nominate one or more directors (not necessarily civil servants) for approval by the shareholders at the General Meeting
- Continued option for the French state to appoint a government commissioner
- Five-year director terms are no longer mandatory
 - The Shareholders' Meeting held on 21 November 2014 modified the Company's articles of association and reduced the term of office of the Directors to 4 years. As an exception, the articles of association state that the first term of office of the Directors representing the employees that came into effect after the Shareholders' Meeting held on 21 November 2014 shall be 5 years and that the term of office of the other appointed Directors shall expire at the end of the Shareholders' Meeting called to approve the financial statements for the fiscal year ending 31 December 2018

Composition of the Board of Directors and of its committees at the end of 2014

The Shareholders' Meeting held on 21 November 2014 modified the Company's articles of association in order to implement the new provisions of Order no. 2014-948 of 20 August 2014 relating to governance and trading in shares of state-owned companies and appointed the composition of the Board of Directors.

Audit Committee

- Chaired by a Director appointed by the Shareholders' meeting
- 3 other Directors appointed by the Shareholders' meeting⁽¹⁾
- 4 Directors appointed by the employees

Board of Directors

- 11 Directors appointed by the Shareholders' meeting (o/w 5 on recommendation from the French State)
- 6 Directors elected by the employees
- 1 Representative of the French State
- 1/3 of independent Directors

Ethics Committee

- Chaired by an independent Director appointed by the Shareholders' Meeting
- 2 other Directors appointed by the Shareholders' Meeting
- 3 Directors appointed by the employees

Nuclear Commitments Monitoring Committee

- Chaired by an independent Director appointed by the Shareholders' Meeting⁽²⁾
- 2 other Directors appointed by the Shareholders' Meeting
- 2 Directors appointed by the employees

Appointments and Remunerations Committee

- Chaired by an independent Director appointed by the Shareholders' Meeting⁽²⁾
- 1 other independent Director appointed by the Shareholders' Meeting
- 1 Representative of the French State
- 1 Director appointed by the employees

Strategy Committee

- Chaired by the Chairman and Chief Executive Officer of the Group
- 3 other Directors appointed by the Shareholders' Meeting
- 1 Representative of the French State
- 4 Directors appointed by the employees

Board of Directors members as of 31 December 2014

Directors appointed or reappointed at the General Meeting of 21 November 2014

- Jean-Bernard LEVY
- Philippe CROUZET
- Bruno LAFONT
- Colette LEWINER
- Laurence PARISOT
- Philippe VARIN
- Olivier APPERT, appointed on recommendation from the French State
- Bruno LECHEVIN, appointed on recommendation from the French State
- Marie-Christine LEPETIT, appointed on recommendation from the French State
- Gérard MAGNIN, appointed on recommendation from the French State
- Christian MASSET, appointed on recommendation from the French State

Director representing the French State

- Régis TURRINI

Directors elected by employees

- Christine CHABAUTY
- Jacky CHORIN
- Marie-Hélène MEYLING
- Jean-Paul RIGNAC
- Christian TAXIL
- Maxime VILLOTA

EDF group Executive Committee (1/3)



Jean-Bernard LEVY
Chairman and CEO

A graduate of the “Ecole Polytechnique” engineering school and Télécom Paris Tech, Jean-Bernard Lévy has been appointed Chairman and CEO of EDF since November 2014. He began his career in 1979 with France Telecom. In 2002 he joined Vivendi as Chief Operating Officer, where he was appointed CEO from 2005 to June 2012. Before joining EDF, he was, from December 2012 to November 2014, Chairman and Chief Executive Officer of Thales, a leading electronics and systems industrial group. He is also officer of the “Légion d’honneur” and of the “Ordre National du Mérite”.



Marianne LAIGNEAU
Group Senior Executive
Vice President in charge of
Human Resources

A graduate of the “Ecole Normale Supérieure de Sèvres”, the “Ecole Nationale d’Administration” (Condorcet Promotion) and the “Institut d’Etudes Politiques” in Paris, she also holds an advanced teaching degree in Classics and a Masters Degree in French Literature. She joined the Council of State in 1992 and became Counselor in 2007. In December 2010, she was appointed Group Senior Executive Vice President for Human Resources, after having been Corporate Secretary from June 2007 to December 2009 and General Counsel from January 2005 to December 2009. She is also officer of the “Légion d’honneur” and of the “Ordre National du Mérite”.



Antoine CAHUZAC
Group Senior Executive
Vice President in charge of
Renewable Energies

A graduate of the “Ecole Polytechnique” engineering school and of the “Ecole de la Météorologie Nationale”, Antoine Cahuzac is Group Executive Director in charge of Renewable Energies and member of the EDF Executive Committee since 2015 and CEO of EDF Energies Nouvelles since 2012. After a first experience in EDF’s Studies and Research department in 1982, he then held various positions at French Ministry of Transport, Crédit Commercial de France (CCF), Vinci and HSBC. He is also member of the boards of EDF Luminus and EDF Trading.



Henri LAFONTAINE
Group Senior Executive
Vice President in charge of
Customers, Services and
Regional Action

A graduate from Supélec, mathematical master degree, Henri Lafontaine joined EDF in 1983 where he occupied various positions at the Distribution Division in France as well as abroad as CEO of EDENOR. Since July 2013, he has been Group Senior Executive Vice President in charge of Supply, Optimization and Trading as well as Island Energy Systems. Since 2015 he has been Group Senior Executive Vice President in charge of Customers, Services and Regional Action. He supervises Dalkia, Tiru and Citelum. He is also in charge of the operational management of the Supply Division. Chairman and CEO of Citelum, he is also part of the Board of Directors of Dalkia, EDF Energy, Fenice, EDF International and EDF Fondation.

EDF group Executive Committee (2/3)



Bruno LESCOEUR
Group Senior Executive
Vice President in charge of
Gas and Italy

A graduate in Engineering ("Ecole Polytechnique"), in Economics ("ENSAE") and in Political Science ("Institut d'Etudes Politiques"), Bruno Lescoeur started his career at EDF in 1978 as responsible for tariffs issues. Appointed in 1993 Deputy Finance Officer, then Chairman and CEO of London Electricity (now EDF Energy) in 1998, he became in 2002 EDF Director of Generation and Engineering, then Member of the EDF's Executive Committee, in charge of international and later of gas. Since 2015, he has been appointed Group Senior Executive Vice President, in charge of Gas and Italy. He is CEO of Edison since 2011 and supervises also Fenice and Dunkirk LNG. He is "Chevalier de la Legion d'Honneur".



Dominique MINIERE
Group Senior Executive
Vice President in charge of
Nuclear and Thermal
Power Plants Division

A graduate of the Paris "Ecole des Mines", Dominique Minière joined EDF in 1982 as a maintenance engineer, covering positions of responsibility in the department for both the thermal and nuclear French fleets. He took part to the commissioning of the Golfech nuclear power plant in France from 1986 to 1989 and the Daya-Bay nuclear power plant in China, from 1993 to 1997. In 1999, he was Station Director for the Cattenom nuclear power plant. From 2002 to 2013, he was Deputy Director and then Director of the Nuclear Production Division. In March 2013 he was appointed Deputy Director of the Generation Division. Since January 2015 he has been Group Senior Executive Vice President in charge of Nuclear and Thermal Power Plants Division. He is "Chevalier de la Legion d'Honneur".



Thomas PIQUEMAL
Group Senior Executive
Vice President in charge of
Finance

A graduate of ESSEC business school, Thomas Piquemal joined the EDF group in December 2009 as Group Senior Executive Vice President, in charge of Finance. He is part of the Group's Executive Committee. He also supervises the following departments: Purchases, Real Estate and IT. After holding several positions at the investment bank Lazard Frères, he became in January 2009 Senior Executive Vice President in charge of Finance of Veolia Environment and joined the Group's Executive Committee. In 2008, Thomas Piquemal co-founded the "Académie Christophe Tiozzo", whose mission is to promote the social and professional integration of young people from deprived areas.



Vincent de RIVAZ
Group Senior Executive,
Vice President, Chief
Executive Officer of EDF
Energy

A graduate of the "Ecole Nationale Supérieure d'Hydraulique de Grenoble", Vincent de Rivaz has held various positions within the Group, notably in International Development, Hydro Power and Finance. Chairman and CEO of EDF Energy, he has been supervisor of EDF's activities in the United Kingdom since 2002. He is "Chevalier de la Legion d'Honneur" and was made an honorary Commander of the British Empire (CBE) in 2012, by Her Majesty the Queen, for services to the electricity and gas industries.

EDF group Executive Committee (3/3)



Simone ROSSI
Group Senior Executive
Vice President in charge of
the International Division

A graduate in Business Administration at Bocconi University (Milan), Simone Rossi started his career in Management Consulting with KPMG Corporate Finance then joined McKinsey & Company, where he served various financial institutions, industrial and energy clients. In 2004 he joined Edison SpA as Head of Strategy before becoming Head of Controlling and IT in 2007. In November 2009 he moved to Constellation Energy Nuclear Group (CENG) as Chief Financial Officer, then became CFO of EDF Energy in 2011. In March 2015, he joined EDF as Group Senior Executive Vice Président in charge of the International Division. He primarily supervises EDF Polska, EDF Luminus, Bert, EDF Demasz, EDF Inc., EDF Norte Fluminense, Meco, Nam Theun Power Co, Sloe Centrale and Alpiq.



Pierre TODOROV
Group Senior Executive
Vice President, Group
General Secretary

A graduate of the “Ecole Normale Supérieure” and the “Ecole Nationale d’Administration” and holder of an advanced teaching degree in philosophy, Pierre Todorov began his career at the Council of State in 1986 before joining the Lagardère group in 1990, where he held various executive level positions. From 1997 to 2008, he was the Accor Group’s General Secretary. He then became partner at Hogan Lovells. In 2011 he joined PSA Peugeot Citroën, where he was the General Secretary until September 2014. In 2015 he has been appointed Group Senior Executive Vice President and Group General Secretary.



Philippe TORRION
Group Senior Executive
Vice President in charge of
Innovation, Strategy and
Planning

A graduate of the “Ecole Polytechnique” engineering school and the “Ecole Nationale Supérieure des Mines”, Philippe Torrion joined EDF in 1977. After holding various positions he was appointed as head of Corporate Strategy Division in 1999 then, 2 years later, he became responsible for EDF regional action and regional representative in Provence Alpes Côte d’Azur. In 2005, he was appointed CEO of EDF Trading, and in 2008 as head of Optimisation & Trading. Since 2015 he has been Group Senior Executive Vice President, in charge of Innovation, Strategy and Planning. He is also Chairman of EDF Trading.

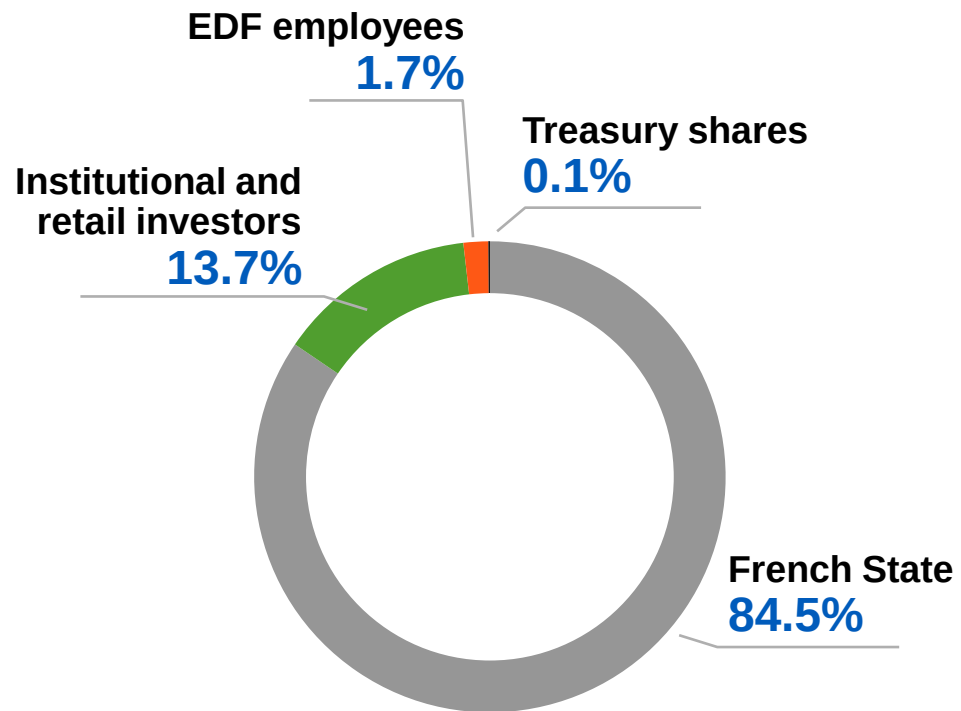


Xavier URSAT
Group Senior Executive
Vice President in charge of
New Nuclear Projects and
Engineering

A graduate of the “Ecole Polytechnique” engineering school and “Télécom Paris”, Xavier Ursat joined EDF in 1991. After holding various positions in the hydraulic engineering department, he became Director of the Southwest Production Unit in Toulouse in 2007. Since June 2010 he has been Executive Vice Director and then Director of EDF’s Hydraulic Production and Engineering Division. In 2015 he was appointed Group Senior Executive Vice President in charge of New Nuclear Projects and Engineering. Member of the Board of Directors of ONEMA and the National Water Committee, he is also Member of the World Water Council and member of the Board of Directors of EDF Energies Nouvelles and Norte Fluminense. He also supervises SOFINEL.

EDF: a listed company with the French State as major shareholder (1/2)

Shareholders as of 31 December 2014



By law, the French State must hold at least 70% of EDF's share capital

Share information as of 31/12/2014

	Shares
Number of shares	1,860,008,468
Number of shares outstanding	1,858,326,287
Number of treasury shares	1,682,181
French security identification no. (ISIN Code)	FR0010242511
Main index	CAC 40, Euro Stoxx Utilities, Dow Jones Euro Stoxx 50, Euronext 100, FTSE Eurofirst
Listing	Paris (Reuters: EDF.PA, Bloomberg: EDF FP)

- Pursuant to article L 225-123 of the French Commercial Code, as amended by the Act no. 2014-384 of 29/03/2014, the so-called "**Loi Florange**", all fully paid-up shares that have been held in registered form for at least two years in the name of the same shareholder will automatically entitle their holder to double voting right
- These provisions will take effect on 3 April 2016. Until 2 April 2016, each shareholder is granted a number of voting rights equivalent to the number of shares that he owns, following the principle 1 share = 1 voting right
- EDF's Board of Directors decided not to propose to the General Meeting to amend the Company's articles of association so as to prevent the implementation of such double voting right in accordance with article L. 225-123 of the French Commercial Code

EDF: a listed company with the French State as major shareholder (2/2)

EDF as a state-owned company: legal and contractual framework

- EDF's chairman and CEO is appointed by decree of the President of France on recommendation of the Board of Directors
- In accordance with article 13 of the French Constitution, the chairman and CEO is appointed based on the candidates' interviews and the opinion of the relevant permanent committees of the French National Assembly and Senate
- Since the Shareholders' Meeting of November 2014, the Board of Directors can be composed of 3 to 18 members, including members appointed by the Shareholders' Meeting⁽¹⁾, a State representative⁽²⁾, and one-third of employees' representative elected in accordance with the provision of the Act of 26 July 1983
- Any decision related to financials, investments, acquisitions and disposals, or related to the compensation of corporate officers must be approved by the French State (decree of 9 August 1953)
- The company faces numerous financial controls by different authorities: State Inspector, *Cour des Comptes* (Government Audit Body), Finance Inspection
- The French State Shareholdings Agency (APE) represents the State as a shareholder
- The main contractual agreements are reviewed by the specific Market Commission whose role is to ensure the regularity of award conditions; its opinions are advisory

EDF as a listed company: corporate governance

- EDF has to abide by listed companies laws and specific standards of a public sector entity
- Internal rules of its Board of Directors are similar to those of other listed companies
- In accordance with the law no. 2011-103 of 27 January 2011 relative to the balanced representation of women and men on Boards of Directors and Supervisory Boards and to professional equality, the Board of Directors of EDF has 5 female members, i.e. a proportion of 27.8% of women on the Board as a whole. If Board members are accounted for in accordance with the AFEP-MEDEF code, that proportion is of 25% (excluding directors that represent the employees)
- EDF adheres to the consolidated AFEP- MEDEF Code (revised in June 2013) which is the corporate governance code to which the company refers, in accordance with the French commercial code, subject to the specific laws and regulations applicable to EDF:
 - The Ethics Committee reports annually on the functioning of the Board of Directors and proposes areas for improvement. Furthermore, every 3 years, this evaluation is conducted by a specialist external consultant under the supervision of the ethics committee
 - The Board has created five dedicated committees to review and prepare certain projects before their submission to the Board of Directors
- EDF is compliant with internal control procedures COSO⁽³⁾
- EDF publishes an annual report on sustainable development

EDF's interaction with the French State Shareholding Agency (APE)

- The French State Shareholding Agency (APE) is a national department jointly controlled by the Minister for Economy, Industry, and Digital and the Minister for Finance and Public accounts. It performs the function of the State shareholder by safeguarding the State's patrimonial interests and the management of its investments. As such, it proposes and implements the decisions and policies of the French State with the related ministries
- Its main objectives consist of:
 - Reviewing the appropriateness and financial health of the company
 - Representing the French Government as a shareholder
 - Facilitate relationship between the company and the French Government
- As a result, the APE has expressed the following requirements to public sector enterprises. They have to:
 - Designate points of contact for the APE
 - Prepare a scorecard reporting for the APE on the main financial and qualitative data
 - Organize regular meetings, at least once a year to present the company strategy and financial performance
 - Inform the APE of any investment operation, or any specific audit mission

Other regulatory bodies with an impact on EDF's activities

- **The ASN (French Nuclear Safety Authority) is in charge of controlling the safety of nuclear facilities in France. As such, the ASN mainly:**
 - Carries out on-site regulatory inspections, randomly or scheduled (approx. 400 per year)
 - Controls the process for the 10-year safety reviews, a necessary step in extending the life of power plants
 - Prescribes post-Fukushima additional safety assessments

- **The CRE (French Energy Regulatory Commission) ensures the proper functioning of the electricity and gas markets for the end-customers in compliance with the energy policy. The regulation fields include:**
 - Energy networks
 - Access to regulated networks and their operation and development
 - Independence of network operators
 - Energy markets
 - Monitor deals on energy and CO₂ markets
 - Monitor retail markets (for instance, making proposals for regulated tariffs' evolution)

Other control procedures involving EDF

- EDF can be subject to State audit procedures, in particular through economic and financial evaluation assessment and through checks by the General Finance Inspection Office (*Inspection Générale des Finances*)
- The company's accounts and management, and where applicable, those of its directly-held majority subsidiaries are under the control of the "*Cour des Comptes*⁽¹⁾"
 - Report on working hours in the Group's main entities
 - Report on remuneration at EDF
 - Report on the renewal of hydropower concessions
 - Report on electricity distribution concessions
- EDF also has to undergo the audit procedures performed by the Parliament

France – country profile

Key points

- EDF is active on the whole electricity value chain, from generation to sales and optimisation/trading. The activities can be split into:
 - **Unregulated activities:** generation and supply, optimisation, and trading
 - **Regulated activities,** with **RTE⁽¹⁾** (transmission) and **ERDF** (distribution). EDF's activities in Corsica and the French overseas departments and municipalities are managed by the **Island Energy Services** (SEI) and are regulated
- EDF owns the largest nuclear fleet worldwide, o/w 58 operating plants in France
- RTE⁽¹⁾ and ERDF are 100% subsidiaries of EDF but are operationally independent (legal unbundling) as requested by the EU legislation
- EDF also plays a holding role through the 100% control of EDF International (which controls the greater part of EDF stakes in international subsidiaries) as well as interests in various companies, including:
 - **EDEV** (o/w EDF EN, LNG Dunkerque, Electricité de Strasbourg, Citelum, etc.)
 - **Dalkia** (energy services provider)
 - **EDF Trading** (market operator for the Group)

Installed capacity and output in 2014

CAPACITY	MW	%
Nuclear	63,130	65
Hydro ⁽²⁾	19,947	21
Fossil-fuel fired ⁽³⁾	13,695	14
Total⁽⁴⁾	96,772	100

(2) Excl. Corsica and the French overseas departments (i.e. 440MW in 2014)

(3) Excl. Corsica and the French overseas departments (i.e. 1,013MW in 2014 and including 2,490MW for units under guaranteed multi-year outage)

(4) Excl. wind capacities of 12MW

OUTPUT	TWh	%
Nuclear	415.9	90.4
Hydro ⁽⁵⁾	37.5	8.1
Thermal ⁽⁶⁾	6.9	1.5
Total	460.4	100

(5) Net pumped output, excluding Corsica and the French overseas departments (i.e. 1.3TWh in 2014)

(6) Excl. Corsica and the overseas departments (i.e. 2.4TWh in 2014)

EBITDA 2014

€bn	EBITDA (2014)
Unregulated	7.9
Regulated	4.3

(1) RTE is consolidated under the equity method

Market development in France

French market deregulation chronology

Nationalisation of the electricity and gas sector pursuant to the Law of 8 April 1946

Opening of the French market, first for B2B (2000 to 2004), then for B2C from 2007 onwards

28 October 2014: publication of the decree that defines the new tariff construction method by costs stacking (ARENH price, cost of supply of the complementary purchases, on wholesale power markets, electricity networks and commercial costs, plus a normal rate of return)

1st November 2014: average rise in tariffs by costs stacking of +2.3% in 2014

1st January 2016: end of yellow and green regulated tariffs

1946

1999

2011

2012

2013

2014

2015

2016

Implementation of the NOME law of 7 December 2010 to foster competition on the French market

For a transitory expected period of 3 years, the ARENH price is set up by Ministerial order, after a CRE consultation

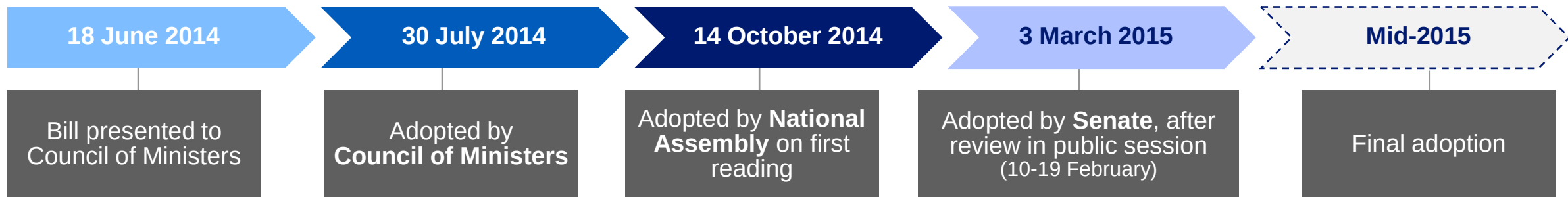
1 July 2011: NOME law entered into force guarantying to EDF's competitors, for a 15-year transitory period, a regulated and limited access to EDF's historical nuclear generation capacity (ARENH) to supply their end customers located in France. The available global energy volume cannot exceed 100TWh⁽¹⁾ per year

At 1st January 2012, ARENH price has been set at €42/MWh

After the issuance of the decree setting the cost based accounting methodology, fixing of the ARENH price following the CRE proposal, by Ministerial order who will only have an opposition right

19 July 2014: The CRE, the French Competition Authority and the CSE examined the draft decree specifying the evaluation method for the ARENH formula. It is currently under examination at the European Commission

“Energy transition for green growth” bill



- After the failure of the joint representative committee ("Commission Mixte Paritaire") on 10 March, the National Assembly is discussing the text again. The text will then go to the Senate. Afterwards, the National Assembly will definitively adopt it (it has the last say). **The Special Committee of the National Assembly** completed its review on 16 April. **It returned to the text adopted on the first reading of the National Assembly.** It thus:
 - Reinstated the 2025 date, and eliminated the criteria (security of supply, price competitiveness, absence of the rise in GHGs) that the senators had introduced regarding the nuclear power decrease from 75% to 50% of electricity output
 - Returned to the cap on the total nuclear output capacity to 63.2GW (instead of the 64.85GW that the Senate had adopted)
 - Returned to the initial wording regarding the decrease in final energy consumption (-50% in 2050 compared to 2012, with an intermediate target of -20% in 2030)
- **The following objectives remain the same** throughout the various readings:
 - Reduce GHG emissions by 40% vs. the 1990 level by 2030, and by 75% by 2050
 - Reduce primary energy consumption of fossil fuels by 30% by 2030, compared to 2012
 - Upgrade the entire housing stock to "Bâtiments Basse Consommation" (energy efficient building) standards by 2050
 - Increase the percentage of renewable energy in final consumption to 32% by 2030 (one target per technology, o/w 40% for electricity generation)

Energy Saving Certificates system (CEE) (1/2)

Implemented in 2006, reworked on 1 January 2015

- Response to new requirements of the European Directive on energy efficiency
- Included in the energy transition law

Enhanced targets, new ambitions

- A national obligation for the third period between 2015 and 2017 is set at 700TWhc
 - Doubled vs. the second period
- Contribution to the energy renovation target of 500,000 homes per year from 2017, in addition to other financial incentives

Involved parties

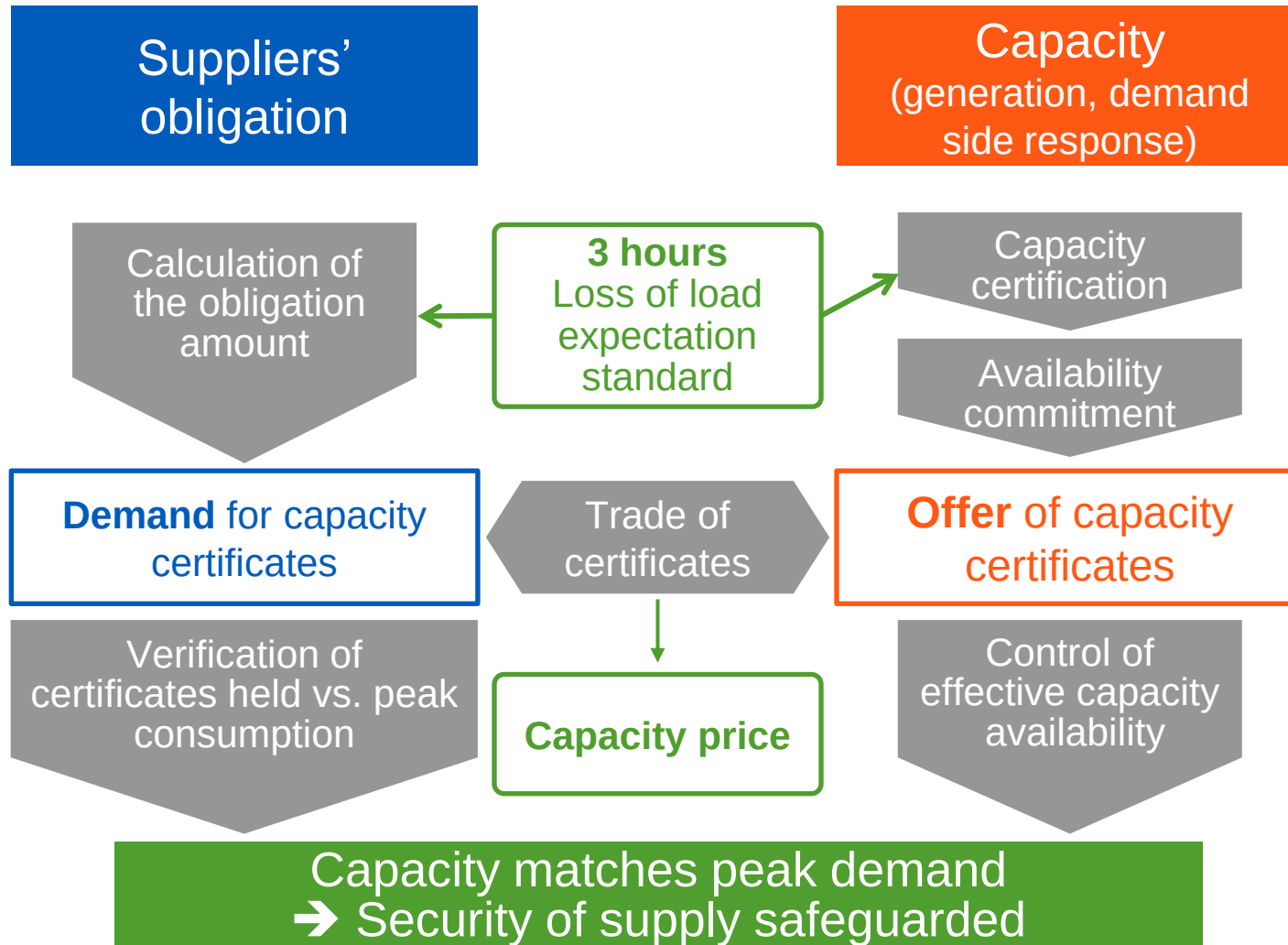
- An obligation to achieve energy savings for customers imposed on **energy suppliers**, called “**obligé**” (obligated ones)
 - Electricity, gas, heating, refrigeration, domestic fuel and automotive fuel
- Actively promote energy efficiency among their customers
 - Households, local authorities, business and professionals

One channel of energy efficiency policy in France

Energy Savings Certificates (2/2)

- EDF is the main “*obligé*” since the start of the Energy Savings Certificates, accounting for one quarter of the total volume
- To meet its obligation, EDF operates in several areas:
 - **Financial incentives for home energy renovations**
 - 165,000 in ordinary housing in 2014, and a total of 1.6 million renovations since 2006
 - 168,000 in low-income housing in 2014, and a total of almost 1 million renovations since 2006
 - **Help in controlling energy consumption**
 - For its corporate and local government customers
 - 14,300 initiatives to enhance energy performance in 2014, and a total of 51,500 initiatives since 2006
 - **Funding of nationwide programs**
 - *Habiter Mieux* (ANAH national housing agency)
 - Professional training (FEEBAT energy savings training centre)...

Capacity mechanism in France



Overseen by the French state

- Defining rules on RTE's proposal and based on the CRE's opinion
- Defining the secure supply criterion

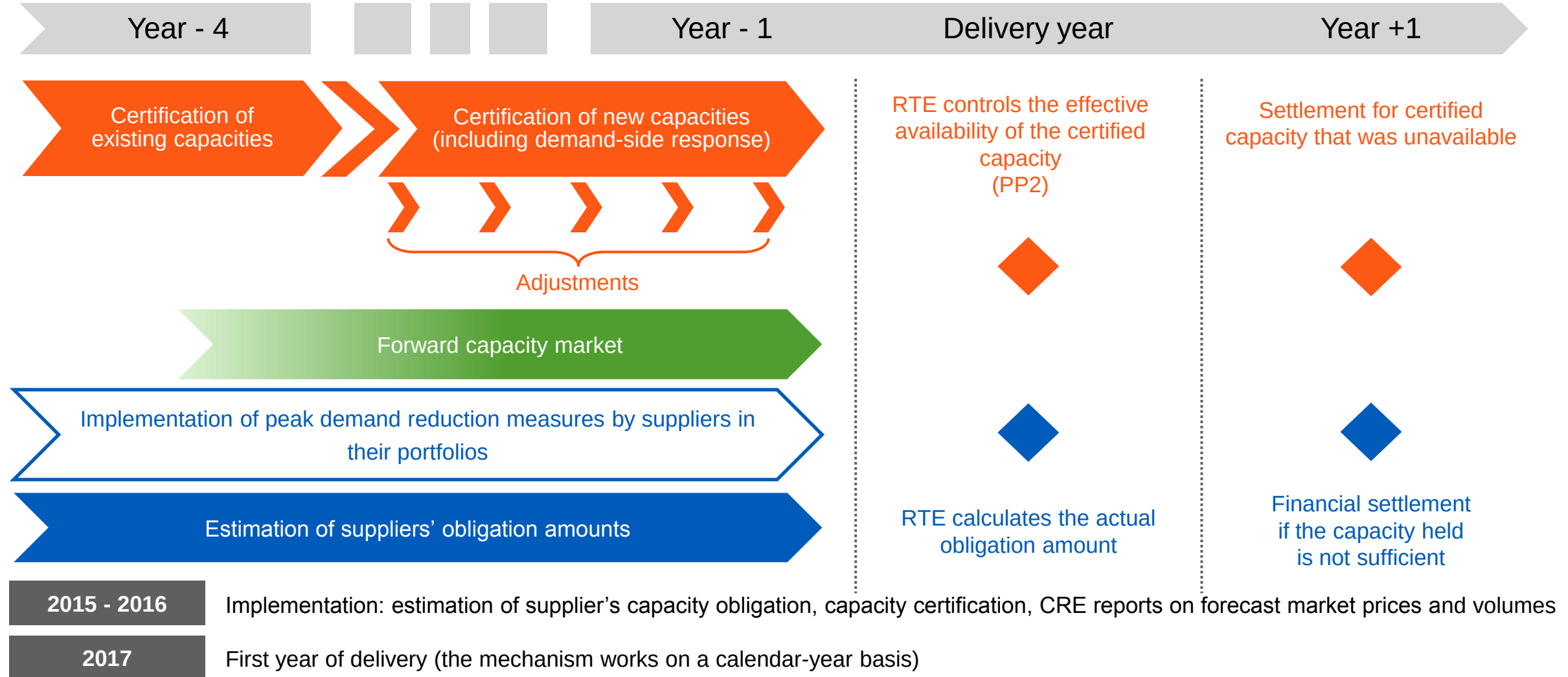
Operated by RTE

- Definition of calculation methods and identifying peaks
- Ex-post calculation of each supplier's obligations
- Certification of capacities/inspections

Monitored by CRE

- Market surveillance
- Review of the mechanism and proposals for improvements

Capacity mechanism in France/ calendar



United Kingdom – country profile

Key points

- **Main entity:** EDF Energy, one of the UK's largest energy companies and the largest producer of low-carbon electricity. Three business units:
 1. **Customers:** managing energy supply and customer service activities for residential and business customers
 2. **Generation:** 15 reactors on 8 nuclear power stations, ~9GW of capacity, 20% owned by Centrica; 2 coal and 1 gas power stations; wind farms
 3. **Nuclear New Build:** in charge of EDF Energy's new nuclear project in the UK
- **The market:**
 - Strong willingness of the Government to decarbonise the economy (80% reduction in greenhouse gas emissions by 2050 vs. 1990) and electricity supply, while ensuring security of supply and affordability
 - Affordability of energy and the energy markets are under political scrutiny; investigation ongoing by the Competition and Markets Authority (for 18/24 months from June 2014)
 - Highly competitive residential and business supply markets with numerous suppliers and unregulated prices. Suppliers obliged to deliver Government policies incl. smart meters
 - Gas and coal currently play the largest roles in electricity generation; cross-party support for nuclear as part of the mix; new generation capacity needed during the next decade as significant amount of aging and environmentally restricted capacity likely to be retired
 - Electricity Market Reform implemented to incentivise investment in low-carbon generation (carbon floor price in force from April 2013; 1st capacity auction concluded in December 2014 for delivery in 2018-21; 1st Contracts for Difference auction in February 2015)

2014 supply market share

Electricity supply:
~51TWh

~17%⁽¹⁾

Gas supply:
~28TWh

~6%⁽¹⁾

2014 key figures

	Capacity (GW)	Output (TWh)
Nuclear ⁽²⁾	8.9	56.3
Gas	1.3 ⁽³⁾	4.7
Coal	4.0	19.6
Renewables	0.17 ⁽⁴⁾	0.4
Total	14.4	81.0

€bn	
EBITDA 2014	1.9

1) Based on March 2015 data from the Department of Energy & Climate Change on total final demand at customer terminal

2) Including Centrica's 20% stake

3) Excluding 18.6% stake in Barking gas-fired plant (total capacity 1.5GW)

4) EDF Energy ownership (50% EDF ER)

Strategy for EDF group in the UK

■ Major nuclear operator, leading the way in nuclear new build

- Almost 9GW of existing nuclear capacity with an aim of life extension (an average expectation of 8 years beyond agreed lifetimes at acquisition for advanced gas-cooled reactors (AGRs); and 20 years for the Sizewell B pressurized water reactor (PWR) station)
- Aim to build 2 EPR pressurised water reactors at Hinkley Point. Agreements with the UK Government on key terms for a Contract for Difference and for a guarantee for the project's debt approved by the European Commission in October 2014. Plan for further 2 reactors at Sizewell

■ A diversified generation portfolio also covering other technologies

- Two coal stations (Cottam and West Burton A, 2GW + 2GW)
- West Burton B CCGT power plant (~1.3GW) commissioned in 2013
- Significant investments in wind projects; our joint venture EDF Energy Renewables currently operates ~500MW of onshore wind farms and a 62MW offshore wind farm in the UK; development pipeline contains further onshore and offshore projects including Navitus Bay JV with Eneco (50% of 1GW)

■ Fairness and profitability in supply to residential and business customers

- Re-gaining customer trust by delivering fair value, better service and simplicity
- Ensuring affordability to customers through efficient operations and focus on cost efficiency related to the implementation of Government policies (energy efficiency; smart meters)
- Innovation
 - Leveraging digital technologies
 - New products and services: strong customer interest in “Blue” products where customers are alerted of cheaper offers on the market

GB Capacity Market

Design Area

Key Design Features

Auction Process	- Centralised annual descending-clock auctions run by the Transmission System Operator (TSO) 1st auction completed in December 2014 for delivery in the 12-month period from Oct. 2018 – Sept. 2019
Capacity Requirement	Capacity needed to meet the Reliability Standard for GB (3 hours of Loss of Load Expectation)
Capacity Agreement Lead-Time	4 years for main auctions 1 year to allow for demand-side response (DSR) participation but also open to generation
Price Setting Mechanism	- The clearing price is that at which offers for capacity equal the willingness of Government to pay - Auction Price Cap (currently set at £₂₀₁₂75/kW) - Net cost of new entrant (CONE): £49/kW - Price taker threshold: £25/kW
Eligibility	- All plants not supported by a low carbon generation scheme (Contract for Difference, Renewables Obligation, small scale Feed-In Tariff, etc.) or a LT STOR (Long-Term Short-Term Operating Reserve) Contract - DSR (transitional arrangements start from October 2016) - Interconnected capacity not eligible for the 1st auction but will participate in future auctions
Capacity Agreement Obligation and Duration	- Capacity de-rating factors centrally determined by TSO - Existing plants 1 year; refurbishing plants up to 3 years; new plants up to 15 years
Funding Mechanism	Total costs recovered through a Supplier Levy on all licensed suppliers

GB Capacity Market: latest/next developments

- 19 December 2014** The first Capacity Market Auction was successfully completed. 49.3GW of capacity was procured at £₂₀₁₂19.40/kW for delivery in 2018/2019
- Jan – March 2015** The Government implemented some design changes including the confirmation of the details of interconnectors participation in the 2015 auction
- June 2015** Completion of Ofgem process to revise Capacity Market Rules for 2015 auction: these changes are expected to be mainly administrative
- June 2015** Government will publish auction parameters for the 2015 Capacity Auction reflecting National Grid's assessment of capacity requirements.
- July 2015** Pre-qualification begins for the 2015 Capacity Auction
- December 2015** 2nd Capacity Auction to take place, procuring capacity for delivery in 2019/2020
- January 2016** Auction for demand side response (DSR) technologies for October 2016-September 2017 (Transitional Arrangements)

GB Capacity Market: capacity auction results for EDF Energy

Nuclear

- 1-year capacity agreement at £₂₀₁₂19.40/kW for 2018/19 secured for all of EDF Energy's nuclear plants
 - 7.9GW derated capacity
 - Dungeness B, Sizewell B, Hinkley Point B, Heysham 1, Heysham 2, Hartlepool, Torness, Hunterston B
 - Capacity revenue will help to support investment (£600m per year made up of £400m Capex and £200m maintenance and outage overhaul Opex) in the nuclear fleet, delivering improved availability and life extension

Coal

- 3-year capacity agreement at £₂₀₁₂19.40/kW for 2018-2021 secured for 7 (out of 8) of EDF Energy's 500MW coal units at Cottam/West Burton A
 - 3.1GW derated capacity
 - An investment of £125/kW between 2012-2018
 - Capacity revenue will support investment to keep the coal plants operating until 2021
- 1 year capacity agreement for OCGTs at West Burton A

CCGT

- 1 year capacity agreement at £₂₀₁₂19.40/kW (2012 prices) for West Burton B CCGT
 - 1.2GW derated

Italy – country profile

Key points

The Italian energy markets hold a strong strategic interest for EDF due firstly to their major significance in the European gas and electricity markets and secondly to their connection to the French markets.

Main entities⁽¹⁾:

Edison:

- EDF owns 97.405% of the ordinary shares of Edison, a major player on the Italian gas and electricity markets. Edison's main activities are:
 - Electricity generation and supply
 - Hydrocarbon generation and supply. Edison's Italian portfolio of gas supply also relies on long-term contracts
 - Gas storage through Edison Stoccaggio, 100% subsidiary of Edison
 - Gas distribution (through Edison DG)
 - Gas infrastructures: partnership in 2 pipeline construction projects, Galsi (20.8%) and IGI Poseidon (50%) and partnership in the company Adriatic LNG Terminal which manages Rovigo offshore regasification terminal⁽²⁾
- **6 November 2014:** F2i, Edison and EDF EN announced the creation of the third-largest Italian operator in the renewable energy sector with an installed capacity of 600MW. The shareholders of the newly-formed company are F2i, with a 70% interest, and a holding company owned by Edison and EDF EN for the remaining 30%

Fenice:

- EDF owns 100% of Fenice, a company specialised in the offer of environmental and energy services: heat or electricity generation, operation and maintenance of energy assets, treatment of solid and liquid industrial waste and environmental engineering (main client: Fiat)

Edison and Fenice 2014 key figures

Installed capacity (GW)	Edison	Fenice
Thermoelectric plants	5.3	0.4
Hydroelectric plants	1.4	n.s.
Wind power plants	0.6	-
TOTAL	7.3	0.4

EBITDA (m€)	Edison	Fenice
Dec. 2013	968 ⁽³⁾	91
Dec. 2014	801 ⁽³⁾	85

(3) At the EDF group level

Edison: electricity and gas sectors figures

Key figures in the electricity sector in 2014

Electricity sales	96.2TWh
Generation market share ⁽¹⁾	6.6%
Total installed capacity	7.3GW
Net electricity output in Italy	17.6TWh
<i>o/w thermal power</i>	11.7TWh
<i>o/w hydro power</i>	5.0TWh
<i>o/w renewable power</i>	0.9TWh
Delivery points	788,000

Key figures in the hydrocarbon sector in 2014

Gas sales	13.2bcm
Gas import market share ⁽²⁾	17.9%
Total number of concessions (o/w 60 in Italy)	127
Number of storage sites in Italy	3
Gas production in Italy	0.4bcm
Gas production abroad	1.7bcm
Oil production in Italy	2,620Mbbbl
Oil production abroad	1,541Mbbbl
Delivery points	557,000

(1) Ratio between Edison's net electricity output and the Italian total electricity output (267.6TWh)

(2) Gas imports in Italy account for 90% of the country's demand (13.2bcm), and Edison accounts for 17.9% of those imports, i.e. 9.9bcm

Capacity market in Italy⁽¹⁾

Existing Capacity Payment to remain until the introduction of the new Capacity Market

- In force since 2003, it remunerates the availability of eligible thermoelectric plants operating on the Ancillary Services Market proportionally to the installed capacity. Small plants (<10MVA) and non programmable plants are excluded
- In order to adapt to the recent changes of the power market, the Italian Regulator (AEEG) and the Ministry of Economic Development (MSE) are currently discussing some proposals to introduce a specific remuneration mechanism for flexible plants for the 2015-2017 period
- Overall system remuneration in 2014 was about €140m

New Capacity Market

- The future capacity remuneration mechanism, proposed by the regulator, was approved on June 30th 2014 by the MSE
- It is a centralized capacity market operated by the TSO that, based on the expected demand, signs “Reliability option contracts” with producers. These contracts are awarded by tenders held by Terna, 4 years in advance
- The timing for the implementation of the new mechanism is still under discussion. However, Terna is developing the IT systems to operate the new mechanism: all the relevant procedures are expected to enter into force in late 2016 for a first capacity supply in late 2020. The Regulator and the MSE are currently discussing a proposal to introduce a first phase of the capacity market for the 2017-2020 period based on simplified rules
- For the moment, authorised bidders are existing and authorised plants that do not benefit from incentives
- Capacity willing to participate will be allowed to bid in marginal auctions for a fixed remuneration (€ per installed MW per annum), within a Floor and a Cap. A Strike Price is introduced: revenues in the energy markets exceeding the Strike Price will have to be rebated to the TSO
- Open Cycle Gas Turbine should be the reference “peak technology” (the technology with the minimum level of Capex/MW) to set the Strike Price. Floor and Cap will be set by AEEG
- Overall system remuneration is expected to be €500-600m/year
- The new mechanism shall be awarded without increasing costs for the system

Benelux – area profile

Key points

■ A strategic area for EDF:

- A region that features important interfaces with French and German power markets and projects for new links with Germany and Great Britain are also being examined
- Key area in the European gas market due to its significant import and transit infrastructures, such as the Zeebrugge hub

■ Main entities:

- **EDF Belgium:** 100% owned by EDF, it owns 50% of the Tihange 1 nuclear plant (i.e. 481MW, equivalent to 2% of Belgium's generation capacity)
- **EDF Luminus**
 - EDF majority shareholder (63.5%) through EDF Belgium
 - 951 employees as of 31 December 2014
 - 2nd player in the Belgian market with 10% of the national generation capacity
 - EDF Luminus owns 10.2% (419MW) of Tihange 2 and 3 and of Doel 3 and 4 nuclear plants. EDF Luminus also has drawing rights of 100MW in the French nuclear plant of Chooz B
 - Total output in 2014 of 4,272GWh (4,985GWh including Chooz B)
 - In 2014, the market share of sales to end customers was of approximately 20%
 - **13 May 2015:** the Board of Directors decided to launch the process for the IPO of EDF Luminus on Euronext Bruxelles
 - **27 May 2015:** EDF Luminus finalised the acquisition of a majority stake in ATS, a company specialised in energy services
- **Sloe Centrale B.V. (Netherlands):** 2 CCGT units of 435MW, owned at 50% with Delta B.V.

2014 key figures

Country	Company	Main activities	Technical data
Belgium	EDF Belgium	Electricity generation	Nuclear installed capacity: 481MW
Belgium	EDF Luminus	Electricity generation Electricity and gas sales	Installed capacity: 1,954MW o/w nuclear ⁽¹⁾ : 419MW o/w thermoelectric: 1,286MW o/w hydro: 69MW o/w renewables: 180MW Delivery points: ~1.74 million
Netherlands	Sloe Centrale B.V.	Electricity generation	Installed capacity CCGT: 870MW⁽²⁾

Total EBITDA⁽³⁾ in 2014: ~14% of “other international” segment EBITDA
Total cumulated output in 2014⁽⁴⁾: 9.9TWh

(1) Excluding 100MW of drawing rights in the Chooz B power plant, owned by the EDF group

(2) Data at 100%

(3) EDF Belgium + EDF Luminus. In 2014, in accordance with IFRS 11, Sloe Centrale is consolidated under the equity method

(4) EDF Belgium + EDF Luminus +50% Sloe (10.6TWh including Chooz B output)

Central and Eastern Europe – area profile

Key points

- Two main countries: Poland and Hungary

■ Poland

- Electricity generation, cogeneration and supply
- The Group operates in Poland mainly through **EDF Polska SA** which includes the Rybnik generation branch, the Krakow cogeneration branch, the Wybrezeze cogeneration branch and the Warsaw branch (comprising the company headquarters and the Optimisation and Sales department) and EDF Torun, a subsidiary of EDF Polska, which holds the municipal district heating distribution network in addition to a heat generation facility
- The Group also controls **ZEW Kogeneracja SA**, the cogeneration company of the city of Wroclaw
- In addition, the EDF group is present in Poland through:
 - EDF Fenice, in the energy efficiency field
 - EDF Energies Nouvelles, that operates a wind farm with an installed capacity of 48MW in Linowo

■ Hungary

- Cogeneration, distribution, supply
- 2 main subsidiaries: BE ZRt (heat and electricity generation) at 95.6% and EDF DEMASZ ZRt (mainly electricity supply and distribution) at 100%

Assets

Country	Company	Site	Main activities	Technical data
Poland	EDF Polska	Gdansk, Gdynia	Electricity and heat generation	Electric capacity: 333MW Thermal capacity: 1,134MWth
Poland	EDF Polska	Rybnik	Electricity generation	Electric capacity: 1,775MW
Poland	EDF Polska	Kracow	Electricity and heat generation	Electric capacity: 460MW Thermal capacity: 957MWth
Poland	EDF Polska	Torun	Heat generation	Thermal capacity: 398MWth
Poland	Kogeneracja	Wroclaw	Electricity and heat generation	Electric capacity: 366MW Thermal capacity: 1,094MWth
Hungary	BE ZRt	Budapest	Electricity and heat generation	Electric capacity: 406MW Thermal capacity: 1,192MWth
Hungary	EDF DÉMÁSZ ZRt	Szeged	Gas and electricity sales and distribution	Clients (approx.): 740,000 Sales: 3.2TWh Distribution: 4.2TWh Delivery points: ~773,300

2014 EBITDA of Poland and Hungary: 42% of “other international” segment EBITDA

Poland: EDF, a major player

- **EDF: 1st foreign investor** in the energy sector, present in the Polish market for 16 years now
- **10%** of the electricity generation market
 - ~3,000MWe
 - An electricity output in 2014 of 14TWh
- **15%** of the municipal heating
 - ~3,500MWth
 - A heat output in 2014 of 8TWh
- **3,000 employees** in main Polish cities (Warsaw, Krakow, Wroclaw, Gdansk, Gdynia, Toruń, Rybnik et Zielona Góra)



For the year 2014, EDF Polska won the **“Ethical Company” award** of the economic daily press “Puls Biznesu” competition



- Electricity generation
- Head office
- ◆ EDF Paliwa / Shared Service Centre
- Electricity trading
- Heat distribution & supply
- Combustion Byproducts management

Poland: power plants modernisation and development of B2B sales

A power plant modernisation program for the country's energy future

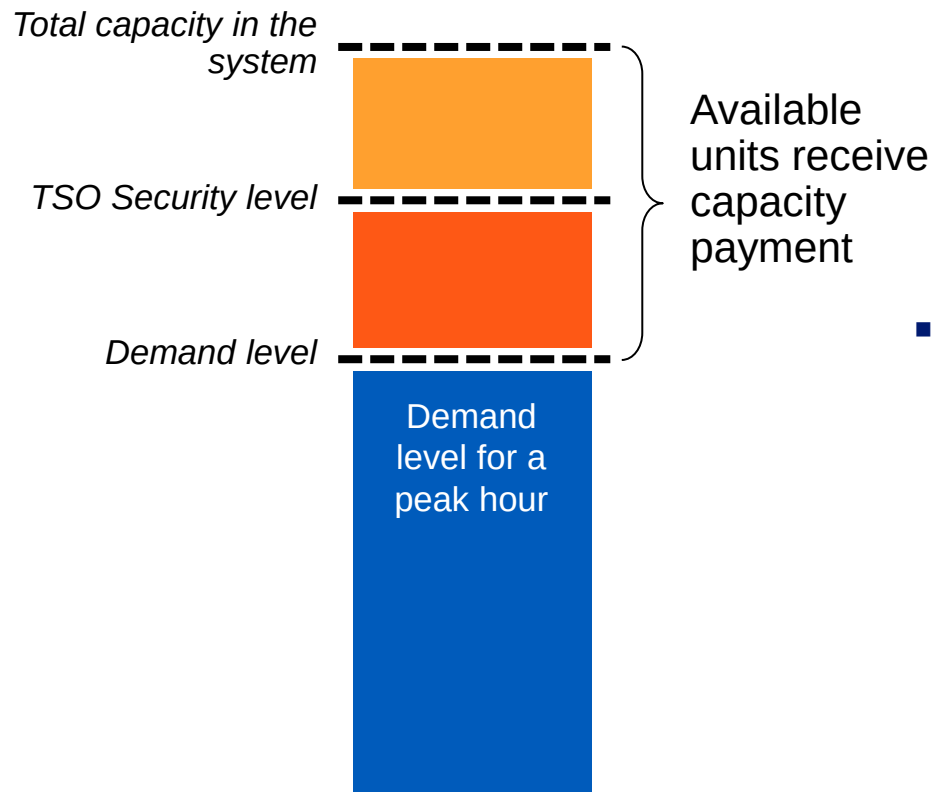
- In 2013, the Group has confirmed the launch of a major **modernization program of its generation units** in Poland for a total investment of €800m between 2013 and 2017
- 2 objectives:
 - **Power plants operational performance improvement** and operational life extension by 2035
 - **Ensure compliance with new European requirements related to industrial emissions** of sulphur oxide (SO_x) and nitrogen (NO_x) (IED directive)
- Desulphurisation and denitrification infrastructures to **divide SO_x emissions** by a 5 to 7 factor⁽¹⁾ and **NO_x emissions** by a 2 to 3 factor⁽¹⁾

Development of the B2B client base

- The EDF group wants to become a leader in electricity sales to **business and professional clients** in Poland
- By entering that segment, EDF becomes an integrated energy company oriented towards its clients. This is part of the ambition of the Group to be the most innovative and efficient producer in Poland
- EDF Polska is already present on the large companies segment. For the past three years, EDF tripled the volume of energy sales from 1.2TWh to 3.5TWh on that segment

Capacity market in Poland

A transitional mechanism to guarantee the security of supply in the short-term



- Operational Capacity Reserve Mechanism
 - In place since 1 January 2014 to support centrally dispatched production units
 - Designed by the TSO and approved by the Regulator, as a transition towards a capacity market
- The TSO remunerates ex-post the capacity available in peak hours
 - For 2015, the maximum amount paid by the TSO is fixed at 37.28PLN/MW per peak hour during which available capacity is below the required TSO security level
 - When available capacity exceeds the security level, the payment is reduced with regards to the extent in which the limit was exceeded

North America – activities profile

Electricity

■ In North America the Group has:

- More than 4.5GW installed capacity
- 28.5GW installed capacity under operation and maintenance or optimisation services contracts

■ Activities in North America:

■ Nuclear generation

- **Existing:** EDF Inc – Around 2GW of nuclear installed capacity thanks to the 49.99% ownership of CENG
- **Under development:** in February 2015, UniStar Nuclear Energy (“UNE”), a wholly-owned subsidiary of EDF, asked the Nuclear Regulatory Commission (NRC) to hold its work towards having a Combined Licence Application (“COLA”) for the site of Calvert Cliffs 3 in the State of Maryland, following the request sent by AREVA to the NRC to suspend the design certification study for the American version of the EPR.

- **Trading:** EDF Trading North America that handles 21GW of electricity generation

- **Renewables:** EDF Renewable Energy (100% EDF EN), with 2.56GW installed capacity in the US, 463.8GW in Canada and 229.5GW in Mexico, and EDF Renewable Services (100% subsidiary of EDF Renewable Energy) that manages about 9.4GW through O&M contracts on its own or on behalf of third parties

Hydrocarbons

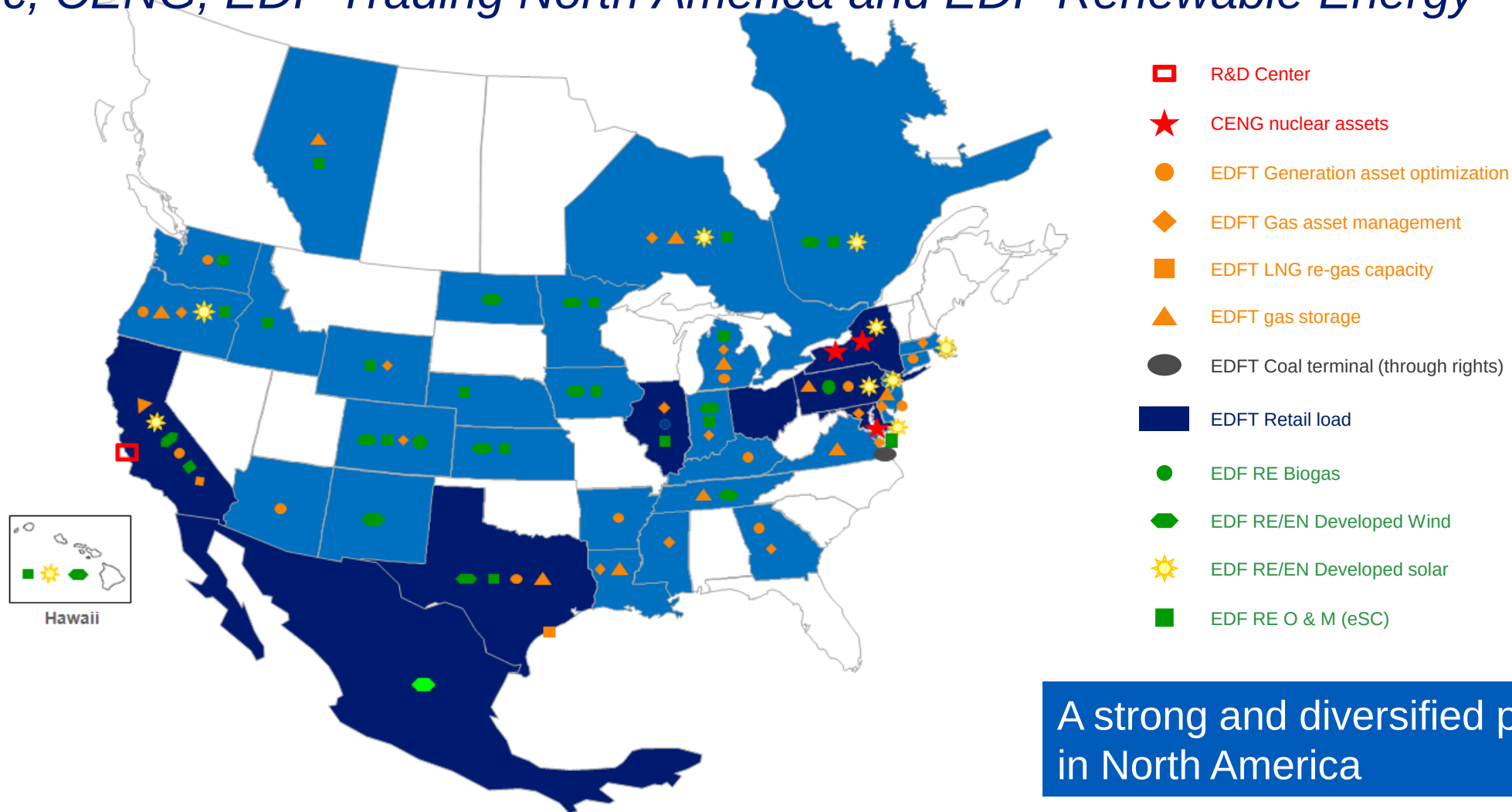
- **Gas transmission:** EDF Trading is among the 5 main suppliers in North America’s gas market. It signed pipeline contracts in Europe, Canada and Mexico and distributes on the market 7.62bcf⁽¹⁾/day on average
- **E&G:** EDF Trading North America holds gas E&P rights in Texas and in Pennsylvania in order to develop its upstream gas activity in the USA
- **LNG:** on 17 July 2014, EDF signed with Cheniere a LNG supply contract of 0.77 million of tones per year, with a duration of 20 years starting from the first delivery date at the Corpus Christi LNG terminal whose construction is not expected before 2019
- **LPG:** EDF Trading joined in 2014 the GPL market through the signature of a supply contract with Enterprise Products Partners LP on the long term export capacity from the Gulf of Mexico

Other activities of EDF Trading

- Coal and freight business
- Large industrial clients through EDF Energy Services, subsidiary of EDF Trading
- Trading of RECs⁽²⁾, biogas, carbon emissions and credits and weather derivatives

Map of EDF group North American operations:

EDF Inc, CENG, EDF Trading North America and EDF Renewable Energy



A strong and diversified presence in North America

North America: market characteristics

US market

- **Total electricity generation of 4,089TWh in 2014:** the US represents one of the world's largest electricity market
- **Electricity generation mix in 2014:** 39.6% coal, 27% natural gas, 19.2% nuclear, 12.9% renewable generation and 1.3% other
- **Electricity demand growth** (about +2% in 2014 vs. 2013) should slow down under energy efficiency programs and related investments. By 2040, demand should grow by 29% in order to reach 4,954TWh⁽¹⁾
- **In 2040** ⁽¹⁾, the generation mix will be split into 35.2% of natural gas, 32% of coal, 16.3% of renewable generation and 15.5% of nuclear
- **The fight against climate change** is central in the current Administration's policy, both at international and federal level. In June 2014, the US Environmental Protection Agency (EPA) proposed the "Clean Power Plan" which sets emission rate targets at national level: a reduction of about 30% of CO₂ emissions for the electricity sector by 2030 compared to 2005 levels
- According to EIA⁽¹⁾, the US became the leading producer worldwide of oil in 2013 ahead of Saudi Arabia and of natural gas ahead of Russia in 2014. The US is also set to become a net exporter of liquefied natural gas in 2016 and an overall net exporter of natural gas in 2018

Canadian market

- **In 2014, electricity generation** in Canada amounted to 592.3TWh (+0.4% vs. 2013)
- **Electricity generation mix in 2014:** 57.5% of hydro (third worldwide hydro producer after China and Brazil), 16.2% of nuclear, 11.3% of coal, 8.9% of natural gas, 6.1% other⁽²⁾
- The National Energy Board estimates that the nuclear share should decrease at 12% in 2035 due to the development of wind farms and gas-fired plants
- The Canadian electricity market, structured by province, is extremely fragmented due in particular to the central role of local policies in terms of carbon emissions and renewable energies

Mexican market

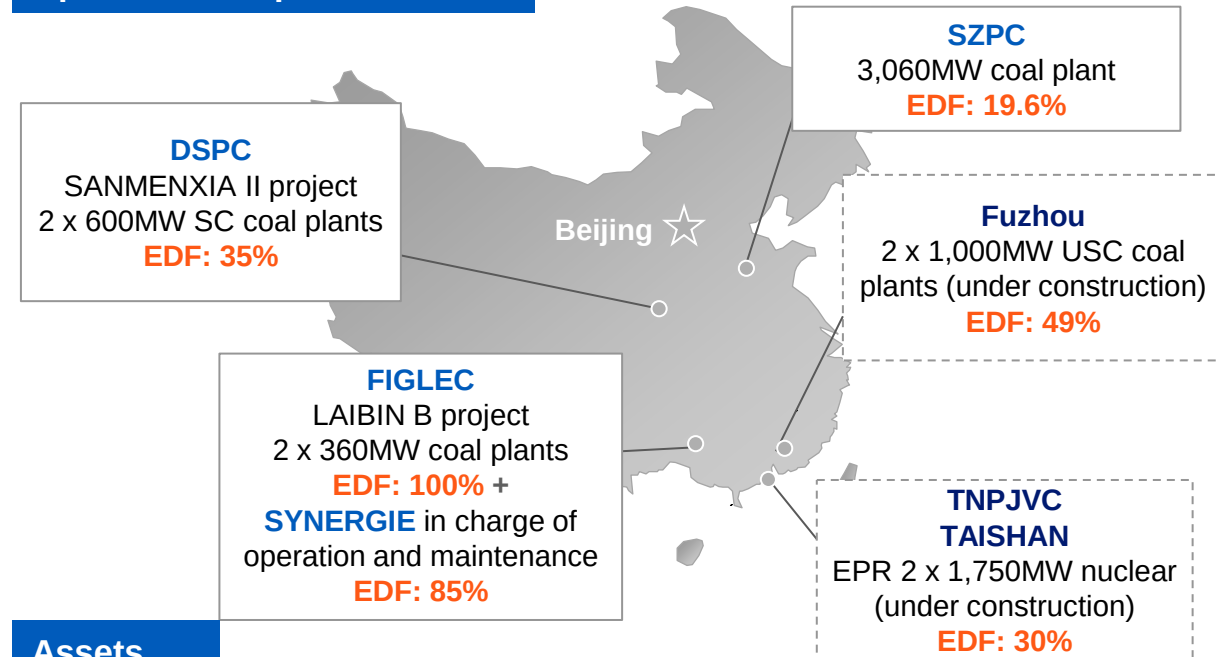
- In 2014 the **country installed capacity** reached 54.4GW for a **gross generation** of 258.3TWh
- **Electricity generation mix in 2014:** 78.3% of thermoelectric plants (gas mainly imported from the US), 14.8% of hydro, 3.7% of nuclear, 3.1% other renewables
- In August 2014, the President signed several laws for the implementation of a favorable context for the market opening and for the competition of the electricity sector in Mexico
- The federal government aims to increase the share of renewable energies in the energy mix to 7.5% by 2017

China

Key points

- EDF group is one of China's most significant foreign investor in the electricity sector, with a thermoelectric capacity of 6,980MW⁽¹⁾
- EDF has also built partnerships to develop nuclear power, thermal and hydro facilities, gas plants, electricity distribution and energy efficiency
- First and only foreign company to invest in the construction and operation project concerning a nuclear plant in China, EDF owned, as of 31 December 2014, 30% of TNPJVC, which was set up to fund, build and commission two EPR nuclear reactors (2 x 1,750MW)
- As of 31 December 2014, the EDF group holds a 49% stake of a joint-venture in charge of building and operating a "ultra-supercritical" coal-fired plant. Construction work began in 2014 and commissioning is scheduled for 2016
- 29 January 2015: as part of their strategic partnership, EDF and China General Nuclear Power Group (CGN) signed an agreement to share their experience of plant operation and engineering support for existing nuclear fleets, with the aim of preserving the highest safety levels and maintaining consistency between French and Chinese procedures and standards. EDF also signed an agreement with Huadian, a leading Chinese electric utility, paving the way for future cooperation on joint projects in China as well as at international level in the gas and renewable generation fields
- EDF is also present in China with an R&D centre and through EDF International Networks in the electricity supply sector

Operations map



Assets

Company (stake)	Asset name	Installed capacity ⁽¹⁾
SZPC (19.6%)	3 coal-fired power plants	3,060MW
DSPC (35%)	Sanmenxia 2 (coal SC)	2 x 600MW
Figlec (100%)	Laibin B (coal)	2 x 360MW
FPC (49%)	Fuzhou (coal USC - under construction)	2 x 1,000MW
TNPJVC (30%)	Taishan (nuclear EPR – under construction)	2 x 1,750MW



2014

FACTS & FIGURES

R&D SUPPORTING
GROUP'S BUSINESSES

R&D supporting Group's businesses

R&D's key figures

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R&D supporting Group's business

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Innovation at R&D

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Electranova Capital

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R&D at a glance

3 main missions

- To strengthen and develop a competitive and low-carbon generation mix
- To prepare tomorrow's electrical systems
- To develop and try out new energy services for customers

Different R&D programs for all Group businesses

- Generation
- Energy management
- Customers and sales
- Renewable energies
- Electrical networks
- Information technology & simulation

Partnerships in France and abroad

In France

- More than 320 partnerships with universities, research institutes and academic institutions
- An advanced research facility, EDF LAB Paris Saclay, operational starting from 2015 and located on an internationally sized scientific campus

In Europe: partner with 74 European Union projects (PC7) and with 16 Joint Technology Initiatives

In France and abroad: many research projects with leading energy players (HYDRO-QUÉBEC, SINTEF, Total, DCNS, Schneider Electric...) and renowned institutes and universities (MIT, EPRI in the US, ETI, Imperial College, Manchester University in the UK, etc.)

Did you know?

2014 R&D figures:

More than **2,100 employees**

15 departments (skills, partnerships and project management)

10 international centers

3 in France and **7** abroad:

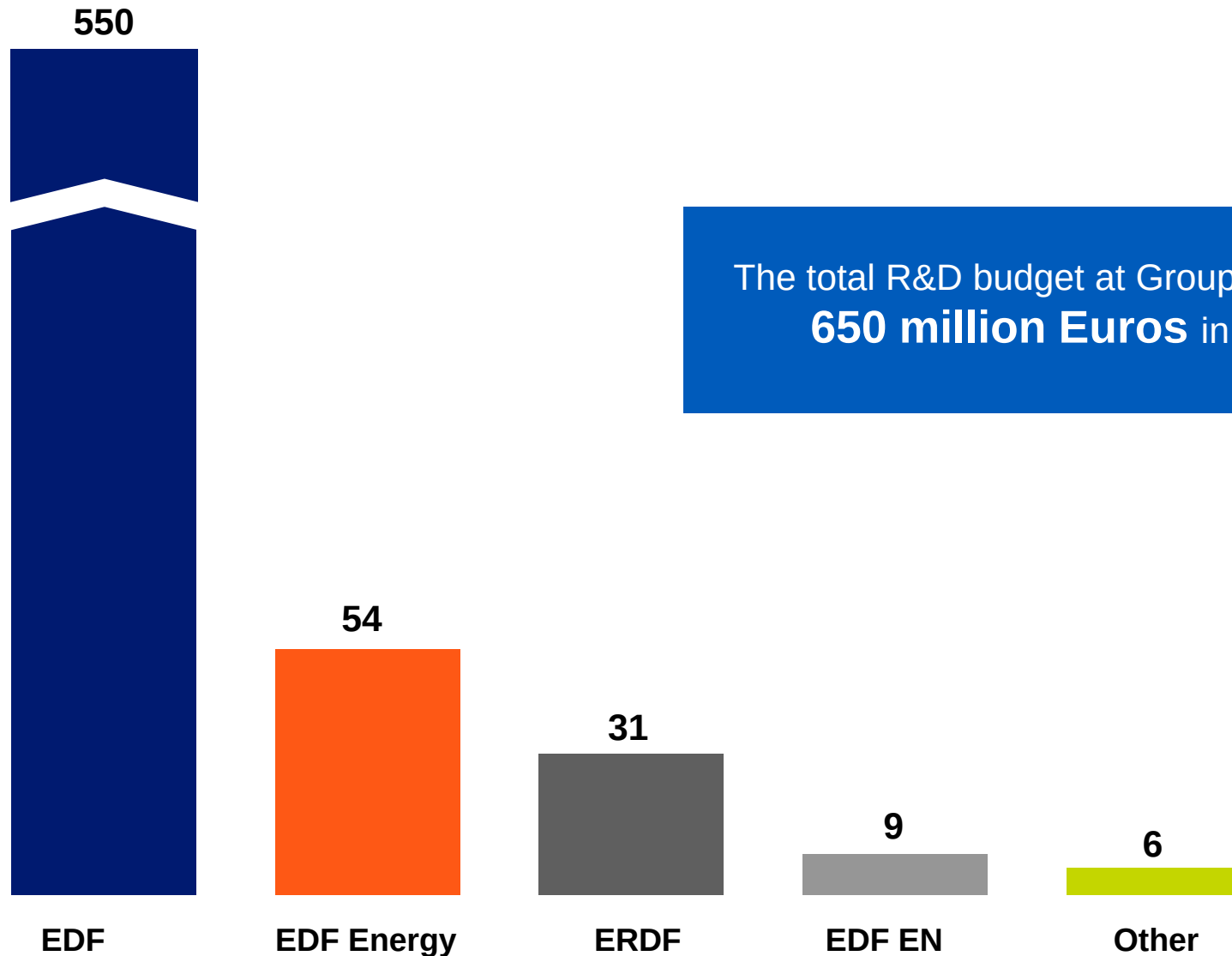
Germany, Poland, UK, China, Singapore, Italy (Edison's R&D), USA

14 shared research labs

A budget of **€650m** in 2014

R&D main expenses break-down in 2014

In millions of Euros



The total R&D budget at Group level was
650 million Euros in 2014

R&D supporting centralised generation

To consolidate and develop competitive, low-carbon generation mixes

- in 3 main generation areas
- driven by one shared priority: the environment

Management and anticipation of our activities' impact on the environment

Nuclear generation

- Optimising the operating performance of the existing nuclear fleet
 - Designing the nuclear technology of the future
- New 3rd generation reactor designs, small modular reactors (SMRs), fast neutron reactors (GEN IV)

Thermoelectric generation

- Testing and evaluating Carbon Capture technologies
- Contributing to the flexibility of the thermal fleet in order to enhance its support to the network and to reduce coal costs

Hydro and other renewables generation

- Contributing to the extension of the **operating life** of hydro plants and equipments
- Submitting alternative methods and innovative tools for the optimisation of renewable generation (off-shore wind)
- Supporting the development of new energy sources (Thermodynamic solar plants, tidal energy, etc...)

R&D supporting energy management and commercial activities

Energy Management

- Developing prospective energy scenarios and assess the market value of the Group assets by:
 - analysing the competitive environment and developing economic models
 - anticipating mutations of the European power system
- Preparing the evolutions of generation & supply optimisation processes by integrating renewable energies' and Smart Grids' development
- Developing tools for supply-demand optimisation and Group market risks management

Commercial activities

- Accelerating the digitalisation of customer relations and promote new uses of electricity
- Developing energy efficiency services for industrial, commercial and residential customers
- Enhancing understanding of customers consumption profiles in order to design new commercial solutions
- Developing new business models for cities and territories

R&D supporting Renewables and Networks

Renewable energies

- Develop tools and methods to optimise Group operating performances and project costs
- Identify and prepare technological breakthroughs that will drive renewable costs reduction
- Prepare new mass storage technologies in the context of renewable energies growth

onshore wind
offshore wind
photovoltaic
tidal energy
geothermal
bioenergy
thermodynamic solar energy

Current electricity grids

- Optimise the operating life of current network infrastructures
- Increase the infrastructure capacity and improve network availability
- Increase automation of current distribution grids in order to optimise the quality of supply and reduce operating costs

Tomorrow's electricity grids

- Develop advanced management tools for electrical systems
- Contribute to a successful rollout of smart meters and related services
- Anticipate the increase in intermittent generation connected to the grid
- Design local energy solutions to be integrated in the overall electrical system



Innovation

Financial partnerships in innovation fund within the investment strategy of the Group

A “Corporate Venture” approach
with a partner focused on France/Europe

Electranova Capital
Fund created in May 2012,
with Idinvest Partners
Already 6 investments made

Strategic stake acquisitions in French
and international venture capital funds

Seed fund

CEA Investissements

Robolution Capital (Fr)

Tsing Capital (China)

Chrysalix (Canada)

DBL (USA)

R&D's “Open Innovation” team

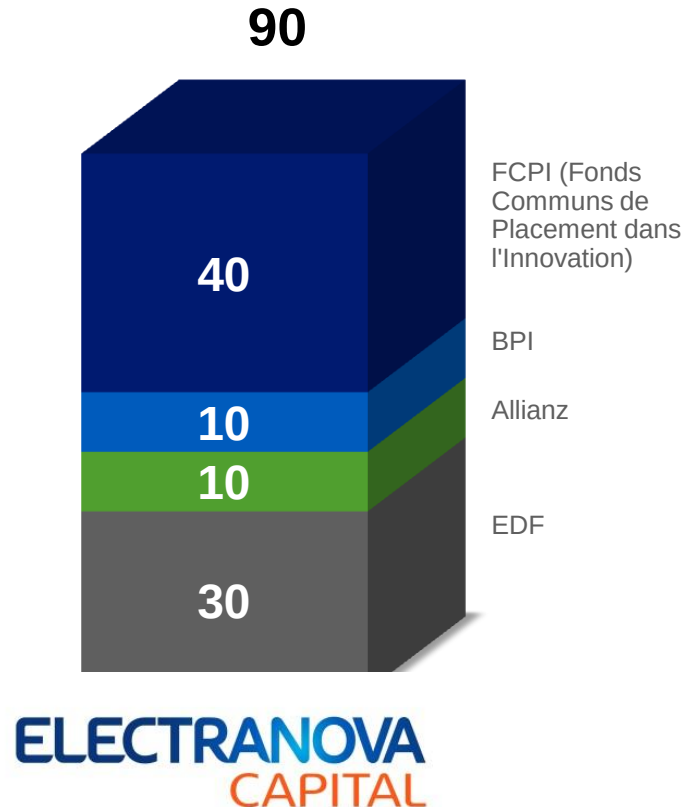
- Start-ups identification and monitoring network spread across 3 continents (America/Asia/Europe):
 - A staff of 20 people
 - Over 1,000 start-ups identified since 2012
 - Over 35 demos in 2014

Missions and challenges of the Innovation network

- **An innovative start-up surrounding**
Together with Electranova Capital, identify start-ups bringing additional value to Group businesses, sponsoring innovation related contests and creation of a network of innovators within the innovation environment and its actors
- **A better promotion of the internal innovation**
Strengthen the “Intellectual Property” culture, integrate it into the business strategy and accelerate the industrialisation process and the transfer of innovations to the businesses

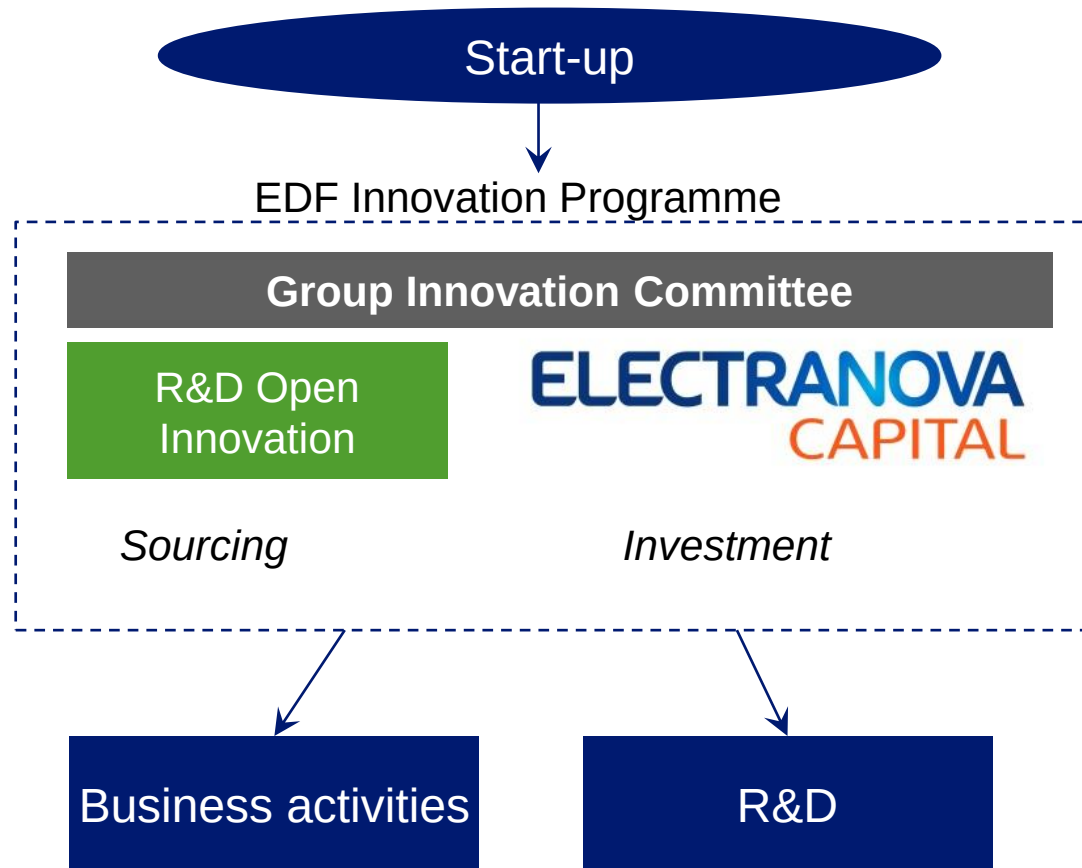
Electranova Capital, a fund launched in 2012

In million of Euros



- **Electranova Capital is a cleantech venture capital fund managed by Idinvest Partners in partnership with EDF. Allianz Group and BPI France are investors in the fund, together with EDF**
- **The mission:** supporting innovative green technology-focused companies and tackling the key challenges of the energy transition
- The fund has an **investment capacity of €90 million**, including €30 million contributed by EDF
- **Geographical diversity:** 80% of the fund's investments are in Europe and 20% in the rest of the world (primarily in the United States)
- **Portfolio:** the fund aims to have a broad portfolio of 10 to 15 companies representing a wide range of energy and cleantech industries (investing between €1m and €10m per start-up)
- A fund that follows standard market practices, with:
 - A separate governance from EDF
 - No pre-emption rights for EDF
- **Strategic ownership:** R&D and Finance Department

Electranova at the center of EDF's innovation programme



STRATEGIC AMBITIONS

- Bolster innovation capacity
- Anticipate and adapt strategy
- Enhance entrepreneurial spirit within EDF
- Identify new technologies or business models

FINANCIAL AMBITIONS

- Ensure financial performance
- Risk management

A partnership model with renowned investors

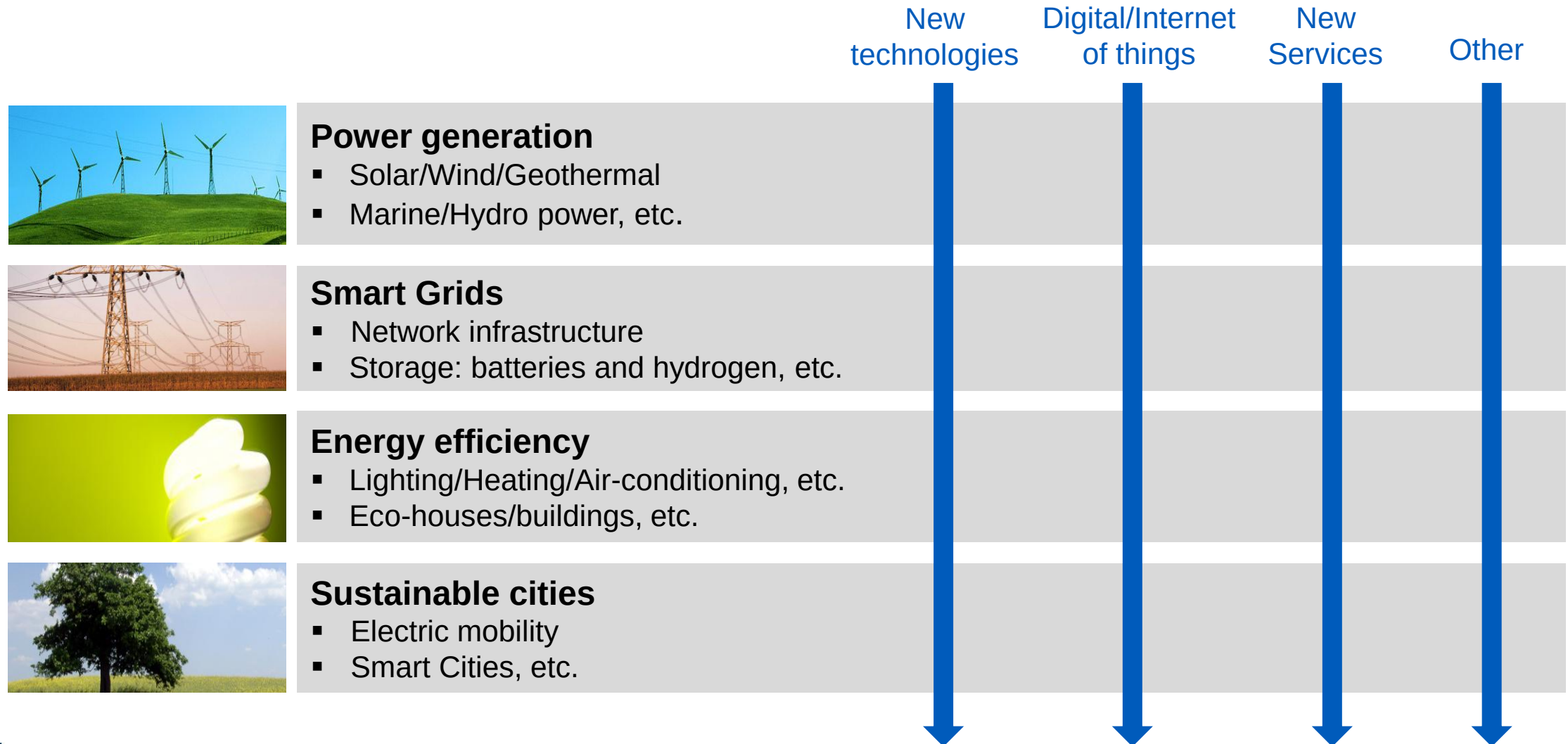
The logo for Electranova Capital, with "ELECTRANOVA" in blue and "CAPITAL" in orange.

EDF's main partner is **Idinvest Partners**, co-founder of Electranova.
2015 saw the establishment of a US-specific partnership, with the American firm **DBL Investors**.

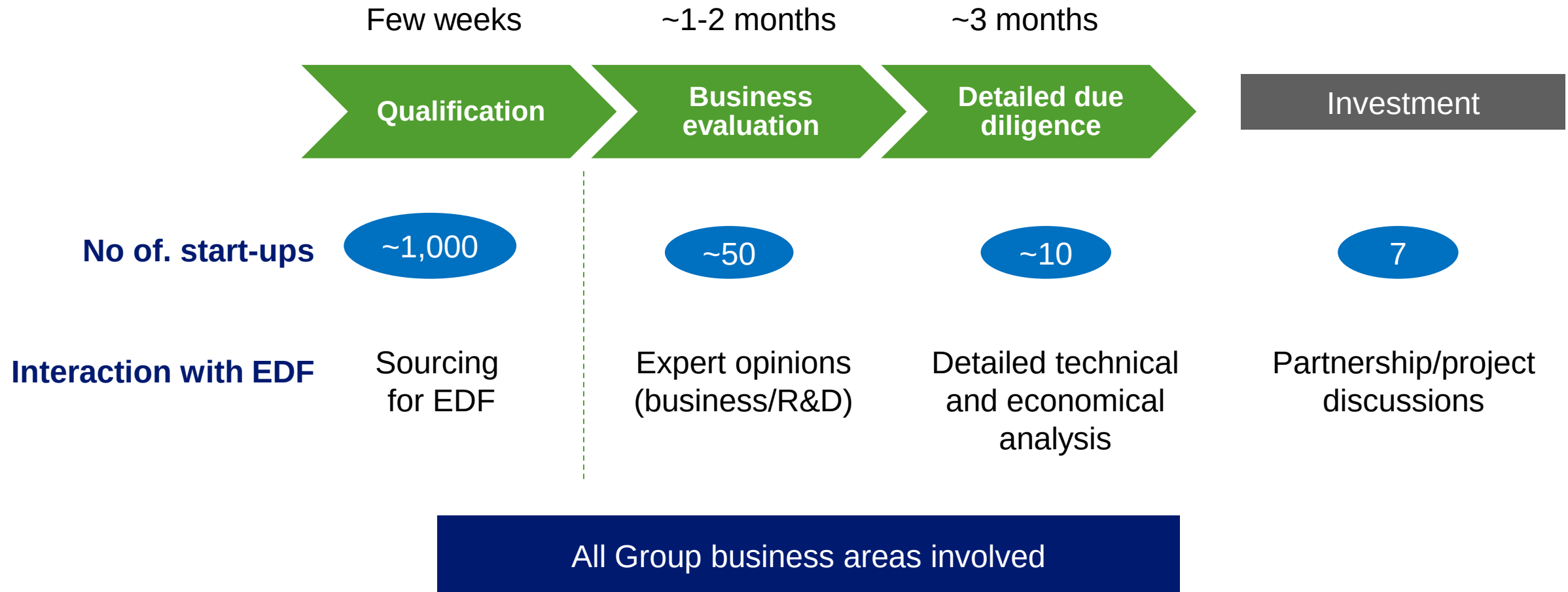


An investment strategy focused on the best companies worldwide

A broad range of investments around the EDF universe



EDF's close involvement in the highly selective investment process



Current portfolio

Start-up	Sector	Country	Description
	Offshore wind turbines		Gravity-based foundations for offshore wind turbines
	Hydrogen		High temperature fuel cells and electrolyzers Markets: Micro CHP, H2 Stations, storage, etc.
	Energy-efficient buildings		High performance thermal wood/insulation composite
	Energy storage		Battery developer for mobile and stationary energy storage markets
	Internet of things - Demand-side response		Demand-side response Low-speed data communications
	Smart buildings		Smart lighting for the tertiary and industrial sectors
	Wind power		LIDAR developer for the wind power industry



2014

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EDF main businesses

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EDF main businesses

Generation

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Thermoelectric generation

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EDF main businesses

Generation

Nuclear generation

Key points of nuclear generation 73

Existing nuclear in France 74

Existing nuclear in the UK 89

Nuclear New Build 94

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Innovations in nuclear generation 109

Nuclear: a unique expertise

- A form of electricity generation at a competitive cost, independent from fossil fuels prices and CO₂ free
- EDF has a solid construction and operation experience in France, in the United Kingdom and in the USA (through Constellation Energy Nuclear Group LLC – « CENG » – and its affiliates), allowing the Group to be a major actor in the international nuclear generation
- EDF new reactors under construction:
 - One EPR reactor in Flamanville (France)
 - Two EPR reactors in Taishan (China), in partnership with CGN
 - Other projects under study in the UK

Did you know?

EDF

existing fleet

58 reactors in France**15 reactors in the UK**

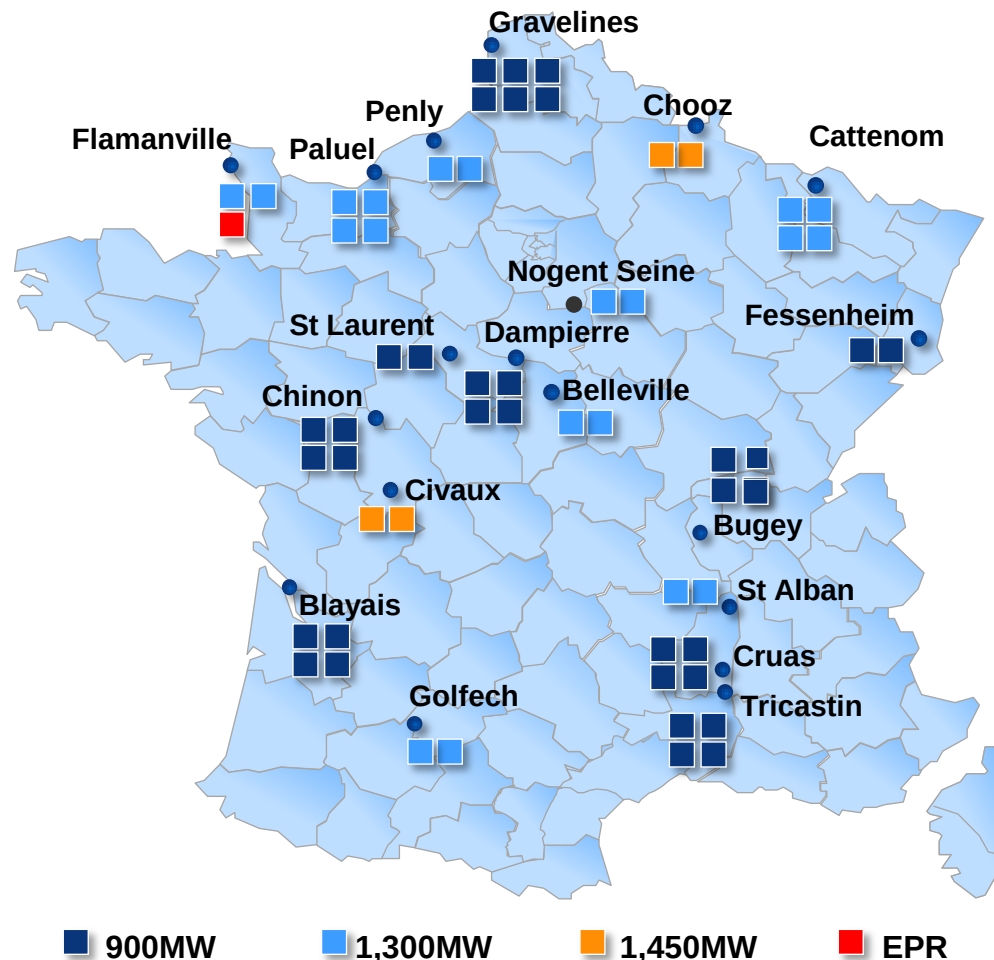
Did you know?

**New Nuclear
Development****3 EPR reactors
under construction**

Did you know?

**A strong
experience****1,700 reactor-years
of experience operating the
French fleet**

EDF nuclear fleet in France



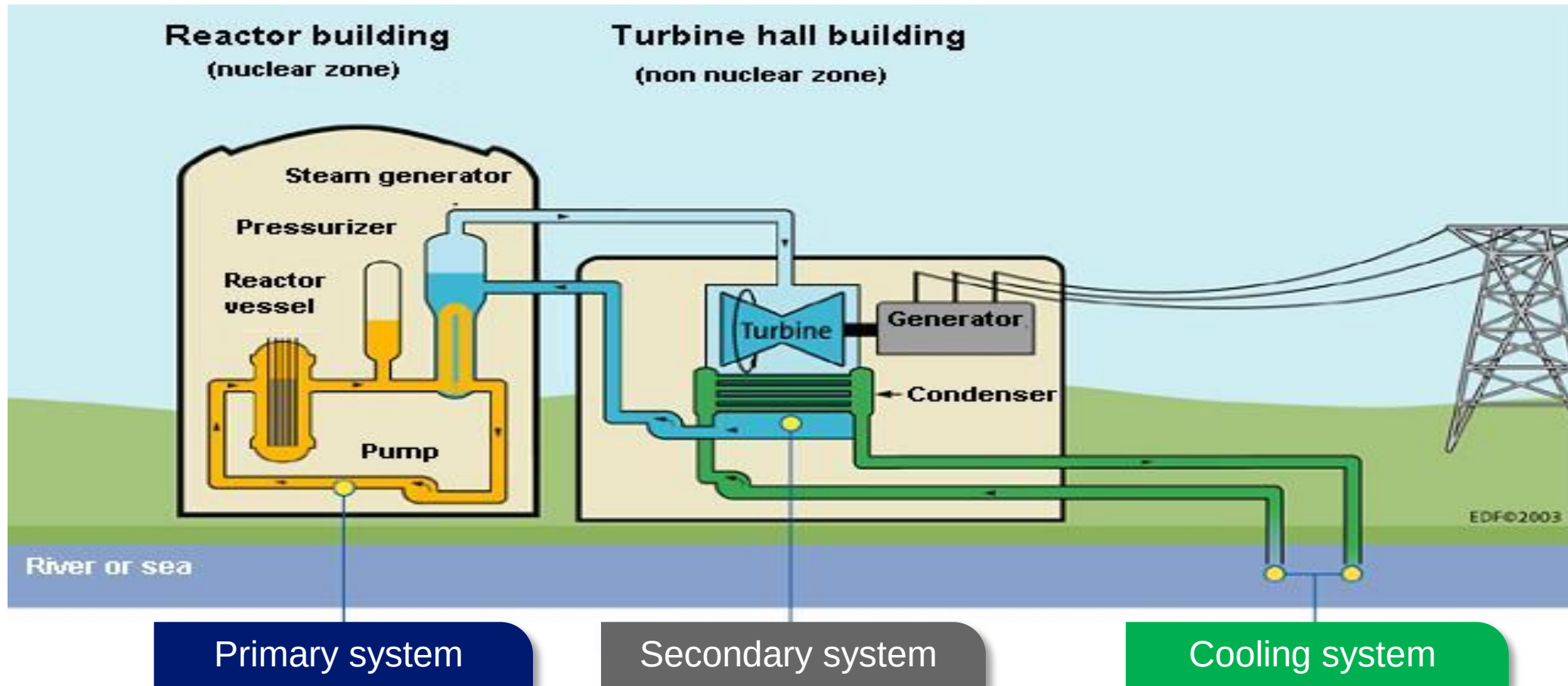
- 77%⁽¹⁾ of French power generation in 2014
- 58 reactors in operation with a capacity of 63,130MW
- 19 sites
- A unique technology (Pressurised Water Reactors), 3 series:
 - 900MW 34 reactors 31GW
 - 1,300MW 20 reactors 26GW
 - 1,450MW 4 reactors 6GW

Did you know?

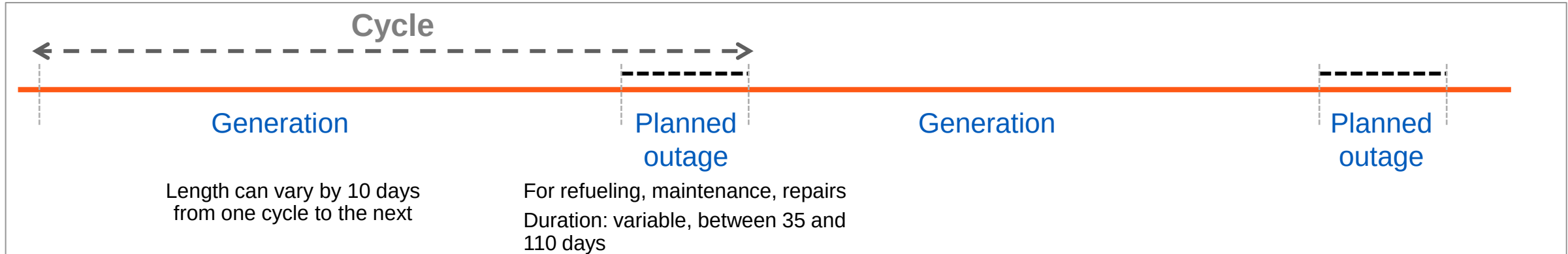
The whole fleet in operation today has been built using the same technology (PWR). This standardization allows for operational synergies and greater efficiency. Moreover, **more than being just a nuclear operator, EDF is an architect-assembler**, meaning that it is responsible for the design, schedule and building of the reactors with the benefit of running its fleet safely.

(1) Source: RTE

Pressurized Water Reactors (PWR) operating principles



The French nuclear fleet: operating cycle



The refueling cycle of nuclear reactors

- 900MW: **28 reactors** 12 months cycle
6 reactors 18 months cycle
- 1,300MW: **20 reactors** 18 months cycle
- 1,450MW: **4 reactors** 18 months cycle

Types of planned outages

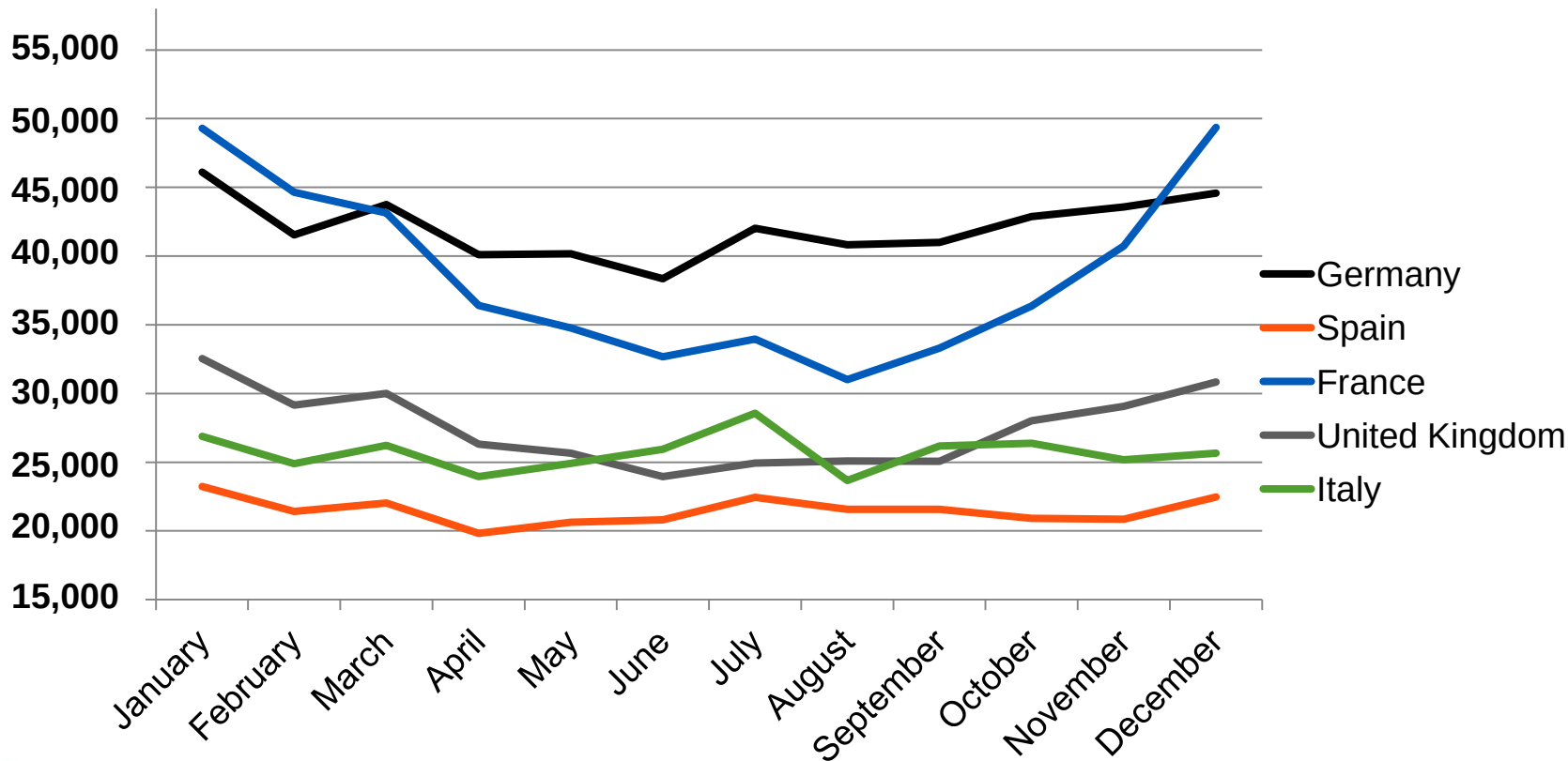
- Two types of planned outages are alternated at the end of each generation cycle:
 - Ordinary outage for refueling only (ASR⁽¹⁾): unloading spent fuel and refueling fresh fuel
Standard period ≈ 35 days
 - Partial inspection (PI) for refueling and maintenance: refueling and maintenance.
Standard period ≈ 70 days, varying according to programs for maintenance work
- 10-year inspections: **standard period ≈ 110 days**, varying according to programs for safety upgrades and maintenance work
 - Regulatory obligations (safety tests and various controls), adapting safety to latest standards, maintenance work

French consumption pattern is particularly seasonal and thermo-sensitive

Which creates special demand on the nuclear fleet

2014 monthly consumption in main European countries

In GWh



- Consumption pattern with high seasonal variations between summer and winter

- Between 30 and 35TWh/month during the summer
- Between 40 and 55TWh/month during the winter

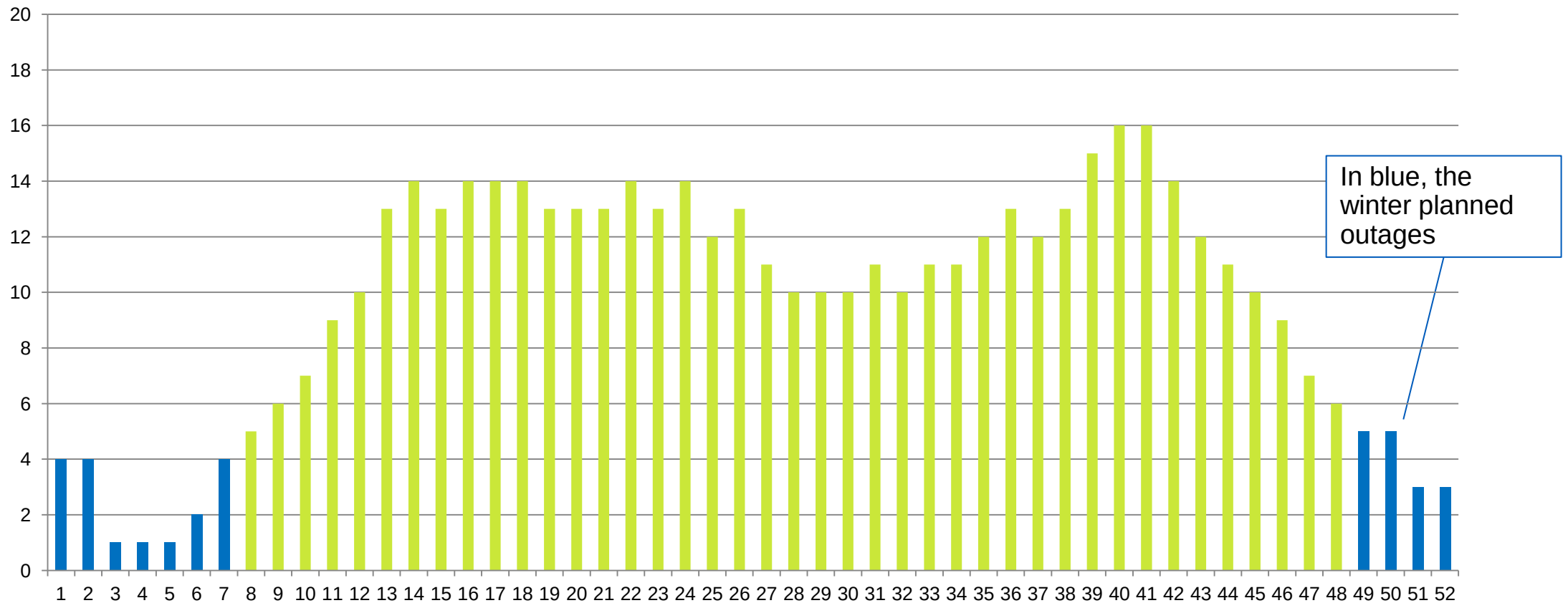
- France is highly sensitive for every 1°C of temperature variation:

- In winter $\approx \pm 2,400\text{MW}$
- In summer $\approx \pm 500\text{MW}$

A seasonal schedule of outages

- A minimum number of planned outages during winter
- Necessary balance between 12-month and 18-month production cycles

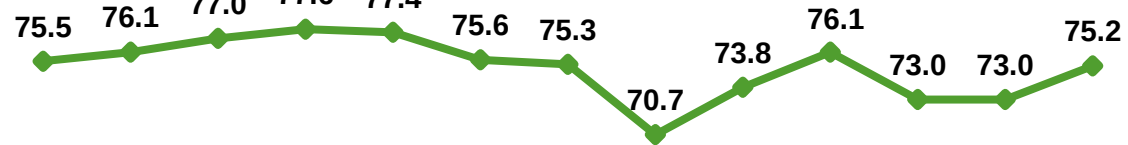
Year 2014: number of reactors in planned outage per week⁽¹⁾



Load factor and nuclear output evolutions

Annual Kp (load factor) of nuclear fleet

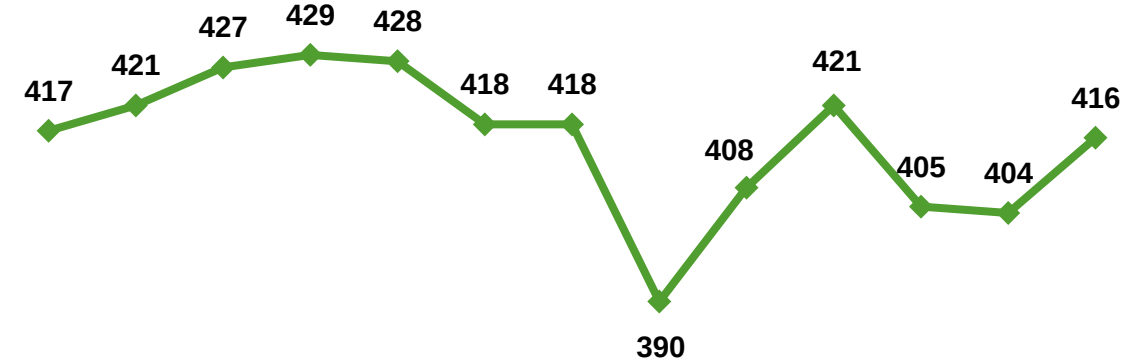
Kp (%)



2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014

Net nuclear output (PWR fleet)

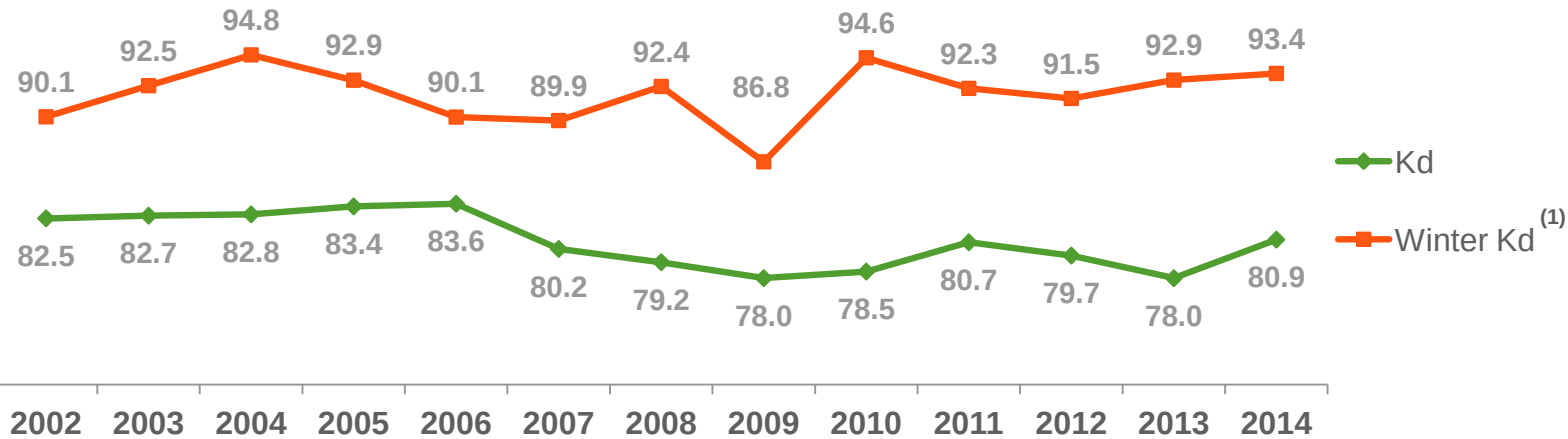
In TWh



2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014

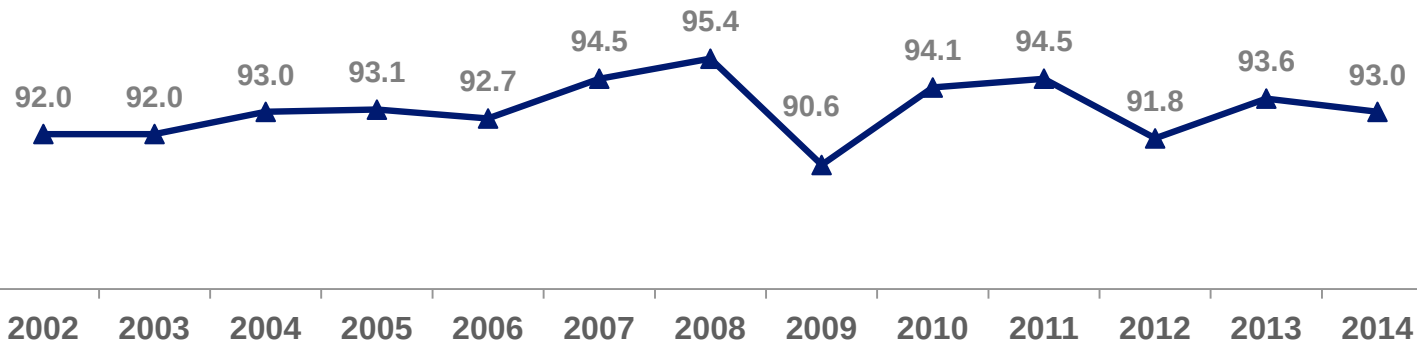
Historical availability of French nuclear fleet

Kd and winter Kd (%)



(1) Kd from 1 December (N) to 14 February (N+1)

Ku (%)



Did you know?

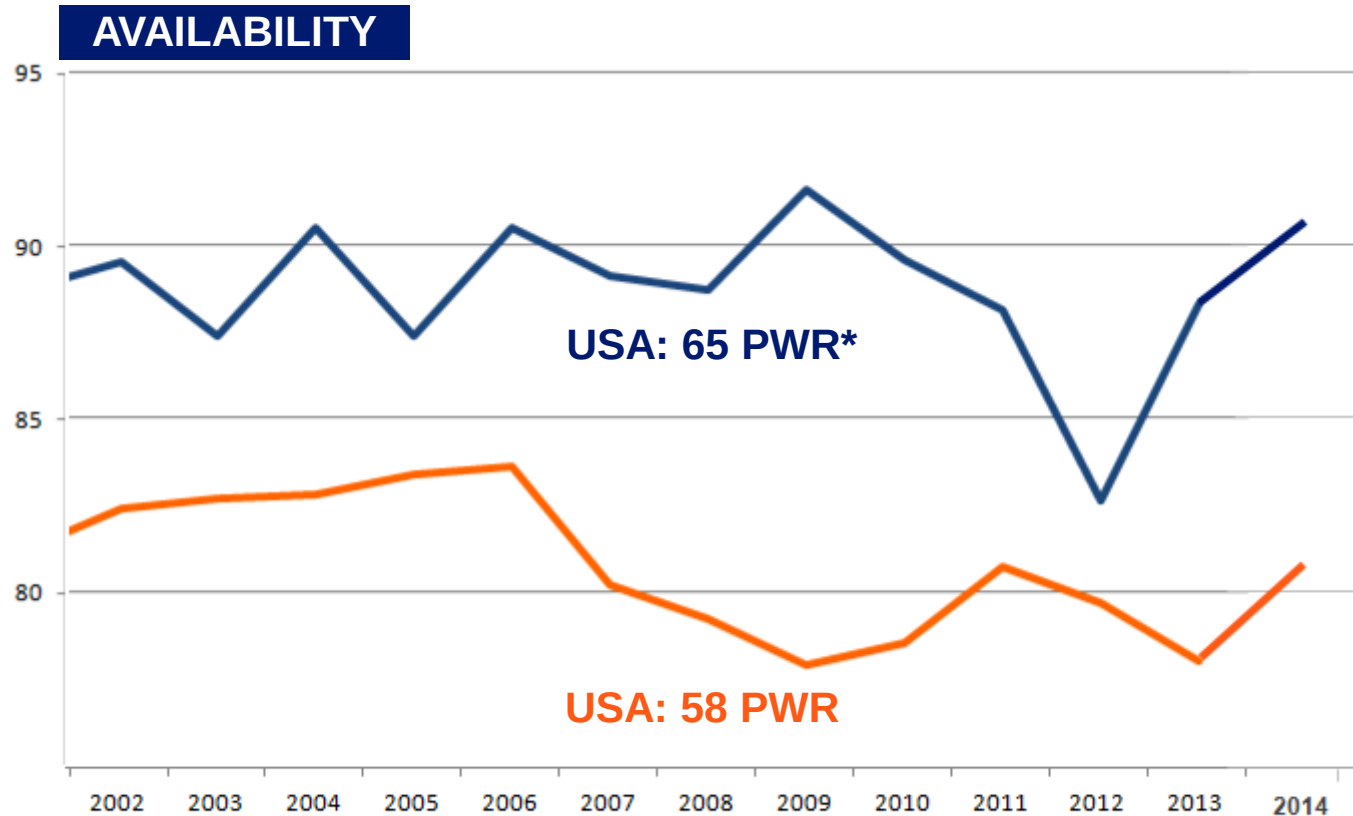
The **Kd**, or availability factor, represents the available energy over the maximum theoretical energy corresponding to the maximum capacity all along the year. The winter Kd is the availability factor measured between the 1 of December and the 14th of February of the next year, when the consumption reaches its maximum levels.

The **Ku**, or utilization factor, is the produced energy over the available energy. It reflects environmental and social constraints, the consumption profile of customers, the supply of system services and the optimization

$$Kp = Kd \times Ku$$

The multiplication of the Kd and the Ku leads to the **Kp**, or “load factor”, defined as the generated energy compared to the maximum theoretical energy.

Comparison between EDF and US PWR fleet Kd



*69 PWR reactors in operation until 2013 and 65 onwards

Kd reflects the impact of technical unavailability (planned and unplanned outages)

Kd key structural discrepancies between the French and American PWR fleet of ≈ 8 points:

- 1.8pts: fleet solicitation method
 - the US fleet operates purely under base-load generation
 - the French fleet operates with seasonal planned outages linked to the electricity consumption model in France
- 2.6pts: fuel management method
 - American refuelling cycle: between 18 and 24 months
- 3.2pts: regulation and safety specificities
- 0.4pt: work regulation

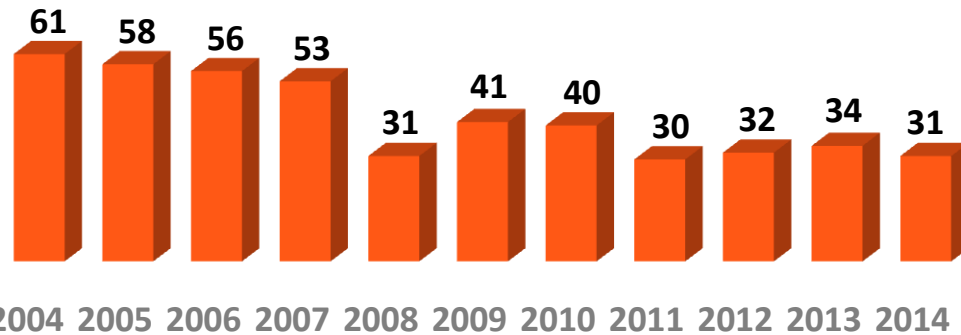
Operating performance: the drivers

- Managing planned outages periods
 - Optimisation of the volume of regular maintenance during outages
 - Improvement of the quality of preparation and realisation of maintenance intervention
 - Strengthening of the control over restart operations
 - **Average length of planned outages cut by half in 2014 vs. 2013**
- Reducing unplanned outages
 - Pursuit of the replacement of large components (steam generators, alternator stators, main transformers)
 - Improving the reliability of equipment through preventive maintenance
- Generating at the best time possible, mainly in winter when consumption is the highest

Nuclear fleet operation conditions

2014: a good year in terms of safety for the French nuclear fleet

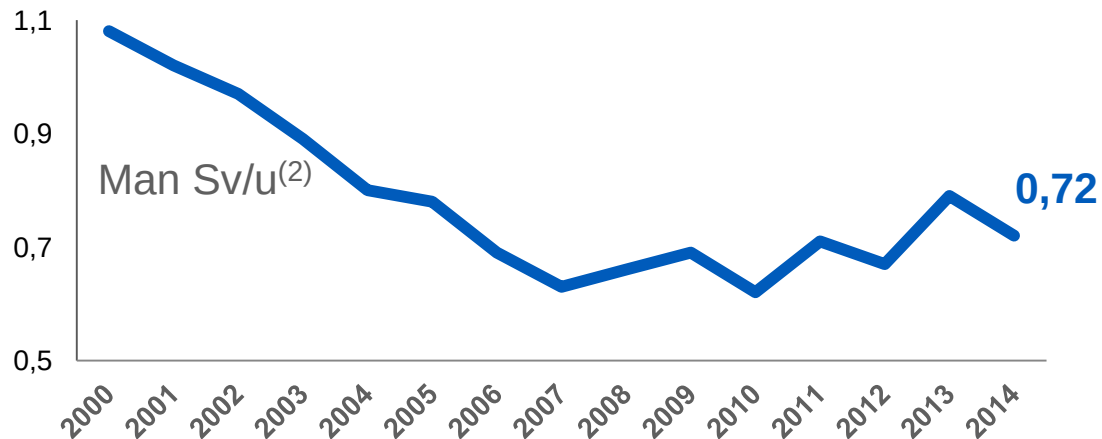
Number of automatic reactor outages



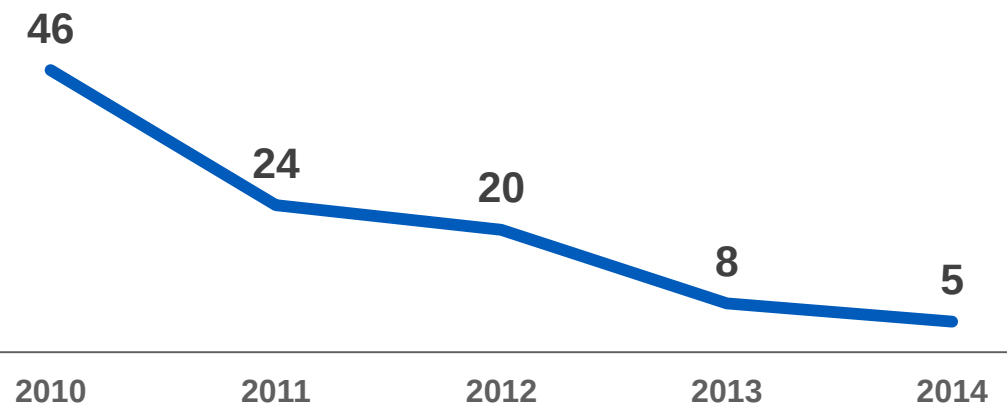
Accidents frequency rate⁽¹⁾



Average annual collective dose/reactor



Individual annual dose⁽³⁾



EDF's nuclear fleet investment program in France (1/2)

Existing nuclear fleet's strengths

- Technical standardisation and continuous safety improvements
- A full economic cost of around €55/MWh⁽¹⁾, lower than any other new generation plant
- A major contribution to the low-carbon generation mix
- EDF, architect-assembler of its power plants, owner and operator

An industrial program to prepare for the future

- The existing nuclear constitutes a sustainable and efficient response to future energy needs
- Major refurbishing and modernisation work over the 2015-2025 period (during which the 900MW reactors will reach 40 years and the 1,300MW reactors 30 years) in order to extend the operating lives beyond 40 years
- A program in accordance with the objectives set up by the energy transition law and by the multi-year energy plans
- A total amount of investments of €₂₀₁₃55bn⁽²⁾ over the 2015-2025 period, to be validated progressively
- A specific programme called “*Grand Carénage*” (major overhaul programme) to manage, in an integrated way, all work in progress

EDF's nuclear fleet investment program in France (2/2)

The “*Grand carénage*” programme integrates:

- **The refurbishing or replacement of all large components when they are around 30 years old**
 - Obsolescence of some large components that have to be replaced starting around age 30: steam generators, transformers, alternators
 - In the perspective of an extended operating life beyond 40 years
- **The increase in facilities protection in extreme situations, following the Fukushima accident**
 - Strengthening of the current protection level of facilities and of some equipments mainly against earthquakes and floods
 - Strengthening and diversification of contingency solutions for water and electricity
- **Modifications to strengthen the power plants designs after 10-year safety re-examinations**
 - Safety standards and an improvement program set up during the 10-year inspections for each reactor, after approval from the ASN (French Nuclear Safety Authority)
 - Positive opinion from the ASN on the generic safety re-examination program for the 3rd 10-year inspection of the 1,300MW series starting in 2015
 - **Operating life extension beyond 40 years**
 - No set limits on operating life but required safety reviews every ten years
 - Consistent target with the current international trend for similar technologies (PWR). In the US, 45 of the 64 PWR received an authorisation to operate up to 60 years
 - The 4th 10-year inspection for the 900MW series scheduled starting from 2019

The pursuit of large components replacement program

Steam generators
3GV/reactor of 900MW
4GV/reactor of 1,300MW

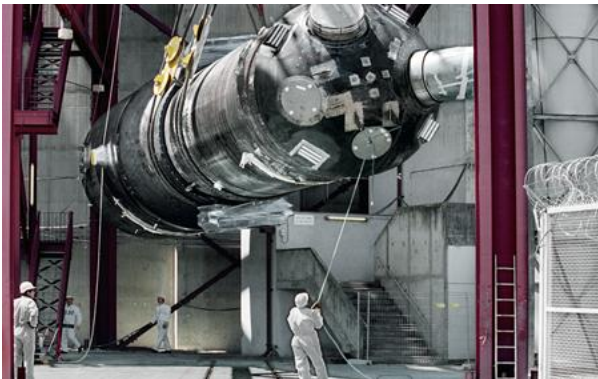
1 reactor of 900MW every 2 years on average until 2030
2 reactors of 1,300MW a year on average until 2033

Alternator stators

3 reactors a year on average until 2019

Main transformers
(3 units/reactor)

4 reactors a year on average until 2024



Requirements evolutions in terms of nuclear safety

■ **Recasting of general regulations related to nuclear installations**

- The law for Transparency and Nuclear Safety of 28 June 2006, and the following decree of 7 February 2012, integrate into the French law some principles related to harmonisation works as led by European safety authorities, brought together in the WENRA (Western European Nuclear Regulators Associations)

■ **ASN's opinion⁽¹⁾ on Safety Additional Examination, following the Fukushima accident: satisfactory safety level but increase in protection of installations for extreme situations**

- Set-up of the FARN (National Rapid Action Force)
- Strengthening of the protection of installations and of some equipment mainly against earthquakes and floods
- Strengthening and diversification of contingency solutions for water and electricity
- **Implementation of ongoing or finished ASN decisions**

■ **Implementation of the decree related to nuclear equipment under pressure (ESPN)**

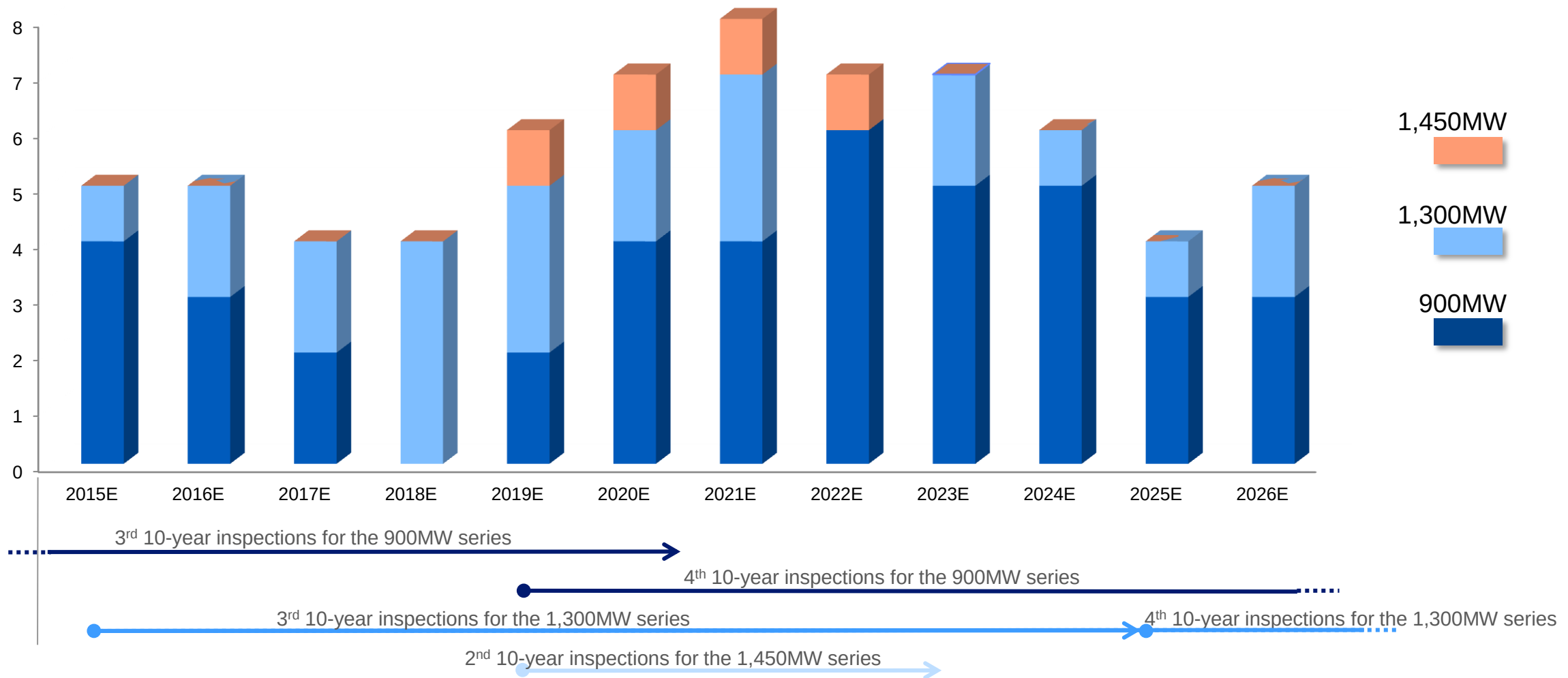
- The decree of 12 December 2005 related to ESPN (steam generators, vessels, etc.) changes mainly the method for the demonstration and surveillance of conception, manufacture and assembly of the components that were build after January 2011 (implementation guide published in 2012 and 2013 by the ASN)
- **Some implementation methods of this decree are currently under development and discussion**

■ **Operating life extension beyond 40 years**

- To go beyond 40 years, the ASN asks the safety re-examination to be realised “with regard to the safety target fixed for 3rd generation reactors, such as the PWR reactor”
- **Discussions between EDF and the ASN for this 4th safety re-examination of the 900MV series of reactor, that will start in 2019**

10-year inspections for the nuclear fleet⁽¹⁾

Number of 10-year inspections



EDF Energy nuclear fleet

Highlights

- Generated approximately one fifth of UK output in 2014⁽¹⁾
- 8 nuclear power stations
- 15 reactors in operation
- 2 technologies (AGR and PWR), with a total capacity of 8.9GW

Did you know?

An **AGR** differs in many respects from a PWR. Whereas the AGR design is unique to the UK, the PWR design is the most common reactor type in the world.

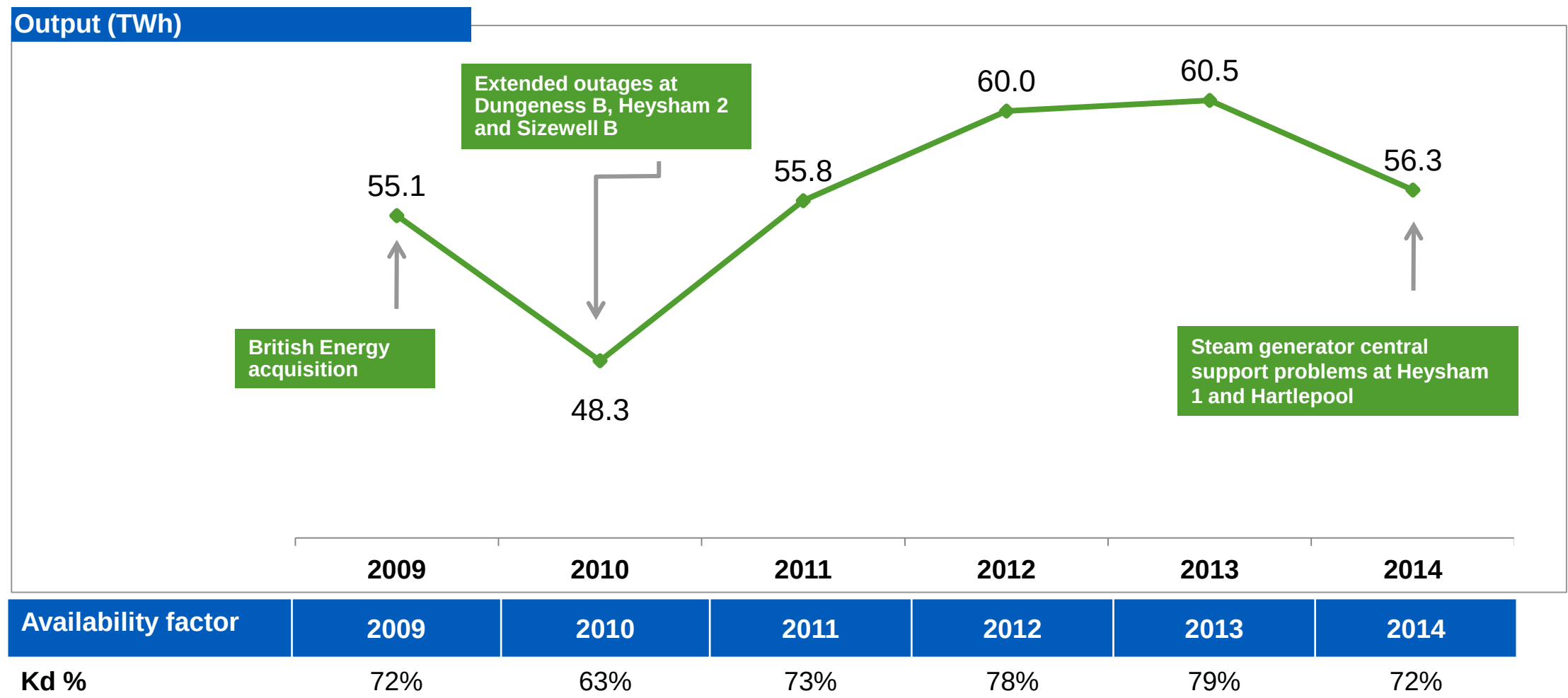
An **AGR** has a graphite moderator helping to control the reaction. The reactor is encased in a steel-lined pre-stressed concrete pressure vessel several meters thick which also acts as a biological shield. The steam generator in which water is heated is situated inside the pressure vessel. An AGR uses enriched uranium dioxide encased in a stainless steel pin for its fuel and CO₂ as its coolant.

A **PWR** is contained inside a steel pressure vessel filled with pressurised water which acts as the moderator and coolant. The fuel used is enriched uranium dioxide and is contained in zirconium alloy tubes.



- Advanced Gas-cooled Reactor (AGR)
- Pressurised Water Reactor (PWR)

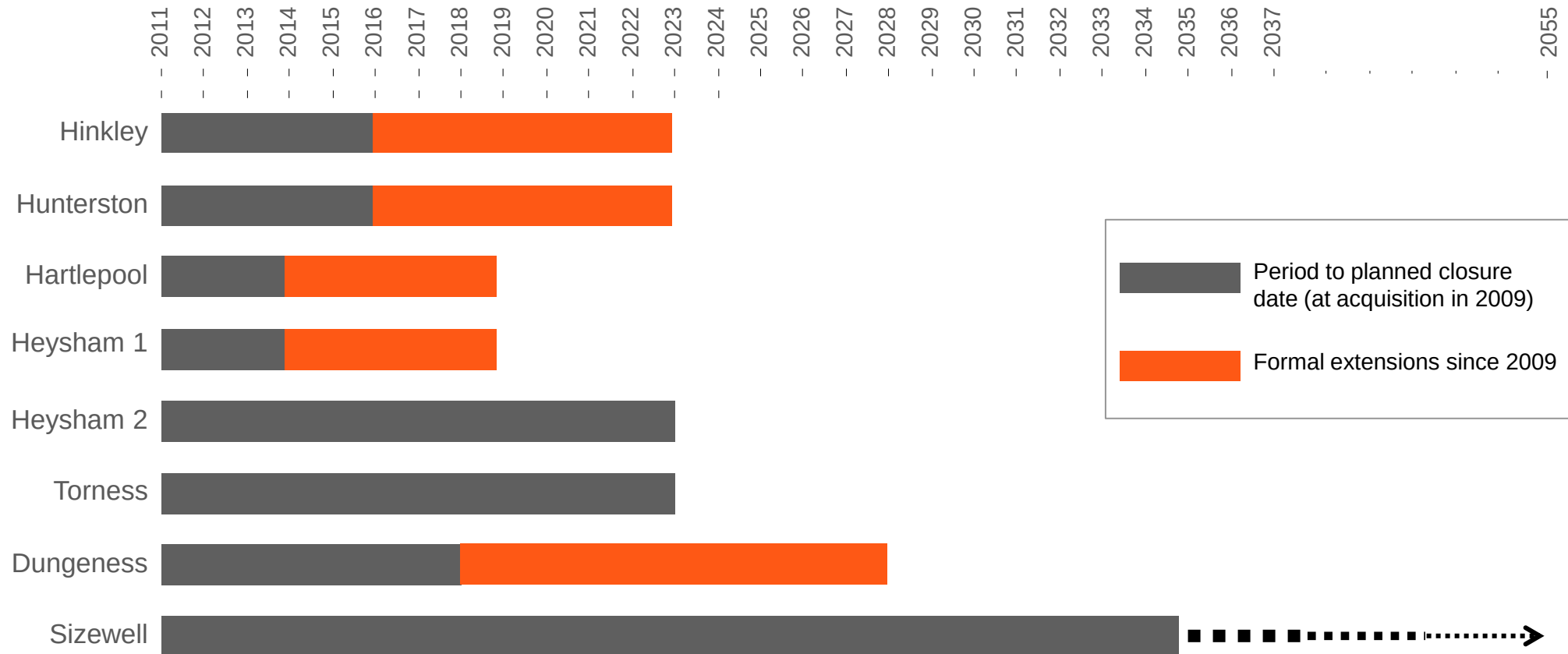
Key figures: nuclear output in the UK



Key characteristics of the EDF Energy nuclear fleet

- **A nuclear fleet with an average age of 31 years**
 - Total power generation capacity of 8.9GW
 - An output of 56.3TWh in 2014
- **Nuclear safety is the over-riding priority**
 - Adequacy of each station confirmed at each statutory outage by the Office for Nuclear Regulation (ONR) that has to provide consent to restart after each outage
 - Periodic safety review (PSR) undertaken every 10 years, also requiring ONR acceptance
 - Following events in Japan:
 - EDF Energy has completed evaluations required by WANO⁽¹⁾, responded to the ONR recommendations and to the EU Stress Test
 - EDF Energy concluded, with agreement from the ONR, that the fleet of existing stations is safe to continue operations. However EDF Energy nuclear generation has specified and committed to deliver resilience enhancements to improve its ability to withstand beyond design basis events. These enhancements were substantially completed by the third anniversary of the events in Japan
- **On track to deliver on life extensions target**
 - Life extension subject to review of safety, technical and economic factors
 - Target to extend the lives of the AGR by an average of 8 years, and Sizewell B by 20 years

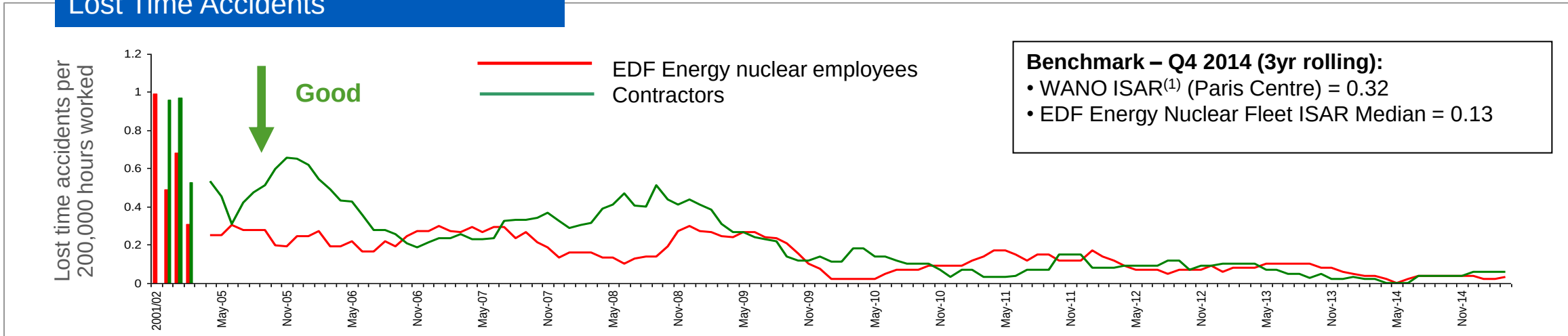
EDF Energy nuclear power stations lifetimes



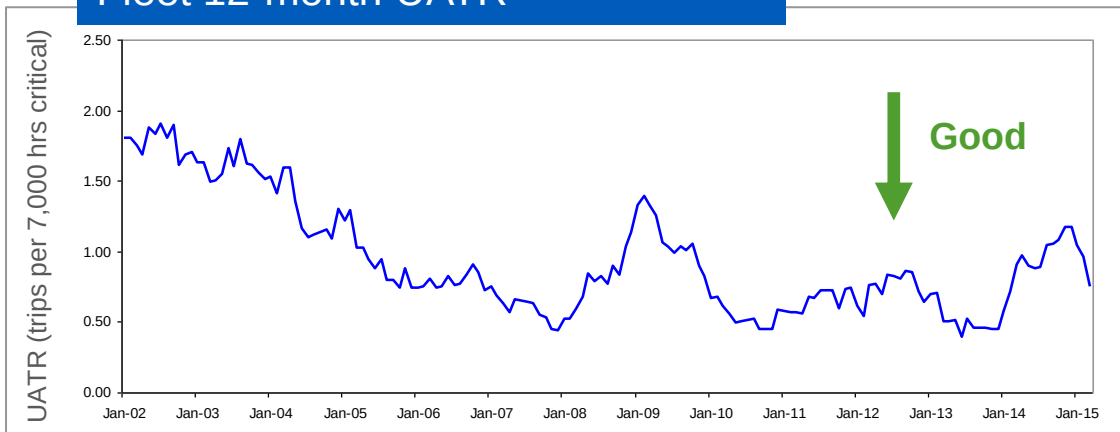
Expectation to achieve an average eight-years extension across the AGR fleet
(relative to planned closure dates at British Energy acquisition in 2009)

EDF Energy nuclear safety performance has improved significantly

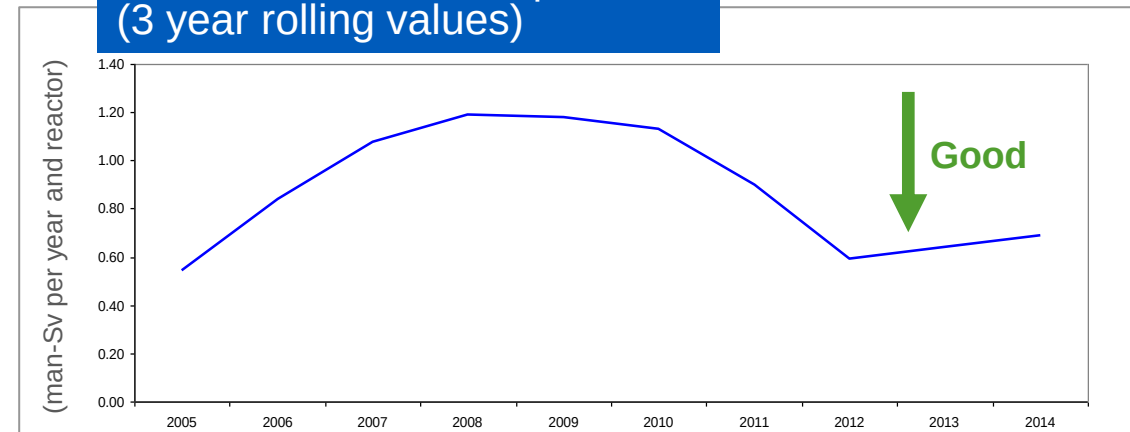
Lost Time Accidents



Fleet 12-month UATR⁽²⁾



Collective radiation exposure (3 year rolling values)



EPR: safe technological improvements

■ Safety:

- Accident probability reduction (factor 10)
- External hazard protection (shell able to resist an airplane crash)
- Evolutionary design (core catcher)

■ Performance:

- Annual generation boosted over 36%
- Efficiency improvement (+3pts)
- Increased availability (91%)

■ Radioprotection:

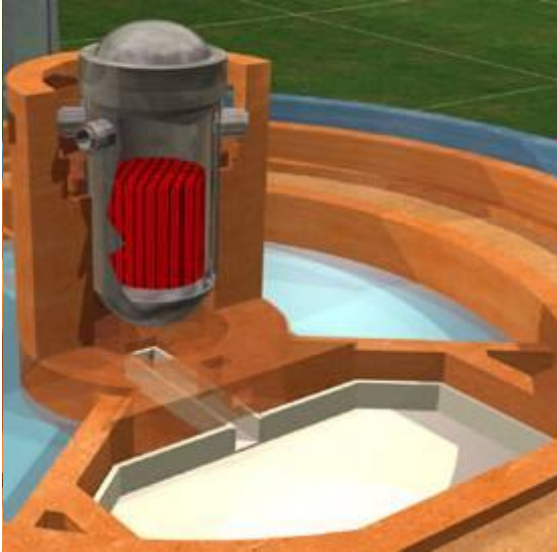
- At least 40% cut in collective annual exposure

■ Environment:

- Very important reduction in radioactive waste and gaseous and liquid discharges



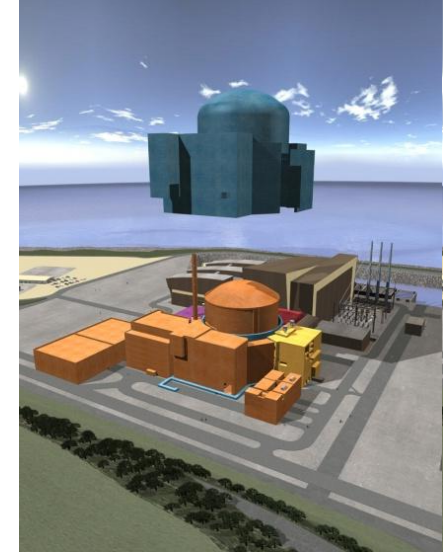
EPR design improvements



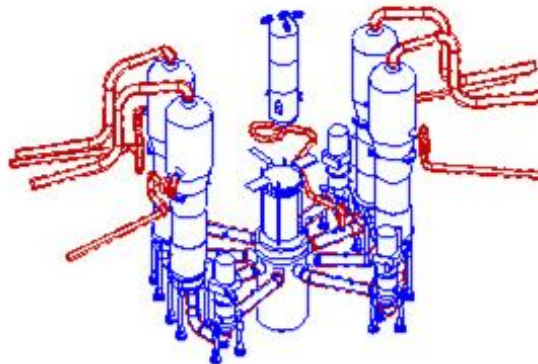
Core catcher in case
of an accident



4 independent
safeguard systems



Shell able to resist
an airplane crash



Systems and
components
improvement

Update on the Flamanville 3 project

- 1 EPR of 1,650MW under construction
- Commissioning scheduled for 2017
- 2014 - 2015 main steps:
 - Primary circuit: installation of the reactor vessel, of the pressuriser and of 4 steam generators; work on installation of the primary circuit
 - Completion of the first major tests facilities (command room, pumping station, etc.)
 - Intensification of electro-mechanic assemblies
 - Densification of trials on various plant systems
- April 2015: AREVA and EDF have informed the (ASN) that a new series of tests is underway for the qualification of the Flamanville EPR reactor vessel head and bottom
 - This series of tests follows chemical and mechanical tests performed on a representative model of the reactor vessel head and bottom that showed that one of the criteria was not met in an area with greater than average carbon content. In parallel, work continues at the Flamanville EPR.



China Taishan 1 & 2 (EDF 30%)

- Two 1,750MW EPRs under construction
- Construction work completed as of 31 December 2014:
 - Unit 1: continuation of the safety review with the Chinese nuclear security authority to obtain commissioning authorisation
 - Unit 2: delivery of large components completed, installation of the tank in the reactor's building and welding begun on the primary circuit
 - Installation of electro-mechanical equipment and tests of various systems on both units
 - Filling the cooling water supply pond
 - Commissioning of the control simulator on which control operators have passed their certification exam
- Planned for 2015:
 - Unit 1: end of works to install the first electro-mechanical equipment; first trials of the entire facility
 - Unit 2: mounting of primary circuit; continuation of electro-mechanical installations and first trials



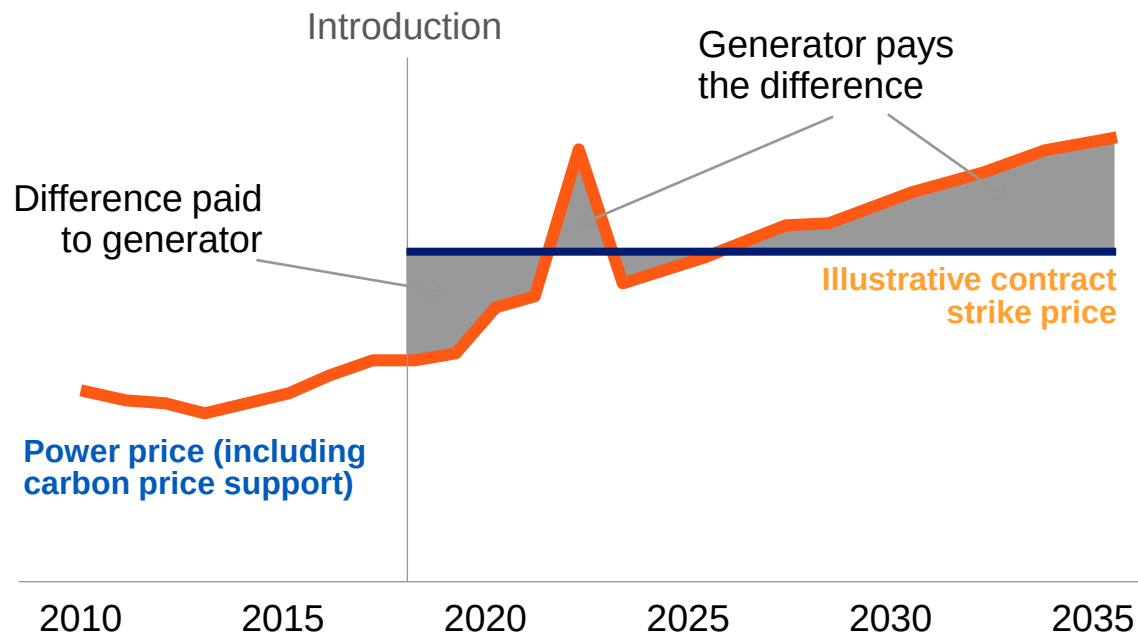
Nuclear New Build in the UK: Hinkley Point C

- State aid approval from the European Commission on 8 October 2014
 - Following examination of the deal, the European Commission approved the Hinkley Point C Contract for Difference (CfD) and the UK Government's proposed guarantee of project debt
 - Key elements of the agreements:
 - Contract for 35 years from commissioning date
 - Strike price: £92.5/MWh⁽¹⁾⁽²⁾ from commissioning date
- Project status
 - Work has continued on the detailed engineering design for the power
 - EDF Energy has also reached agreement with contractors and unions on work conditions on site
- Next steps
 - Finalisation of the full terms of the CfD and the financing arrangements for the project including the debt guarantee
 - Agreements with strategic and financial partners
 - Implementation of the waste transfer contract arrangements which must be approved by the European Commission



In the UK, Contracts for Difference (CfDs) can provide the certainty investors need to build new low carbon plants

Illustrative Impact CfD on Revenues for Low Carbon Generators (£/MWh) – starting 2018



- Reduce market volatility and risks for investors
- Offers a fair deal for consumers
- Not a new mechanism
 - IPPs⁽¹⁾ in the 1990s
 - Used extensively during the Pool
 - Common in commodities trading
- Can be tailored by technology's risk profile
- State aid is approved for most technologies
- Implementation issues manageable
- Open auctions to competition to fix prices

What are nuclear long-term provisions?

- EDF provisions as of 31 December 2014 are established in accordance with the requirements of the law of 28 June 2006, codified in articles L. 542-1 and subsequent of the French Environment Code and its implementing legislation published in 2007
- Two categories of provisions can be distinguished:
 - Provisions for back-end nuclear cycle expenses, covering:
 - Provisions for spent fuel management, including the used fuel in the reactor not yet spread
 - Provisions for long-term management of radioactive waste (see below for more details)
 - Provisions for decommissioning and for last cores
- Another way to look at it from a financial point of view is to separate them based on the necessity to cover the provisions with dedicated assets
 - Indeed, only provisions for decommissioning, for long-term radioactive waste management and a part of provisions for last cores are to be covered by dedicated assets (see financial section for more information on dedicated assets)
 - The rest of the provisions (mainly provisions for spent fuel management) are part of the operating cycle and are not subject to the dedicated assets constitution

The plant dismantling cycle: 3 key steps

Phase

1

■ Final shutdown

- The first phase consists in unloading the fuel and draining all systems (after which 99.9% of the on-site radioactivity has been eliminated), followed by decommissioning (dismantling of decommissioned non-nuclear installations)

Phase

2

■ Partial dismantling

- The second phase consists in dismantling all equipments and buildings (with the exception of the reactor building), the packing and shipment of all waste to storage and disposal facilities, isolation, containment and surveillance of the surrounding portion of the reactor

Phase

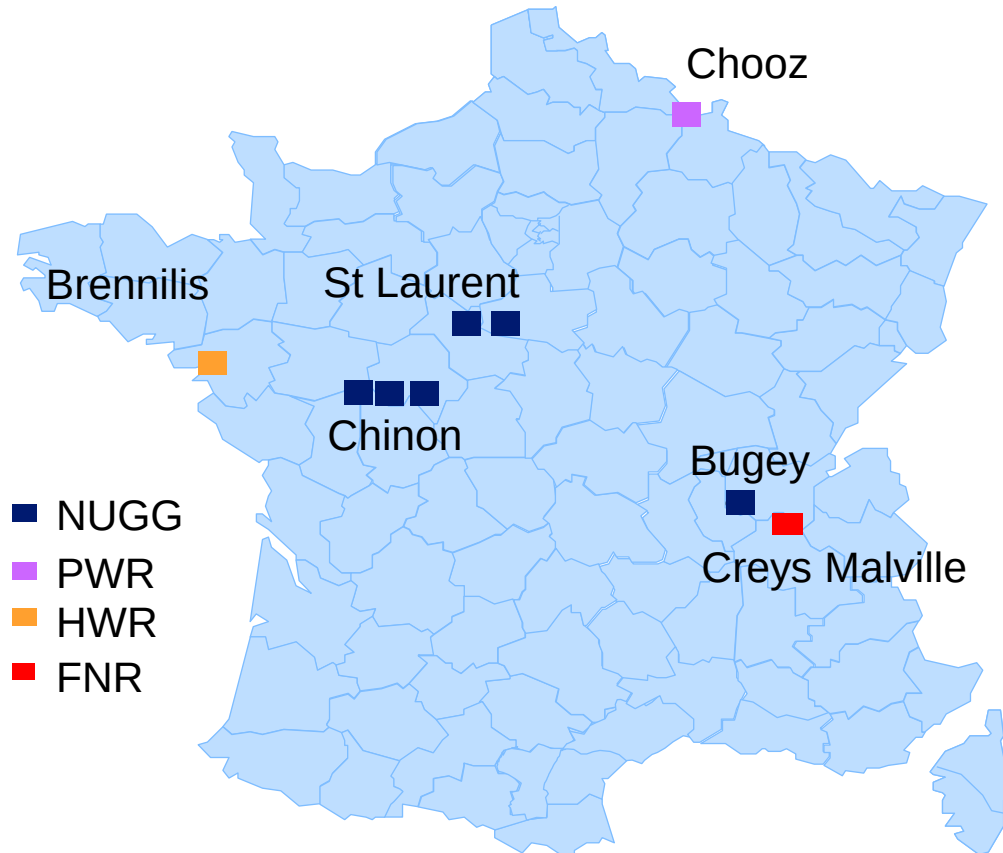
3

■ Full dismantling

- This final phase involves the full dismantling of the reactor building and of the still radioactive materials and equipments

The duration and complexity of the three phases may vary according to the actual scope of the work that needs to be done

EDF nuclear plants being dismantled



■ 1 pressurized-water reactor (PWR)

- Chooz A (300MW): 1967-1991

■ 1 heavy-water reactor (HWR)

- Brennilis (70MW): 1967-1985 (EDF/CEA)

■ 6 natural uranium/graphite gas reactor (NUGG)

- Chinon A1 (70MW): 1963-1973
- Chinon A2 (200MW): 1965-1985
- Chinon A3 (480MW): 1966-1990
- Saint-Laurent A1 (480MW): 1969-1990
- Saint-Laurent A2 (515MW): 1971-1992
- Bugey 1 (540MW): 1972-1994

■ 1 fast-neutron reactor (FNR)

- Creys-Malville (1,240MW): 1986-1997

First PWR under decommissioning: Chooz A

Commissioned in 1967 and in operation until 1991, Chooz A plant is the first reactor of the PWR series to be decommissioned in France

1991-1999

Plant shutdown, transfer of fuel to the reprocessing plant, surveillance phase

1993

Publication of the decree for the definitive closure of the plant allowing the beginning of decommissioning works

1999-2008

“Non-nuclear part” (o/w turbine hall building) and nuclear annex buildings (excluding the reactor room) decommissioning

2007

Publication of the decree for the complete dismantling of the installation

2008

Dismantling and decontamination of the nuclear circuit (excluding nuclear vessel)

2012-2014

Pressuriser and steam generators extraction and expedition to ANDRA⁽¹⁾. End of the electromechanical equipment decommissioning in the caves housing the reactor and auxiliary equipment

2015

Preparatory work to the reactor vessel dismantling yard



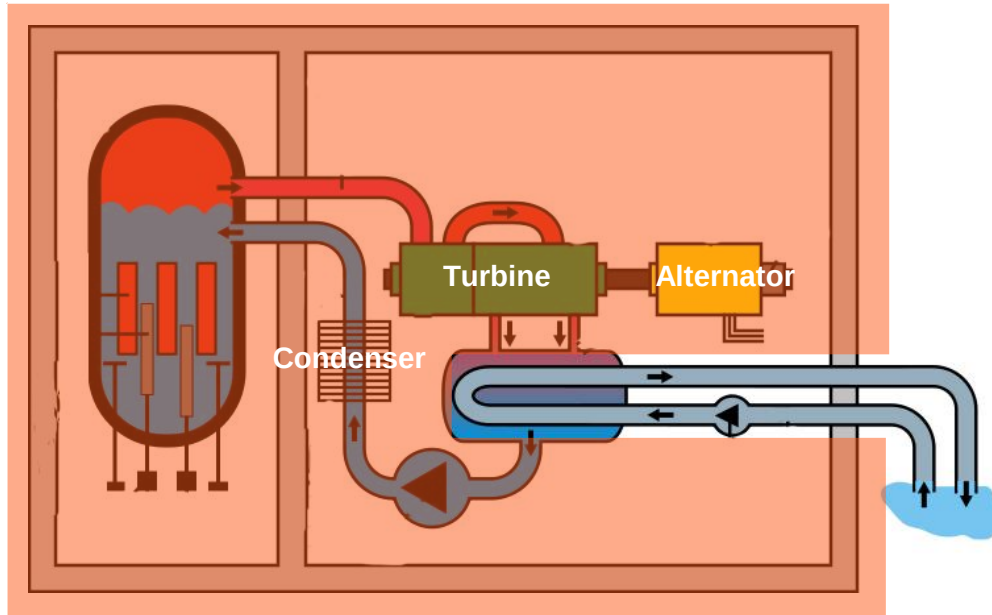
Benchmarking vs. German plant operators

- A direct comparison of nuclear provisions (dismantling and downstream cycle) in EDF's accounts with German plant operators' provisions is hindered by the important provisions aggregation reported by German plant operators
- German plant operators' higher level of dismantling provisions, when compared to their installed base, may be due to several factors:
 - **The effect of discounting, as the French fleet is younger:** a 10-year time lag lowers provisions by 25%
 - **Differences in scope:** in Germany, dismantling costs include the costs of building and operating an on-site spent fuel storage building
 - **The series and processes standardization effect leads to a lower dismantling cost for PWR reactors than for all other types of reactors**
 - **Structural differences in organization and industrial choices:** German reactors are of various types and are run in a decentralized manner, in contrast to the integrated and standardized fleet in France

EDF's specific factors explain why its nuclear provisions are lower than some other operators

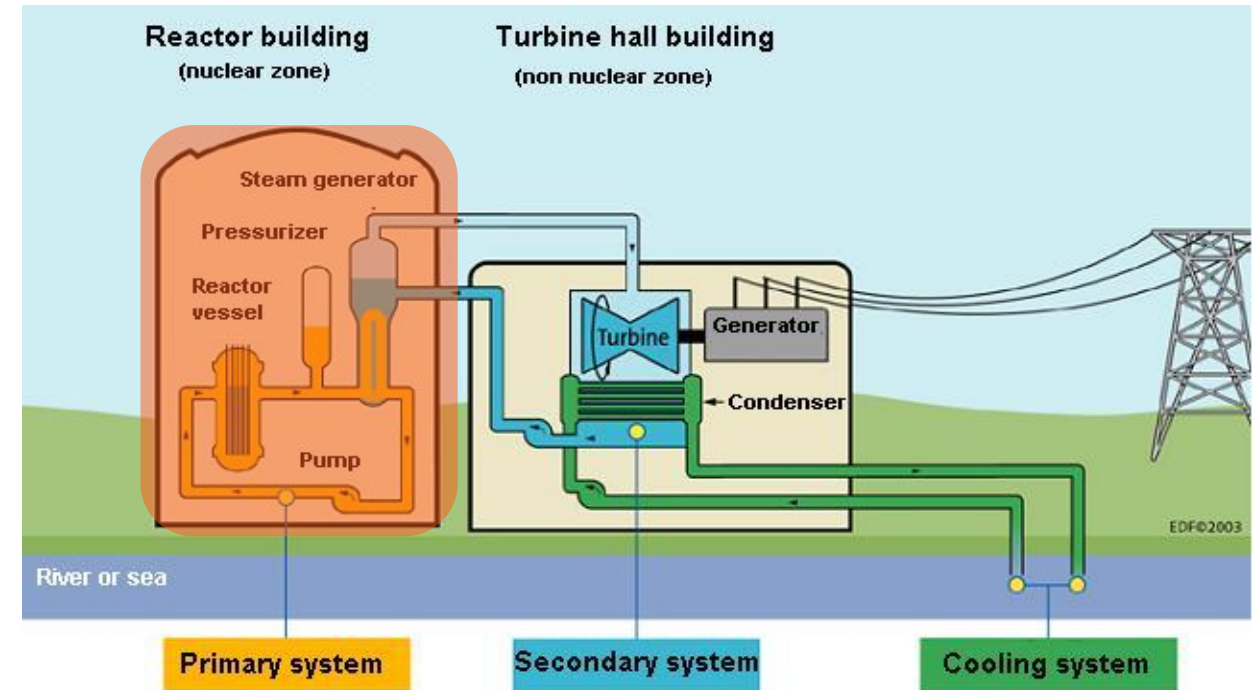
Boiling Water Reactor and PWR comparison

BOILING WATER REACTOR⁽¹⁾ 6 reactors in Germany



Zone generating nuclear waste upon dismantling

EDF PRESSURISED-WATER REACTOR⁽¹⁾



A boiling water reactor (BWR) has more areas contaminated by primary circuit water and larger areas generating nuclear waste than a pressurized-water reactor (PWR)

The management of radioactive waste

	TYPE OF WASTE	EXAMPLE	POSITION/STORAGE
SHORT-LIVED WASTE Their radioactivity is halved over a period of 31 years or below 90% of waste 0.1% of radioactivity	VERY-LOW-LEVEL WASTE (VLLW)	They come from the decommissioning of nuclear installations (concrete, scrap, piping, etc.)	On the surface at the Morvilliers storage centre managed by ANDRA ⁽¹⁾
	SHORT-LIVED INTERMEDIATE- AND LOW-LEVEL WASTE (SL-ILW and -LLW)	They come from maintenance works (tools, clothes, dismantled parts, etc.); waste from the processing of liquid and gaseous effluents of operating plants; other deconstruction waste	On the surface at the Soulaïnes storage centre, managed by ANDRA ⁽¹⁾
LONG-LIVED WASTE Their radioactivity is halved over a period of more than 31 years 10% of waste 99.9% of the radioactivity	LONG-LIVED, LOW-LEVEL WASTE (LL-LLW)	They essentially are graphite waste from the dismantling of first generation plants	At the production site waiting for a special subsurface storage (from 15 to 200m) to be built. Commissioning in 2025.
	LONG-LIVED INTERMEDIATE-LEVEL WASTE (LL-ILW)	Metallic structures of the assemblies separated during the processing of spent fuel, other dismantling waste	At the production site for the waste generated from operation and storage at the ICEDA (<i>Installation d'Entreposage et de de Conditionnement des Déchets Activés</i>) for deconstruction waste. Storage: Cigéo (<i>Centre Industriel de Stockage Géologique</i>). Beginning of the pilot industrial phase in 2025
	HIGH-LEVEL WASTE (HLW)	Non-recyclable material from the processing of spent fuel	Temporarily stored in dedicated installations in La Hague site of AREVA, waiting for a decisions on the deep geological waste storage (Cigéo). Beginning of the pilot industrial phase in 2025

What does long-term management of radioactive waste cover?

- Evacuation and storage of radioactive waste from the dismantling of nuclear facilities
- Evacuation and storage of radioactive waste from the treatment of spent fuel in La Hague
- Long-term warehousing and direct storage of the not recyclable fuel on an industrial scale in existing facilities
- EDF share of evaluation costs and costs of coverage, closure and supervision of storage centers:
 - Existing centers for very low-level, low-level and intermediate-level radioactive waste (VLLW, LLW and ILW)
 - Centers need to be created for long-lived low-, intermediate- and high-level radioactive waste (HLW/ILW-LL)

Cigéo, a project for reversible deep-storage of French radioactive nuclear waste

- Pursuant to article L.542-1 of the French Environment Code, EDF is technically and financially responsible for its radioactive waste. ANDRA (National Agency for Radioactive Waste Management) is in charge of this waste and is responsible for the design, construction and operation of storage sites. The waste type is established according to two criteria:
 - Their level of radioactivity: high level, intermediate level, low level and very low level activity
 - The time required for the radioactivity of radionuclides to be divided by two: short-lived and long-lived waste
- Regarding long-lived waste, EDF works in close collaboration with ANDRA in order to implement a storage solution that is safe and cost effective. EDF anticipates the Cigéo financing by constituting secured provisions through dedicated investments in order to ensure funds to be available when needed and make ANDRA benefit from EDF experience as a nuclear operator in the project design. This cooperation is spelled out in an agreement signed between ANDRA, EDF, AREVA and the CEA.
- Provisional timeframe:
 - 18 December 2014: launch of the formal consultation process of nuclear operators on the project and its opinion
 - First half of 2015: formal consultation of waste producers on project figures, followed by a ministerial order from the French Ministry of the Environment, Sustainable Development and Energy for the evaluation of costs
 - 2015-2017: authorisation request to build Cigéo set-up and submitted by ANDRA
 - 2020: beginning of construction works of Cigéo facilities
 - 2025: beginning of the industrial pilot phase
 - 2030: beginning of Cigéo operation subject to the approval of the Nuclear Safety Authority

Innovation: nuclear generation (1/2)

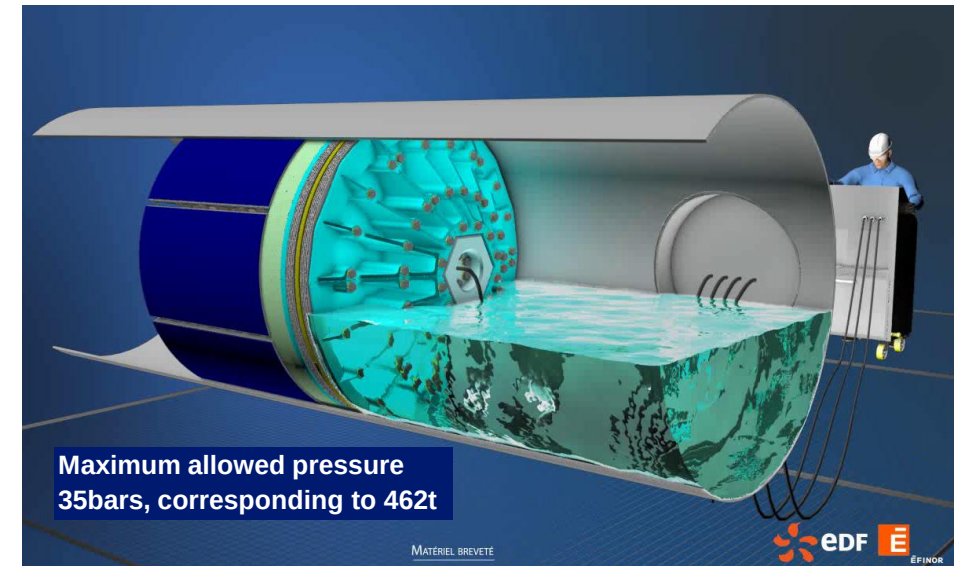
Testing the impermeability of circuits without cutting them

The project: circuits in all nuclear power plants are tested regularly for leakages and to ensure they can withstand high pressure, both to comply with regulation and to guarantee high safety levels. Generally, in order to isolate the area of piping to be examined, the relevant section has to be cut out and welded back in again, making repairs lengthy and complicated. But now these difficulties have been addressed by a "multi-element plug" tool developed and patented by EDF. Once inserted into the circuit, it temporarily "plugs" the relevant pipe without any need for modifications. It is even possible to plug a pipe wider in diameter than the entrance through which the tool is inserted. The "self-sealing" plug offers the same impermeability and pressure resistance as traditional leak plugging measures. The tool is particularly useful during hydraulic tests on the impermeability and strength of the primary circuit.

Benefits:

- Time saved estimated to be several weeks during hydraulic testing (16 hours instead of 200 hours for the traditional method)
- Lower repair costs and simpler maintenance through the avoidance of welding, grinding and handling
- Lower risk of exposure to ionising radiation, due to the fact that x-rays are not needed to check the quality of new welding

Project implementation: The tool was successfully used at the Cattenom plant and will next be introduced at Flamanville and Nogent before being rolled out to all nuclear facilities.



3D model of how the tool operates

Innovation: nuclear generation (2/2)

Virtual "Fuel Handling" Training

The project: until now loading and removing fuel into and from a nuclear reactor could only be carried out during unit shutdowns, with correct handling equipment in a controlled area. So, to improve its existing training programme, EDF developed a virtual tool which simulates the loading and removal of fuel. The tool is based on software which recreates the working environment of each person at work in the fuel handling process. The training interface comprises 5 networked touchscreen tablets, one for each participant. The programme is designed to improve coordination between the activities of each participant. Trainers can modify the programme to change the exercises in real time, thereby ensuring that the training covers all possible scenarios.

Benefits:

- It is possible to organise training sessions at any time, without regard to unit shutdown times
- It eliminates any exposure to ionising radiation as the training sessions are held outside the nuclear zone
- It does not affect the scheduling of unit shutdowns, thanks to more regular simulation exercises

Project implementation: because it relies on standard technology (tablets), this training programme can be implemented in any nuclear plant. In 2015 the tool will be made available to 900 MW series and then expanded to other sites.

EDF main businesses

Generation

Nuclear generation

Renewable generation

Key points of renewable generation

112

Hydropower and innovations

114

Other renewables and innovations

122

A leader in hydropower and other renewable energies

■ Europe's leading hydropower producer

- 239 dams and 436 hydropower plants in mainland France
- 47 hydroelectric plants in Italy

■ Architect and lead contractor on international hydro projects

- EDF owns 40% of Nam Theun 2 Power Company (NTPC), owner of the hydro plants complex of Nam Theun 2 (for a total of 1,070MW)
- **12 December 2014:** EDF, through its subsidiary EDF Norte Fluminense, acquires 51% stake in the SINOP Energy Company, which is responsible for the construction and future operation of the hydroelectric facility of SINOP (400MW), in the North of the Mato Grosso State in Brazil. The construction of this dam began in spring 2014 and its commercial commissioning is scheduled for the second half of 2017

■ A major player in the green energies market

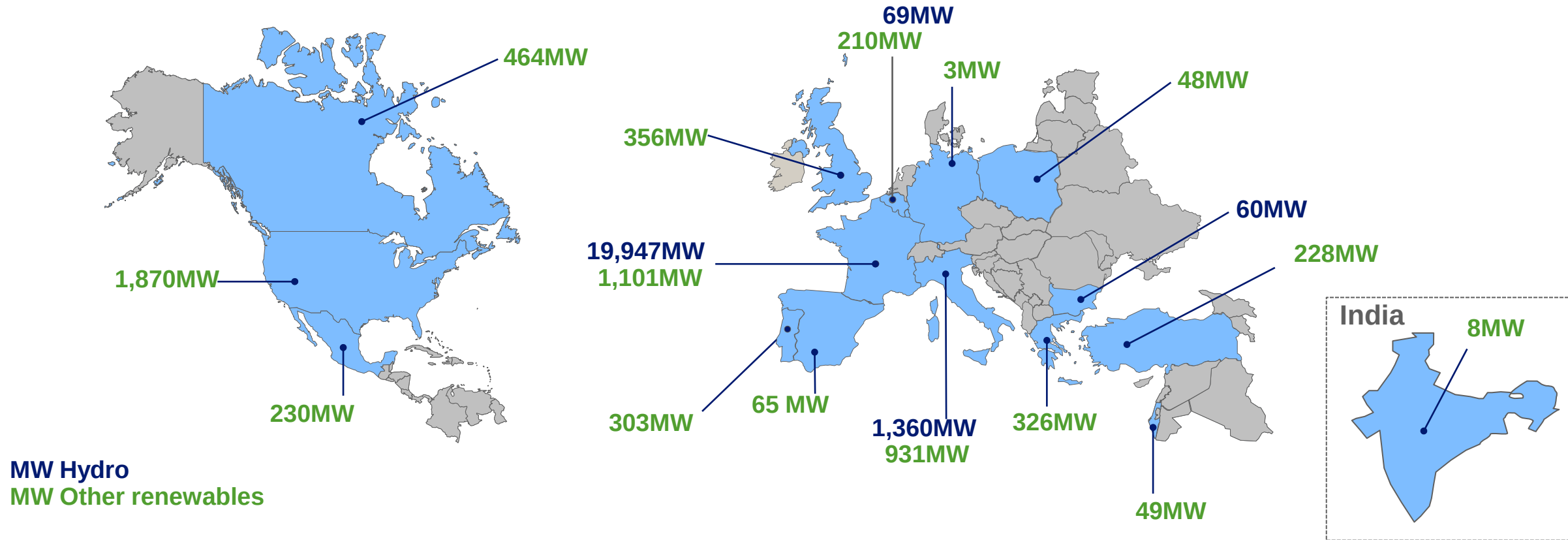
- The EDF group is among the world's top five companies for renewable energy, with an installed capacity of over 28GW (mainly in hydropower)
- Historically, EDF Energies Nouvelles (EDF EN) has developed its business in Europe and North America. Since 2012, the Group has been established in new countries such as South Africa, Morocco, Israel, Poland and India

■ Wind power and photovoltaic solar: supporting a growing industry

- Wind offshore: in France, in April 2012, three of the French government's four wind power projects were awarded to the consortium headed by EDF EN as part of the first tenders for offshore wind power in 2011 (1,500MW)

EDF: major positions in renewable energies

Net consolidated capacity as of 31 December 2014

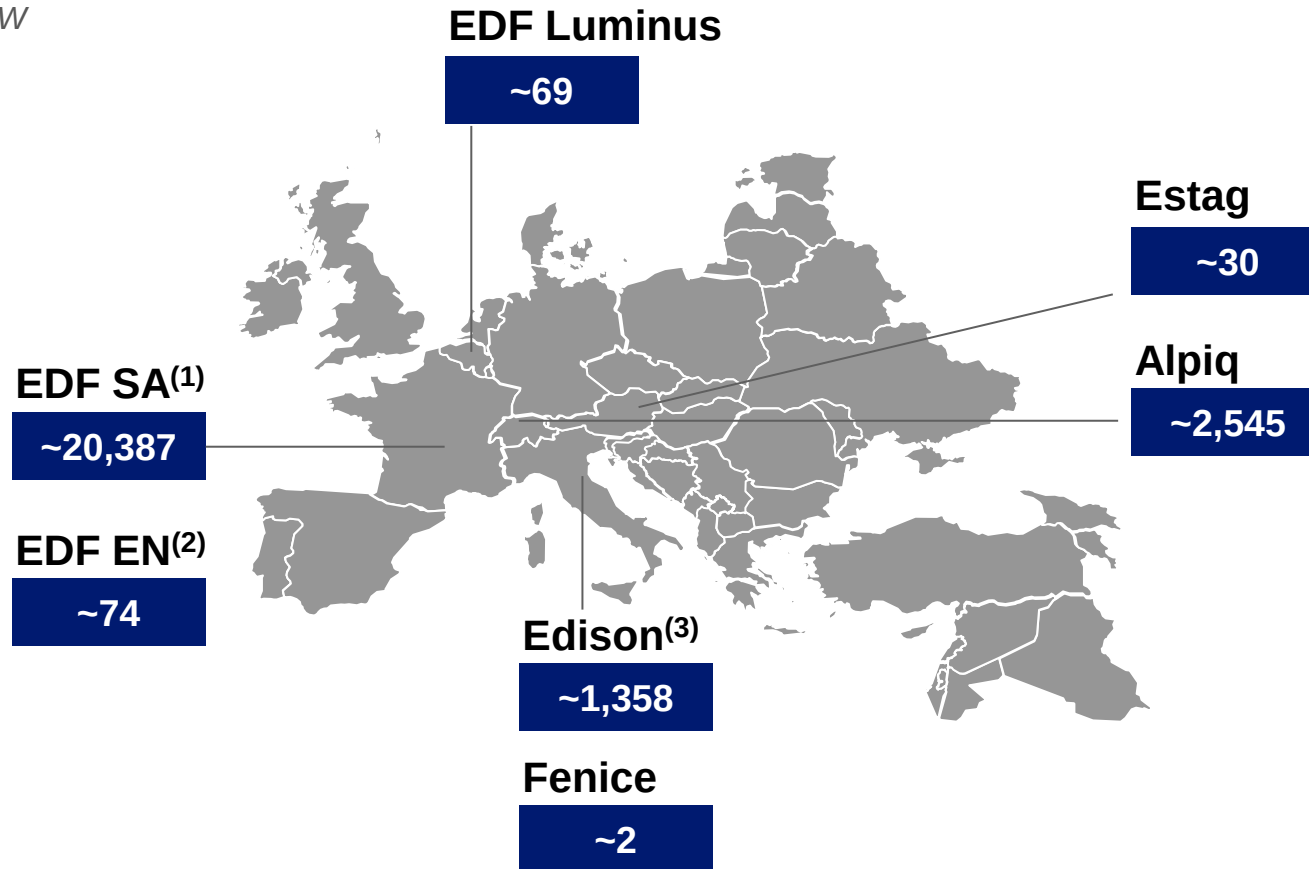


A diversified portfolio of renewables with approximately 28GW⁽¹⁾ of net installed capacity

Hydropower in the EDF group

Installed capacity at the end of 2014 (non consolidated data)

In MW



In MW



Nam
Theun 2
~1,070

(1) Including French Island activities and the Rance power plant, excluding EDF EN
(2) The EDF EN figure includes the whole worldwide installed capacities, France included
(3) Including 125MW in Switzerland
Note: these figures include non-controlling interests

EDF's hydropower fleet in France

- EDF's hydropower fleet in France is comprised of **436 power plants** with an average age of 70 years
- **Net output in 2014 = 37.5TWh⁽¹⁾** (excluding Corsica and the French overseas departments, equivalent to 1.3TWh in 2014)
- Benefits of hydropower:
 - Speed, availability and flexibility
 - Renewable energy: annual savings of 3.23 million ToE (tons of oil equivalent)
 - Water storage capacity (peak energy, cold source for thermal and nuclear generation)
 - Ability to provide system services to the network (frequency and voltage adjustments)



Different types of hydropower facilities

EDF disposes of numerous hydropower facilities, able to meet base-load and peak demand, designed to optimise the use of water resources

■ Run-of-river

- No storage capacity
- Energy generation depends solely on the current water condition

■ Pondage water

- Average sized water reserve, intended for an occasional use during the week or the day
- Generation is concentrated at peak hours

■ Reservoirs

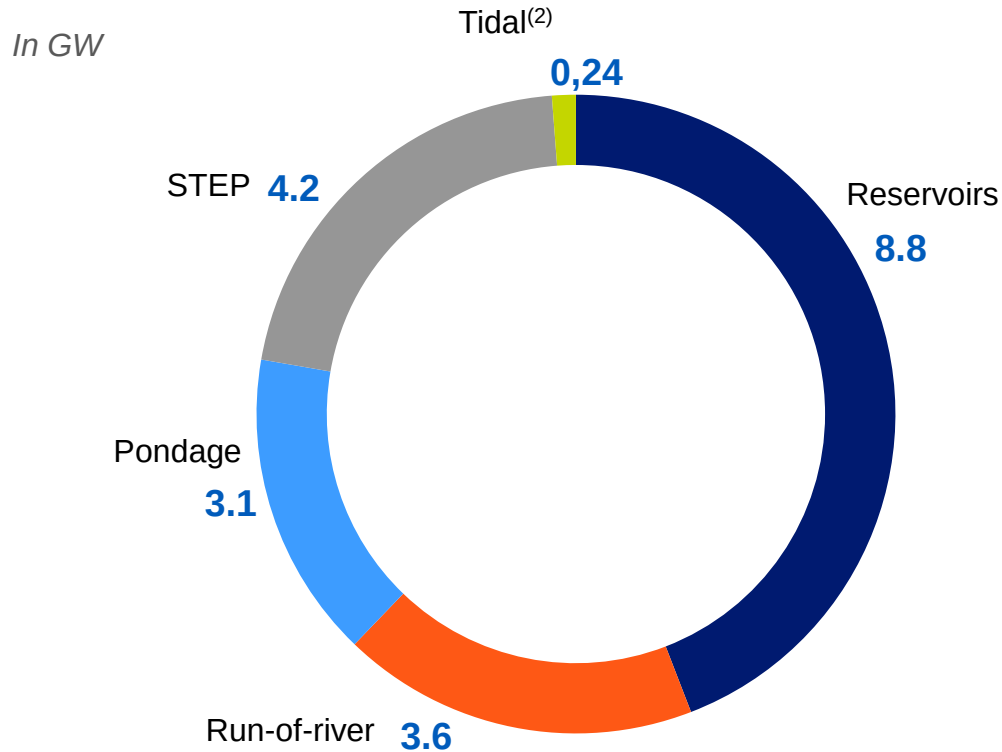
- Large storage capacity
- Influence on downstream power plants, which calls for a management of valley stations (located in mountain ranges)

■ Pumped storage (STEP)

- Water is pumped from a downstream reservoir to an upstream one to create a reserve available during off-peak hours
- Water is then turbined from the upstream reservoir to the downstream one during periods of high demand

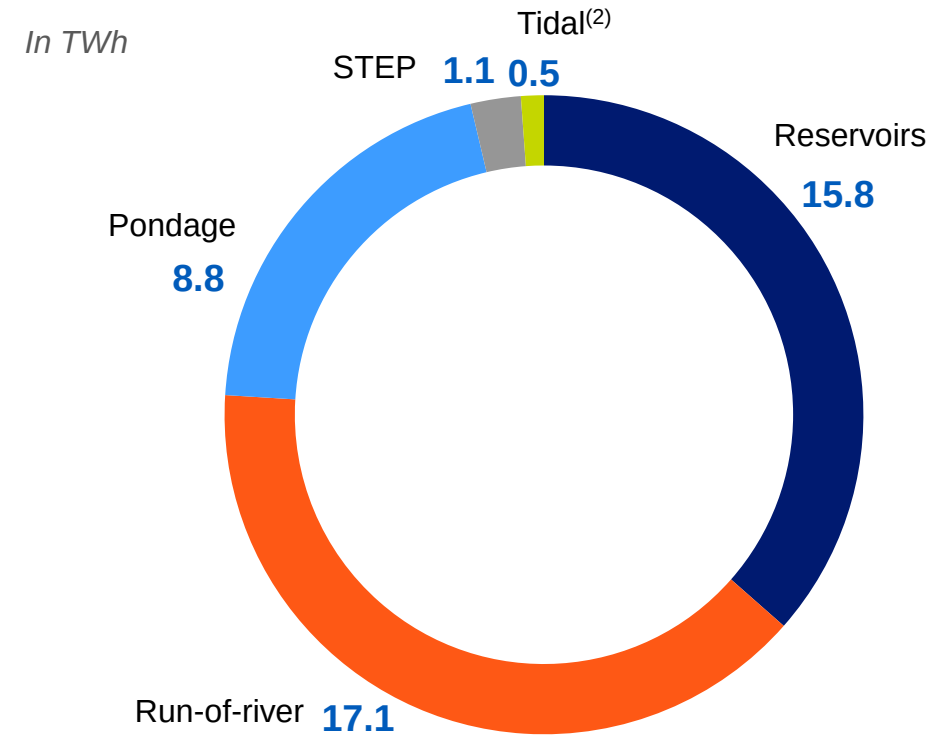
EDF's hydropower fleet in France

Installed capacity ~20GW⁽¹⁾



≈ 20% of the overall EDF generation capacity in France

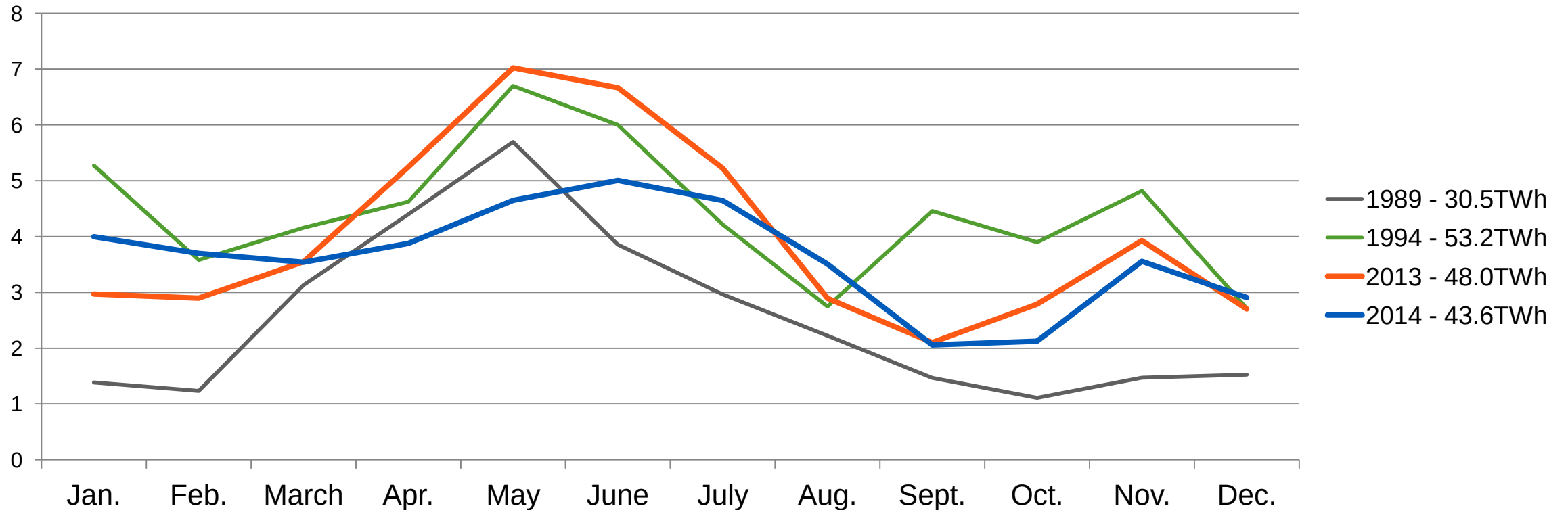
Average producible hydropower
output⁽³⁾: ~43.5TWh



≈ 10% of the average EDF output in France

A producible hydropower output dependant on the weather

In TWh



1989: lowest producible hydropower output⁽¹⁾ in the last 25 years

1994: highest producible hydropower output⁽¹⁾ in the last 25 years

Hydroelectric concessions in the framework of the energy transition law

- On 22 April 2010, the Ministry for Ecology, Energy, Sustainable Development and the Sea announced **the scope for the renewal of the hydroelectric concessions**: ten concessions with a cumulated power of 5,300MW (equivalent to approximately 20% of the French hydropower fleet), o/w 4,300MW operated by EDF, are involved
- In order to put together those concessions per valley, the French State has decided that half of EDF concessions (2,150MW and 3.5TWh approximately) have to be renewed earlier. Outgoing operators will receive compensation for the lost income stemming from the early termination of the concession, in accordance with the terms of the concession agreement
- **The draft bill on energy transition** for green growth, adopted by the National Assembly in the first reading on 14 October 2014 has rounded out the existing competitive bid procedure, giving the French State the opportunity to:
 - Group concessions forming a “chain of hydraulically linked facilities” and, for grouped concessions, determine the concession end date; that date should guarantee an economic equilibrium for the existing concession owner
 - Set up semi-public hydroelectric companies made up of private operators and a public partner (the State, local authorities, etc.), each holding at least 34% of the share capital
 - Extend certain concessions in exchange for investments on the part of the operators in connection with the energy transition
- EDF is preparing itself to submit its best offer for each concession, combining improved energy efficiency, attention to the environment (water resources, aquatic environments, etc.), compensation of the government and municipalities through fees and regional development, while ensuring safety and taking into account the social component

Innovation: hydroelectric power generation (1/2)

The new Poutès dam: built for and by the local communities

The project: as part of the Monistrol d'Allier concession renewal, EDF co-designed a large-scale redevelopment of the Poutès dam, in close collaboration with local stakeholders. The **aim** was to reconcile CO₂-free electricity generation with the conservation of the Allier's unique biodiversity. The project is innovative in many ways and is particularly notable for its governance model based on strategic decision-making by consensus of the interested parties (the State, elected officials, environmental associations, biodiversity experts, etc). On a technical level, the project boasts an innovative mix of complementary solutions including:

- lowering the height of the dam from 17 to 4 metres to restore the Allier's appearance as a free-flowing river
- building channels to allow fish to swim up and down the river
- measures to facilitate the movement of sediment necessary to ensure the right balance in the river

Once the redevelopment is complete, the dam's integration in the Allier ecosystem will be subject to close scientific monitoring.

Benefits:

- it retains 85% of the power generation capacity of the old dam
- it is a model hydroelectric plant meeting both economic and environmental challenges

Project implementation:

Working methods and the model of governance with local stakeholders are directly applicable to other hydroelectric projects.



The Poutès dam currently.



The dam following redevelopment.

The new facility will stand at 4m, down from 17m currently.

Innovation: hydroelectric power generation (2/2)

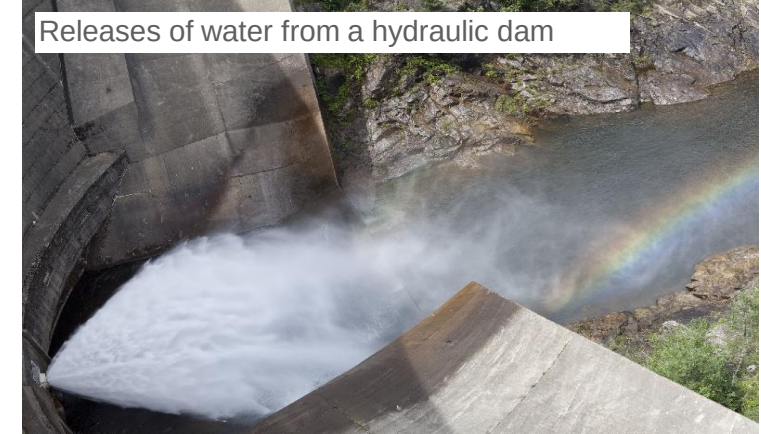
Low water replenishment online

The project: hydroelectric dams play a major role in regulating water flow. When water flow reaches exceptionally low levels (known as "**étiages**" in French), it can be replenished by releases of water. To assist the relevant authorities (departmental councils, river associations, etc) in this process, EDF developed an IT application called "**E-tiage**" which simulates releases of water and their effects on the river. With continuous access to updated hydrological data, the tool is able to make reliable forecasts and aid decision-makers in ordering low water level replenishment.

Benefits:

- more efficient management of low water levels ensures water resources are conserved and power generation continues
- financial benefits for local authorities: thanks to more efficient water releases, local authorities can control spending on water level management

Project implementation: E-tiage is currently being tested in the Lot river valley. In 2015, it will be offered to local authorities responsible for low water level management in South-West France, ahead of testing in 2016.



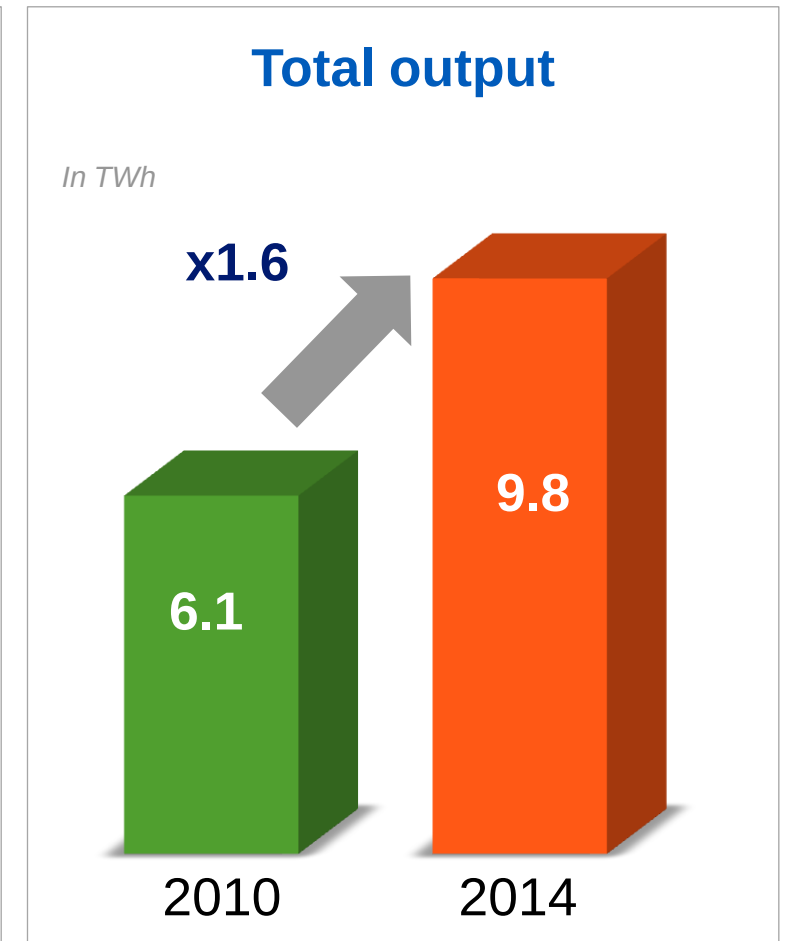
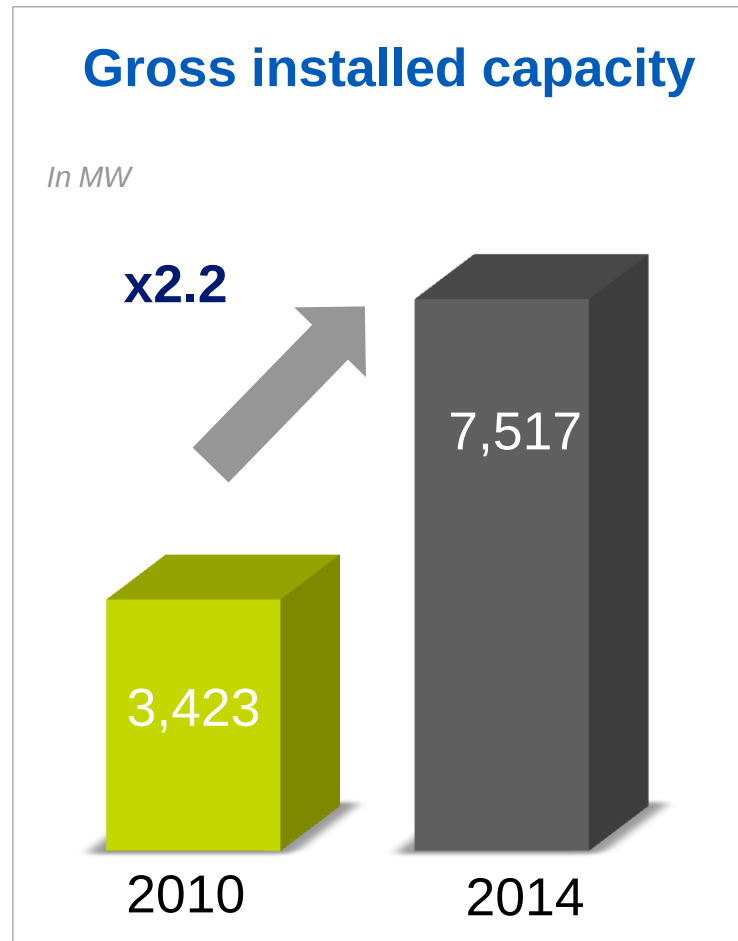
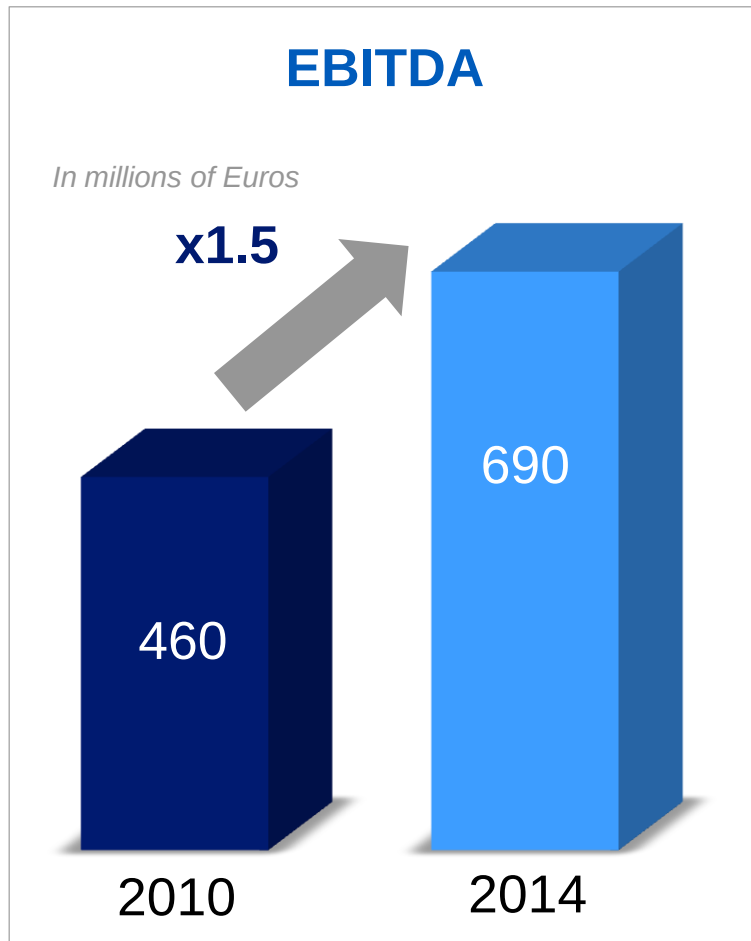
PERFLEX: Real time optimisation of hydroelectric generation in the Rhine valley

The project: EDF developed a pilot system called PERFLEX, which optimises the contributions of 10 factories in the Rhine valley in real time to accurately track the area and safeguard the stability of the electricity network. The solution also provides 10% of the second national reserve (which can be used to maintain a balance between power generation and consumption).

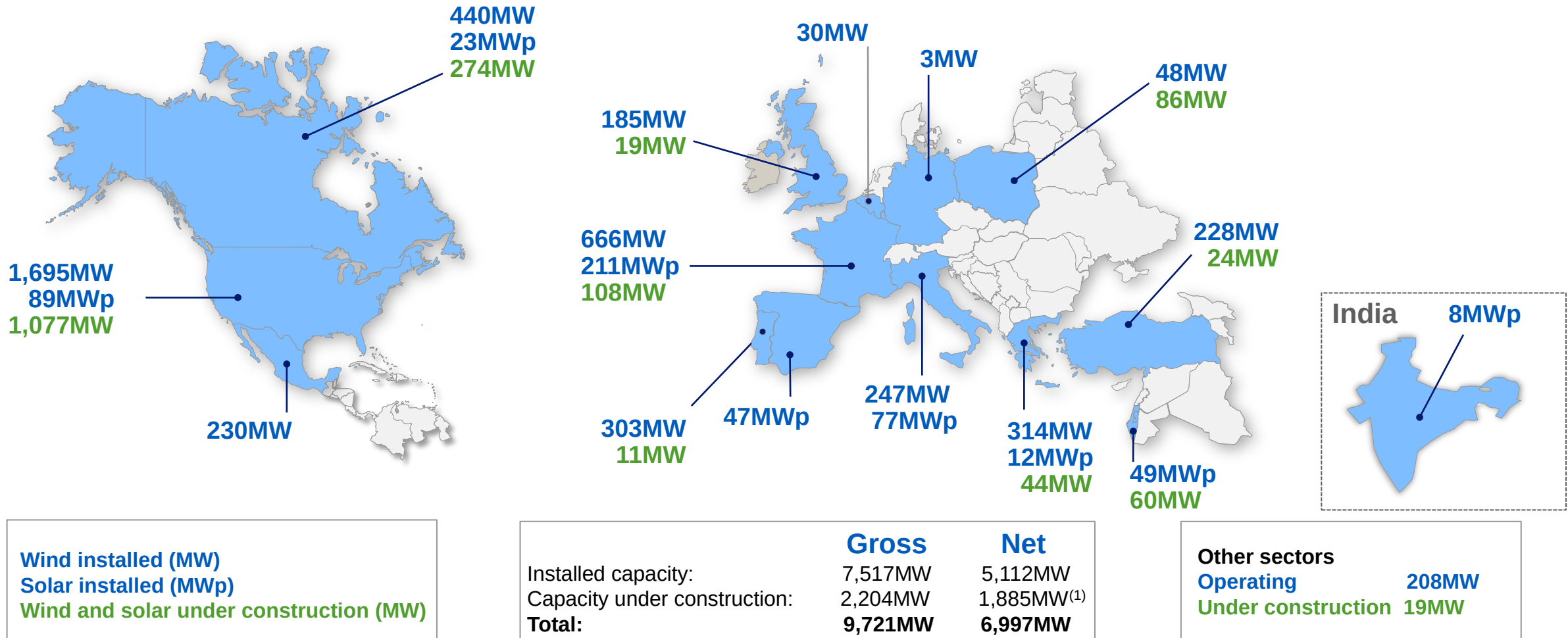
Benefits: The innovation generates a €3 million financial gain (through supply of reserves and enhanced programme monitoring).

Project implementation: PERFLEX can be applied to other facilities connected to the river and will soon be patented to be exported abroad, as for example in the framework of tendering processes.

EDF Energies Nouvelles: financial and operational indicators evolution since 2010



EDF EN net installed capacity as of 31 December 2014



Source: EDF EN

(1) O/w 50MW net in South Africa, 73MWp net under construction in Chile and 40MWp net in India

NB: MWp: Megawatt peak (a measure of power under standard temperature and sun conditions)

EDF EN: installed and under construction capacity by type as of 31 December 2014

In MW	Gross ⁽¹⁾		Net ⁽²⁾	
	as of 31/12/2013	as of 31/12/2014	as of 31/12/2013	as of 31/12/2014
Wind	5,735	6,554	4,019	4,388
Solar	645	727	542	516
Hydro	80	77	77	74
Biogas	70	78	65	73
Biomass	62	62	54	54
Cogeneration	19	19	7	7
Total installed capacity	6,611	7,517	4,764	5,112
Wind under construction	1,767	1,735	1,434	1,635
Solar under construction	191	450	116	231
Other under construction	28	19	28	19
Total capacity under construction	1,986	2,204	1,578	1,885
Total	8,597	9,721	6,342	6,997

EDF EN: net installed capacity evolution

Commissioning in 2014

▪ Wind

☐ USA	361MW net
☐ Canada	484MW net
☐ France	75MW net
☐ Turkey	71MW net
☐ Mexico	30MW net
☐ United Kingdom	12MW net

▪ Photovoltaic

☐ USA	39MW net
☐ Israel	34MW net
☐ India	8MW net
☐ France	5MW net

▪ Other sectors

☐ France	7MW net
☐ USA	1MW net

Commissioned capacity

Gross
1,289MW

Net
1,127MW

Main acquisitions in 2014

▪ France

☐ Plein Vents	70MW net
---------------	----------



EDF EN: net capacity sold

<i>In MW</i>	2013	2014
France	-	(70)
Germany	-	-
United Kingdom	58	29
Italy	-	108
Turkey	-	38
United States	103	197
Canada	115	309
Mexico	162	-
Total wind	438	610
France + overseas departments	28	-
Italy	10	19
Canada	-	-
United States	-	99
Total photovoltaic	38	118
France	4	-
Total hydro	4	-
Total	480	728⁽¹⁾

(1) O/w sold: 798.5, including Plein Vents reintegration for (70.4)

Operation & Maintenance⁽¹⁾ as of 31 December 2014

<i>In MW</i>	2013	2014	Δ MW	Δ%
United States	6,191	7,480	1,289	21%
Canada	1,124	1,807	683	61%
Mexico	68	68	-	-
Total America	7,383	9,354	1,971	27%
France	1,390	1,441	51	4%
United Kingdom	67	164	97	143%
Greece	150	150	-	-
Italy	-	599	599	na
Poland	48	48	-	-
Total Europe	1,656	2,402	746	45%
Total O&M	9,039	11,756	2,717	30%

(1) MW corresponding to the renewable energies power plants that EDF EN operates and maintains (power plant supervision, generation monitoring, pre-emptive and corrective maintenance, etc.) for its own account and on behalf of third parties

na: not applicable

Innovation: renewable generation (1/2)

Offshore wind turbines: a revolution in offshore wind measurements

The project: following a request from EDF EN, teams from the UK R&D centre came up with a turnkey solution for wind measurement, the floating LIDAR, which aims to improve evaluation of offshore wind farm generation capacity in France and the United Kingdom. It is a laser measurement solution, based on a floating buoy, which is cheaper, more mobile and better performer than traditional weather masts fixed to the sea floor.

LIDAR is able to measure wind speeds up to a height of 200m, which is the height of the top of wind turbine blades, whereas traditional masts can only measure up to 100m in height. Further, it can take measurements at wind farms located in deep water, while traditional masts are only able to operate in areas with a depth of no more than 50m.

Benefits: because it is not anchored to the ground, LIDAR can easily be moved and re-used in several areas, reducing wind measurement costs (representing €8m in savings compared with a weather mast).

Project implementation: two units have been ordered for the Fécamp and Courseulles-sur-mer sites in the English Channel. A third project hopes to use the device in the Mediterranean. The UK R&D centre team chose the right disruptive innovation, adapted it according to need and ensured it provides accurate data. A framework contract for the technology, with 5-year price guarantees, has now been signed.



Innovation: renewable generation (2/2)

The Badaling solar thermal power plant

The project: the Badaling power plant near Beijing is a demonstration site aimed at maximising concentrated solar power (CSP) for electricity generation. With a 1.5MW capacity, Badaling is now the primary plant on this scale in Asia. The system addresses issues stemming from the intermittent nature of solar power. Mirrors focus the sun's energy towards a tube containing a fluid which is heated up and then releases water vapour which drives a turbine attached to a generator. An oil and water storage system extends the operating time of the plant by several hours, even after sunset.

Applications for EDF: a joint research programme was launched in 2012 by the Institute of Electrical Engineering from the Chinese Academy of Science (IEE-CAS) and EDF, via the Beijing R&D centre. A new agreement was signed in 2014 which extends the scope and duration of the first agreement. The partnership is an opportunity for EDF group to increase its skills in the thermodynamic solar sector, as a part of EDF group's short-term investment plans.

One challenge will be to further develop R&D modelling methods on the basis of those used in experiments at the Badaling site.



EDF main businesses

Generation

Nuclear generation

Renewable generation

Thermoelectric generation

Overview

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Focus on France

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Focus on international activities

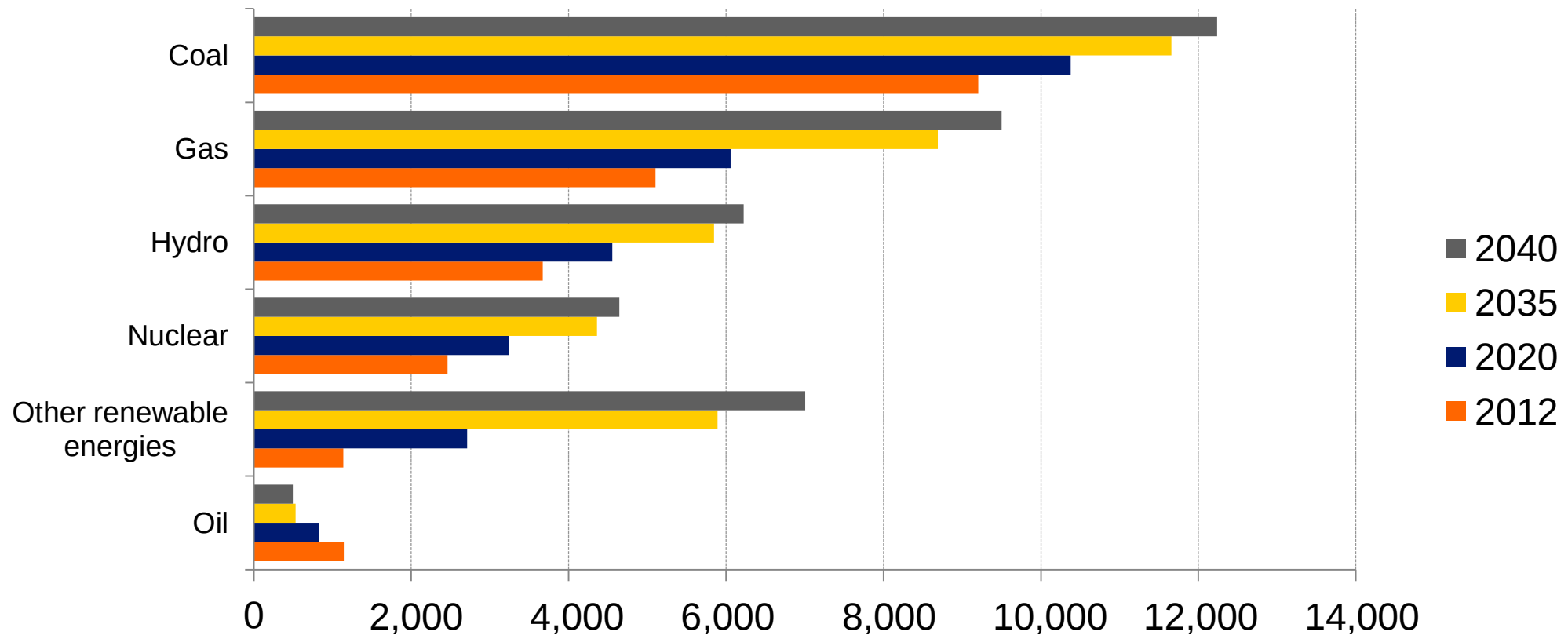
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Innovations in thermoelectric generation

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Fossil-fired generation remains the number one source of electricity generation in the world

In TWh



EDF is well positioned to meet new challenges of fossil-fired generation

- **EDF experience in fossil-fired generation is reflected by existing assets and current investments in France and abroad**
 - An important part of the energy mix of the Group (26% of the installed capacity) that varies between countries (13% of the installed capacity of EDF in France and around 74% in Italy)
 - Plants/IPPs development in Asia (China, Vietnam), South America (Brazil) and Europe
 - Development of gas thermoelectric plants: construction of CCGTs (4 in France and 3 in the UK)
- **Thermoelectric power contributes to the low-carbon strategy of the Group**
 - Development of more efficient combined gas plants (reduction by 30% of the carbon emissions per kWh produced, three times less nitrogen oxide and very little sulphur and dust)
 - Involvement in the highly-efficient coal technology with better environmental performances (partnership with Datang for the construction and operation of a supercritical power plant of 2,000MW in Fuzhou)
 - Modernisation of the most recent coal-fired units in France to extend their lifespan up to 2035, and increase their availability and performances
 - Final shutdown of the 10 oldest coal units between March 2013 and April 2015
 - R&D focusing on carbon capture (CCS), with a pilot unit in Le Havre (France)
- **The development of thermoelectric power relies on the best available technologies**
 - In 2013 in France: beginning of the construction of the Bouchain CCGT (575MW), with commissioning scheduled for 2016. This CCGT will be the first to be equipped with the most efficient combined-cycle gas turbine developed by GE, the 9HA. This new technology allows the plant to reach maximum power in under 30 minutes, with a high yield performance (61%)

Did you know?

EDF existing fleet

~35⁽¹⁾GW

Installed in the world



~22GW

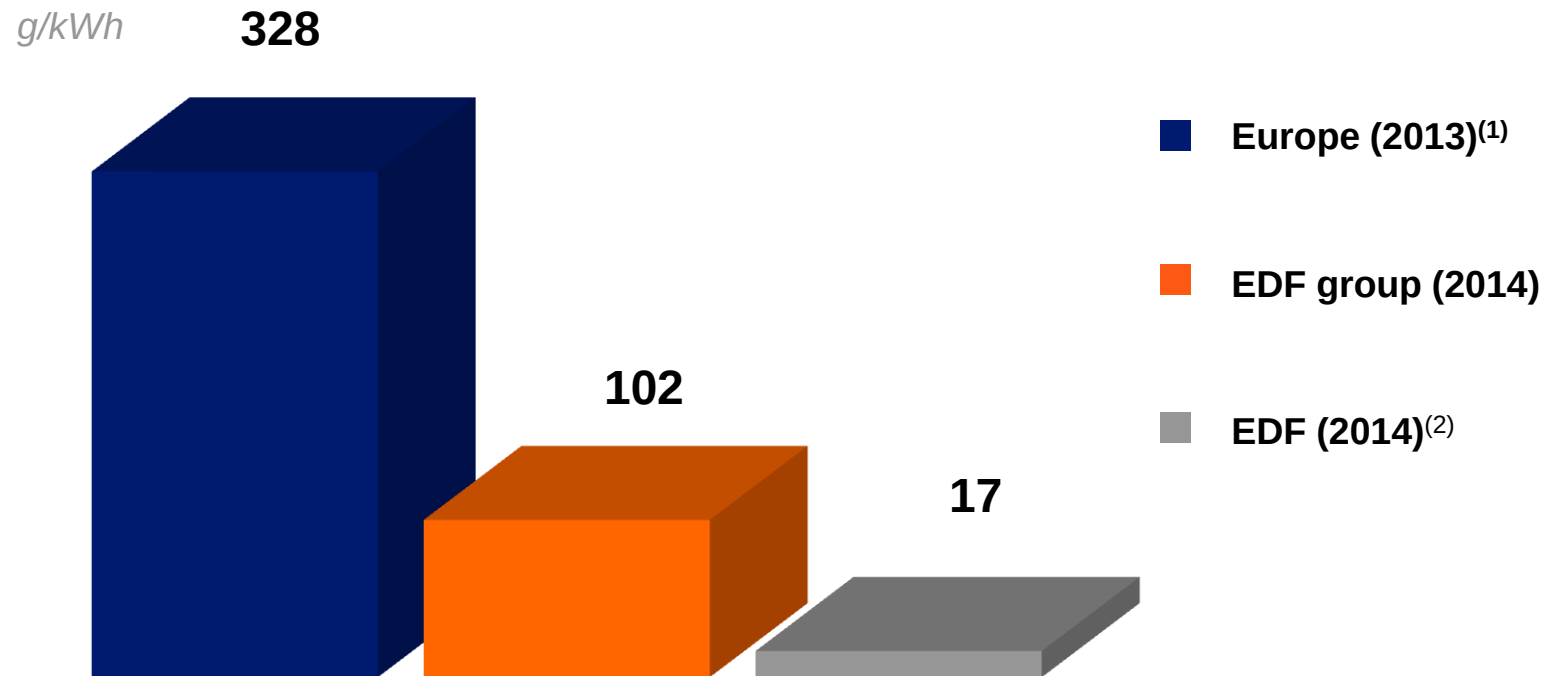
Made up of fuel- and coal-fired plants

~13GW

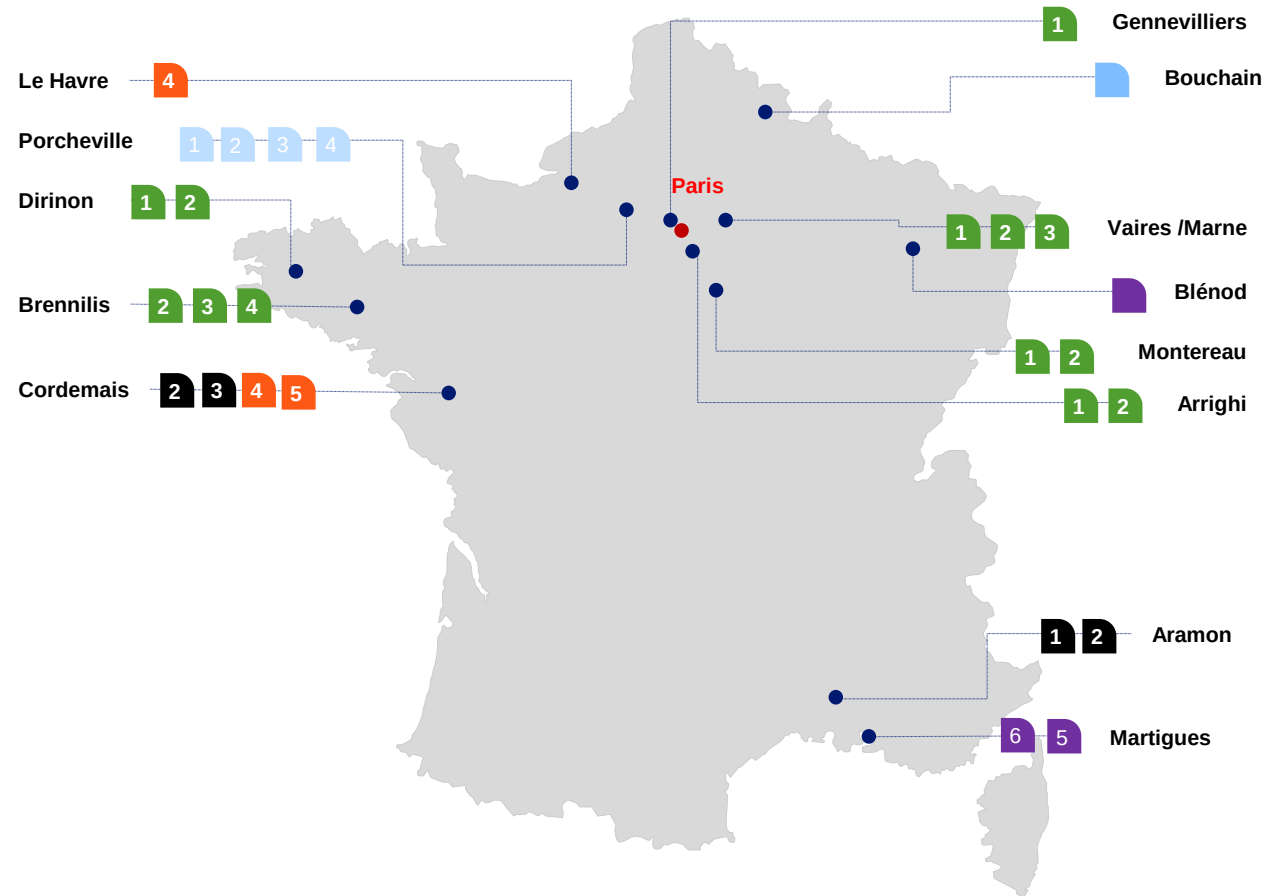
Made up of gas-powered plants (*incl. cogeneration*)

(1) Net generation capacity as of 31 Decembre 2014

EDF group specific carbon emissions vs. Europe



EDF thermal plant fleet in mainland France



~ 10GW⁽¹⁾ (excl. overseas departments and Corsica) divided as follows:

• Coal-fired plants

Three 600MW units

• Fuel-fired plants

Four 600MW units

Four 700MW units

• CCGT

Three CCGT totalling 1,360MW

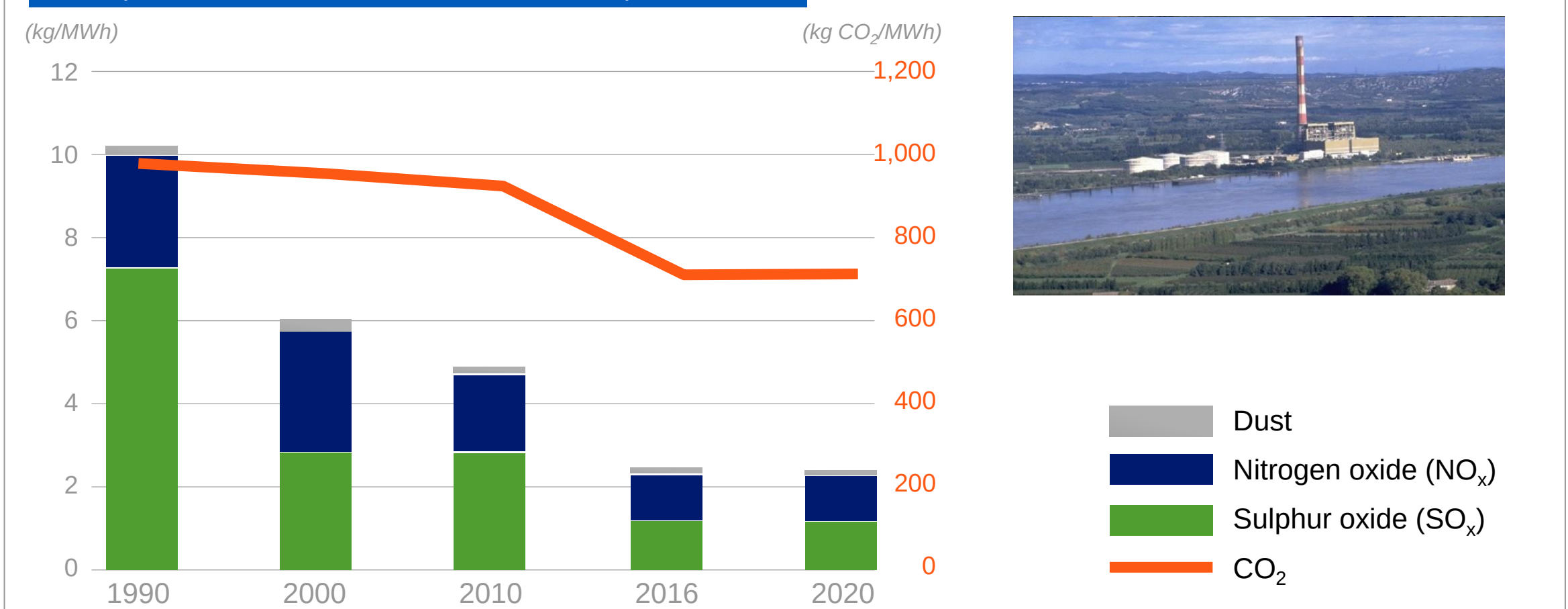
575MW of CCGT under construction (Bouchain in 2016)

• Combustion turbines

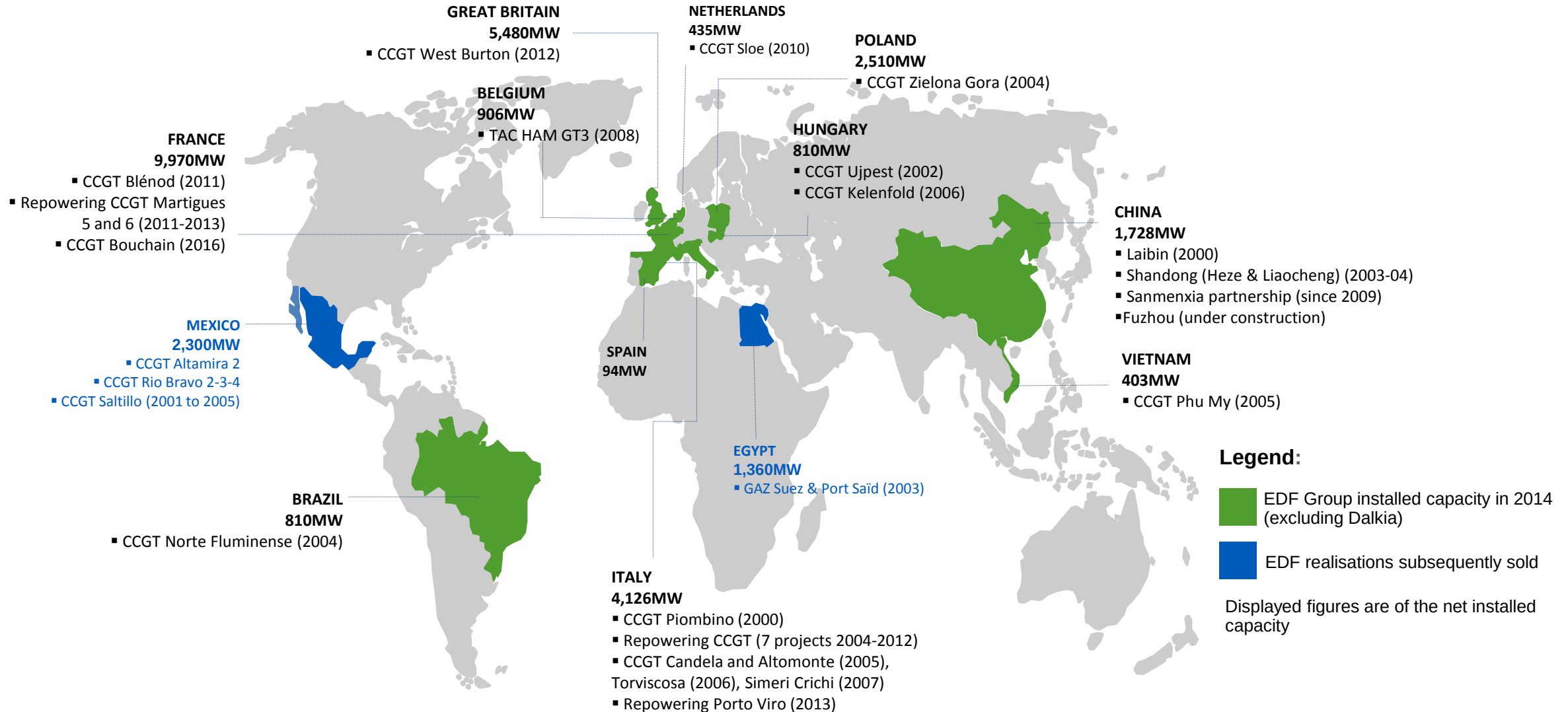
Thirteen turbines totalling 1,843MW

An industrial project for a better environmental performance

Atmospheric emissions of the French thermal plant fleet



EDF group thermal plant fleet



Innovation: thermal power generation

Maintenance with no need to stop generation

The project: pumping systems are essential in a thermal power plant to ensure that the plant's equipment works properly. Operating regulations stipulate that before any technical procedure the pumps must be isolated from the fluid being discharged (e.g. water at high pressure and temperature) by a double barrier. The main challenge is ensuring the safety of those assisting in the procedure. Most pumps in more recent plants have two valves which allow the fluid evacuation pipe to be closed off. However, older power stations only have one isolating valve, meaning generation has to be stopped to allow maintenance to be carried out. Teams at the Bouchain thermal power plant designed a device which safely isolates the necessary equipment while the unit is operating, in compliance with operating regulations. The solution involves inserting a mechanical part designed to block the moving parts of the pump from within, therefore preventing fluid from escaping.



Pump maintenance in a thermal power plant

Benefits:

- It avoids several days of shutdown, as the unit can operate while pump maintenance is being carried out (in some cases shutdown can be as long as 75 days)
- Ease of use: the blockage system can be inserted and removed in 4 hours during a weekend shutdown
- It is a mechanical solution, which is cheap and easy to roll out to other sites

Project implementation:

After a first use at the Bouchain thermal power plant in 2013, this innovative solution will be implemented across all thermal power plants.

EDF main businesses

Generation

Networks - Transmission and Distribution

Overview

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Focus on transmission

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Focus on distribution

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Innovations in the network field

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Key expertise in networks

■ Electricity transmission

- France: through RTE, the French electricity transmission network operator, which owns 100,000 km of high and very high voltage power lines and 46 cross-border lines

■ Electricity distribution

- **France:** through ERDF, which owns a network of ~1.3 million km of lines, Electricité de Strasbourg (14,000 km) and EDF SEI (35,415 km)
- **Hungary:** through Demasz ZRt which owns close to 32,200 km of high-, medium- and low-voltage lines and operates the regulated electricity distribution business in Hungary's south-eastern region (19.6% of the territory)
- Increasing use of delegated management partnerships: e.g. agreement signed with the Russian power distribution operator Rosseti to study a joint network management opportunity in one of the Russian region. In 2014, EDF International Networks and Rosseti signed an agreement to extend the scope of their cooperation
- Evolving business model to take into account various new decentralized generation solutions and allow customers to manage their consumption more closely

Tariffs for Using the Public Electricity Transmission and Distribution Networks (TURPE)

The general principle of TURPE is to cover operating costs and give a return on capital invested.

TURPE Distribution

- By the CRE decision of 12 December 2013, the new TURPE 4 HVA-LV distribution tariffs came into force on 1 January 2014 for a period of four years. The transmission tariffs for the distribution network rose, on average, by +3.6% on 1 January 2014, and will then be adjusted automatically on 1 August each year over the 2014-2017 period. The application of this mechanism in 2014 led to a 1.3% tariffs fall as of 1 August 2014
- The CRE renewed the “CRCP” mechanism (*“Compte de Régulation des Charges et des Produits”* – account for regulating income and expenses), making it possible to measure and offset, for previously identified items considered difficult to forecast or control, the differences between the effective data and the forecasts on which the tariffs are based
- The regulator set out to reinforce the existing framework for multi-annual regulation, which prompted ERDF to improve its cost control and the quality of supply and of services provided to users

TURPE Transmission

- The current tariff for using the public transmission network (TURPE 4 HVA), set by the CRE decision of 3 April 2013, came into force on 1 August 2013. After an increase of 2.4% at the date of its entry into force, RTE’s tariff revenues thus fell by 1.3% at 1 August 2014. A change to this tariff based on the consumer price index will take place on 1 August 2015 and 2016
- Financial compensation from RTE’s assets is obtained by multiplying the amount of the Regulated Assets Base (RAB), estimated at €12,143 million as of 1 January 2014, by a nominal rate before tax of 7.25% for the 2013-2016 tariff period.
- As for the TURPE Distribution, the CRE renewed the “CRCP” mechanism relating to the transmission TURPE, with the same functioning and conditions

Regulated asset base in France

	Regulated Asset Base as of 01/01/2015	Nominal remuneration rate before corporate tax	Indexation CPI + K ⁽¹⁾
Transmission	NBV of fixed assets ⁽²⁾ = € 12.8 bn	7.25%	+2.4% as of 01/08/2013 -1.3% as of 01/08/2014
Distribution	NBV of fixed assets ⁽²⁾ = € 46.3 bn ----- NBV of regulated equity ⁽³⁾ = € 3.7 bn	Margin on assets: 2.5% ----- Risk-free rate: 6.1%	+3.6% as of 01/01/2014 -1.3% as of 01/08/2014

(1) CPI: Consumer price index covering all of France excluding tobacco of year Y-1

K: CRCP reconciliation term, in range of +/- 2% (CRCP: The CRCP mechanism (*Compte de Régularisation des Charges et des Produits*) corrects, across years, the differences between forecasted and effective expenses and products)

(2) Excl. financial assets and assets under construction

Under Turpe 3, tariffs included only industrial D&A's. Under Turpe 4, provision for renewal as well as all D&A are included

(3) Difference between regulated assets and the sum of specific accounts, provisions for renewal and investment subsidies

TURPE Transmission: expenses/revenues details and RAB evolution

(according to the CRE decision on TURPE 4 Transmission on 3 April 2013)

Evolution of expenses to be recovered provided under TURPE Transmission for 2015 and 2016

<i>In current millions of Euros</i>	2015	2016
Tariff revenue	4,397	4,495
Expenses to be recovered by the tariff	4,369	4,555

RAB evolution provided under TURPE Transmission for 2015 and 2016

<i>In current millions of Euros</i>	2015	2016
Regulated asset base (RAB)⁽¹⁾	12,688	13,332
O/w investments	1,711	1,769
O/w depreciation	(728)	(772)

Yearly indexation TURPE 4 (CPI + K). Tariff is adjusted every year on the implementation date of TURPE 4. After an initial increase of 2.4% on 1 August 2013, RTE's tariff revenues thus fell by 1.3% on 1 August 2014

Yearly indexation on 1 August based on the formula: $CPI + K$

CPI = Consumer price index in France excluding tobacco of Year N-1

K = CRCP reconciliation term (in a range of +/-2%; the non-cleared amounts being deferred if needed to the following year)

TURPE Distribution: expenses/revenues details and RAB evolution

(according to the CRE decision on TURPE 4 Distribution of 12 December 2013)

Evolution of expenses to be recovered provided under TURPE Distribution for 2015-2017

<i>In current millions of Euros</i>	2015	2016	2017
Tariff revenue	13,105	13,542	13,949
Expenses to be recovered by the tariff	13,140	13,531	13,900

RAB and Regulated Equity (RE) evolutions provided under TURPE Distribution for 2015-2017

<i>In current millions of Euros</i>	2015	2016	2017
Regulated asset base (RAB)⁽¹⁾	47,289	49,063	50,825
O/w investments (excluding Linky)	3,378	3,466	3,547
O/w depreciation and provisions for renewal	(2,416)	(2,496)	(2,578)
Regulated equity (RE)⁽²⁾	4,608	5,395	6,413

Yearly indexation TURPE 4 (CPI + K). Tariff is adjusted every year on the implementation date of TURPE 4. After an initial increase of 3.6% on 1 January 2014, ERDF tariff revenue dropped by 1.3% on 1 August 2014

Yearly indexation on 1 August based on the formula: $CPI + K$

CPI = Consumer price index in France excluding tobacco of Year N-1

K = CRCP reconciliation term (in a range of +/-2%; the amounts not being cleared deferred to the following year)

(1) RAB as of 1 January of each year: RAB increases every year by the amount of investments carried out, minus depreciation

(2) RE as of 1 January of each year: regulated equity increases by the amount of investments carried out, minus depreciation charges and provisions for renewal, as well as third party participations received in the course of the year

ERDF key figures

<i>In millions of Euros</i>	2013 restated	2014	Δ%
Sales	13,811	13,280	-3.8%
EBITDA	3,616	3,531	-2.4%
Net income excl. non-recurring items	810	697	-14.0%
Gross operating investments	3,177	3,208	+1.0%

Linky smart meters rollout

■ The project

- Deployment starting from late 2015, with a target of 35 million meters installed by 2021 (representing a 90% deployment rate)
- Estimated investment of €5bn for the 2014-2021 deployment period
- Economic balance based on the gains induced by the Linky project (reduced non technical losses, fewer technical interventions and meters readings, grid optimisation, etc.)

■ The tariff model is described in the CRE's ruling of 17 July 2014 relating to Linky, published in the *Journal Officiel* of 30 July 2014

- Specific regulation over a 20-year period (Linky-dedicated RABs)
- Pre-tax nominal return rate of 7.25% and a 3% additional premium depending on costs control, deadlines and system performance
- Implementation of a deferred tariff on Linky revenues until 2022, remunerated at 4.6% and fully balanced in 2030

■ Latest developments:

- Six manufacturers chosen in August 2014 as winning bidders to supply 3 million meters
- Tenders for the installation of the meters still ongoing. For the first installations, the markets have been attributed in early April 2015. A second tender is ongoing for installation periods scheduled for 2016

Electricity smart metering regulatory framework in France, Great Britain and Italy

	France ⁽¹⁾	Great Britain	Italy
Deployment responsible entity	Distributors	Energy Suppliers (Retailers)	Distributors
Regulatory entity	CRE (deliberation of 17 July 2014) Specific regulation over a 20-year period	Department for Energy and Climate Change (DECC) accountable for the project delivery with Ofgem responsible for monitoring performance and compliance	Since 2000: business-driven process, led by Enel Since 2006: process fully regulated by the Authority for Electricity and Gas
Targets	35 million meters (deployment rate of 90%) to be installed by 2021. Incentive-based regulation focusing on 3 parameters (installation schedule, costs management and service quality) with bonuses and penalties	Take “all reasonable steps” to achieve 100% of residential and small business customers by end of 2020. Material fines for non-compliance with milestones and targets. 53 million meters ⁽²⁾ to be installed, and ‘In-Home-Displays’ must be offered to customers	Already reached: Italy has been a pioneer and today deployment rate of smart meters exceeds 95%, consistent with the Authority’s objective (95% by the end of 2011)
Project status	Rollout starting from late 2015 following a first tender closed in April 2015. A second tender is ongoing for installations in 2016	Large-scale roll-out delayed to start only in late 2016	In 2013, new pilot projects have been launched to test a new type of multi service smart meter that can remotely manage the supply of gas, electricity and water
Remuneration	Tariff model, based on OPEX coverage and on a specific RAB remuneration, applicable for the whole life of assets, until 2040	Government assumes net costs will be recovered via competitive energy tariffs and expects national benefits of c.£17b. Project estimated discounted cost of c.£11b	Investment and installation costs of meters for distributors are remunerated on the basis of the tariff set by the Authority

Innovation: transmission

Modernising gas-insulated substations

The project: many electrical substations on generation sites will have to be renovated over the next few years, so EDF has come up with a faster and more cost-effective way of modernising them on the basis of the "retrofit" principle. Retrofitting means replacing old parts with equivalent parts that use today's technology.

However, in many cases it is not possible to replace parts due to technological incompatibility. To resolve this problem though, EDF has designed connecting parts which attach new and old components together. Attaching new technology to old substations means that the substations benefit from technological progress, for example through extending their usable life and improving performance.

Benefits for EDF:

- the solution reduces the time that the substation is out of use, as it takes much less time than traditional renovations or replacement
- savings of around 25% on the cost of a new substation and 40% on the cost of maintenance
- more environmentally-friendly generation, thanks to a marked decrease in the amount of SF6 gas required to isolate voltage-conducting parts

Project implementation: the innovation can be applied to all gas-insulated substations at generation sites. The thermal power plant in Le Havre was the first to use the solution.



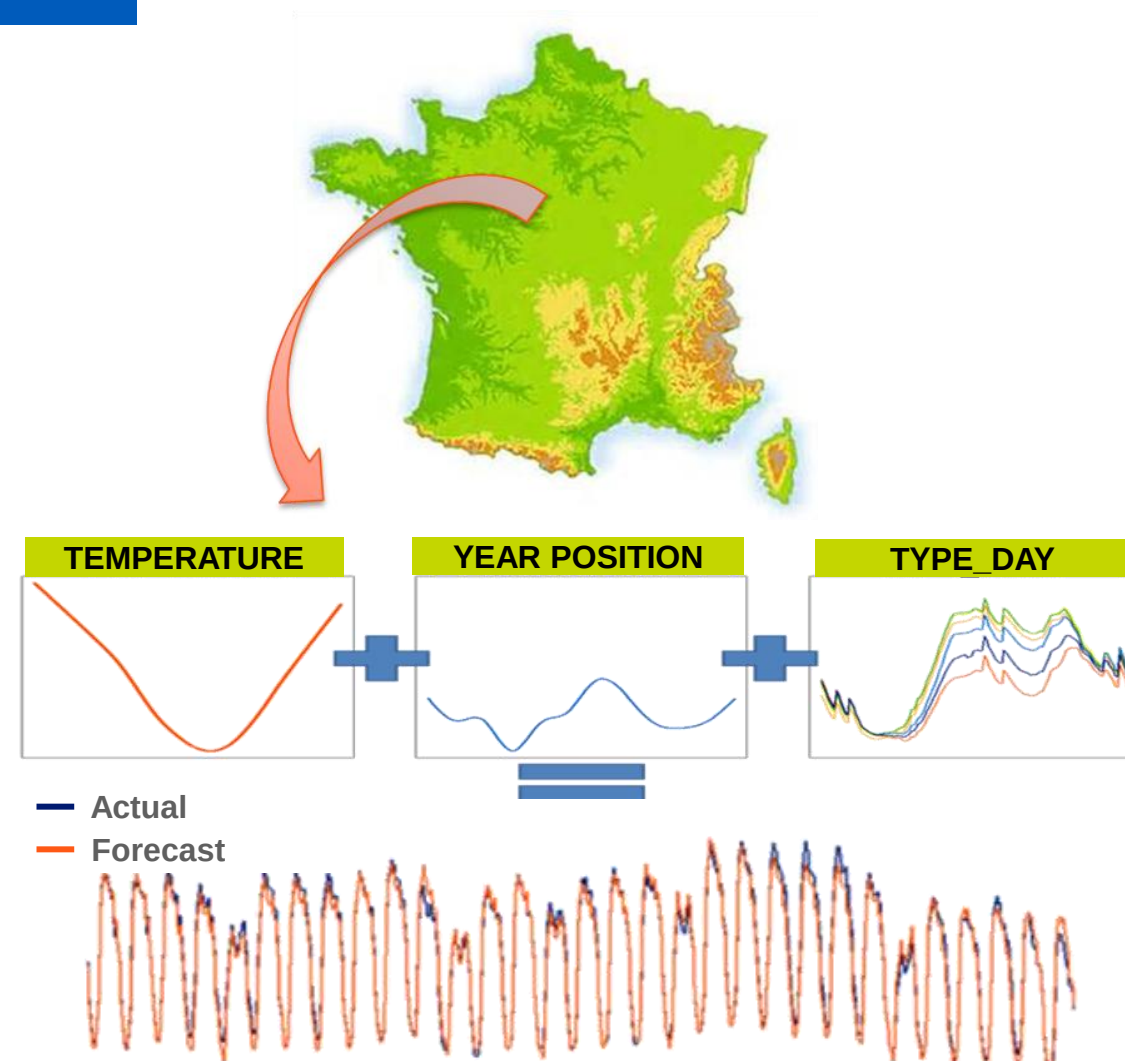
Porcheville electrical substation

Innovation: networks and renewables

Increasingly accurate forecasting for the distribution network

The project and its advantages: to maintain supply/demand equilibrium on the network and better manage the intermittent nature of renewable energy, R&D has developed a **unique model to forecast consumption** and model the situation in different areas across different timeframes. The application is able to forecast consumption simultaneously at tens of thousands of locations along the major distribution network routes, within a city or within a neighbourhood. The solution, based on an innovative statistical approach (the General Additive Model or GAM), automatically and intelligently models complex scenarios on the basis of large sets of constantly changing data. In one day it is therefore able to generate thousands of forecasted models, which up to now would have taken weeks to produce.

Implementation: in 2014 the solutions were successfully integrated into ERDF's information systems and user numbers have been rising steadily. In the areas of Chartres and Nantes, the tool is already providing daily forecasts to network operating teams on the ground. By mid-2015, the 2,335 delivery point substations and additional points (25,000 medium-voltage power lines) will be equipped with the technology. The tool will give daily short-term (for the next day) and medium-term (the following year) simulated forecasts for the whole of France.



EDF main businesses

Generation

Networks - Transmission and Distribution

Optimisation - Trading and Supply

Optimisation principles

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Optimisation and Trading in France

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Supply in France and innovations

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Focus on Group commercial strategy

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Optimisation and Trading: leveraging the value chain

- **The main role of the optimiser** is to ensure the balancing between EDF sources and uses of energy in France
- **The objective is to secure and maximise the gross electricity margin** of the “generation-supply” entity through the optimal use of upstream or downstream asset flexibility and by constantly seeking the best purchasing or sales opportunities on wholesale markets
 - **Upstream resources:** generation fleet, long-term electricity purchasing contracts, purchases on wholesale markets, purchase obligations from decentralised producers, contractual load shedding capacity
 - **Downstream commitments:** long-term supply contracts, sales to end customers, sales on wholesale markets, sales to competitors in France

The goal of the optimiser is to optimise costs and inventories, resorting to the wholesale market (through EDF Trading)

- The supply-demand balance is forecasted over different time horizons
- To manage the “volume” risk, a sufficient margin in terms of capacity must be available for all time horizons, in order to cope with main critical situations

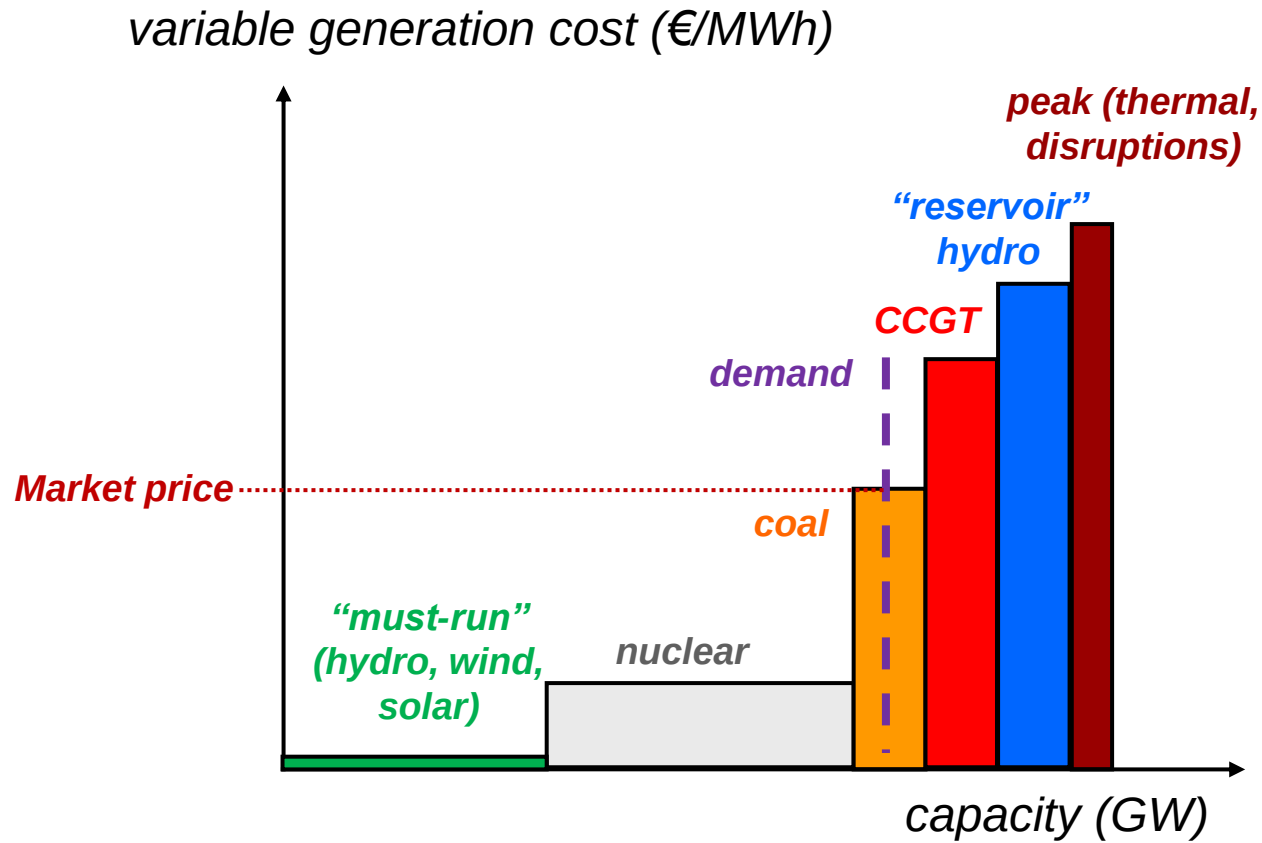
Did you know?

EDF Trading is one of the most important energy traders in Europe and has strong positions in the US

Trading figures for 2014:

- 3,140TWh of electricity
- 332MBTU of gas
- 662Mt of coal
- 675Mt of carbon

Daily optimisation: preliminary optimisation by each producer

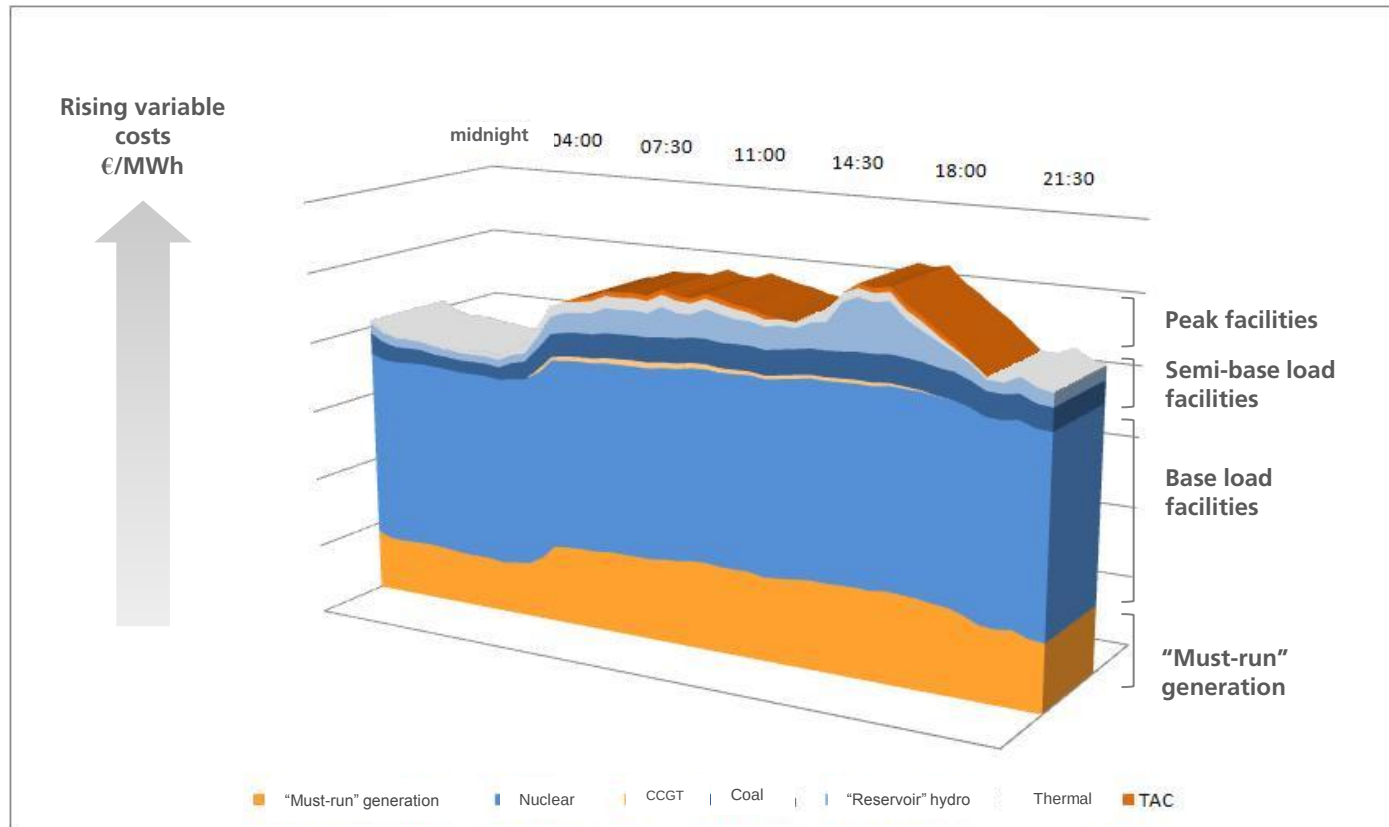


- The optimiser schedules the operation of generation facilities, ranked according to their merit order until the estimated demand is met
- Before using the market, each producer determines the resources required to meet a given level of demand
- It classifies its available generation facilities from the least expensive to the most expensive
- It then determines the marginal cost to meet the supply/demand balance of its own portfolio
- Spot power price (day ahead) is based on the variable generation cost of the last called plant (marginal plant) to meet the demand of the next day

Cost optimisation – scheduling of generation facilities based on variable costs

Stack chart of generation facilities

Example of one high consumption day in winter



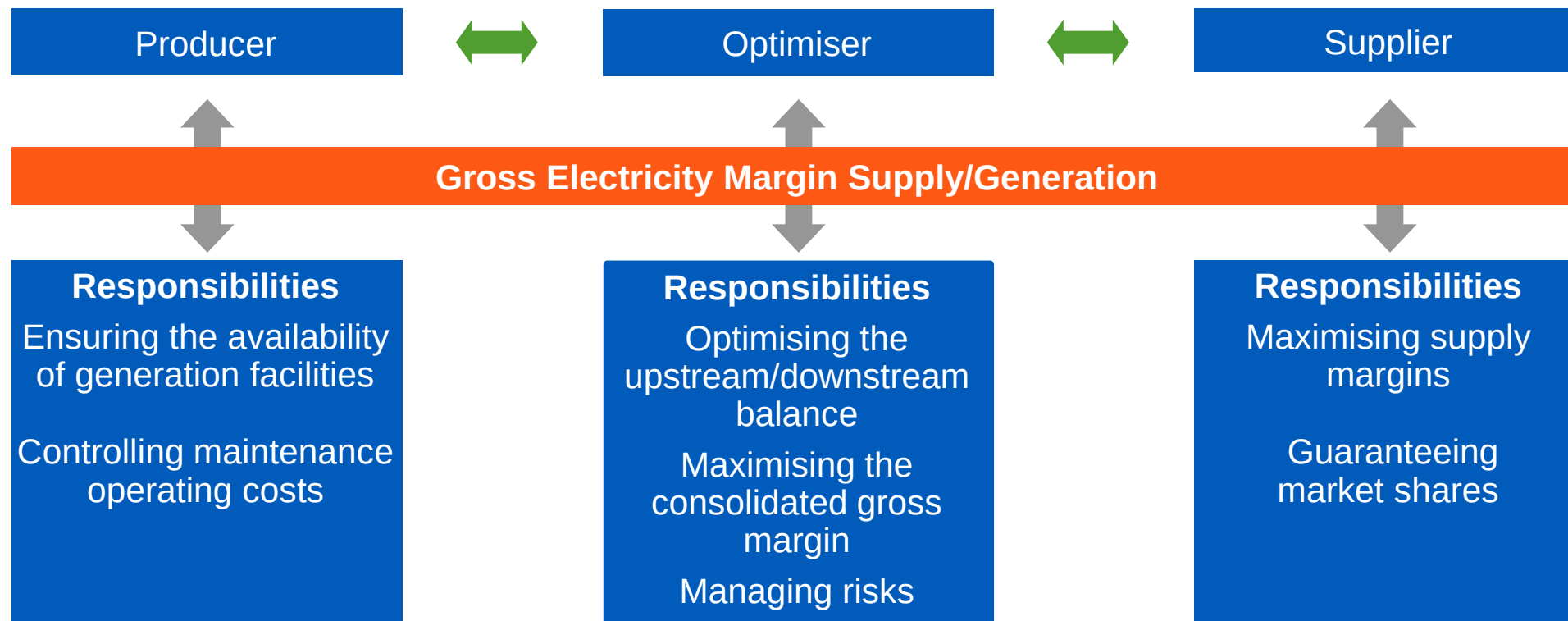
Did you know?

The merit order is a way of ranking available sources of energy, especially electrical generation, in ascending order of their short-run marginal costs of generation, so that those with the lowest marginal costs are the first ones to be brought online to meet demand, and the plants with the highest marginal costs are the last to be brought on line

Maximising the consolidated gross margin

■ Structural diagram:

- the objective is to make the Producer, the Optimiser and the Supplier responsible for their own activities within an explicit mandate
- There is a shared objective, to maximise the gross margin, driven primarily by the Optimiser



Optimiser's interactions with the supplier and the producer

- The producer undertakes to provide the optimiser with:
 - Its best estimate of the availability of generation facilities
 - Complete transparency on its constraints and costs

- The supplier undertakes to provide the optimiser with:
 - Its best estimate of the development of its customer portfolio and volumes consumed by its customers
 - Full transparency on products sold to its clients, including embedded flexibility with the associated risks

- The optimiser undertakes to provide the producer and the supplier with:
 - Economic signals so that each entity will manage their portfolios in order to maximise gross margin

The upstream/downstream balance is fairly volatile over different time horizons

- Thermo-sensitivity of consumption: temperature has a strong influence on demand in winter, one degree less equals to 2,400MW of higher consumption in France
- Variations in water levels: major variation in generation potential year on year (some 20TWh between a dry year and a rainy year)
- Unplanned unavailability of generation facilities (nuclear power, fossil-fired power, etc.)
- Mandatory purchases from decentralised smaller producers: strong fluctuation in contribution from renewable energies (up to ~4,500MW from one day to another on the French wind power generation)
- Sales on wholesale markets: optionalities at the hand of EDF counterparties

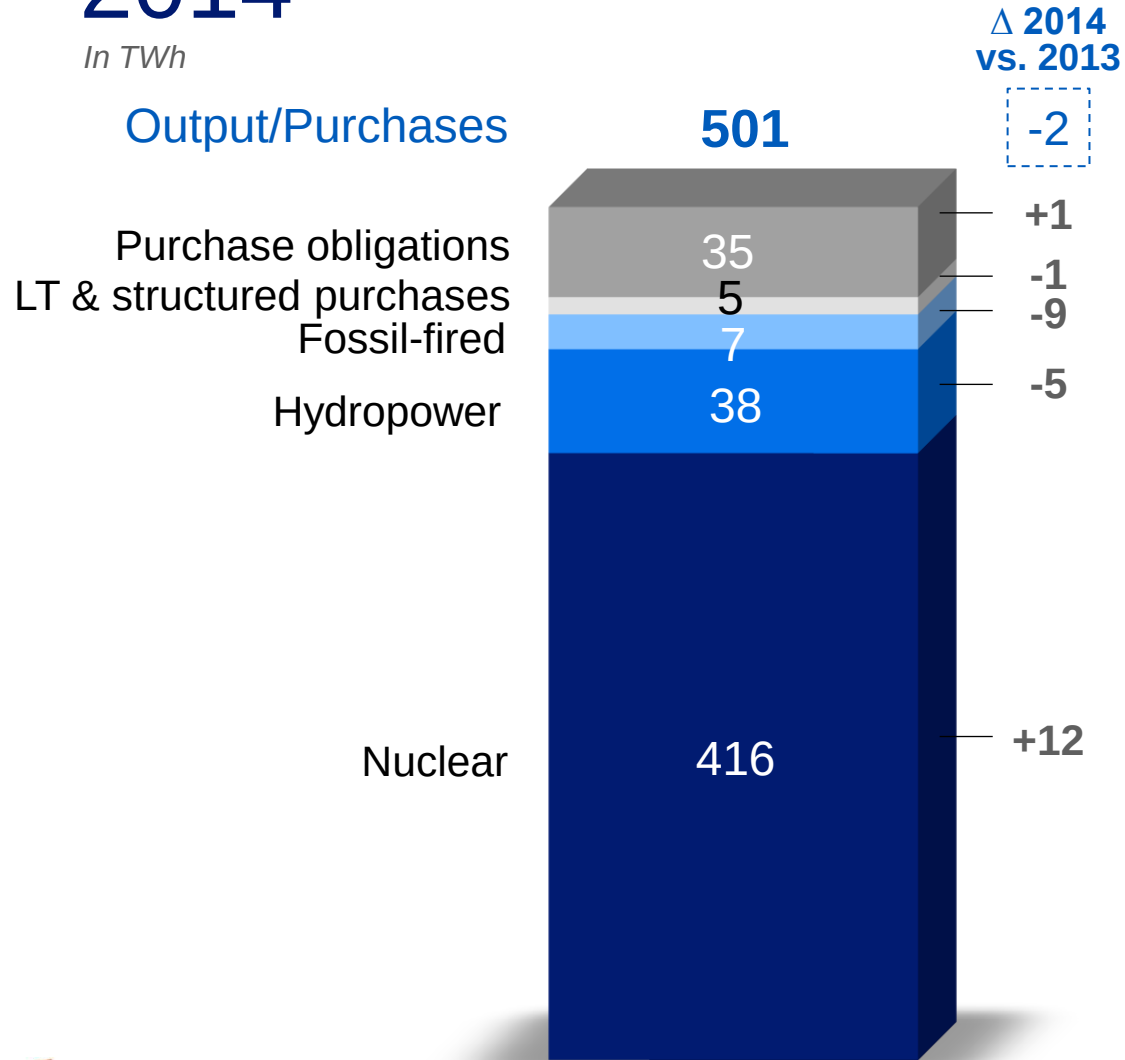
Use of the wholesale market

- When there is a difference between the sum of upstream and downstream positions, the optimiser balances this difference through purchases/sales on the wholesale market
- It is possible to transact different products over different time periods
 - Medium-term: purchases or sales of annual products for the years $Y+1/Y+2/Y+3$
 - Short-term: same principle with purchases/sales today for the next day (spot) or over the next few hours of the day
 - Intermediate products (monthly and quarterly products over two to three coming quarters and weekly products over two to three coming weeks) also exist
- The optimiser can directly contact its potential counterparties or go through the organised markets
 - OTC (over the counter) bilateral agreements: direct trade with counterparty
 - Regulated exchanges: pooling of supply and demand by a market organiser and settlement of trades (Epexspot in France, Belpex in Belgium, etc.)
- The optimiser for France (DOAAT) has access to the market exclusively via EDF Trading

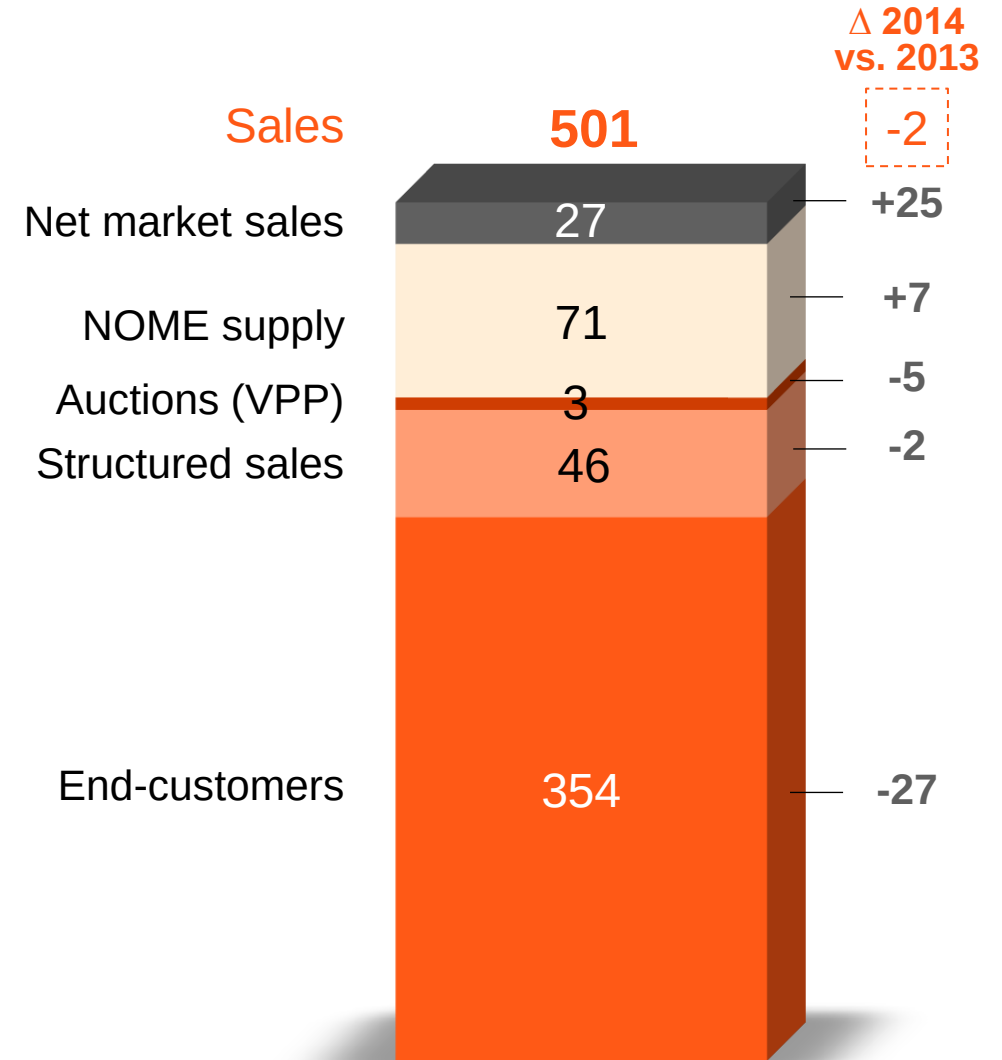
France: upstream/downstream electricity balance in 2014

In TWh

Output/Purchases



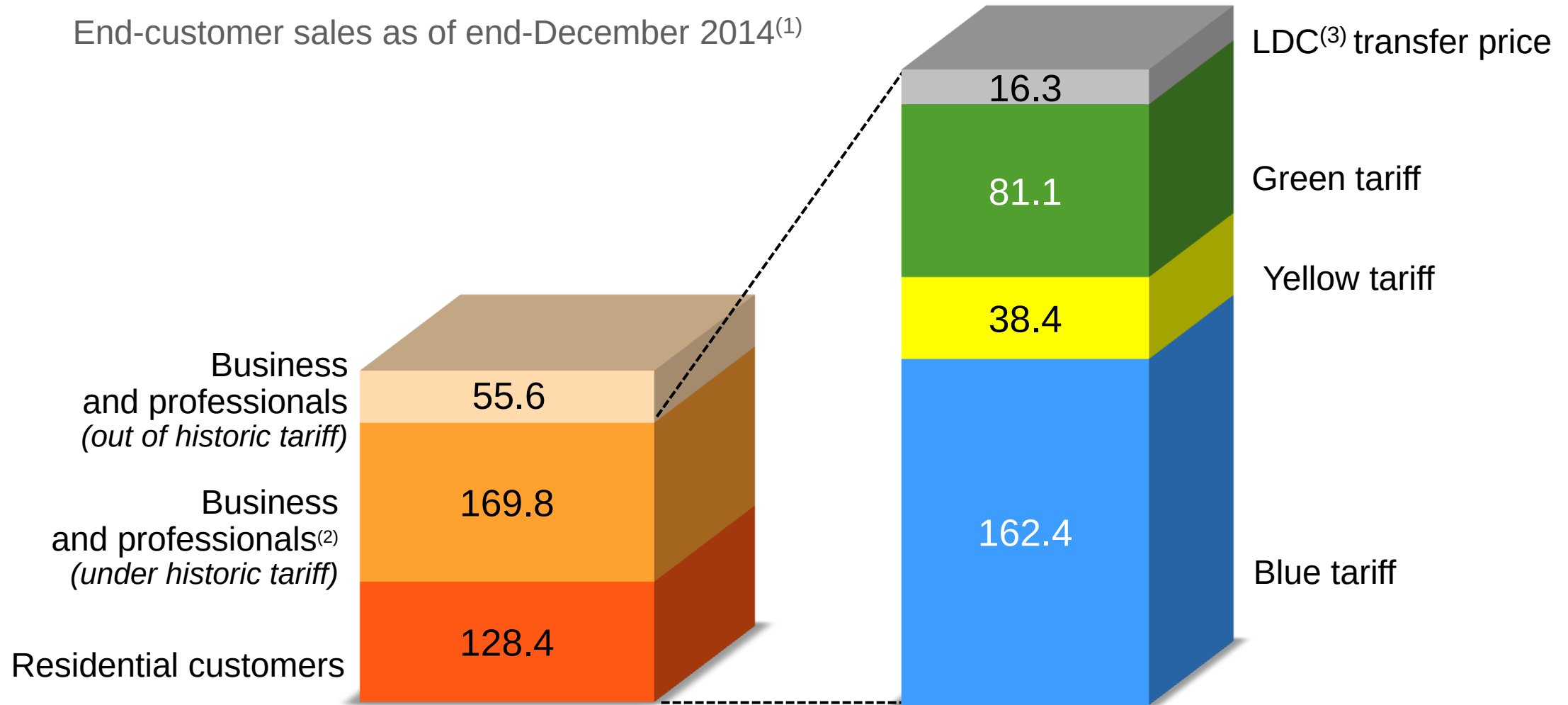
Sales



EDF's electricity business in France

In TWh

End-customer sales as of end-December 2014⁽¹⁾



(1) Rounded to the nearest tenth

(2) Including EDF self-consumption

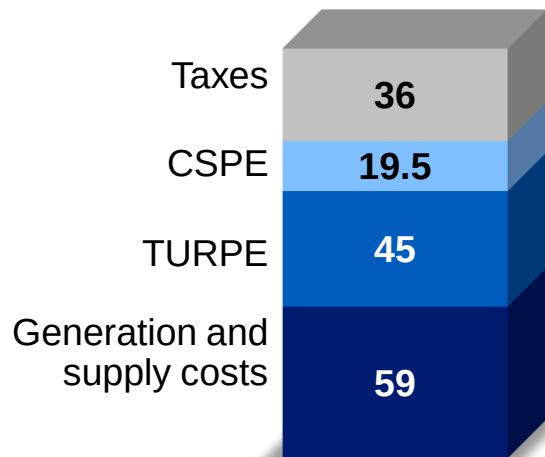
(3) Local distribution companies (LDCs)

Regulated tariff in France in 2014

- Tariffs are different depending the type of consumers: blue for residential and small professionals, yellow and green for companies
- 1 January 2014 - 31 October 2014: the tariff is called “integrated”**
- From 1 November 2014:** the decree of 28 October 2014 introduces the new **“cost stacking”⁽¹⁾ tariff method**

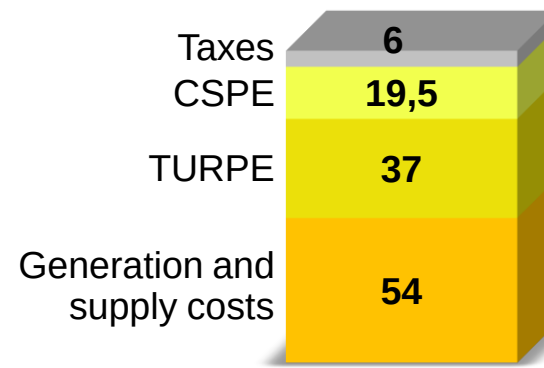
Average bill breakdown including VAT
Blue residential tariff (1 Nov. 2014)

159.5€/MWh



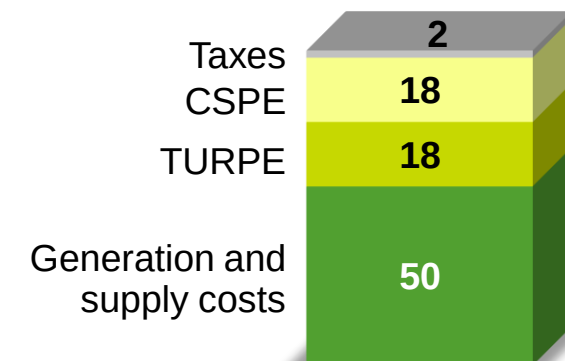
Average bill breakdown including VAT
Yellow tariff (1 Nov. 2014)

116.5 €/MWh



Average bill breakdown including VAT
Green tariff (1 Nov. 2014)

88 €/MWh

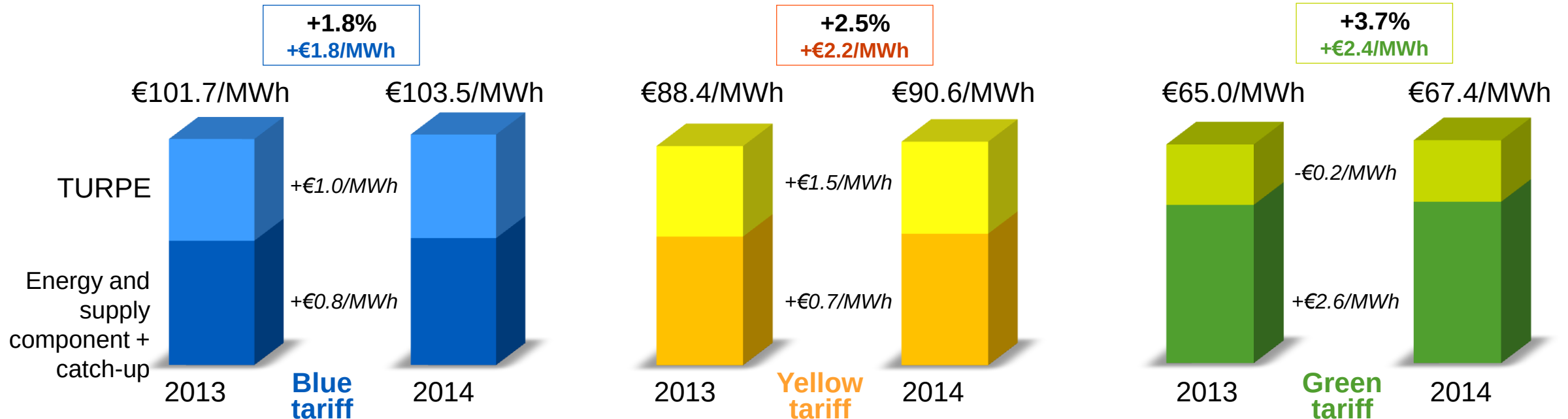


Source: DETP – (Tariff and Price Savings Department, 31 December 2014)

(1) For more information, see page 161 “Components of the cost stacking method established by the 28 October 2014 decree”

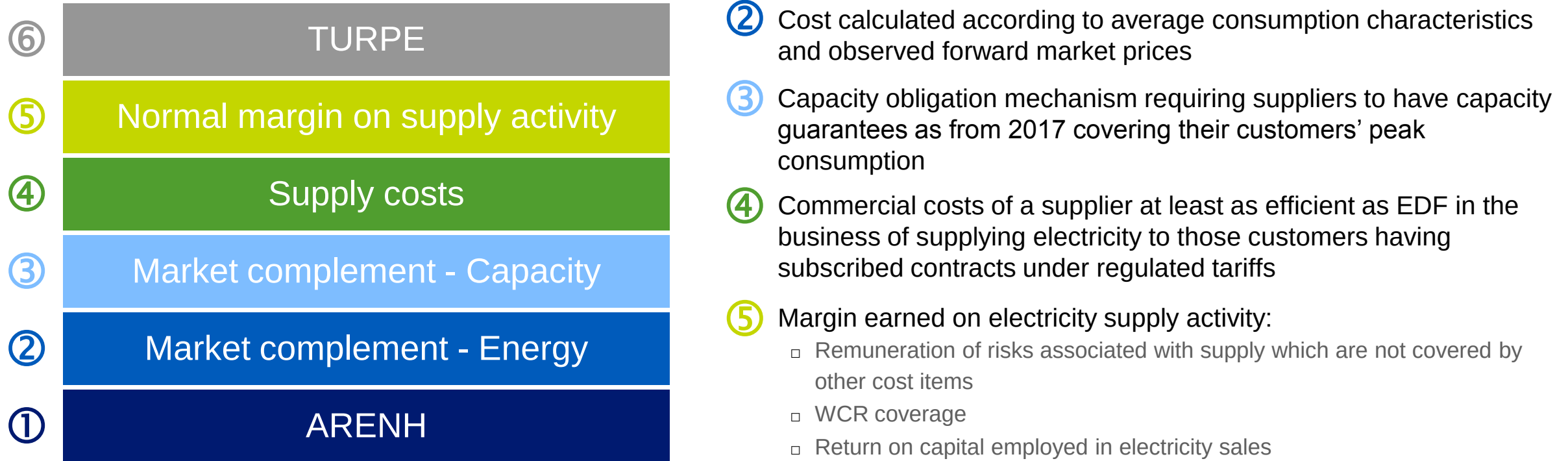
Increase in regulated tariffs in France in 2014

- Tariff increases are made once a year: in 2014, the following increases went into effect on 1 November:
 - +2.5% for households (including 0.9% of tariff catch-up for 2012-2013) and -0.7% for small businesses (blue tariff), +2.5% for companies under yellow tariff and +3.7% for companies under green tariff
 - These hikes include grid tariff increases (TURPE) effective 1 January 2014: +3.6% for distribution only, and then on 1 August 2014: -1.3% for distribution and for transmission



Higher share of energy and supply component on residential customers and small businesses

Components of the cost stacking method established by the 28 October 2014 decree



The decree also states that the regulated tariffs are determined by the addition of these different components “subject to the costs supported by EDF and LDCs for supplying electricity under regulated tariffs being taken into account”

CRE report of 15 October 2014 on electricity regulated tariffs

Historic method:

Based on actual and projected costs

- Historic costs not covered, to be included in subsequent tariff hikes⁽¹⁾
 - **2012: €509m** (in addition to the adjustment decided on 28 July 2014 for revenue estimated to €921m)
 - **2013: €627m**
- Based on projected costs, regulated tariffs should have increased by 4.9% on average in 2014
 - Among which 6.7% for residential tariffs

New method:

Based on cost stacking method

Impact on regulated tariffs according to CRE assumptions

	2014	2015	2016
Blue residential tariff	+1.6%	+1.5%	+2.0%
Blue professional tariff	-0.7%	+0.9%	+1.8%
Yellow tariff	-0.1%	+1.1%	n/a
Green tariff	+2.0%	+1.6%	n/a

Source and detailed data: CRE report

For more information on CRE report and underlying assumptions regarding analysis and recommendations, please visit the CRE website or download the file on the link below (available only in French)

<http://www.cre.fr/documents/publications/rapports-thematiques/rapport-sur-les-tarifs-reglementes-de-vente-d-electricite>

Tariff decisions and revisions announcements

2012 tariffs

2013 tariffs

2014 tariffs

Government

August 2012: 2% increase in all regulated tariffs

August 2013: 5% hike for blue, 2.7% for yellow and 0% for green

July 2014: planned 5% rate hike cancelled

November 2014: “stacking” tariffs, +2.3% on average (blue residential: +2.5%; professional blue: -0.7%; yellow: +2.5%; green: +3.7%)

French Energy
Regulation
Commission (CRE)

Recommendations:
+5.7% for blue,
+2.6% for yellow,
+1.5% for green

June 2013 report shows that the revised 2012 tariffs, following the State Council’s decision, and 2013 tariffs were insufficient. **EDF’s costs were underestimated by a total of €1,136m** (blue: €930m; yellow: €70m; green: €130m)
2012 costs underestimated by €509m on top of the €921m **2013 costs underestimated by €627m**

According to CRE discussions of 30 October 2014, tariff hikes include a **partial catch-up of 2012 and 2013**. For example, for blue residential, **0.9% catch-up** on top of a +1.6% increase

ANODE

Request for
cancellation in
January 2013

Appeal to cancel the
ministerial order that
cancelled the 5%
rate hike

Appeal to cancel the tariff
ministerial order
(contesting the level and
not the “stacking”
method)

French State
Council

Decision of 11
April 2014
cancelling the
July 2012
ministerial order

7 January 2015 decision on the rate hike of 1 November 2014:
-blue and yellow: include **a catch-up but only a partial one**; the Government will have **to further carry tariffs catch-up on** in its next tariff decisions
-green: no catch-up, tariffs set at a clearly insufficient level

Appeal struck down on
12 September 2014, as
there was no urgency.
“In-depth” decision
within 12 to 18 months

Appeal struck down on
7 January 2015, as
there was no urgency.
“In-depth” decision
within 12 to 18 months

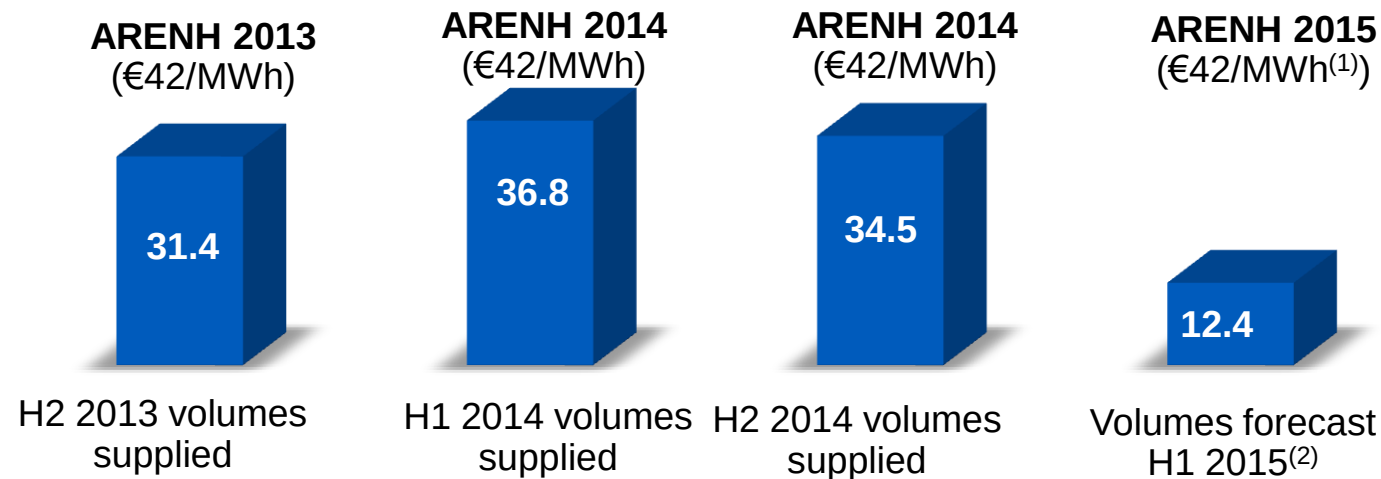
Impact on EDF

**€921m in revenues
in 2014**

Catch-up included in the tariff decision of November 2014
Blue: 15% of the amount to be caught up; yellow: 50% of the amount

ARENH volumes allocated to competitors under NOME law

In TWh



- Maximum total volume of EDF's sales to competing suppliers (excluding grid losses): 100TWh⁽³⁾ p.a
- Volumes allocated in 2014 by EDF to competitors: 71.3TWh
 - Since early 2014, competing suppliers include grid sourcing losses in their ARENH demands (*produit plat C1*). Annual amounts dedicated to losses, set by the CRE, take into account 80% of projected consumption of the public grid operator for 2014 and 100% for 2015 and beyond
- Volumes allocated for the first half of 2015: 12.4TWh (o/w 5.3TWh for losses) due to:
 - A context characterised by a lack of visibility on evolution to come on ARENH price and decrease in wholesale electricity market prices
 - Termination by four suppliers of the framework agreement that allowed them to benefit from ARENH

Did you know?

By 2015, there will be an evaluation of the ARENH mechanism by the DGEC

- Evaluation required by the NOME law every five years, with the first to come before the end of 2015
- Analysis of ARENH's impact on competition, wholesale markets, supply of alternative suppliers, and investments necessary to secure supply
- Wording of mechanism-adjustment proposals

Innovation: supply

Connected homes: e.quilibre

The new digital *e.quilibre* service allows customers to analyse their energy consumption and usage. It is a new, completely digital tool, accessed via the online dashboard of the customer site for residential customers. It allows customers to monitor and manage their consumption and electricity expenses, through a personalised service. The more precise the metering data provided, the more accurate and personalised the *e.quilibre* service will be. With this in mind, it has been designed to receive data from a smart meter.

E.quilibre allows customers to:

- track their **consumption** and **energy expenses** at all times
- compare consumption with **similar households**
- identify the **appliances that use most electricity**
- benefit from **practical and personalised advice** to lower bills



EDF commercial strategy in France (1/2)

27.2 million customer accounts, or more than 33 million sites⁽¹⁾

On the electricity market, 353.8TWh sold in 2014, representing a market share of 78.8%

On the gas market, 19.6TWh sold in 2014, representing a market share of 4.7%

Residential customers

Key figures in 2014

- **Electricity:** 27.5 million delivery points and 128.4TWh sold
- **Gas:** more than 1 million delivery points and 9.3TWh sold
- **Customer satisfaction rate** in 2014 of **90%**⁽²⁾

- Implementation of 9 “**EDF & Me commitments**” involving proximity, personalisation and proactivity
- **Services for residential customers**
 - **Services dedicated to energy savings:** advice concerning different heating systems or insulation solutions, personalised support on renovation work projects, applications for a quote from EDF’s Partenaires Bleu Ciel, and access to financing solutions from EDF’s financial partner (Domofinance)
 - **Other services:** paperless management methods for accounts, access to insurance services and assistance with electrical and plumbing troubleshooting, and monitoring of consumption

(1) Excluding overseas and Corsica

(2) Source: BSC satisfaction barometer

EDF commercial strategy in France (2/2)

Corporate and business customers

Key figures in 2014

- 1.7 million corporate and business customers with 179.5TWh of **electricity** sold and 9.5TWh of **gas**
- **Customer satisfaction rate** in 2014 of **77%**⁽¹⁾
- **“EDF Entreprises”**, new brand of EDF launched in 2013, supports professionals in order to help them reduce their energy bill. EDF has put in place **offers dedicated to large customers** with:
 - **offers for tailor-made** electricity and gas supply
 - **offers valuing the demand-side response capacity**: depending on certain conditions, customers with the ability to reduce their demand load according to specified capacity levels can receive financial compensation
 - **assistance on a European scale through the entities of the Group**: EDF has a “Large Companies and Major Accounts” commercial network dedicated to the management of large companies and with a centralised purchasing structure
 - **support in the control of their energy consumption and CO₂ emissions** through the implementation of energy productivity plans (PPE)
 - **trading of CO₂** for businesses subject to the EU emission trading system (EU ETS)

Local authorities, low-income housing agencies, Local Distribution Companies (LDCs) and public service providers

Key figures in 2014

- **Electricity**: 1.2 million sites for an annual consumption of 29.6TWh
- **Gas**: close to 6,000 sites for an annual consumption of 0.9TWh
- Additionally, 16.3TWh of electricity were sold to LDCs in 2014
- **Customer satisfaction rate** in 2014 of **91%**⁽¹⁾

5 areas: the supply of electricity and gas at market price; the signing of concession contracts for the “supply” portion; the supply of electricity at regulated sales tariff; accompaniment in different projects (local climate plans, eco-districts, sustainable cities, etc.); development of sustainable mobility offers for local authorities

EDF Energy commercial strategy

Residential electricity and gas supply market (B2C)

CONTEXT

- Highly competitive market with **~25 suppliers; small-to-medium suppliers grown strongly** over last 2-3 years (c10% market share). New entry & establishment helped by cost exemptions policies
- A **wide range of tariffs** (fixed and variable) available to all customers; competition most intense on fixed-term tariffs. Dual-fuel (electricity, gas) offers prevail with cheapest prices for online accounts management
- Comparatively high customer **switching rate**; increasing level of switching through price comparison websites
- **Suppliers used to deliver Government policies**, including energy efficiency and smart metering

Business electricity supply market (B2B)

- **Market remains highly competitive with >30 suppliers**
- **Very diverse customers**: from small to large/multi-site customers requiring a wide range of energy products and services
- **Intermediaries** helping customers to choose their energy supplier **retain a strong presence in the market**, representing ~80% of volume to industrial & commercial customers. Lower penetration for small business customers
- **Suppliers increasingly looking to deliver energy-related services** in addition to electricity/gas sales

3 pillars: fairness and convenience for customers, efficient operations and innovation (digital technology & smart metering)

STRATEGY

- **Standard variable prices at the lower end of competitors**, recognising typically lower engagement of customers on such tariffs and so building reputation for acting fairly
- **Market share holding up** (4th largest supplier) due to strong interest in fixed-term Blue + Price Promise products, where a customer is alerted of cheaper offers (saving £1/week or more), even if by a competitor
- **Costs reduction** to serve customers and narrow the differential to competitors
- **Increasing number of customers using digital interface**
- **Serve all customer segments** (0.1-10TWh p.a. demand)
- **Remain the largest supplier to UK businesses**; supplies 4 of the 5 largest UK users (Network Rail, Scottish Procurement, Crown Commercial Service, Tesco)
- **Promote low carbon emissions through innovative offerings** to the B2B supply base
- **Drive the growth in key areas** with a focus on smaller businesses and emerging energy services & export markets

Edison's commercial strategy

- Edison, through its 100% controlled company **Edison Energia** is involved in the electricity and gas supply to Italian customers
- The Italian retail market is not completely liberalised but the removal of the regulated market starting in 2018 is under discussion at government level. In the first months of 2015, an acceleration towards the complete opening of the retail market has already started

Business market (B2B)

- Edison is **a leader in the B2B market** both in power and gas
- Very fragmented and competitive market
- Market share of 10% for power and 20% for gas**

Retail market (B2C)

- Late 2008: Edison entered the retail free market** in power and gas, positioning itself as the new real alternative to incumbents (Enel, Eni, ex-Municipalities)
- Strong growth in the retail market:** 1 million contracts signed in less than 2 years, up to 1.3 million contracts at the end of 2014

POWER SALES IN 2014

17TWh

3.8TWh

788,000 customers⁽¹⁾

GAS SALES IN 2014

5.3bcm o/w
2bcm resellers
3.3bcm business

554mcm

557,000 customers⁽¹⁾

NEW INNOVATIVE OFFERS AND SERVICES

- **NEW OFFERS – “EDISON BEST”**: in October, Edison launched an innovative offer for the power residential market, which introduces a new service to guarantee its best value for money. **Edison advises its customers about the existence of another fixed price offer which guarantees at least 1€ per week saving.** This is a true innovation which has never been proposed by any other national operator for energy and gas services or in other sectors
- **NEW SERVICES – “ENERGY CONTROL”**: in the residential sector, Edison has introduced Energy Control, a device which enables **families to supervise**, through a data reader and a digital platform, **their energy spending in real time.** It helps customers reach a greater awareness of their energy use, encouraging them to reduce their final consumption
- **LOYALTY PROGRAM – “NOI EDISON”**: the **“Noi Edison” loyalty program** enables customers to earn points easily, which can be spent in high-tech goods and other items linked to energy saving and sustainable lifestyle

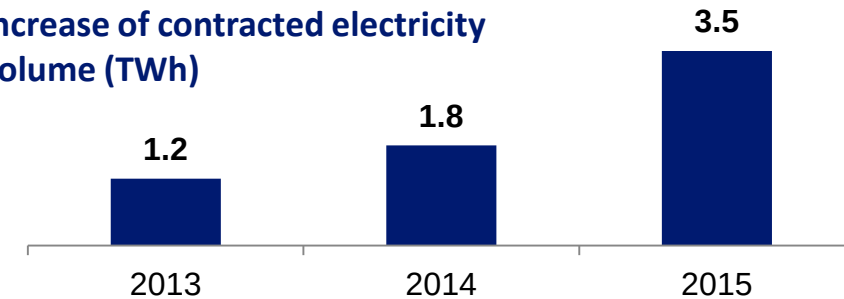
EDF Polska commercial strategy

The Group is currently developing its strategy in the B2B segment, with the possibility to expand into the B2C market depending on the regulatory evolution

Large B2B clients (High and Medium Voltage):

- New commercial strategy implemented in 2013 with focus on medium-size customers (>5GWh/yr) and large-size industrial customers (>100GWh/yr)
- Successful and promising results following the launch of the strategy

Increase of contracted electricity
volume (TWh)



Small B2B clients:

- The project started in June 2014, with sales starting in **February 2015**
- The strategy aims to bring EDF's expertise to an attractive market segment, increase the level of **vertical integration** and develop the **EDF brand** in Poland
- **Offers:**
 - ✓ Fixed price electricity supply, with innovative Service Packages
 - ✓ Additional products, including Solar PV Feasibility Study

The EDF group also aims to rapidly develop a significant position in energy services in Poland, leveraging on competencies and expertise of Group entities: Dalkia, Fenice, Tiru, EDF Polska.

EDF Luminus commercial strategy

Key factors of success in 2014

- **Complete restructuration of generation activities** and reduction of O&M costs by 20% between 2013 and 2014
- **Development of profitable renewable energies** in the energy mix: increase in installed wind capacity by more than 50% in 2014 and implementation of a broad life extension programme of hydroelectric power stations
- **Strong development of innovative energy solutions** with the launch of new products completing the “**Home Solutions**” range in B2C which includes:
 - “**Comfort**” service: 24/7 assistance to residential customers for all emergency repair
 - New “**Maintenance and repair of boilers**” and “**smart thermostat**” services
 - Portfolio of more than 100,000 services
- **Acquisition of RAMI**, a network of more than 250 domestic installers enabling the deployment of B2C services
- Positioning across the entire value chain of heat, ventilation and air conditioning thanks to the recent increase in shareholding of **Dauvister**, a multi-energy solutions installer

The future strategy

EDF Luminus launched with success a deep transformation with the plan “**Better for our customers**” with the following targets

Being a leading integrated energy company, offering innovative and sustainable solutions and ensuring best service to customers

Enhancing local anchorage while benefiting from the integration within the EDF group

1.74 million customers⁽¹⁾



82% residential



18% professionals and industrials



100,000 services contracts

60% Flandres
35% Wallonia
5% Brussels

Market share of 20% and growing despite strong competition

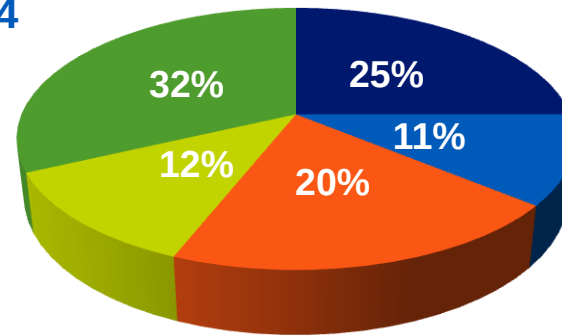
+50,000 customers in 2014: supplier with strongest growth

An excellent and growing level of customer satisfaction and drop in cost of customer service. Supplier with the smallest level of complaint for every 5,000 customers: rate of 1.03 in 2014 vs. 2.42 in 2013

(1) Delivery points

Dalkia commercial strategy

Customer breakdown in % of 2014
revenue



- Housing
- Health
- Commercial
- Local authorities
- Industry

- ~€3bn revenues in 2014
- 33,700 customers

Context and issues in France

- **Long-term growth potential in the energy transition context**
 - **A growing importance of local territories:** local players' willingness to manage energy choices within their territories
 - Resources management and valuation: mobilisation of local renewable sources under a multi-energy approach
- **An increasingly competitive market; players with very different backgrounds**
- **Higher-skilled customers and more specific expectations**
- **More complex solutions**
 - Rise of new digital technologies and associated services (big data, energy management system)

Dalkia commercial strategy in France

- **3 strategic business areas structuring our offers:** heating and cooling networks, industrial utilities, energy services to buildings
- **Offer to customers tailor-made solutions for energy savings in the long-run with a commitment to results**
 - Promoting energy sobriety: **consuming less**
 - Improving energy efficiency: **consuming better**
 - Developing local and renewable resources: **promoting alternative energy**
 - Seeking environmental performance and economic competitiveness through the systematic use of the most adapted solutions in terms of technology, maintenance, and energy monitoring and purchase: **placing the innovation at the core of our business**
- **Assets**
 - **Ability to accompany our customers in the long-run:** ensuring a close relationship by covering the whole territory and controlling all technologies and steps in the value chain (from design to operation)
 - **Innovation capacity**

EDF main businesses

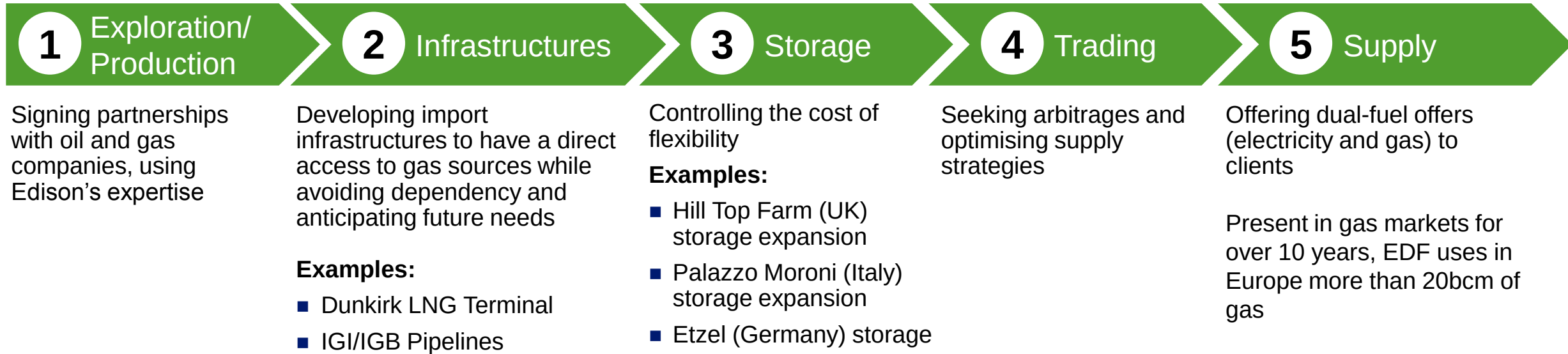
Generation

Networks - Transmission and Distribution

Optimisation - Trading and Supply

Group's activities in the gas sector

EDF is well positioned all along the gas value chain



- Securing competitive long-term gas supplies for the Group
- Gas and electricity dual-fuel offers to end costumers
- Supply of EDF's gas-fired power plants
- Benefitting from arbitrage opportunities

Gas end-market for EDF

Gas sales for the Group in 2014⁽¹⁾:

- **France:** more than 1.1 million customers (residential customers and key accounts) and 19.6TWh sold, equivalent to a market share of 4.7%
- **Italy:** 553,200 customer accounts and 5.7bcm of gas (~60TWh) sold, equivalent to a market share of 13.6%
- **United Kingdom⁽²⁾:** about 2.1 million customer accounts and 28TWh sold, equivalent to an approximate market share of 5%
- **Belgium:** some 581,000 customer accounts and 13.2TWh sold, equivalent to an approximate market share of 18%

(1) Sales of companies at 100%, i.e. not corrected for interest percentage (including non-controlling interests). The gas business of EDF Trading is not taken into account in these figures

(2) Excluding Northern Ireland

EDF's main gas infrastructures

LNG terminal in Dunkirk

- Capacity of **13bcm/year** (o/w **8bcm/year** owned by EDF)
- Dunkirk LNG shareholders: **65% EDF**, 25% Fluxys, 10% Total
- Project status: under construction
- As of end of December 2014, the construction project is 74.8% complete. The terminal commissioning is scheduled for end 2015
- In 2014, cryogenic tanks were built inside concrete reservoirs and then sealed. This was followed by a series of tests

Rovigo LNG terminal in Italy

- Capacity of **8bcm/year** (o/w **6.4bcm/year** owned by Edison)
- Adriatic LNG shareholders: **7.3% Edison**, 70.7% ExxonMobil Italiana Gas, 22% Qatar Terminal Company Limited

Gas Storage in Europe

- **Italy**: three existing storages (Cellino, Collalto, San Potito-Cotignola) and one project under development (Palazzo Moroni)
- **United Kingdom**: one existing storages (Hole House) and one project under development on the adjacent site (Hill top Farm)
- **Germany**: one existing storage in Etzel. Surface installations will be operated in a 50-50 joint-venture with EnBW

Other import structures

Edison takes part in infrastructures projects for gas import:

- **Galsi**, a gas pipeline aimed at connecting Algeria to Italy through Sardinia, in which Edison has a 20.8% shareholding
- **IGI Poseidon**, a company owned at 50% by Edison and involved in the development of several projects aiming to connect Greece and Italy (IGI), Greece and Bulgaria (IGB, in 50-50 partnership with Bulgaria) as well as Greece and Cyprus (EastMed)

Long-term gas contracts

- Edison gas contracts (Qatar, Libya, Russia et Algeria) and their price review
 - The total volume of Edison long-term gas contracts is of 14.4bcm/year
 - A new round of price review started in late 2012 for the 2012-2015 period, in order to restore the profitability of those contracts, affected by the lower gas selling prices

Renegotiations and arbitrations status:

Contract	Nominal volume (bcm/year)	Expiration	Renegotiations/arbitrations status	
			1 st phase (2010 - 2012)	2 nd phase (2012 - 2015)
Qatar	6.4	2034	Arbitration August 2012	Renegotiation July 2013
Algeria	2.0	2019	Arbitration April 2013	Renegotiation July 2013
Russia	2.0	2019	Renegotiation July 2011	Arbitration August 2014
Libya	4.0	2028	Arbitration September 2012	Arbitration started in April 2013 ⁽¹⁾

- 17 July 2014: EDF signed a supply contract with the US Cheniere Group for a approximate 1bcm/year, for a period of 20 years from the commercial commissioning of the LNG terminal of Corpus Christi in Texas

EDF main businesses

Generation

Networks - Transmission and Distribution

Optimisation - Trading and Supply

Group's activities in the gas sector

Energy services

EDF's strategy

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Subsidiaries

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Focus on Dalkia

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Energy services activities at EDF

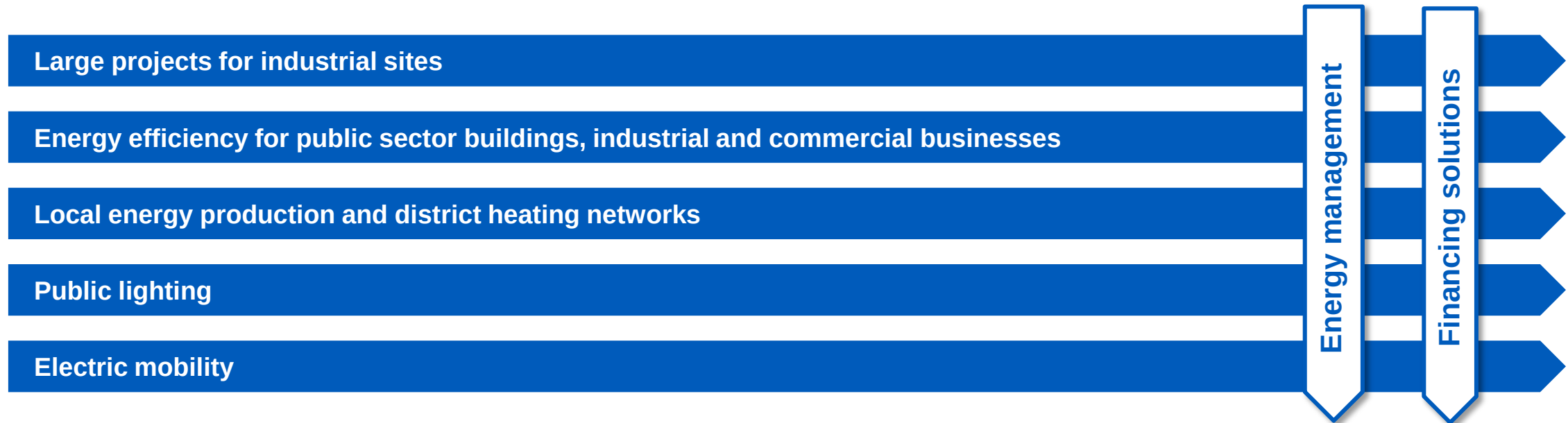
- EDF aims to be active across the whole value chain of energy services i.e. advisory and engineering, installations, operation and maintenance, energy management, and financing



- EDF's ambition in energy services is to increase energy efficiency of plants and equipment in order to reduce or to control energy consumptions and associated costs, as well as to reduce greenhouse gas emissions, particularly in the industry and buildings

Service offering for customers in the business and public sectors

The EDF group developed its offering in energy services for business customers as well as local authorities, around 5 primary service lines



An ambitious development project

- With **Dalkia France and Citelum integration within the Group** since July 2014, EDF reinforced its position as a major player in energy services in France and internationally and expanded its service offering to business customers and local authorities on the following activities: **industrial utilities, energy services in buildings, heating and cooling networks and public lighting**
- Dalkia is planning to **strengthen its position in France** throughout its current activity in heating networks and services to buildings, and by developing its activities for industrial customers. In that context, Dalkia is working on the following development projects:
 - Full integration of **EDF Optimal Solutions** within Dalkia from 17 February 2015. EDF Optimal Solutions designs and implements comprehensive and tailored energy eco-efficiency solutions in order to help businesses and local authorities reduce their energy costs and CO₂ emissions, in four areas: district heating networks, energy generation and recovery, building energy efficiency, and complete multi-technical energy efficiency solutions. EDF Optimal Solutions and Dalkia decided to join forces to share their know-how and benefit from the strong complementarities between their energy efficiency proposed solutions
 - Integration of **Verdesis** on 11 February 2015, following its acquisition from EDF Energies Nouvelles, aimed at optimise strategy due to Verdesis' close business proximity with Dalkia's activities. Verdesis is specialised in biogas generation, treatment and sales
 - The acquisition of **Cesbron** on 18 March 2015, a company specialised in industrial and commercial refrigeration systems as well as in air-conditioning engineering. This transaction enables Dalkia to enhance its strategic positioning in refrigeration activities

Overview of EDF's energy services subsidiaries

The EDF group delivers energy services solutions to its customers through four main subsidiaries:

In 2014



~€3bn⁽¹⁾ in sales
Active in France
11,200 employees

Dalkia France, a leader in energy services, offers local solutions to reduce energy consumptions and improve facilities' performance through three business activities: heating and cooling networks, energy services for buildings and industrial utilities



~€400m in sales
Active in Italy, Spain,
Poland and Russia
~2,000 employees

EDF Fenice offers comprehensive technical and financial solutions to ensure quality and efficient technical operation of industrial facilities, under mid- to long-term Energy Performance Contracts



~€230m in sales
Active in France, the UK
and Canada
~1,100 employees

The Tiru group, an expert in renewable energy generation from waste, designs, builds and operates energy-from-waste plants and biomass facilities in France, the UK and Canada (incinerators, anaerobic digestion, etc.)



~€250m⁽²⁾ de CA
Active in **18 countries**
~3 000 employees
o/w 500 in France

Citelum assists cities and industries, in France and internationally, towards smarter, more efficient and safer lighting systems under urban lighting management contracts (lighting, illuminations), public transport management (signaling, traffic management) and management of security and communication equipment connected to the lighting network



(1) Dalkia's sales for the entire FY2014. Its contribution to the 2014 Group sales since its full integration in the Group's consolidation scope on 25 July 2014 is €1,323m

(2) Citelum's sales for the entire FY2014. Its contribution to the 2014 Group sales since its full integration in the Group's consolidation scope on 25 July 2014 is €133m

Dalkia, a major player of the energy transition supporting its customer base

- **Through its “green” heating networks** fuelled with renewable energy sources and energy recovery
- **Through its energy performance contracts (EPC) and its remote facility management centers** for full optimisation of energy facilities' efficiency

**CONTINUED REDUCTION
IN CO₂ EMISSIONS**

Over 6 years, the share of gas used by Dalkia in its facilities dropped by a third and the share of renewable energy sources was multiplied by 4



2.4 million tonnes of CO₂ saved in 2014

Dalkia's business activities

HEATING AND COOLING NETWORKS



328 district heating and cooling networks
2.4 million homes serviced through collective heating systems

ENERGY SERVICES TO BUILDINGS



2,300 sites in the healthcare sector
16,500 schools, sports and leisure facilities

ENERGY SERVICES TO THE INDUSTRY



2,000 industrial plants



2014

FACTS & FIGURES

GROUP CORPORATE
RESPONSIBILITY
APPROACH

Group corporate responsibility approach

A strong undertaking for the Group

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Commitments associated with a strong monitoring

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Monitoring and certifications

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Extra-financial rating: a constant source of improvement for the Group

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Innovations in corporate responsibility

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Materiality matrix: prioritising commitments in sustainable development

In 2014, EDF carried out its first materiality analysis⁽¹⁾

- guaranteeing that the Group is taking into account and reporting on all the most significant economic, social, societal and environmental issues
- keeping the Group's sustainable development approach up to date with regard to the expectation of its key stakeholders

Legend:

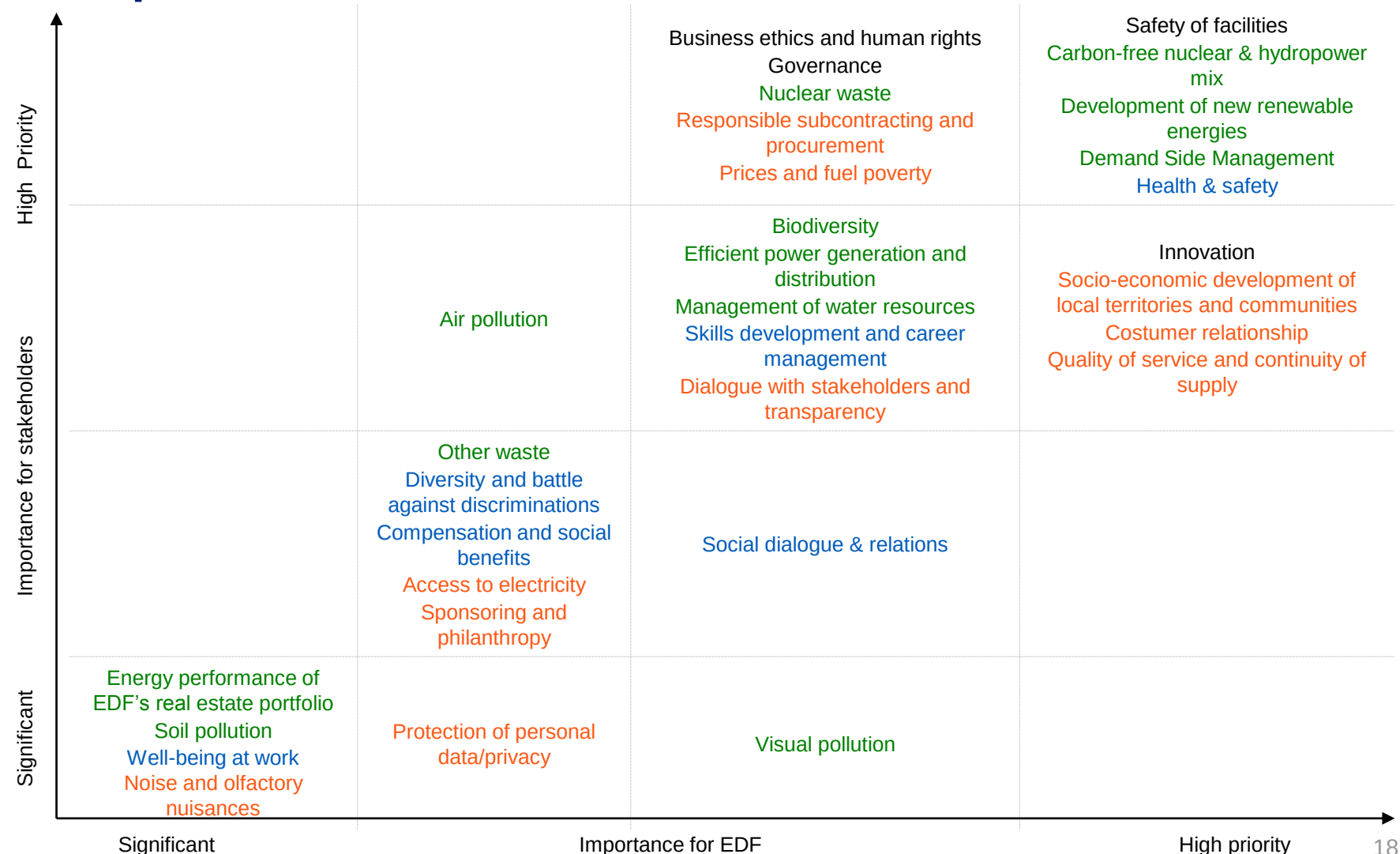
environmental issues

societal issues

social issues

cross-interests issues

(1) In accordance with the definition of the principle of materiality, as it appears in article 225 of the Grenelle 2 law, the AA 1000 assurance standard, the GRI G4 guidelines, ISO 26000 standard and the IIRC framework on integrated reporting



A strong undertaking for the Group

- Commitments that cover the main issues
- Commitments devised with all businesses and subsidiaries of the Group
- Results **validated** every year by the **EDF's Executive Committee** and presented during the **Shareholders' Meeting**

11 shared objectives covering 3 areas

**Responsible
Industrial Firm**

**Responsible
Employer**

**Responsible
Partner**

A responsible industrial firm

Maintaining the highest levels of security in Group installations

International FTSE4Good⁽¹⁾ criteria for nuclear safety met

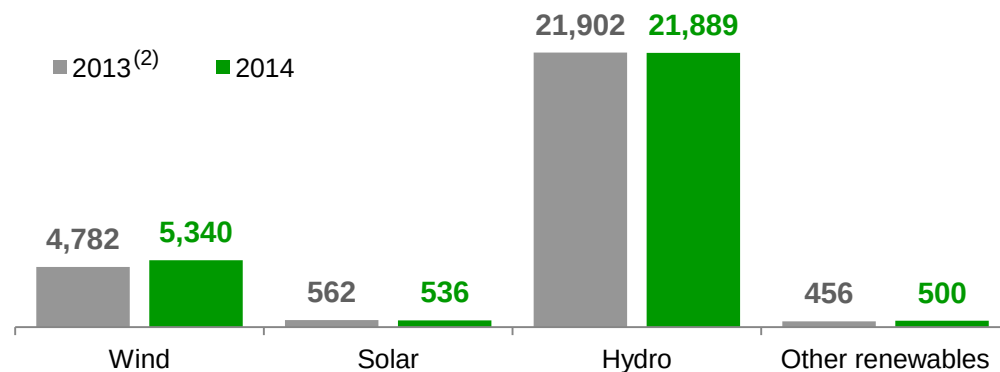
2014 Results

- **Maintained** in the FTSE4Good index

(1) The FTSE4Good Index Series was created by FTSE and aims to promote investments in companies that respect ambitious sustainable development objectives

Investing in renewable energies to increase their competitiveness

Installed renewable generation capacity of the Group (in MWe)



(2) Group consolidated data restated for the impact of the IFRS norms 10 & 11; Dalkia France 100% consolidated for the full year

Remaining the best among major energy providers in the development of low-carbon energy

Direct CO₂ emissions (g/kWh) of the Group kept within the 150g/kWh limit⁽³⁾

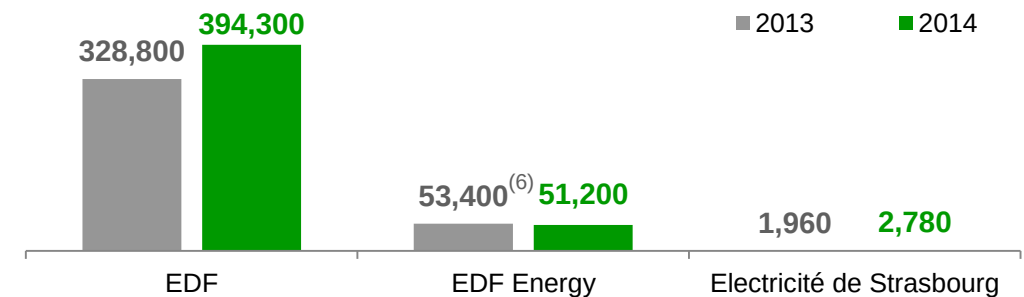


(3) Group consolidated data restated for the impact of the IFRS norms 10 & 11; Dalkia France 100% consolidated for the full year

(4) Group consolidated data in accordance with the IFRS norms in application in 2014; Dalkia France 100% consolidated for the full year

Significantly contributing to the improvement in energy efficiency within households

Number of households supported by Group companies in terms of energy efficiency⁽⁵⁾



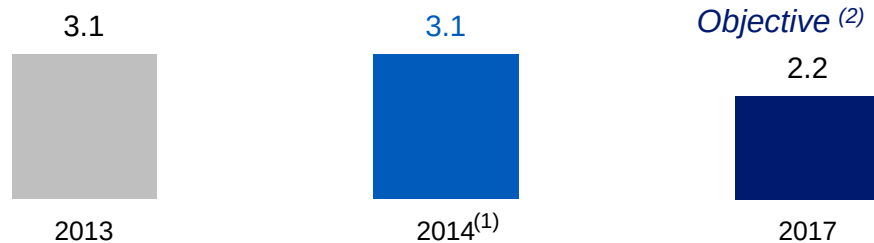
(5) Subsidiaries included in the consolidated scope of the Group and selling energy to residential customers

(6) Group consolidated data in accordance with the IFRS norms in application in 2014 (CENG, Sloe Centrale et Estag are considered as joint-ventures and consolidated under the equity method starting 1 January 2014); Dalkia France 100% consolidated for the full year

A responsible employer

Resolutely reducing workplace accidents among our employees and subcontractors

Lost-time accident for Group employees frequency rate divided by two within 5 years



(1) Group consolidated data restated in accordance with the IFRS framework in application in 2014; Dalkia France and Citelum 100% consolidated over the last 6 months of the year

(2) The previous 2017 objective of 1.9 was adjusted in 2014 after Dalkia's and Citelum's integration to take into account the specificities of their businesses

Preserving performance and professional excellence of the employees through training and promotion of diversity

Over 75% of Group employees receive, every year, at least one training session



By 2015, women should represent 30% of the pool of potential future top executives

2013: 25%

2014: 24%

No tolerance for breach of human rights, fraud and corruption, in any of the Group's companies and among their suppliers

13 companies will include an Ethics/SD clause in their long-term purchasing contracts⁽³⁾ by 2015

2014 result: 13 companies (vs. 8 companies in 2013)

- EDF
- EDF Luminus
- TIRU
- ERDF
- EDF Polska
- Électricité de Strasbourg
- EDF Energy
- EDF Démasz
- SOCODEI
- Edison
- EDF Norte Fluminense
- EDF Énergies Nouvelles
- EDF Trading

(3) Except energy contracts on the spot market

13 companies will meet the requirements of the United Nations "Global Compact Advanced" level by 2017

In 2014: 2 companies have reached the *Advanced* level
EDF (since 2012) and Edison (since 2013)

At end-2014: the 13 companies will have signed the *Global Compact*

6 new in 2014

A responsible partner

Promote transparency and dialogue on sensitive issues

8 companies will set up a formal space for dialogue with stakeholders by 2015

2014 result: 3 companies

- EDF: Sustainable Development Committee France
- EDF Energy: Stakeholder Advisory Panel
- Edison: Social Committee

Since 2005, EDF has set up the Sustainable Development Panel of stakeholders at Group level.

Contributing to the development of territories through employment

Number of direct jobs (Group employees) and indirect jobs (resulting from purchasing orders with suppliers and service providers) generated by EDF business activities

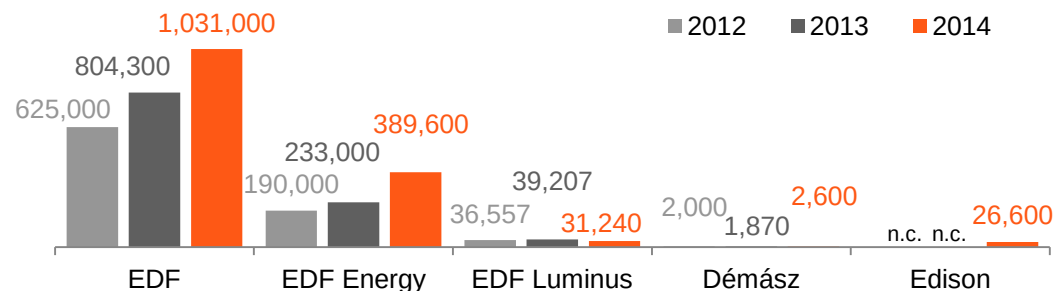


(2) Consolidated scope

(3) Application of the same auditable method as in 2013. In 2014, calculation of the indicator, excluding nuclear fuel cycle and uranium purchases, includes EDF, ERDF, EDF Energy, EDF Polska, Edison, EDF Luminus, EDF Énergies Nouvelles, Électricité de Strasbourg and TIRU. Full-time equivalent data shown.

Proactively fighting energy poverty and promoting access to electricity

Number of actions⁽¹⁾ to support our customers in need carried out by Group companies that supply energy



n. c. not collected. Consolidation of Edison for the first year in 2014

(1) Energy management advisory, negotiated payment plan, provision of financial support, etc.

Preserve water resources in all our activities

Publication, starting in 2015, of the water footprint at Group level

Since 2013, EDF coordinates the development of a water impact assessment tool applicable to all energy-related activities, all over the world, through a collaboration with the scientific community and international bodies representing the coal, nuclear, hydrocarbons and renewable sectors.

In 2014, the methodology was tested on 12 sites: 8 EDF sites (four nuclear power plants in France, two thermoelectric ones o/w one in Poland, and two hydropower plants), 2 Engie's thermal sites and two Hydro-Québec hydropower plants. The methodology was presented at the World Water Forum of Daegu, in South Korea, in April 2015. It will be applied to the Group's priority sites in the course of 2015.

CO₂ emissions undergo a structural decrease

This performance results from a long-term low-carbon industrial policy...

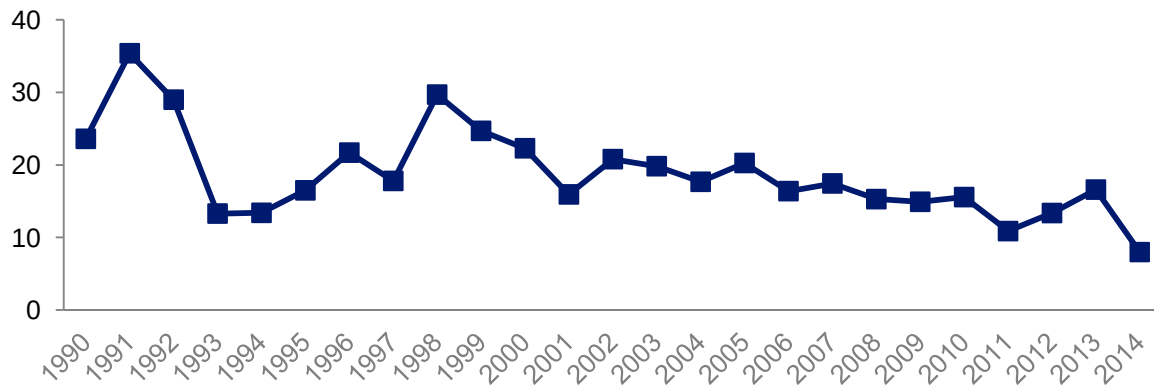
- Fuel switching
- Coal-fired plants shutdown
- Improvement in plant efficiency

... and from favourable weather conditions in 2014

The EDF group makes a significant contribution to holding the average European carbon factor at a relatively low level (328g/kWh in 2013⁽¹⁾), i.e. 428kgCO₂/MWh excluding EDF

EDF CO₂ emissions in mainland France

(Mtons)



Group CO₂ emissions

(Mtons)

(g/kWh)



(1) Source: PWC study of December 2014

(2) Group consolidated data restated for the impact of the 10 & 11 IFRS norms; Dalkia France 100% consolidated for the whole year

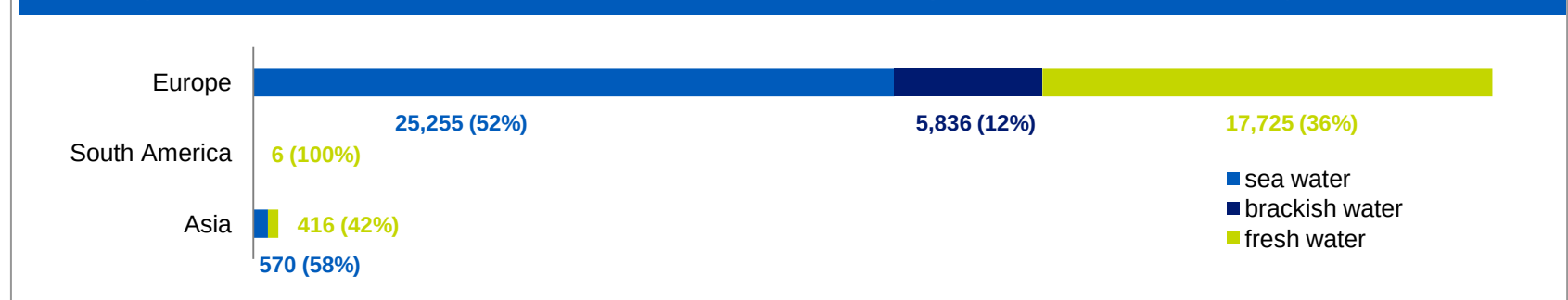
(3) Group consolidated data in accordance with the IFRS framework in application in 2014; Dalkia France 100% consolidated for the whole year

Water: a resource under control, an international commitment

A low Group exposure to water stress

- 98% of cooling water withdrawn by the Group is located in Europe
- Seawater represents 65% of the withdrawn water
- 99% of the withdrawn water is returned to the natural environment

Geographical breakdown of cooling water withdrawals – 2014 (in million of cubic meters)



Commitments made at the 6th World Water Forum in 2012

- Invest in all necessary resources to develop methods and tools to evaluate the water footprint of electricity generation activities
- Manage the water footprint of electricity generation activities
- Create local value and taking into account the objective of the water footprint minimisation from the design phase of power plants

Results

- EDF is developing an evaluation tool (Water for Energy Framework programme), in partnership with the scientific community and the international bodies of the energy sectors
- Validation of the first version in 2014, 12 sites being tested, o/w 8 EDF ones

Health and safety of employees: an absolute priority

A health and safety policy at Group level

Issued in January 2014, this policy is applicable

- to all companies controlled by the EDF Group, in all countries in which EDF operates
- to both EDF's employees and its subcontractors' employees working on its facilities and premises

It is based around four guiding principles:

- responsibility
- stakeholder commitment
- continuous improvement
- sharing of good practices and feedback

Target

No accident
No health impact

Results in line with the ambition

Frequency rate⁽¹⁾

- For Group employees: stable results vs. 2013
Objective: halving occupational accidents between 2012 and 2017



- For subcontractors: publication started in 2014
2014 result: 4.2

Health/security training

- EDF profit-sharing criteria on the proportion of employees who have followed some form of training in health, security and risk prevention. Objective between 30% and 45%

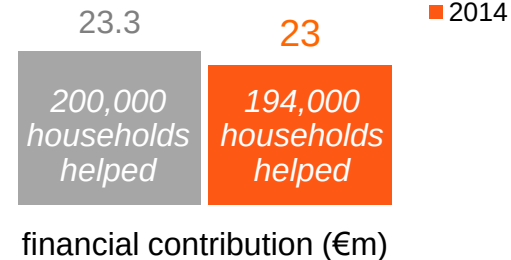
2014 result: 44.9%

Energy poverty: commitment of the Group beyond regulatory obligations

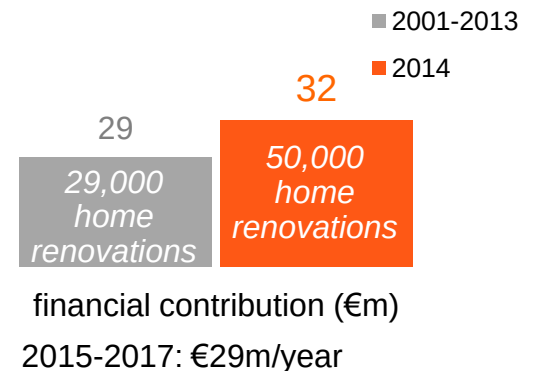
In France, EDF's action is based on three types of measures:

- **help in bills payment:** financial contribution to part of the energy bills, as part of the housing solidarity funds (FSL)
- **assistance to costumers in difficult situations:** alert programme for vulnerable costumers
- **preventive actions:** improvement of energy efficiency for the homes of people that are in energy poverty situation ("Habiter Mieux" programme)

FSL



« Habiter Mieux »



In other Group companies

EDF Energy

- regulatory obligations: ECO (Energy Companies Obligation) government initiative to help households
- voluntary programs: energy management advisory, help for debt payments of vulnerable households (EDF Energy Trust Fund)

Energy Companies Obligation

2013 - 2015 period:
Target reached by end-2014 with **€610m**

EDF Energy Trust Fund

2014
4,036 treated demands for **€3.4m**

EDF: responsible buyer

A corporate responsibility approach incorporated in the purchasing process

Revision in 2014 of its main stakes:

- sustainable development quality purchasing policy
- Sustainable Development Charter for contracting suppliers
- CSR risk mapping in purchasing segmentation

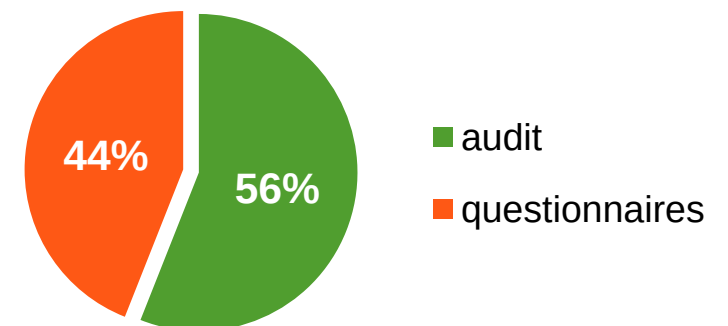
Shared stakes within the Group

- Development of an evaluation platform of contractors' CSR practices made available to departments and subsidiaries

A performance under control

- In 2014, the EDF Group's Purchasing Department conducted 129 "Sustainable development/CSR" assessments for an announced target of 90 assessments

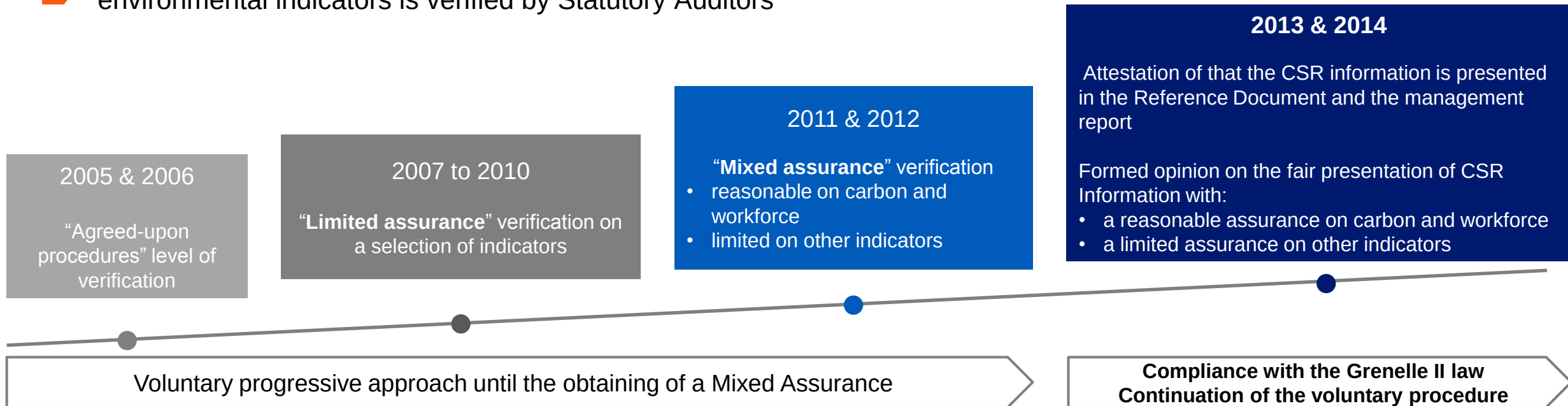
Allocation of the 129 evaluations



A rigorous monitoring supported by an external verification

► **Certification:** 98% of Group sales covered by the ISO 14001 certification

► **Third party verification:** since 2005, the Group undergoes a voluntary process whereby the quality of its social and environmental indicators is verified by Statutory Auditors



EDF and the Global Compact

- Member since **2001**
- Level: **Global Compact Advanced** since 2012



Non-financial ratings: major achievements for the Group in 2014

- Significant progress in EDF's non-financial rating by leading agencies
- Inclusion in a growing number of sustainability indices
 - Latest achievement: EDF's inclusion in the 2015 Global 100 Index, only company in the Electric Utilities sector



EDF 2014 Industry Mover and Bronze Class in RobecoSam Sustainability Yearbook

	2013	2014
EDF score	66%	79%
Average Electricity sector score	54%	56%



EDF member of the FTSE4Good Index

Group admission confirmed in **2014** with a high level of performance

The EDF Group is now one of the five global nuclear operators meeting the stringent criteria developed and overseen by the FTSE4Good Policy Committee. In 2014, the rating is 4.3/5 (3.7/5 in 2013)



EDF member of all applicable Euronext Vigeo indices: World 120, Europe 120, Eurozone 120, and France 20

EDF rated at 58/100 in 2014 (vs. 55/100 previously)



EDF member of the CDLI France 2014
(Climate Disclosure Leadership Index)

	2013	2014
Transparency score	95	98
Performance score	B	B



EDF member of the STOXX ESG Leaders Index

EDF rated at 76/100 in 2014 (vs. 71/100 in 2013)

Innovation: environment

Cordemais fish pump

The project: the Cordemais plant continuously withdraws water from the Loire estuary, an area of abundant aquatic wildlife, to cool its systems. During the extractions of water, through powerful 14 meter-deep pumps, fish are sometimes sucked up. To limit this, the site has fitted its filter drums (used to separate water from solids) with screw-shaped pumps to gently return any fish sucked up during the extraction to their natural habitat. The new system does not affect the performance of the pumping and does not generate additional maintenance costs. Cordemais is the first French thermal plant to implement this solution. The initiative is part of continuing efforts by the plant to conserve wildlife in the Loire over the last 5 years. The project, carried out with support from the Loire-Bretagne Water Agency, is an illustration of EDF's biodiversity policy.

Benefits: protects aquatic wildlife.

Implementation: the system has currently been fitted at two units of the Cordemais plant and will be expanded to the remaining two units. It can be copied at any generation plant which extracts river water.





2014

**FACTS
& FIGURES**

FINANCE

Finance

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2014 results, 2015 targets and 2018 ambition

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Focus on the Group's credit profile

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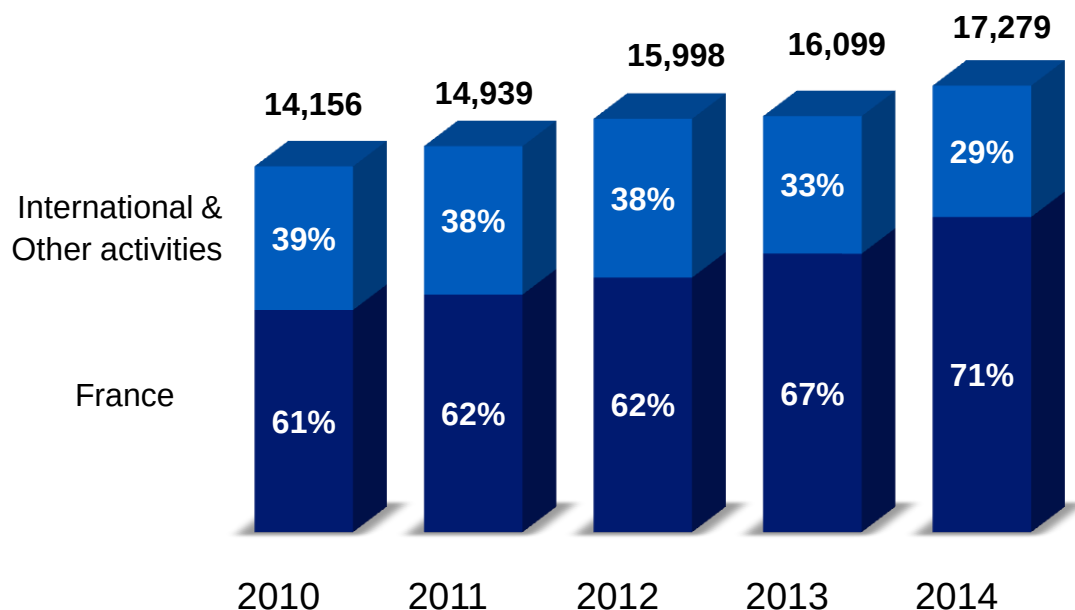
CSPE

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Historical financials (1/5)

EBITDA evolution from 2010

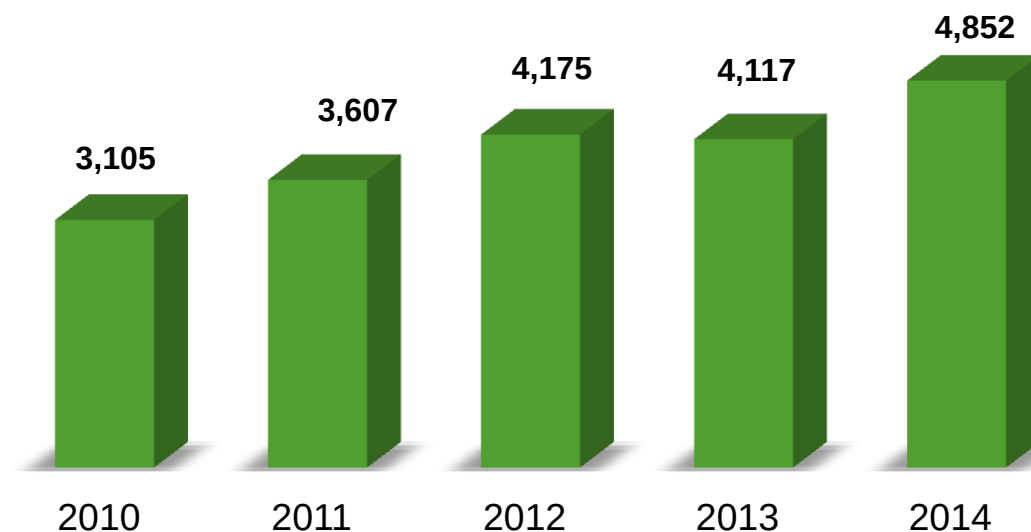
In millions of Euros



EBITDA increased by 5.1%⁽¹⁾ from 2010

Net income excluding non-recurring items evolution from 2010

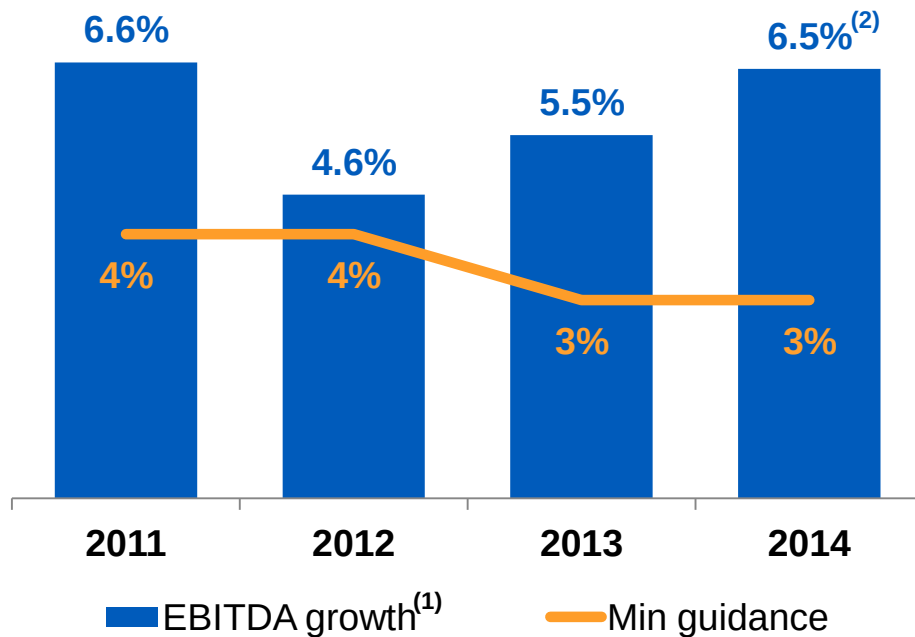
In millions of Euros



Net income excluding non-recurring items increased by 11.8%⁽¹⁾ from 2010

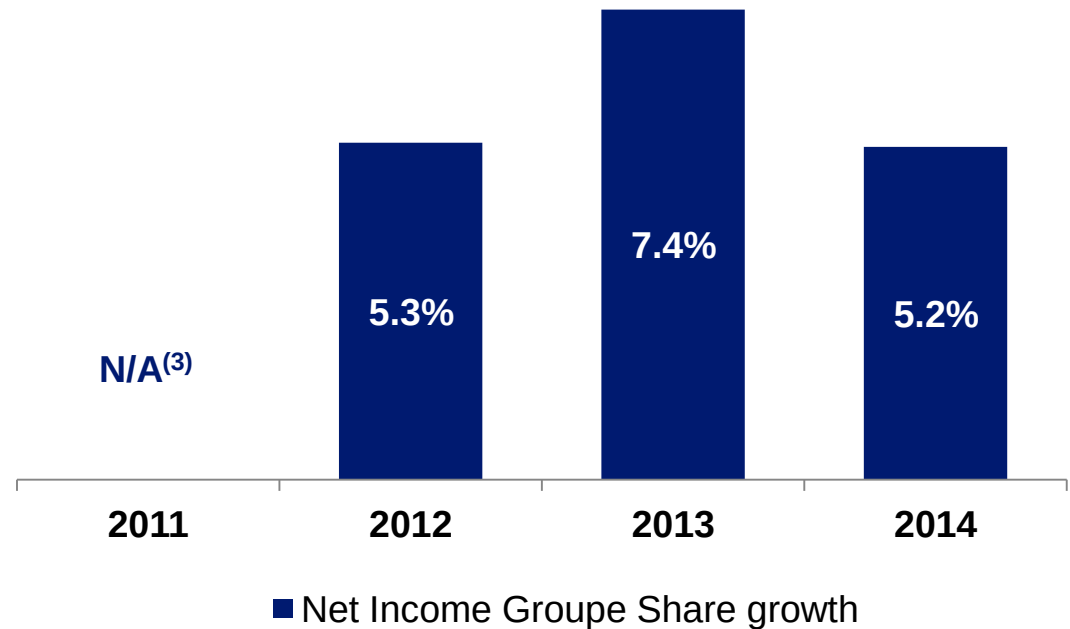
Historical financials (2/5)

EBITDA growth⁽¹⁾ vs. Guidance



For 4 years, results above targets

Net income – Group share growth

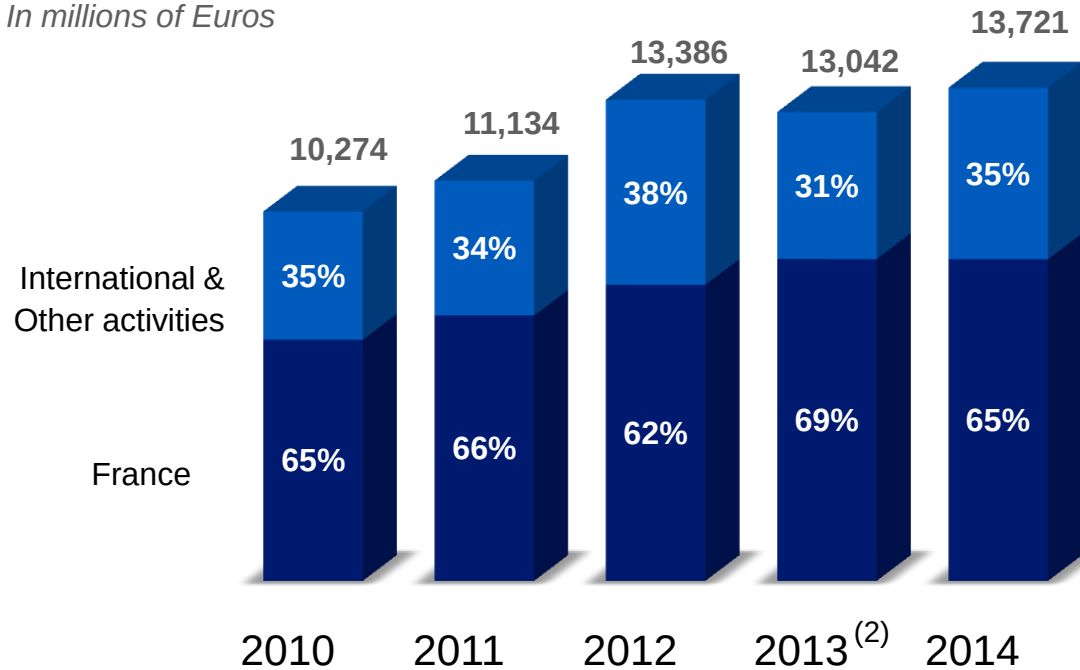


For 4 years, Net income – Group share in continuous improvement

Historical financials (3/5)

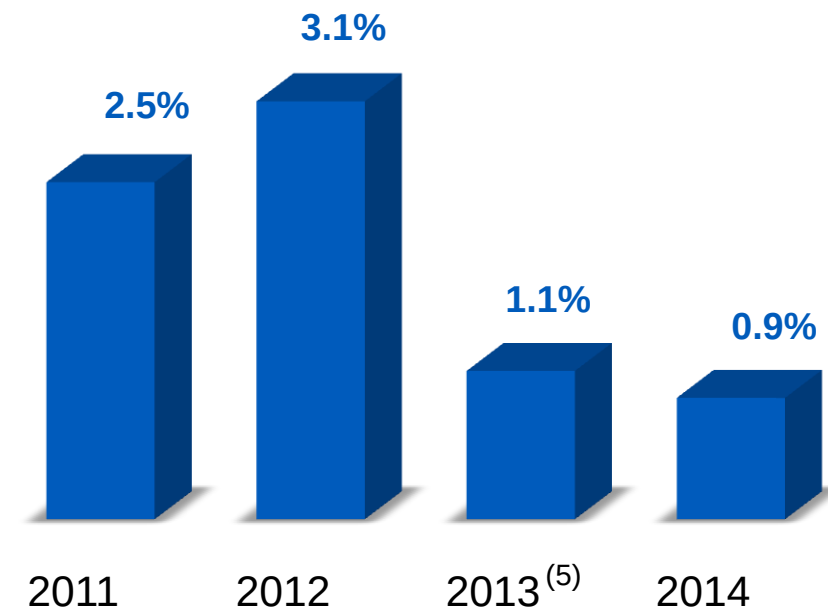
CAPEX⁽¹⁾ evolution from 2010

In millions of Euros



CAPEX increased by 7.5%⁽³⁾ from 2010

OPEX growth⁽⁴⁾ from 2011



Ongoing efforts to control Opex

(1) Gross operational investments including Linky

(2) Data restated for the impact of IFRS 10 & 11

(3) CAGR

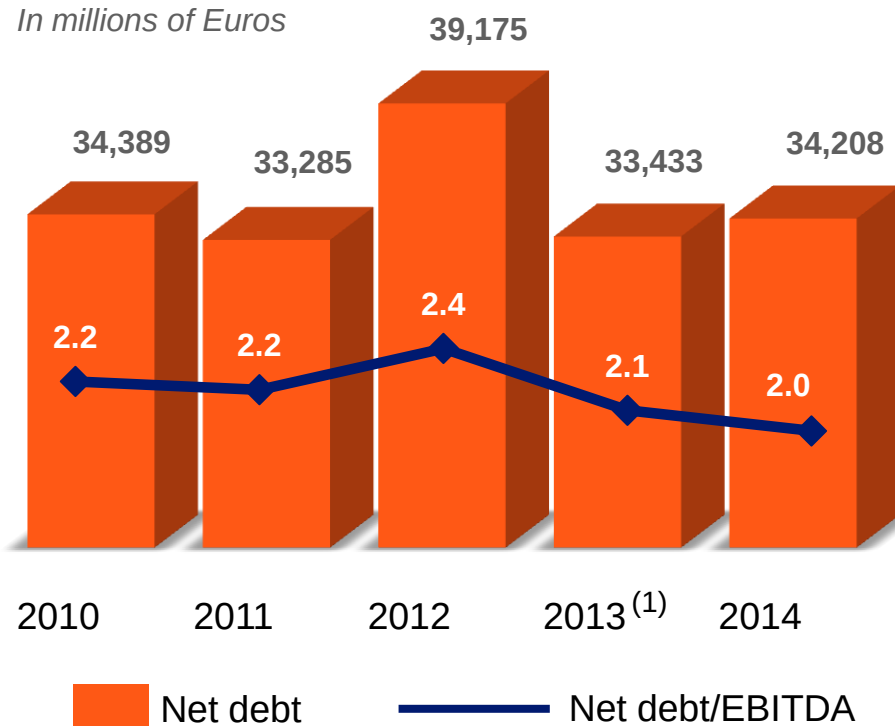
(4) Published data of organic growth at constant scope and exchange rates

(5) At constant method

Historical financials (4/5)

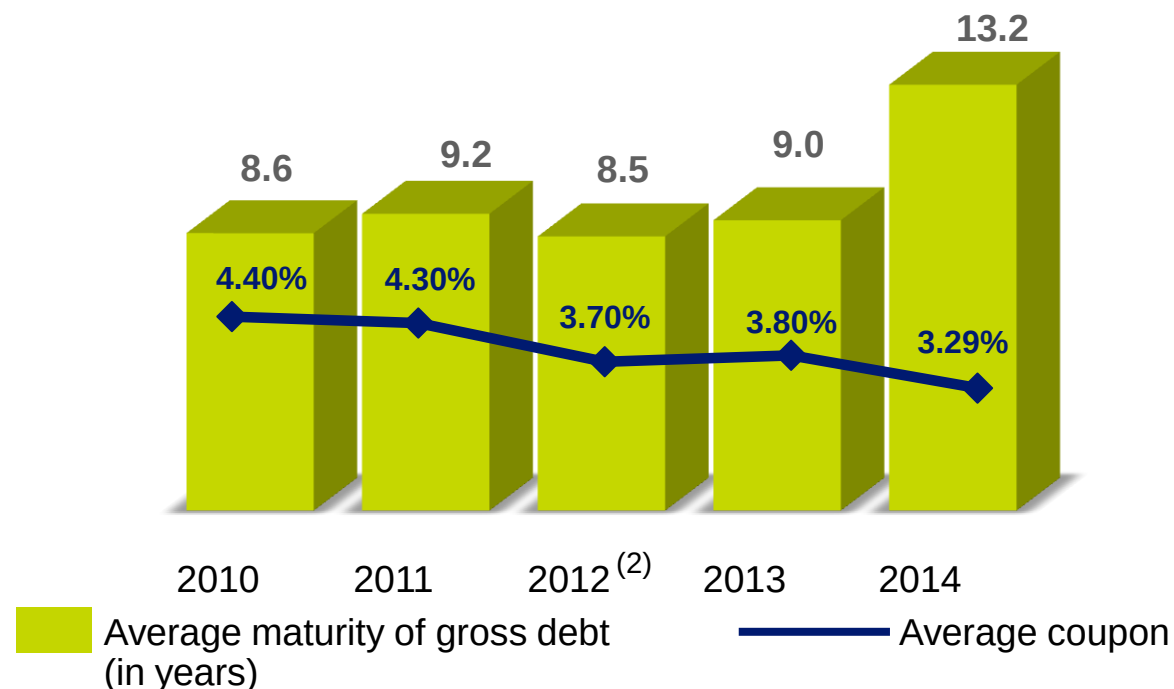
Net debt and net debt / EBITDA evolution from 2010

In millions of Euros



Lowest debt ratio over the last 5 years

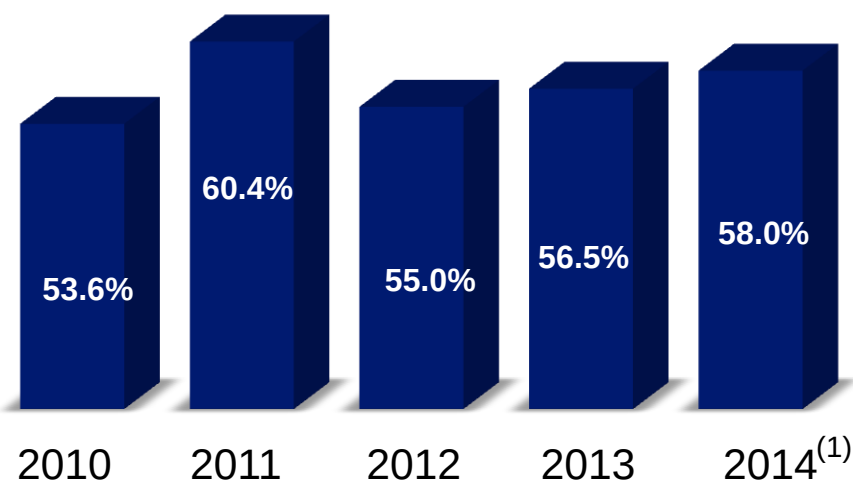
Debt maturity and coupon evolution from 2010



Longer maturity and lower cost of debt over the last 5 years

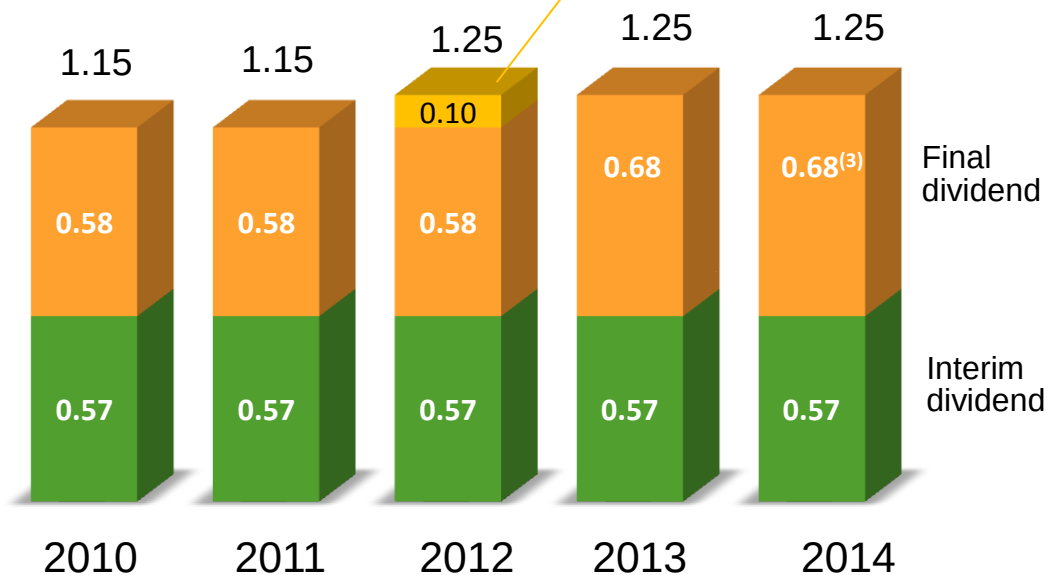
Historical financials (5/5)

Dividend payout ratio from 2010



Dividend per share from 2010

In € per share



(1) Excluding tariff catch-up or 52% including the 2012-2013 tariff catch-up

(2) In 2013, part of the 2012 final dividend paid in stocks resulted in a share capital increase of 6 millions of Euros, corresponding to the issuance of 11,141,806 shares

(3) Shareholders holding their shares continuously for at least two years at the end of the year and still holding them at the payment date will benefit of a loyalty dividend of 10%. The final dividend distributed for 2013 stood at €0.805 per share for the shares benefiting from the loyalty dividend

2014 results: financial targets delivered or exceeded

Targets		Actual
EBITDA growth ⁽¹⁾ excluding Edison: at least 3%	➤	+3.2% excluding tariff catch-up
Edison EBITDA before effect of gas contract renegotiations: more than €600m	➤	€801m ⁽²⁾
Net financial debt/EBITDA: 2.0x-2.5x	➤	2.0x
Payout of Net income excluding non- recurring items ⁽³⁾ : 55% to 65%	➤	Proposed dividend of €1.25/share 52%/58% excluding tariff catch-up

(1) At constant scope and exchange rates, excluding the impact of the regulated tariffs catch-up for the period from 23 July 2012 to 31 July 2013 following the French State Council's decision of 11 April 2014

(2) EBITDA Edison 2014 including the impact of the Russian gas contract renegotiation of +€80m

(3) Adjusted for interest payments on hybrid bonds booked in equity

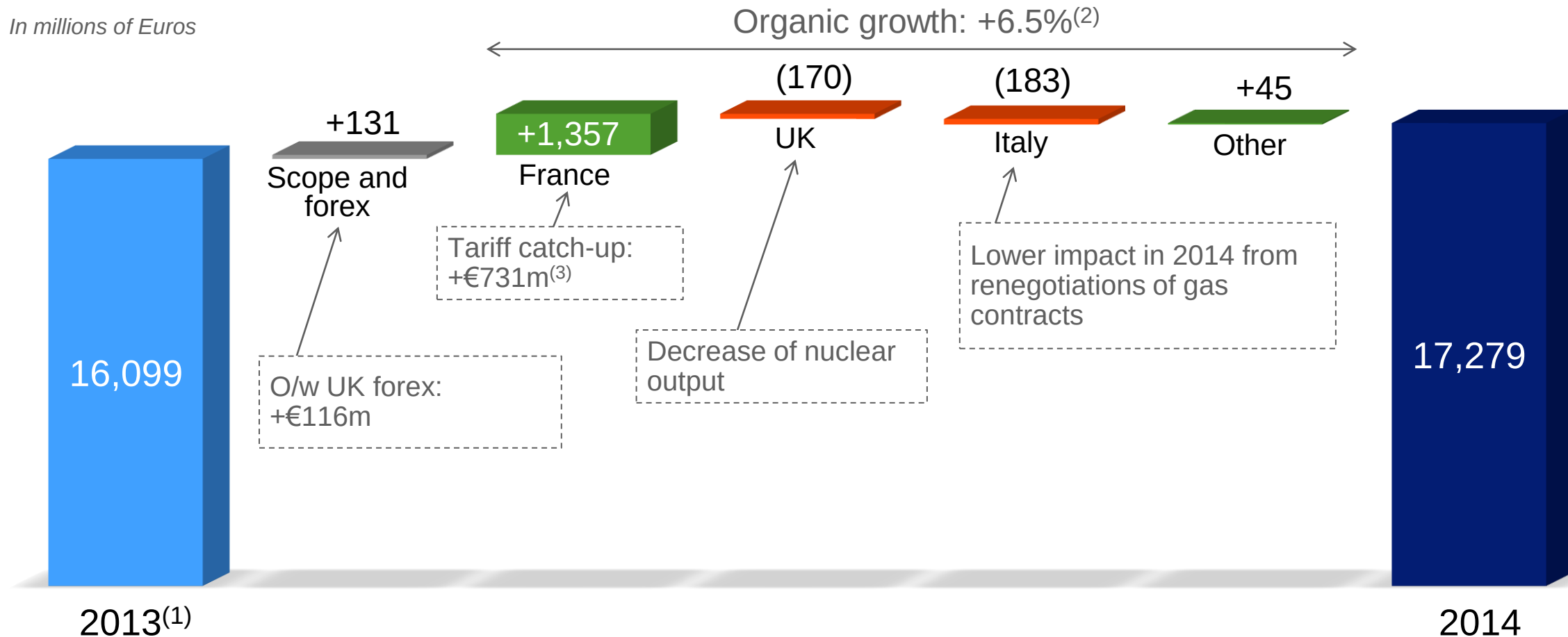
2014 results: simplified income statements

<i>In millions of Euros</i>	2013 restated	2014
Sales	71,916	72,874
Fuel and energy purchases	(38,116)	(36,704)
Other external expenses	(8,287)	(9,181)
Personnel expenses	(11,291)	(11,785)
Taxes other than income taxes	(3,481)	(3,593)
Other operating income and expenses	5,358	5,668
EBITDA	16,099	17,279
IAS 39 volatility	14	203
Net depreciation and amortisation & increases in provisions for renewal	(7,381)	(8,097)
(Impairment) / reversals	(398)	(1,401)
EBIT	8,334	7,984
Financial income	(2,942)	(2,551)
Income before taxes of consolidated companies	5,392	5,433
Group net income	3,517	3,701
<i>Earnings per share⁽¹⁾</i>	<i>1.84</i>	<i>1.78</i>
Net income excl. Non-recurring items⁽²⁾	4,117	4,852

(1) Earnings per share = (Net income Group share – Payments on hybrid bonds) / average number of outstanding shares, in compliance with IAS 33 including effects of interest payments on hybrid bonds for €103m in 2013 and €388m in 2014

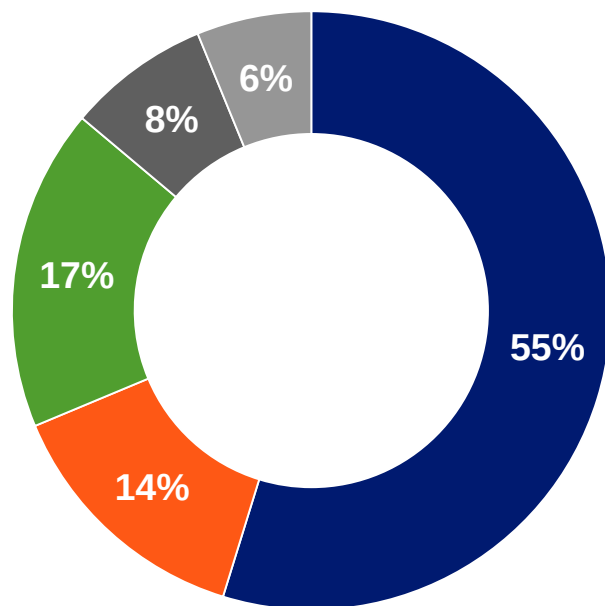
(2) Excluding non-recurring items & IAS 39 volatility

2014 results: EBITDA growth driven mainly by France

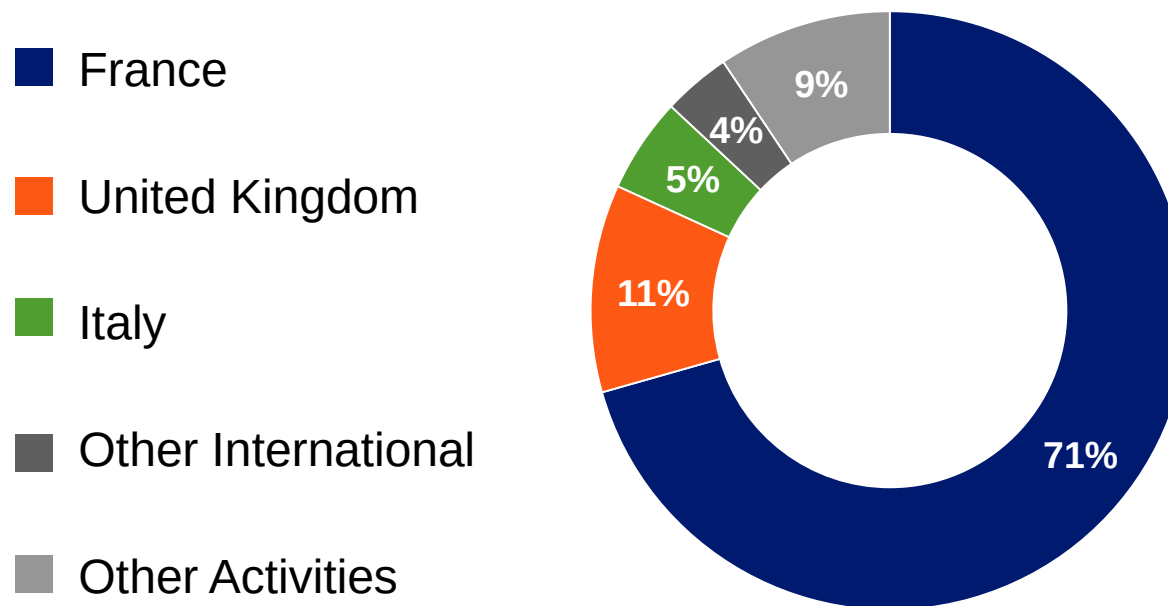


2014 results: sales and EBITDA by reporting segment

2014 Sales



2014 EBITDA



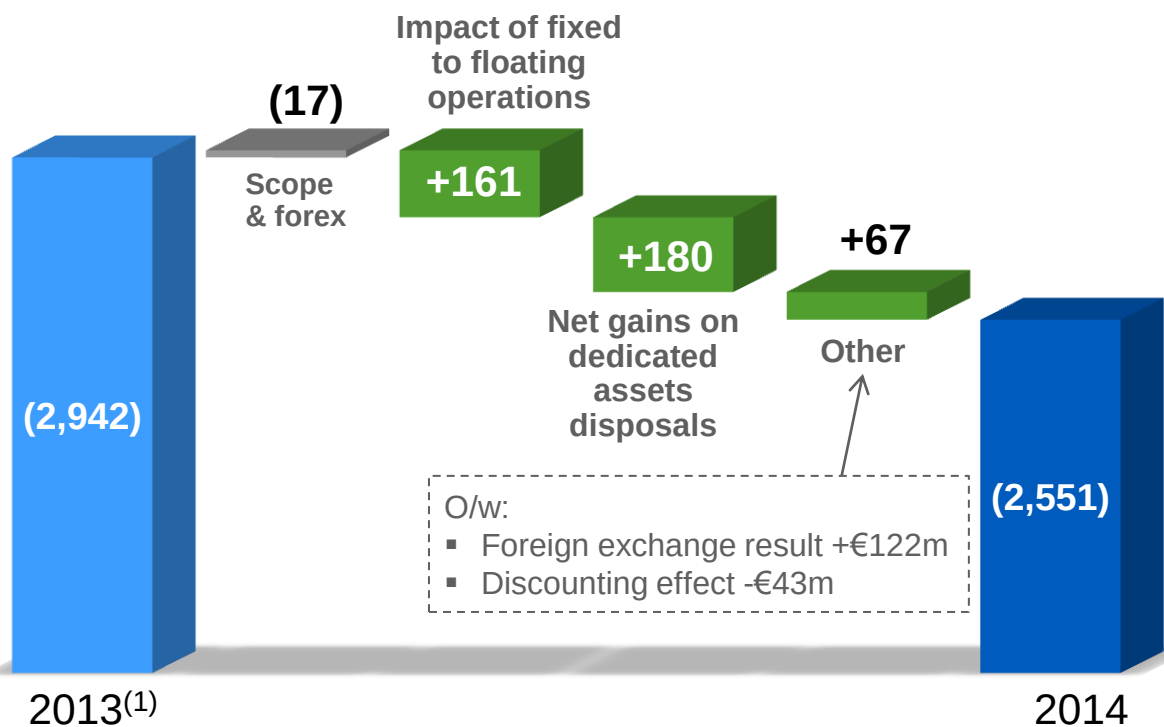
- France
- United Kingdom
- Italy
- Other International
- Other Activities

2014 results: Group recurring net income driven by operating and financial performance

<i>In millions of Euros</i>	2013 ⁽¹⁾	2014	Δ%
EBIT	8,334	7,984	-4.2%
Financial income	(2,942)	(2,551)	-13.3%
Income tax	(1,896)	(1,839)	-3.0
Share of net income from associates	262	179	-31.7%
Net income from minority interests	241	72	-70.1%
Net income, Group share	3,517	3,701	5.2%
<i>Excluding non-recurring items</i>	<i>600</i>	<i>1,151</i>	
Net income excl. Non-recurring items	4,117	4,852	17.9%

Decrease in net financial expense

In millions of Euros



2014 results: EDF group simplified balance sheets

<i>In millions of Euros</i>	31/12/2013 restated	31/12/2014
Fixed assets	137,748	146,078
<i>O/w Goodwill</i>	9,081	9,694
Inventories and trade receivables	36,096	37,923
Other assets	57,589	65,609
Cash and equivalents and other liquid assets ⁽¹⁾	18,332	18,361
Assets held for sale (excluding cash and liquid assets)	1,154	18
Total Assets	250,919	267,989

	31/12/2013 restated	31/12/2014
Shareholders' equity (Group share)	34,207	35,191
Net income attributable to non-controlling interests	4,998	5,419
Specific concession liabilities	43,454	44,346
Provisions	66,304	73,850
Financial liabilities ⁽²⁾	51,765	52,569
Other liabilities	50,191	56,614
Liabilities linked to assets held for sale (excluding financial liabilities)	-	-
Total Liabilities	250,919	267,989

2014 results: financial data

<i>In millions of Euros</i>	2012 restated	2013 restated	2014
EBITDA	15,998	16,099	17,279
Net financial charges	(1,634)	(1,719)	(1,752)
Funds From Operations	12,314	12,577	11,691
Net debt	39,175 ⁽¹⁾	33,433	34,208
Shareholders' equity including non-controlling interests	31,111	39,205	40,610

2014 results: change in cash flow (1/2)

<i>In millions of Euros</i>	2013⁽¹⁾	2014	Δ%
EBITDA	16,099	17,279	7.3%
Non-cash items and change in accrued trading income	(224)	(1,901)	
Net financial expenses disbursed	(1,719)	(1,752)	
Income tax paid	(1,936)	(2,614)	
Other items o/w dividends received from joint-ventures and associates ⁽²⁾	357	679	
Operating Cash Flow	12,577	11,691	-7.0%
Δ WCR	(1,711)	(1,041)	
<i>O/w CSPE receivable</i>	(360)	(699)	
<i>O/w impact from tariff catch-up, VAT included</i>	-	(979)	
Net investments excluding strategic operations ⁽³⁾	(11,830)	(12,045)	
Cash Flow after investments	(964)	(1,395)	-44.7%

(1) Data restated for the impact of IFRS 10 & 11

(2) O/w exceptional dividend in 2014 of €290m received from CENG

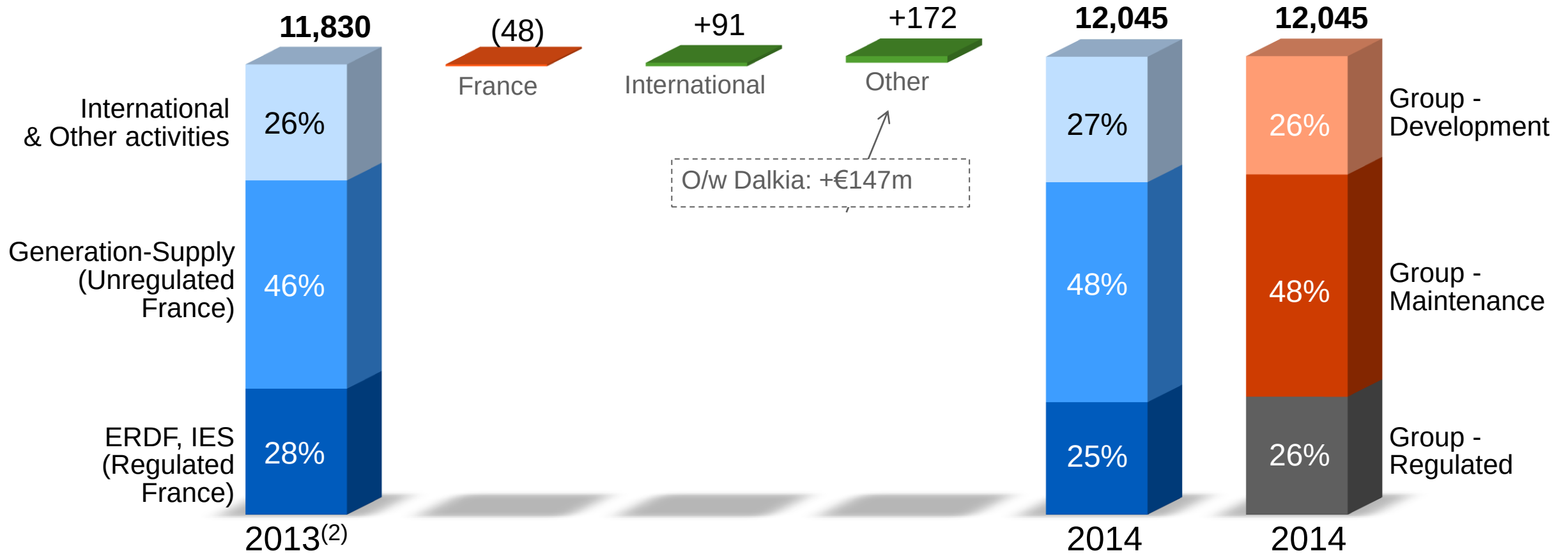
(3) Excluding Linky

2014 results: change in cash flow (2/2)

<i>In millions of Euros</i>	2013⁽¹⁾	2014
Cash flow after net investments	(964)	(1,395)
Net investments allocated to strategic operations ⁽²⁾	755	158
Dedicated assets	2,443	174
Cash flow before dividends	2,234	(1,063)
Dividends paid in cash	(2,445)	(2,556)
Interest payments on hybrid issued	(103)	(388)
Cash flow after dividends	(314)	(4,007)

2014 results: stability of net investments⁽¹⁾

In millions of Euros

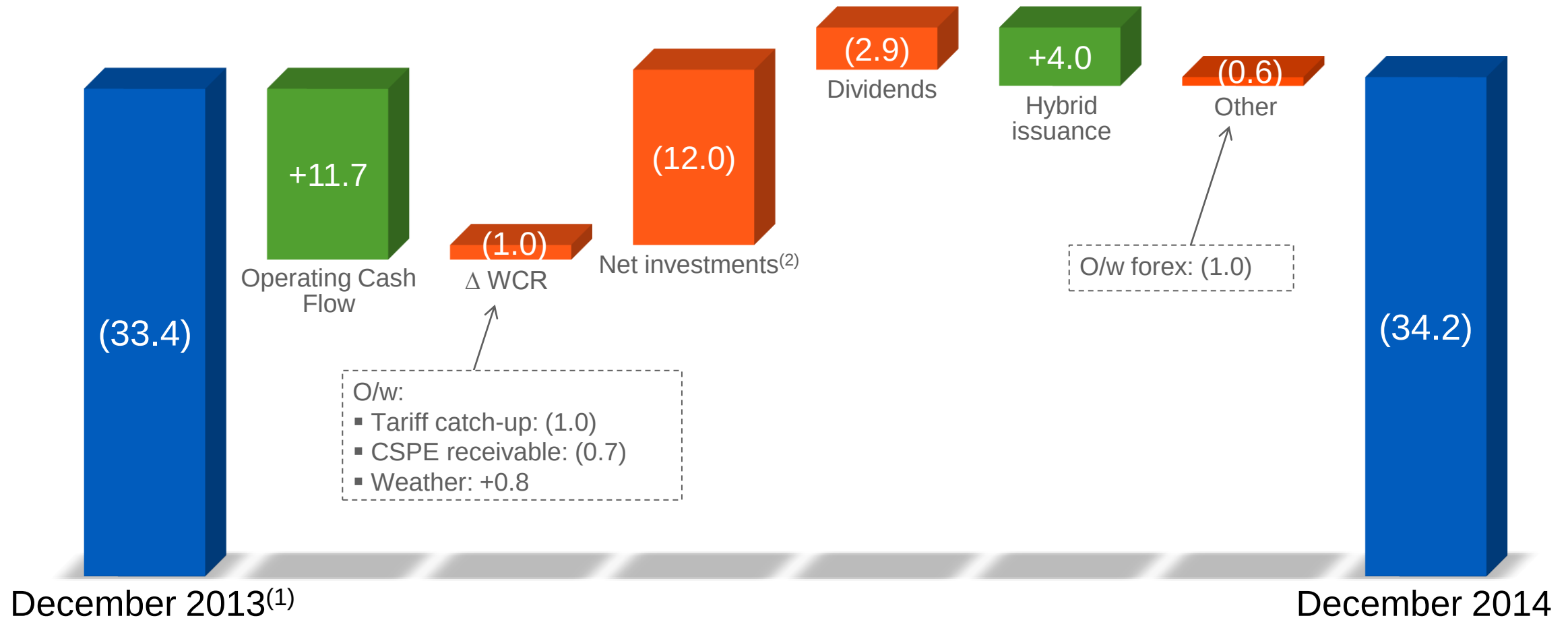


(1) Net investments excluding Linky and excluding strategic operations

(2) Data restated for the impact of IFRS 10 & 11

2014 results: change in net financial debt

In billions of Euros



2015 guidance

EBITDA growth⁽¹⁾

0 to 3%

Net Financial Debt/EBITDA

Between 2x and 2.5x

Payout ratio of Net income
excluding non-recurring items⁽²⁾

55% to 65%

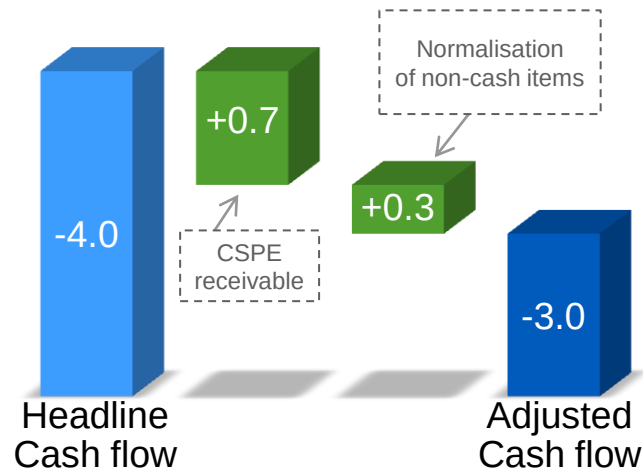
2018 ambition: action plan on generating cash flow levers

2014

2014 - 2018

2018

Cash flow after dividends⁽¹⁾

In billions of Euros

- EBITDA growth
 - Taking into account of the regulatory and market environment
 - Maximisation of the gross margin
 - Ongoing efforts to control OPEX

- Balance in the CSPE mechanism

- WCR improvement plan

- Control over net investments

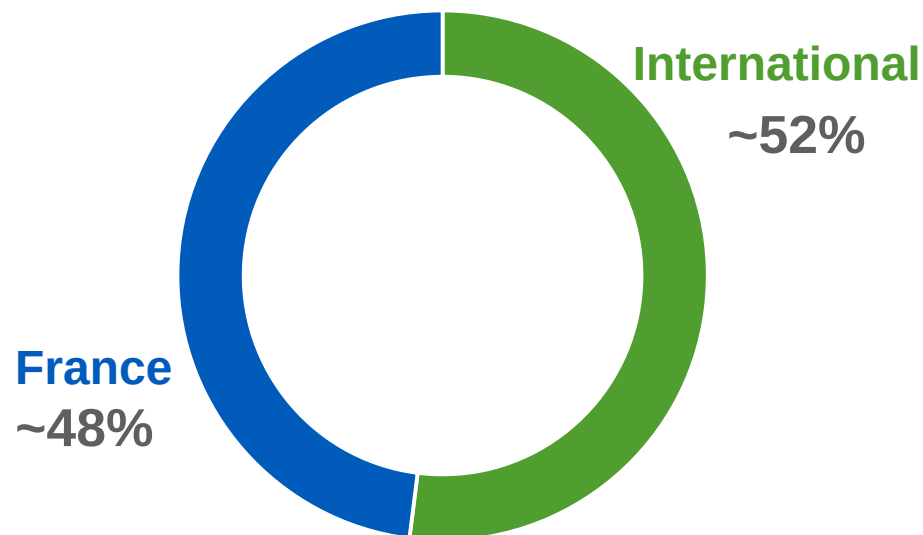
Cash flow after dividends⁽¹⁾ positive in 2018

€3bn uplift targeted by 2018, equivalent to the end-2013 estimate

2018 ambition: WCR improvement plan

- Setting the 2018 target in assuming a like-for-like environment⁽¹⁾
- Implementing of aggressive management actions

A contribution from all Group business lines



Examples of action plans implemented

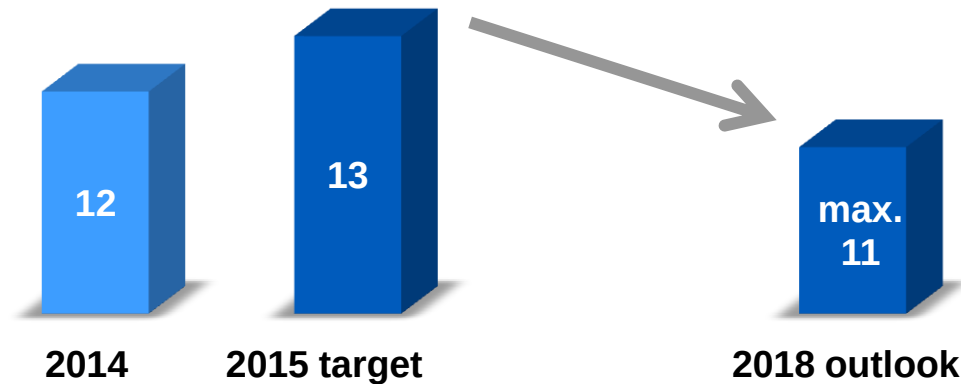
- Receivables
 - Optimisation of the billing and collection process
- Inventories
 - Centralised management, particularly of spare parts inventories
 - Group optimisation of purchases and inventories of nuclear fuel

Objective: €1.8bn in cash flow optimisation over 2015-2018

2018 ambition: control over net investments⁽¹⁾

Existing projects: net maintenance and development investments

In billions of Euros

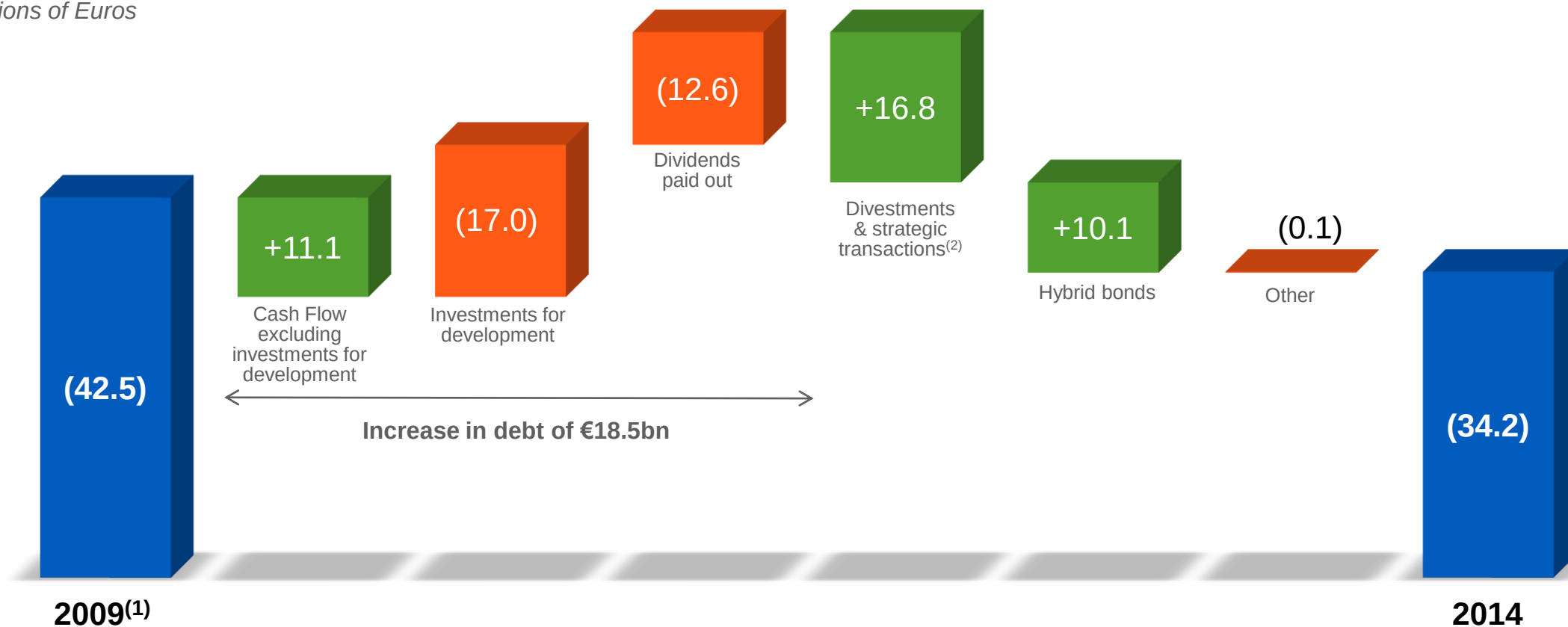


Developments: main capital allocation principles

- Identifying non-strategic assets and maximisation of their value
- New developments exclusively financed through divestments, in accordance with Cap 2030 project
- Roll-out of the EDF-Amundi fund (renewables, energy services, etc.)

Net financial debt: change over 2009-2014

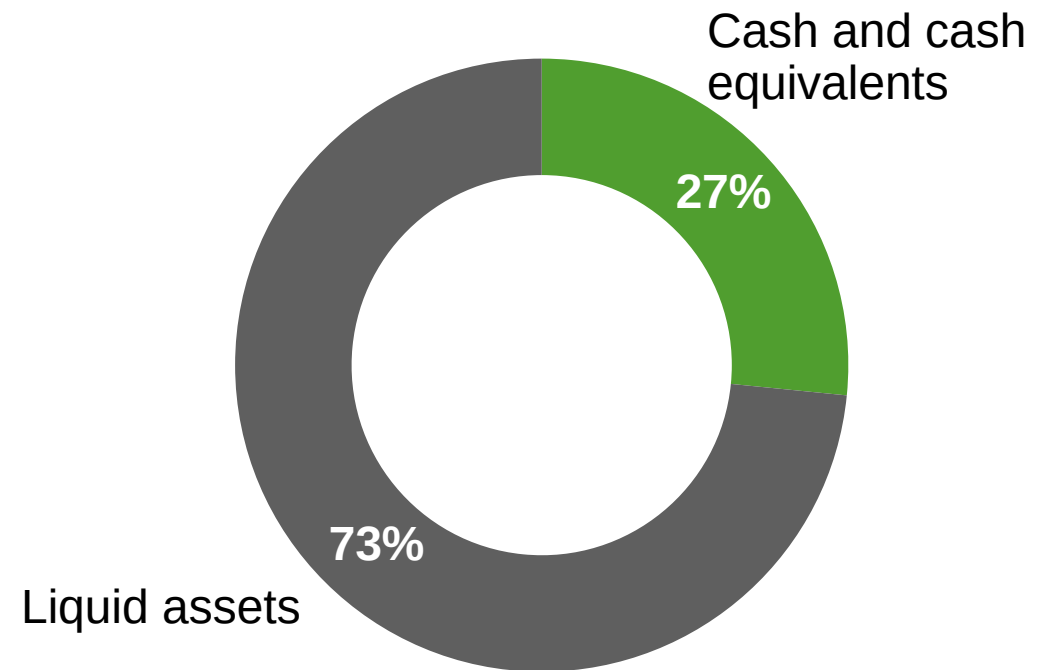
In billions of Euros



A strong liquidity position

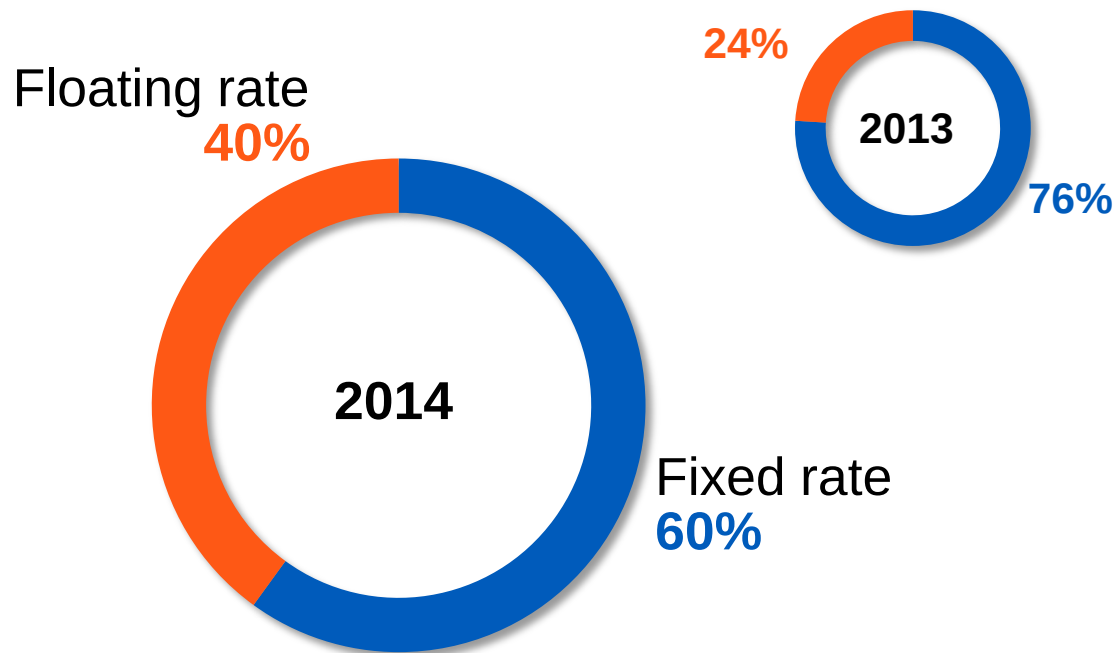
- Gross liquidity position of €28.4bn composed by:
 - €4.7bn of cash and cash equivalents
 - ~€13.0bn of liquid assets
 - €10.7bn of syndicated and bilateral credit lines
- Net liquidity position of €19.3bn

Breakdown of the liquidity position as of 31/12/2014 excluding credit lines

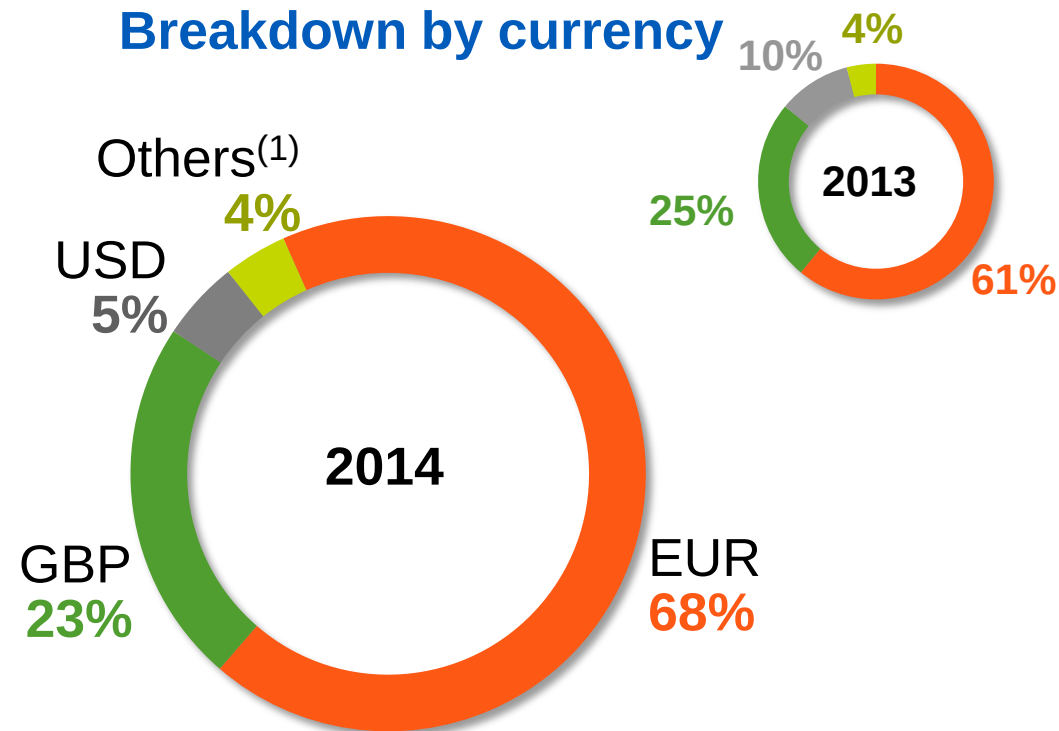


Group financial debt after swaps as of 31 December 2014

Breakdown by type of rate



Breakdown by currency



Decrease of USD exposure and growing floating rate

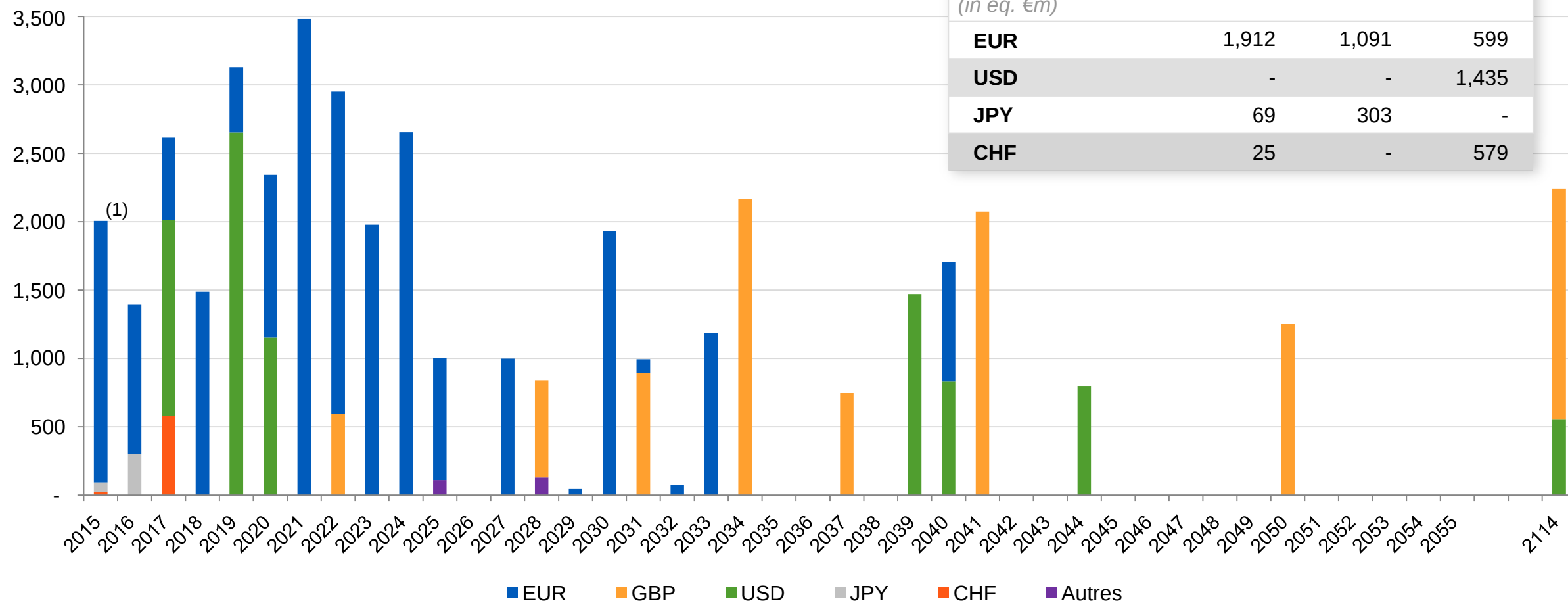
Net financial debt: **€34.2bn**

Average coupon: **3.29%**

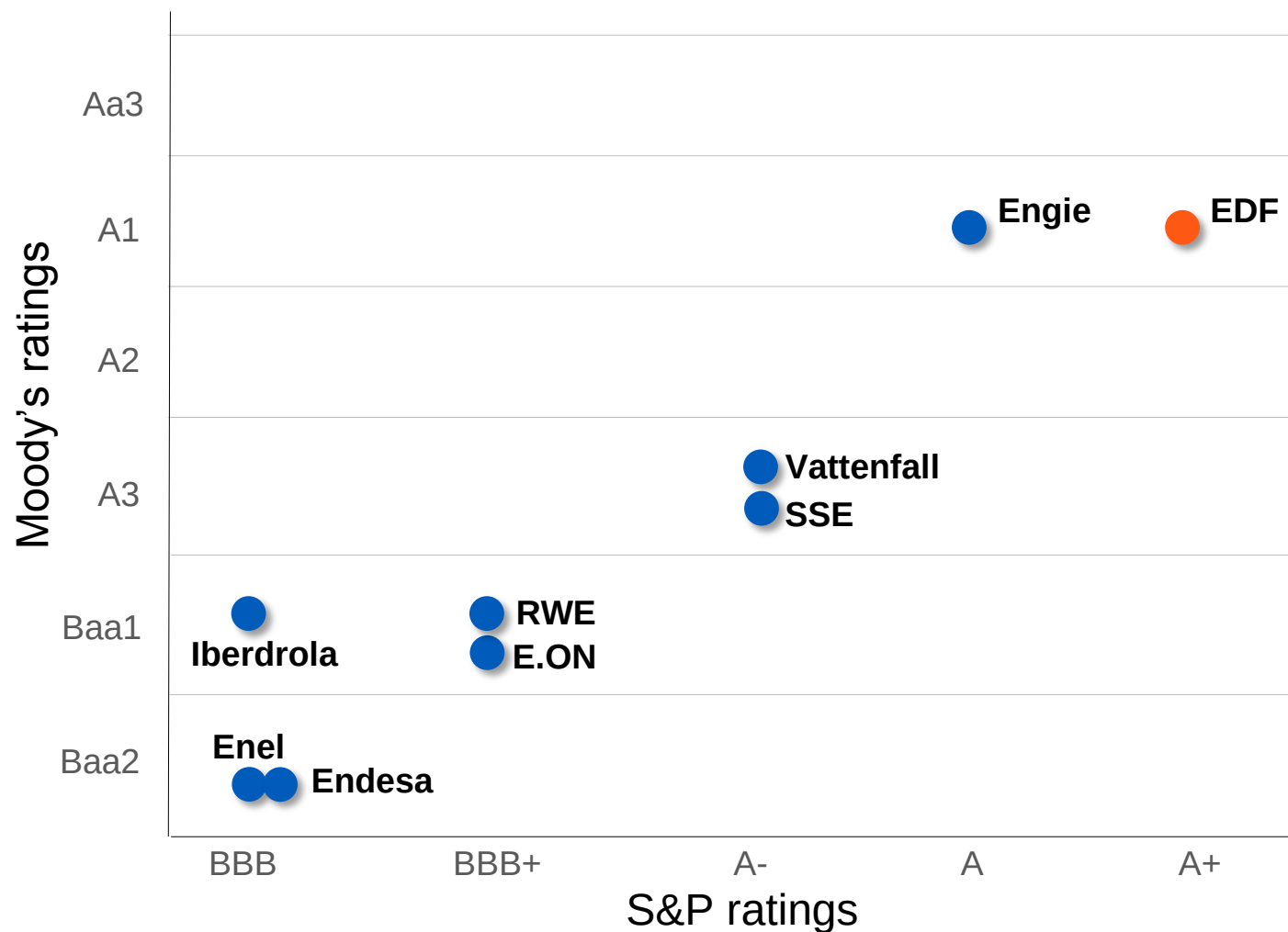
Average maturity of gross debt: **13.2 years**

Breakdown of Group debt by currency

In millions of Euros, before swaps



Comparative debt ratings



	S&P Ratings	Moody's Ratings	Fitch Ratings
EDF	A+ negative ⁽¹⁾	A1 negative ⁽²⁾	A+ negative
Engie	A stable	A1 negative	n/a
E.ON	BBB+ stable	Baa1 stable	A- watch negative
Enel	BBB positive	Baa2 stable	BBB+ stable
Iberdrola	BBB positive	Baa1 stable	BBB+ stable
SSE	A- stable	A3 negative	A- negative
RWE	BBB+ negative	Baa1 negative	BBB+ negative
Endesa	BBB positif	n/a	BBB+ stable
Vattenfall	A- stable	A3 stable	A- negative

n/a: not available

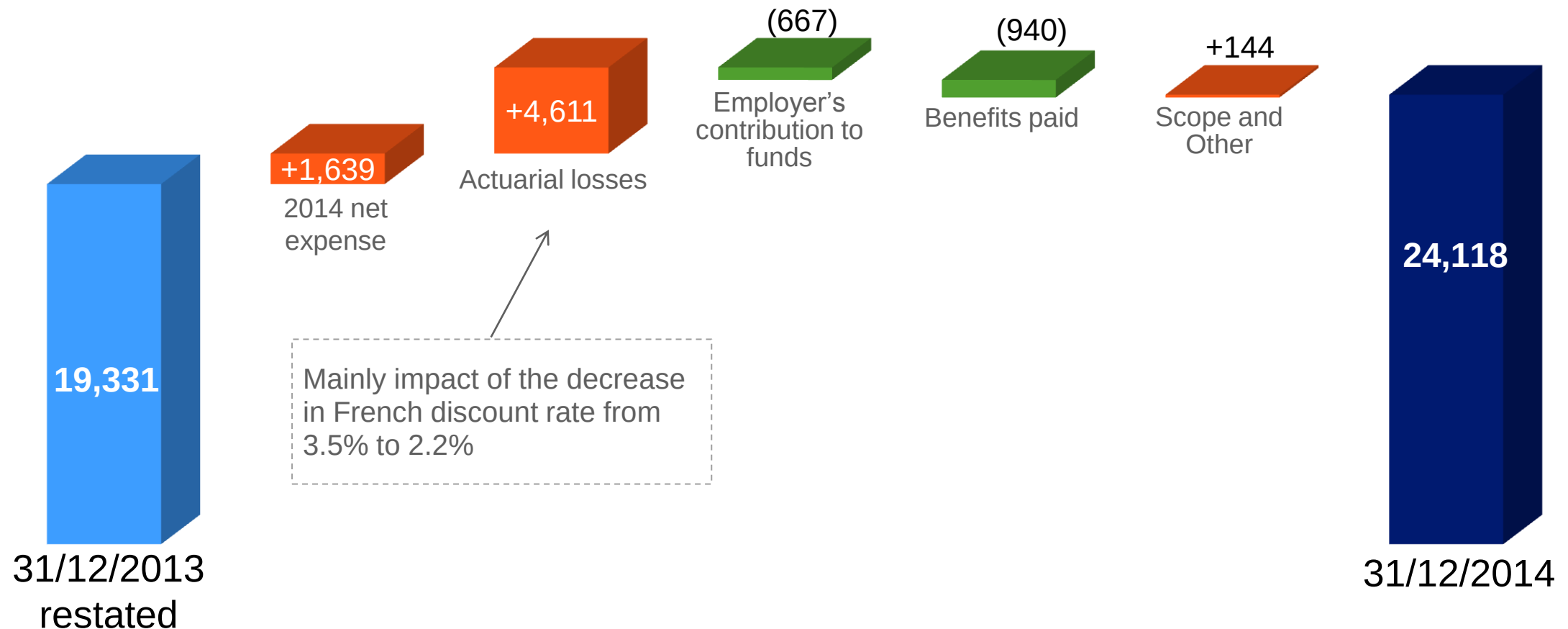
Sources: rating agencies as of 2 July 2015

(1) Update of the rating and outlook of EDF Group by S&P on 7 May 2015

(2) Update of the rating and outlook of EDF Group by Moody's on 16 April 2015

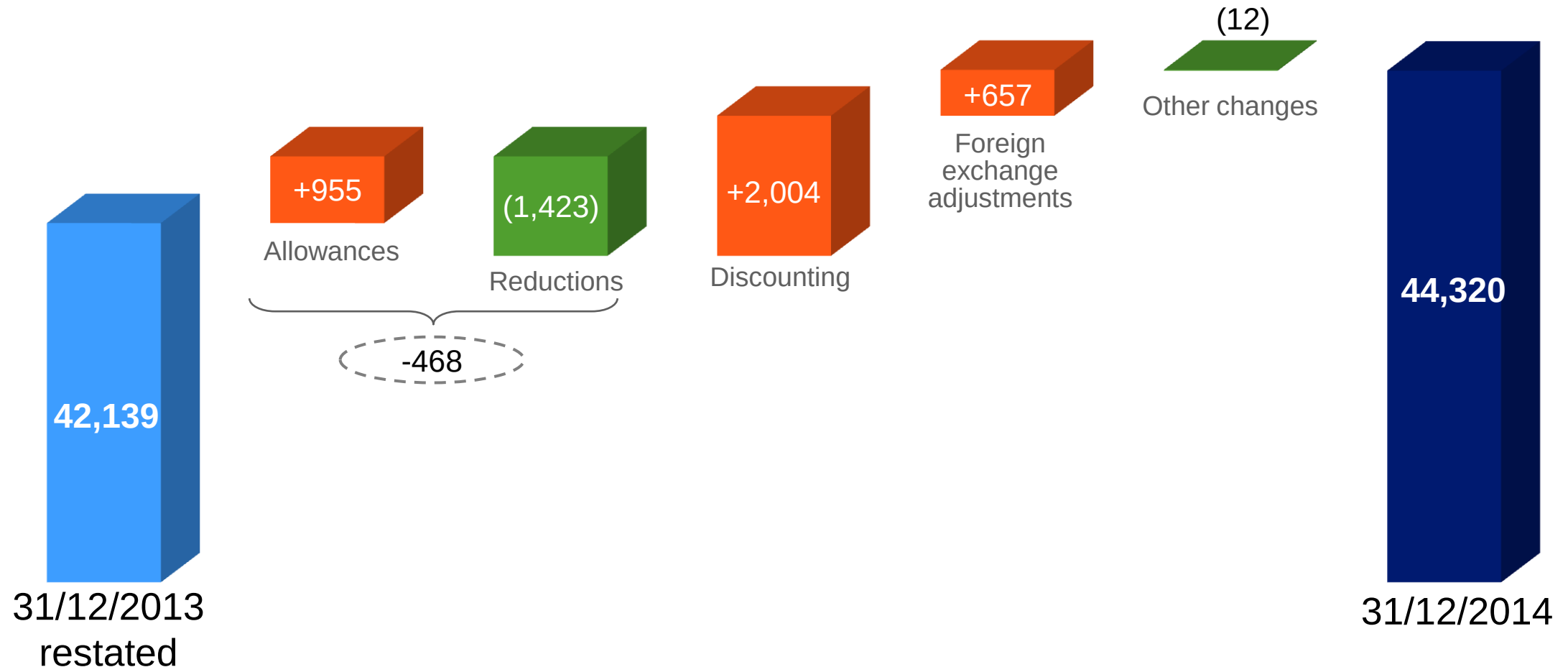
Group provisions for employee benefits: €24.1bn

In millions of Euros



Group nuclear provisions: €44.3bn

In millions of Euros



EDF's France nuclear provision: €34.1bn

<i>In millions of Euros</i>	31/12/2013 restated	Net allowances	Discounting	Other changes	31/12/2014
Total provisions for back-end nuclear cycle	17,321	(402)	808	54	17,781
Provisions for management of spent fuel	9,779	(191)	462	55	10,105
Provisions for long-term management of radioactive waste ⁽¹⁾	7,542	(211)	346	(1)	7,676
Total provisions for nuclear dismantling and last cores	15,337	259	736	(53)	16,279
Provisions for dismantling power stations	13,024	259	625	(42)	13,866
Provisions for last cores	2,313	-	111	(11)	2,413
TOTAL NUCLEAR	32,658	(143)	1,544	1	34,060

(1) The measurement of Cigéo provision is sensitive to the gross cost of storage, but also to key assumptions. A €1billion rise in the gross contractors' quotes under 2011 economic conditions would have an estimated impact of approximately €200million (present value) on the provision at 31 December 2014. For more details, see the 2014 consolidated accounts, section 29.1.2

(http://shareholders-and-investors.edf.com/fichiers/fckeditor/Commun/Finance/Publications/Annee/2015/resultats_annuels/va/EDF-2014-consolidated-statements.pdf)

Discount rate for nuclear provisions in France

- The discount rate determined under the Company's usual method is **4.6%** as at 31 December 2014, assuming inflation of 1.7%

	December 2013	June 2014	December 2014
Nominal discount rate	4.8%	4.8%	4.6%
Regulatory ceiling rate	4.58%	4.46%	4.31%⁽¹⁾
Inflation rate	1.9%	1.9%	1.7%

- Ongoing discussions since 2013 between nuclear operators and the French administration regarding the mechanism for the discount rate have been completed and they are expected to be translated into regulations in the first quarter of 2015

Under the new mechanism, the ceiling on the discount rate would be about **4.8%** as of 31 December 2014

Analysis of sensitivity to the discount rate

		Sensitivity to the discount rate					
	Provisions (discounted value)	On balance sheet provisions			On pre-tax earnings		
In millions of Euros		+0.20%	-0.20%	-0.30%	+0.20%	-0.20%	-0.30%

Front-end nuclear

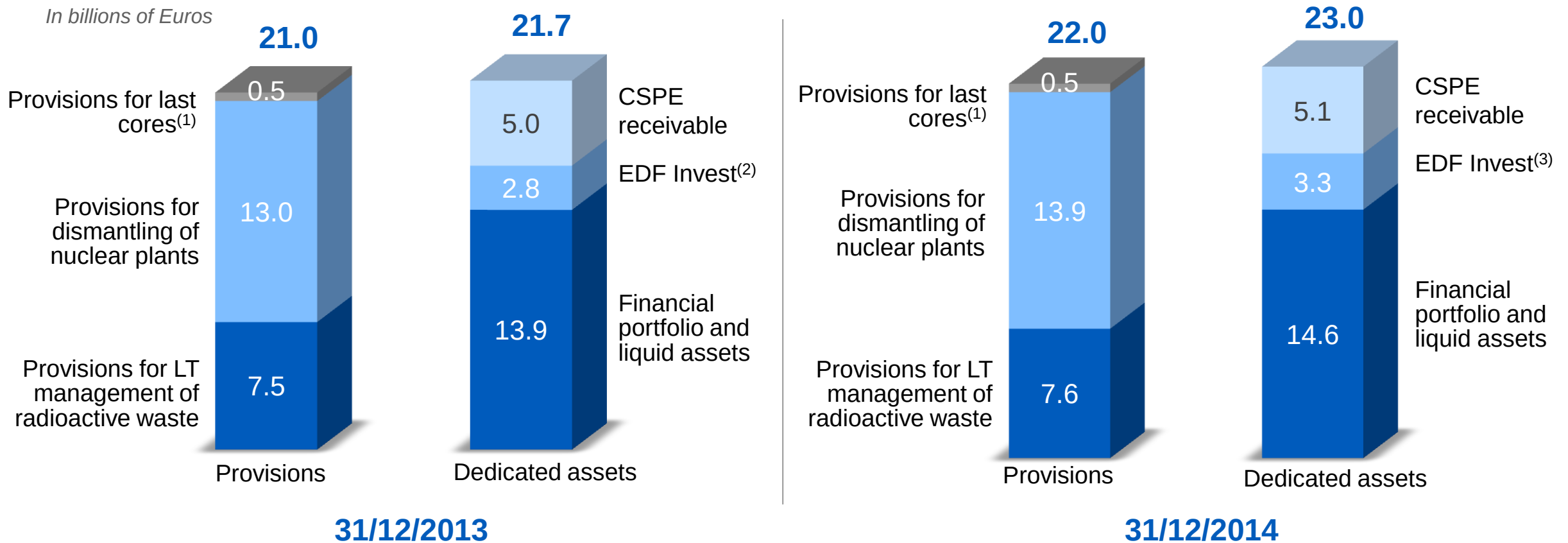
Management of nuclear fuel	10,105	(171)	180	274	141	(149)	(227)
Long-term management of radioactive waste	7,676	(381)	425	657	327	(368)	(568)

Dismantling and last cores

Dismantling of nuclear plants	13,866	(431)	449	681	52	(54)	(82)
Last cores	2,413	(64)	68	103	-	-	-
Total	34,060	(1,047)	1,122	1,715	520	(571)	(877)

Dedicated assets

In billions of Euros



The coverage ration of EDF nuclear liabilities eligible for dedicated assets is 105% as of 31 December 2014

Revised coverage of nuclear provisions by Dedicated Assets

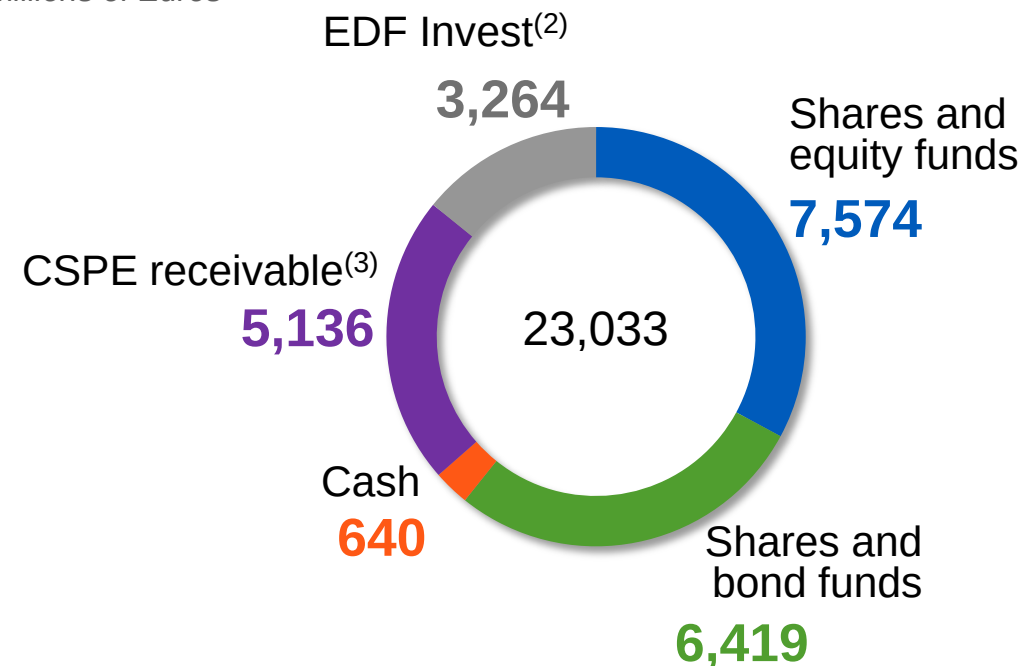
- Decree no. 2015-331 of 24 March 2015 modifying the decree no. 2007-243 of 23 February 2007 to secure financing of long term nuclear expenses, and published at the *Journal Officiel* on 26 March 2015:
 - Introduces an additional requirement regarding the coverage of nuclear provisions by Dedicated Assets
 - Whilst making the possibility to withdraw assets more explicit
- **If provisions do not change**, except for discounting effects and expenses covered by the liability
 - ➔ Any potential margin between 100% and 110% is meant to cover future risks on asset return and cannot be reduced through asset withdrawals
- **If provisions increase** because of higher future expenses or new assumptions
 - ➔ An absolute increase in assets must match the absolute increase in liability, up to 110% of the new liability
- **If provisions decrease** because of lower future expenses or new assumptions
 - ➔ Assets can be withdrawn by the same absolute amount, while still maintaining 100% minimum

EDF dedicated assets performance in 2014

- Financial portfolio performance above 10% for the third year in a row:
 - Conservative allocation decisions: bond under sensitivity and underweight in Pacific and emerging markets shares at the beginning of the year
 - Implementation of a more diversified strategic sovereigns and corporate benchmark bond index
- EDF Invest, which manages the unlisted investments posted a performance of 8.4% and continues to build its portfolio
- The CSPE receivable is remunerated at a rate of 1.72% p.a. with a redemption timeframe by 2018

Portfolio breakdown as of 31 December 2014

In millions of Euros



Performance⁽¹⁾ 2014: +7.9%
Average annual performance over 10 years: +6.0%

EDF Invest is continuing to build its portfolio

Infrastructures

- **RTE (France):** 50% stake in RTE⁽¹⁾ allocated to Dedicated Assets since 31 December 2010
- **TIGF (France) :** stake of 18%⁽²⁾ in TIGF, the transport and gas storage operator of the Southwest of France, acquired in July 2013 from Total in consortium with SNAM and GIC
- **Porterbrook (United Kingdom):** minority stake in a consortium with Allianz Capital Partners, the Canadian pension fund AIMCO and the Australian fund Hastings. Porterbrook is one of the three main railway material leasing companies in the UK
- **Madrileña Red de Gas (Spain):** minority stake in a consortium with the Chinese investor Gingko Tree and the Dutch pension fund PGGM. Madrileña Red de Gas is the operator of the main gas distribution network in the region of Madrid (investment carried out in May 2015)

Real estate

- **Campus Thalès (France):** minority stake, alongside AG Real Estate and Predica, in a property complex of about 85,000m² in Gennevilliers hosting Thalès Communications and Security company
- **Zalando Headquarters and Steigenberger Hotel (Germany):** minority stake alongside Amundi in a property complex made up of offices and a hotel in Berlin⁽³⁾
- **Cottbus (Germany):** minority stake alongside Amundi in a shopping center in Cottbus⁽³⁾
- **Gerland (France):** minority stake alongside Gecina, in a tertiary property complex under construction in Lyon, subject to a lease agreement with EDF
- **Intermediate Housing Fund (France):** stake in the fund set up by Société Nationale Immobilière

Private Equity

- Ten participations as of today, complying a diversification objective by fund type and geography

Scope of CSPE (Contribution to Electricity Public Service costs in France)

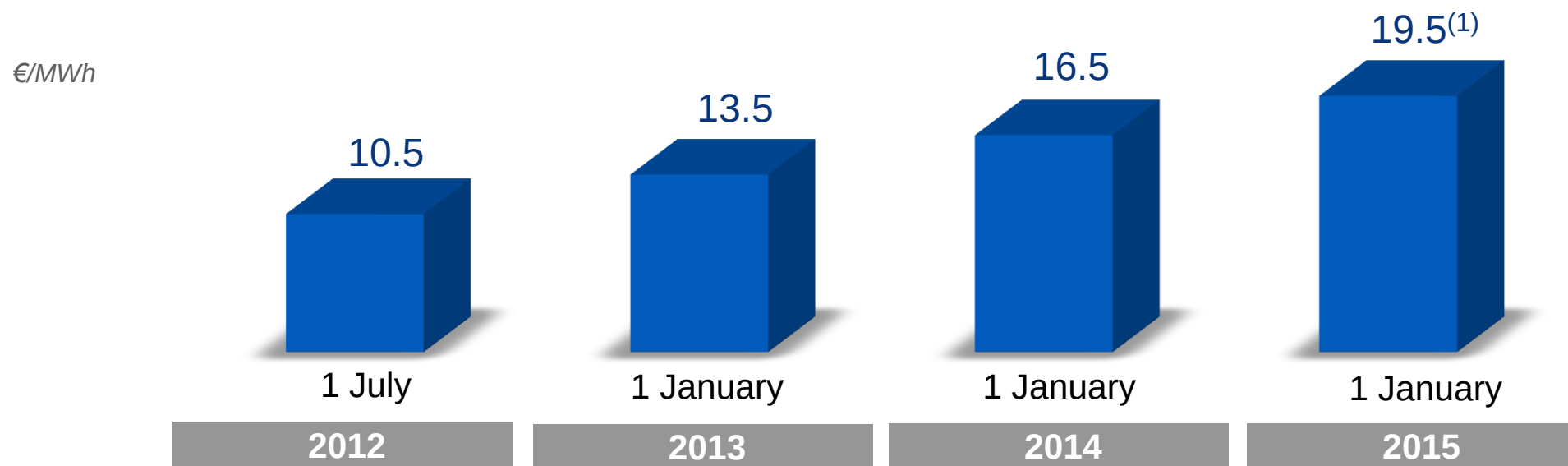
The CSPE covers 3 different public service mandates:

- Lost revenues and additional costs associated with EDF's participation in the TPN (basic necessity tariff) for low-income households
People concerned:
 - 2.33 million households (mainland France, Corsica and overseas departments) benefited from TPN at end-2013
 - 200,000 households in 2014 for the FSL⁽¹⁾
- Additional generation costs in non-interconnected regions (Corsica and overseas departments), not covered by the energy share of regulated tariffs
 - Electricity is sold in non-interconnected regions at the same price as mainland France despite significantly higher generation costs
- Purchase obligations
 - Originally designed for cogeneration units, they have now been extended to output volumes of electricity generated using renewable energy sources (mainly wind and solar power)

CSPE principles and announced increases

■ The Electricity Public Service Contribution (CSPE)

- is levied on consumers via a “Other services” line in their electricity bill
- is collected by grid operators and electricity providers
- is periodically raised: “Barring a decree setting the amount of the contribution due for a given year prior to 31 December of the previous year, the amount proposed by the French Energy Regulation Commission (CRE), in accordance with the preceding paragraph, enters into force on 1 January, with the increase capped at €0.003/KWh with respect to the amount applied before this date.”



Carrying costs prior to 2013 and those of 2013 were taken into account by the CRE

Main CSPE components for EDF

- Set up of the CSPE pursuant to the Law of 10 February 2000 to allow EDF to offset certain expenses related to certain public service obligations:

<i>In millions of Euros</i>	2012		2013		2014	
Purchase obligations ⁽¹⁾	3,155	67%	3,330	65%	3,905	66%
Other ⁽²⁾	1,532	33%	1,773	35%	1,983	34%
Total CSPE EDF	4,687		5,103		5,888	

- In French overseas departments and Corsica, the CSPE depends on energy and fuel purchases, the cost of replacing old power plants and the volumes of purchase obligations

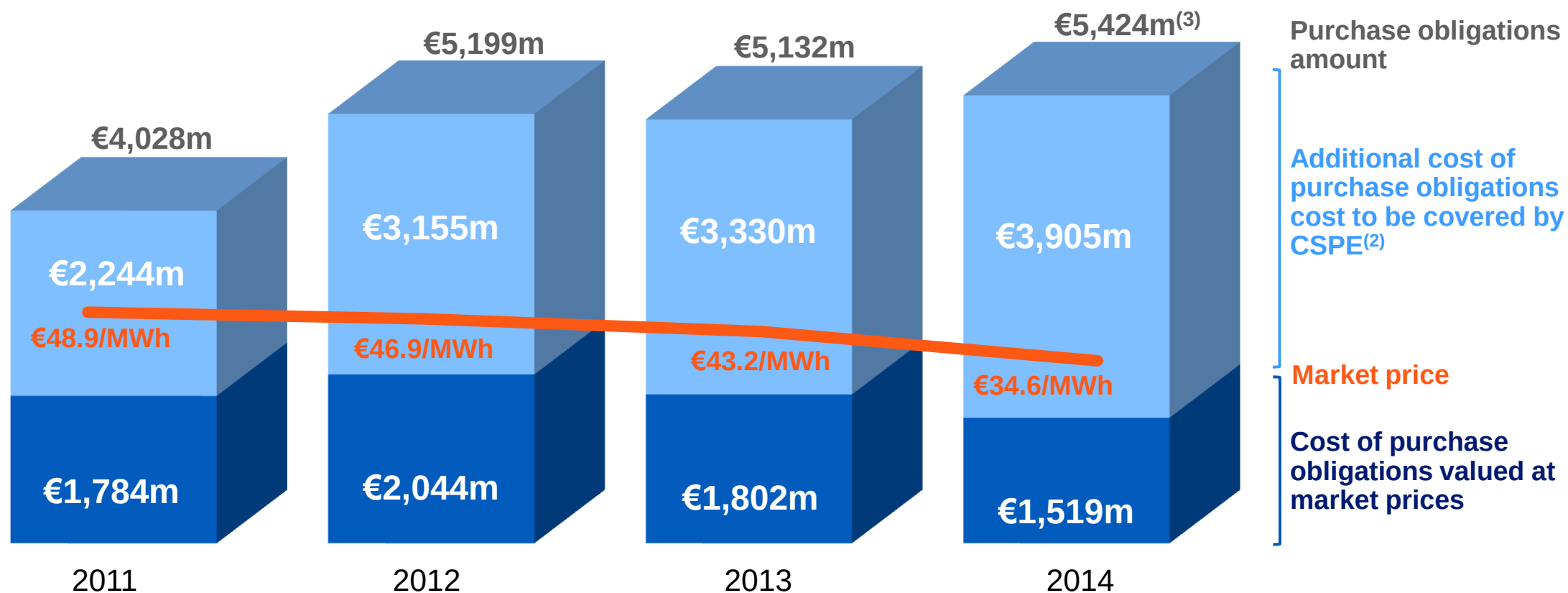
The rise in the CSPE is linked to purchase obligations, which reflects the rapid expansion of wind and PV power and the decline in wholesale electricity prices

(1) Purchases obligations include electricity generated from: hydropower (less than 12MW), biomass, wind power, PV power, cogeneration, recovery of household waste and energy recovery, with the exception of Corsica and the French overseas departments

(2) Additional generation costs and purchase obligations in Corsica and overseas departments, the TPN (First Necessity Tariff) and the FSL (Housing Solidarity Fund)

Change in purchase obligations in mainland France and CSPE for EDF

Principle: The CSPE⁽¹⁾ offsets the difference between the cost of purchase obligations and market prices



CSPE in EDF's 2014 financial statements

- Income statement
 - Offsetting the additional cost of certain public services booked under “Other Operating Income and Expenses” for €5,888m
 - Offsetting financing costs for the past cumulated deficit within CRE's meaning booked under “Financial result” for €93m
- Balance sheet
 - Included in Working Capital Requirement under “Other receivables” for €2,056m
 - CSPE receivable recognised by the State booked under “Financial receivables” for €5,144m
 - CSPE on metering cut-offs (collected after electricity is delivered) in liabilities for €1,122m
- Cash Flow statement
 - Cash in: €5,195m
 - Increase in Working Capital Requirement – Debtors and Creditors: €560m

CSPE impact on EDF's accounts

<i>In millions of Euros</i>	2012	2013	2014
Income statement			
Extra-costs/losses	(4,687)	(5,103)	(5,888)
Impact on "Other Operating Income and Expenses"	4,687	5,103	5,888
EBITDA	Neutral	Neutral	Neutral
Pre-tax result impact	629	83	93
Balance sheet			
Working Capital Requirements (Other receivables)	997	1,357	2,056
Debt (CSPE on supply energy but not billed; Other current liabilities)	(747)	(984)	(1,122)
Financial debt	4,879	5,051	5,144 ⁽¹⁾
Cash Flow			
Cash in energy billed	3,261	4,652	5,195
Increase in WCR – CSPE receivable	1,426	360	699
Increase in WCR – Debtors and Creditors	1,258	123	560

CSPE: impact of lower markets prices and a narrower collection base

<i>In millions of Euros</i>	2013	2014	2015e
Charges to be offset by CSPE in EDF's accounts	-5,103	-5,888	
Accounting cash income	4,652	5,195	
Accounting increase in CSPE operating receivables	+451⁽¹⁾	+693⁽²⁾	
CRE-recognised charges to be offset at EDF	-5,056	-5,888 ⁽³⁾	-5,960 ⁽⁴⁾
CRE-recognised CSPE collection	4,896	5,361 ⁽³⁾	6,633
Increase in CRE-recognised deficit assumed by EDF	+159	+527⁽³⁾	-673
<i>Average market price (in €/MWh)</i>	43.2	34.6	42.6
<i>Purchase obligation volumes (in TWh)</i>	37	38	42
<i>A part of which is exposed to the year's market prices</i>			
<i>EDF's CSPE tax base, based on actual weather conditions in 2013 and 2014 (in TWh)</i>	363	325	340

(1) €360m in EDF's accounts after €91m transferred to financial receivables

(2) Excluding financing costs of €6m for 2013 and 2014

(3) EDF's January 2015 estimate based on 2014 accounting, which will be confirmed in the CRE deliberation of end-2015

(4) Source: CRE 15 October 2014 deliberation - 2015 estimate of charges and income

Monitoring the agreement with the French government

- French government has committed to a maximum timeframe for paying back the receivable recognised at end-2012, i.e. €4,968m, composed of the compensation deficit (€4,341m) and past financing costs (€627m), the receivable bearing interest of 1.72%
- The deficit will be paid back before end-2018
- The €627m of past financing costs were taken into account by the CRE by an exceptional charge increase in 2013
- 2013 financing costs were calculated by the CRE in 2014, integrated within 2015 forecast costs expected to be fully compensated by the CSPE amounting to €19.5/MWh
- According to the decision of the CRE of October 2014, 2015 collection should be greater than the costs of the year

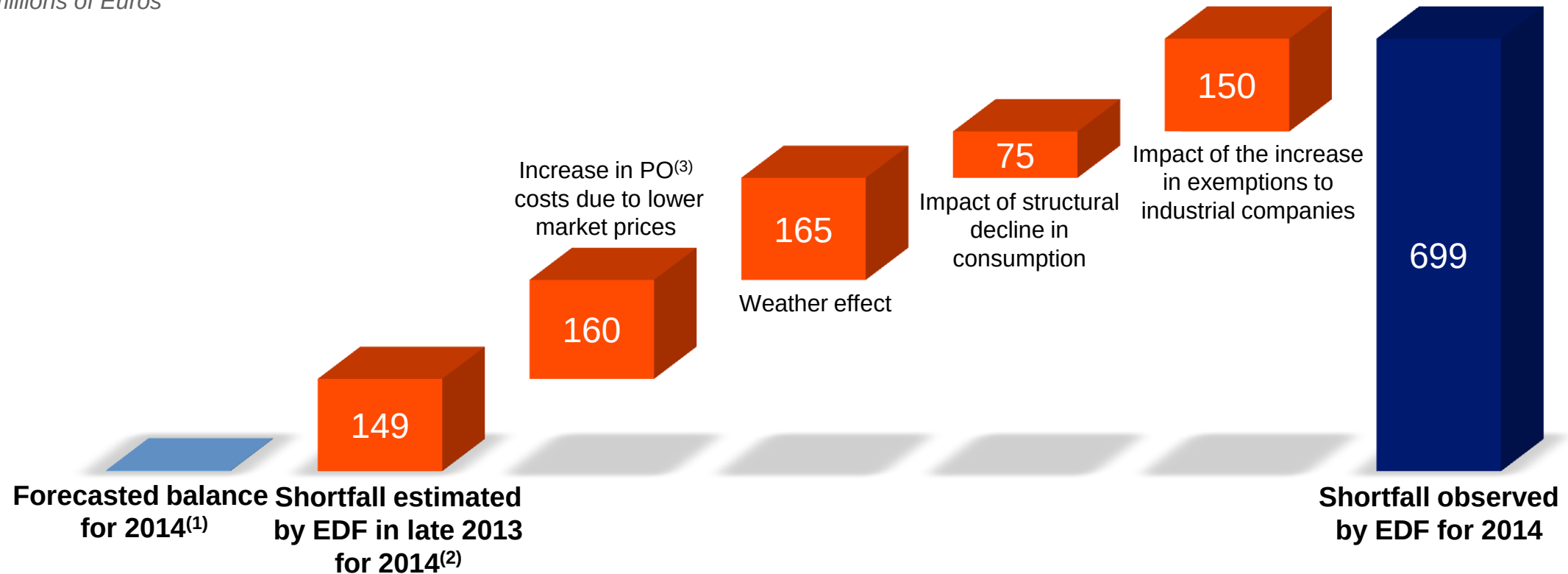
Changes planned in managing energy under the purchasing obligation

As part of the future market sale of energy bought by EDF under the Purchasing Obligation (PO)⁽¹⁾:

- Setting up of a PO-dedicated balance perimeter (PE-OA)
 - This will include all PO-eligible installations in Continental France
 - It will manage the PE-OA and make output projections for all PE-OA installations supplied by EDF
- To widen the compensation for purchase obligations
 - Compensation of the gap's cost between power generation forecasts and actual output (about €30m/year) as soon as the dedicated equilibrium perimeter has been set up
 - Objective compensation of the extra cost of PO energy assumed by EDF (additional compensation of about €20m/year expected)

Estimated increase in the CSPE receivable in 2014

In millions of Euros



(1) Balance forecasted by the CRE in October 2013

(2) Accounting difference between energy volumes delivered and energy volumes invoiced by EDF

(3) Purchase Obligations



2014

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MARKET DATA

Market data

European regulatory context

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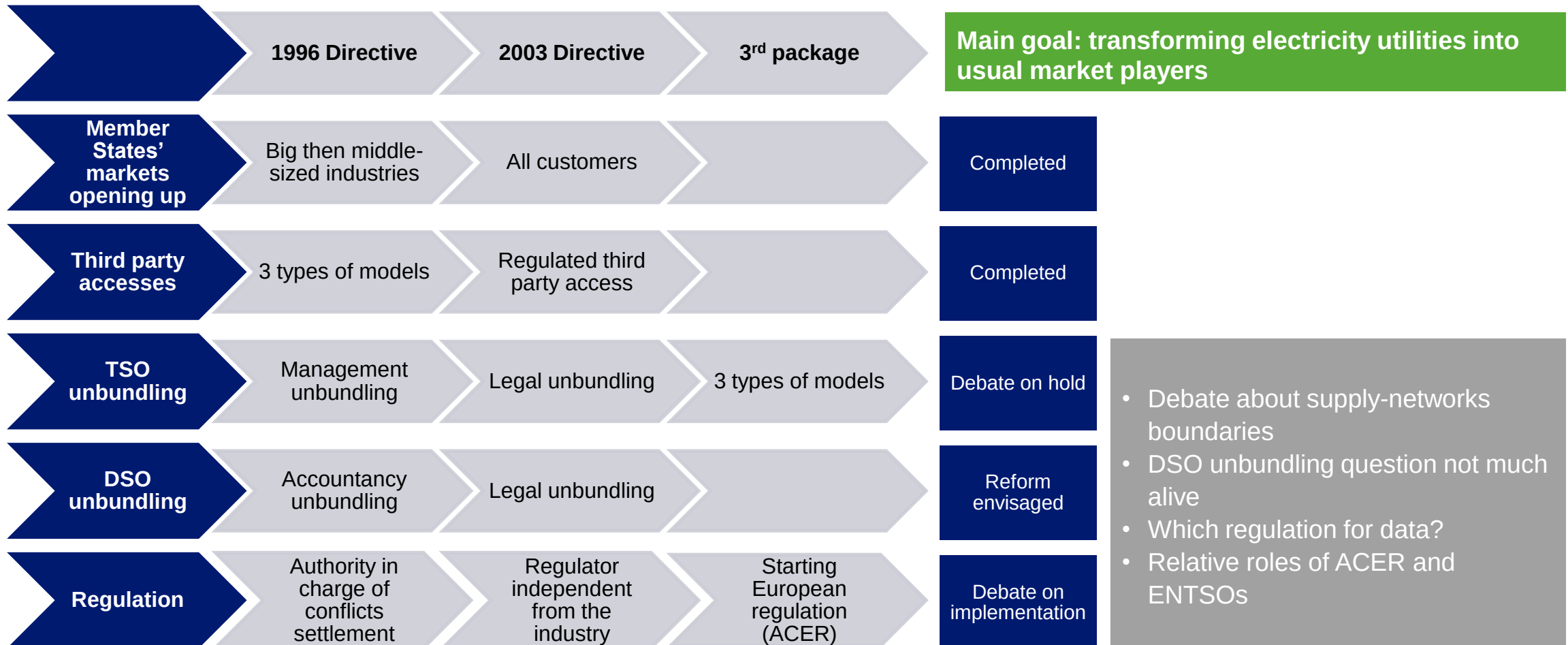
Cross-border and foreign markets

251

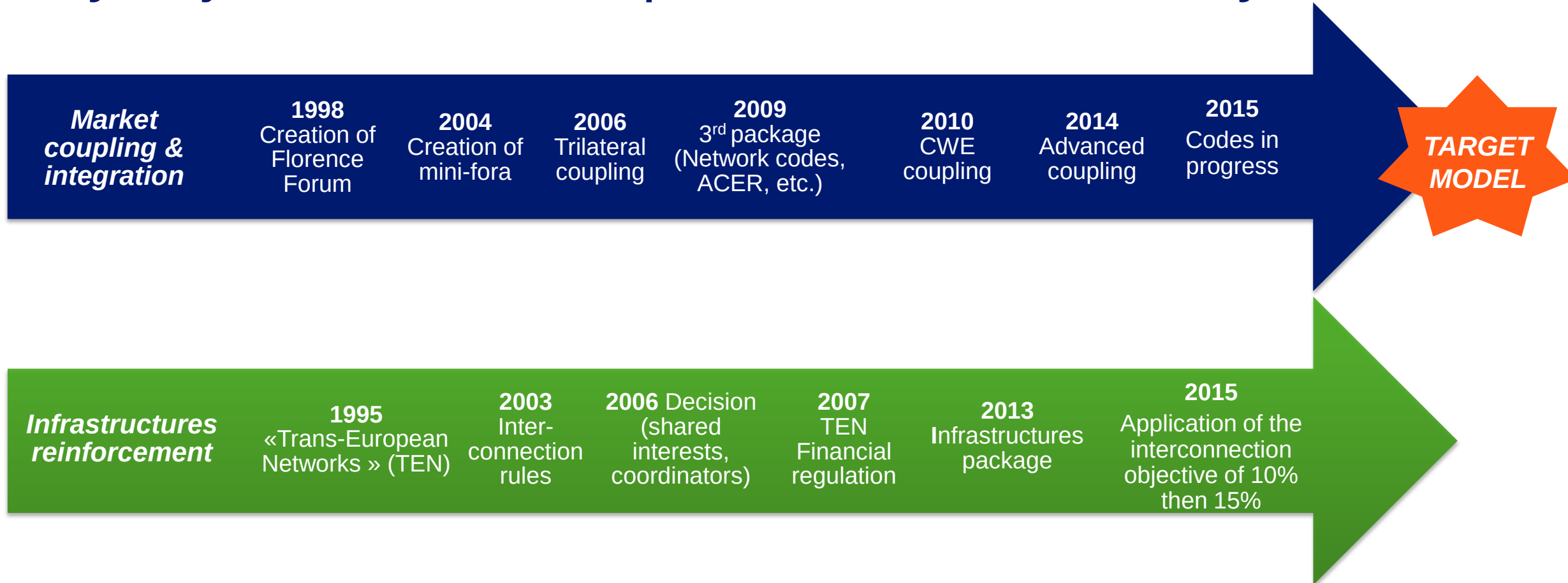
Historical prices

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Network unbundling & market opening in Europe



Key objective: the European internal electricity market



The European Commission presents this process as a major success

- A 20-year long process which dealt with both market integration and network development
- Significant improvements despite limited budgets and local opposition

Current trends on generation adequacy and market organisation

MECHANISMS ARE NEEDED

- Member States have to guarantee security of supply
- RES growth makes them even more necessary

THEY SHOULD BE “SMART”

- Market-oriented
- Non discriminatory (generation and demand)
- No windfall profit

THEY MAY MOBILIZE CROSS BORDER CAPACITY

- By reducing national margins
- Or involving interconnections
- At a later stage coupling them – if inter-state agreement

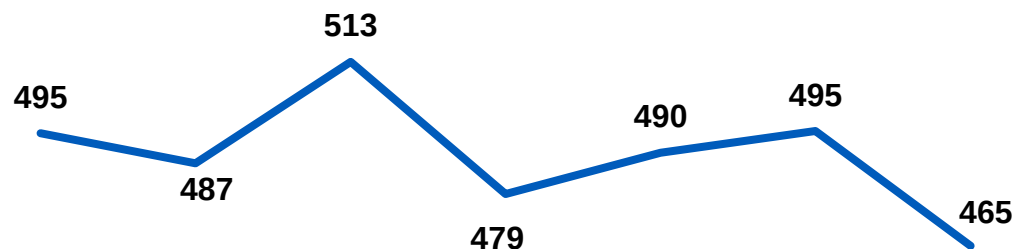
Investment is ensured through well functioning energy and capacity markets

Markets: electricity consumption

(data not adjusted for weather and calendar)

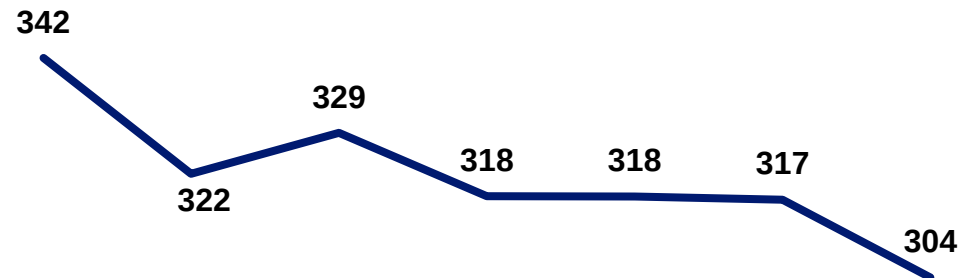
In TWh

France



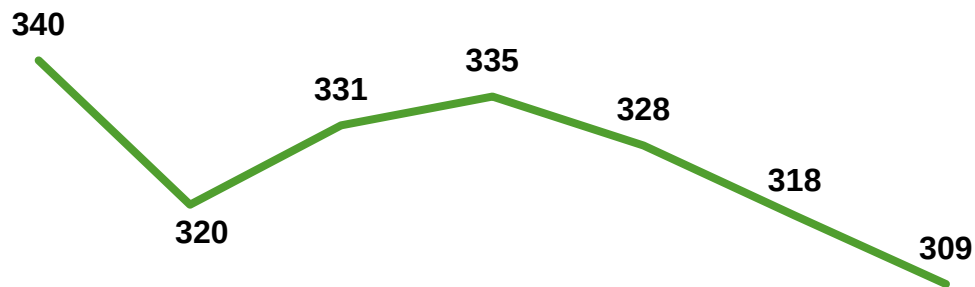
Source: RTE

United Kingdom



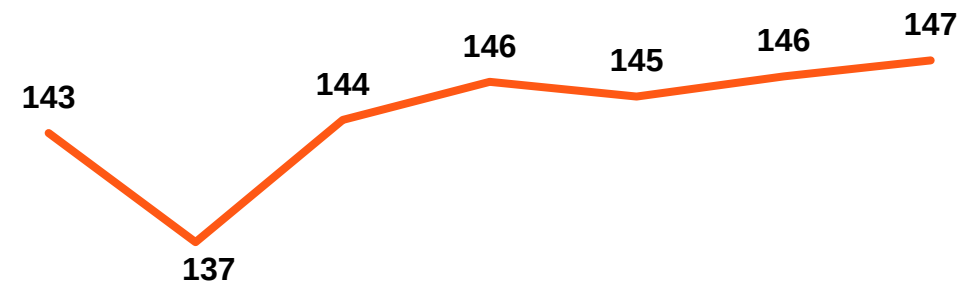
Source: DECC – forecasted data for 2014

Italy



Source: Terna

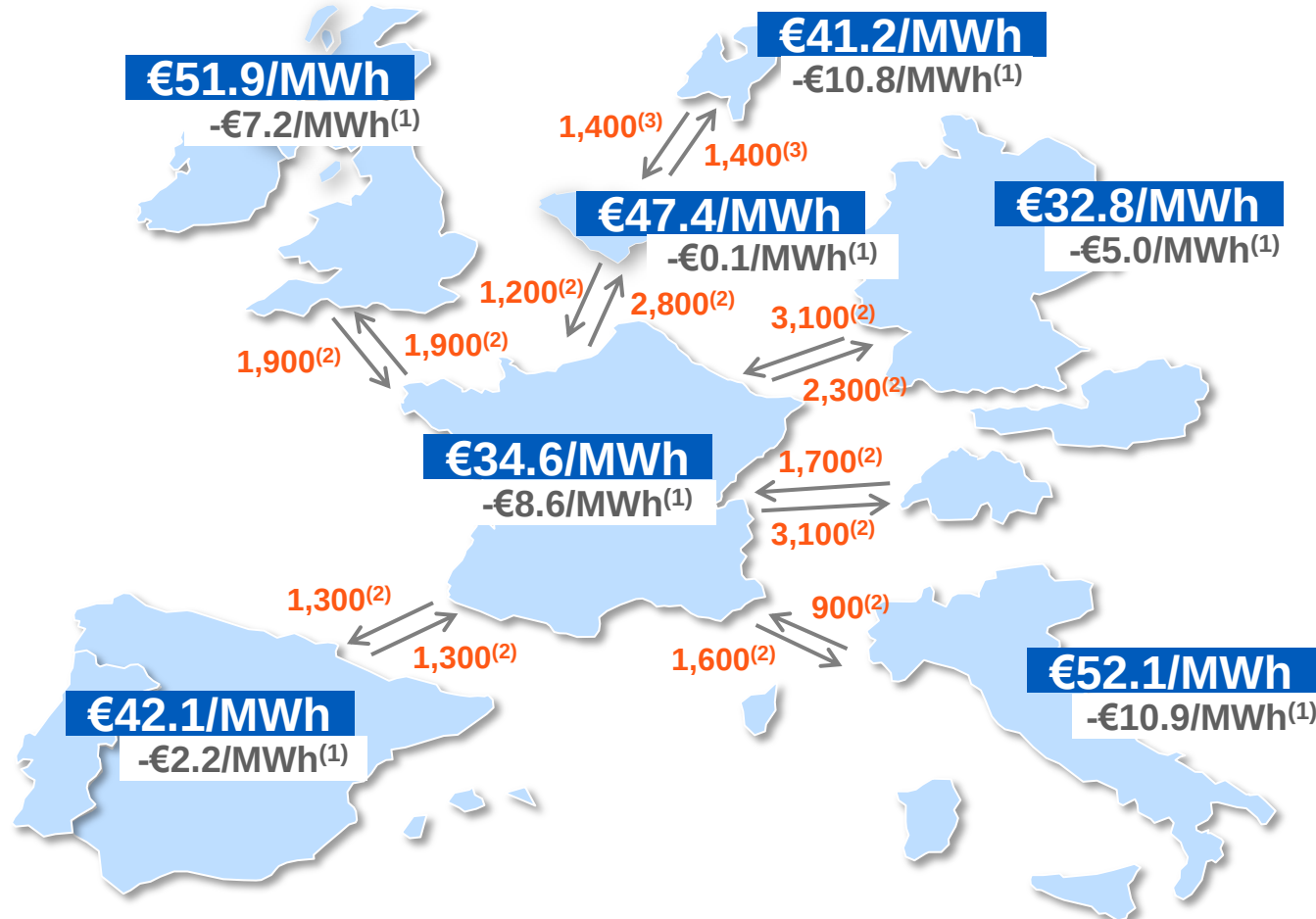
Poland



Source: ENTSO-E

European energy market remains split into “electricity plates” - Average spot prices in 2014

Available commercial capacity



- Interconnected but distinct markets
 - Price: average spot price in 2014 for France (Epex), Germany (Epex), the United Kingdom (EDFT), Spain (OMEL), the Netherlands (APX), Belgium (Belpex) and Italy (Ipex)

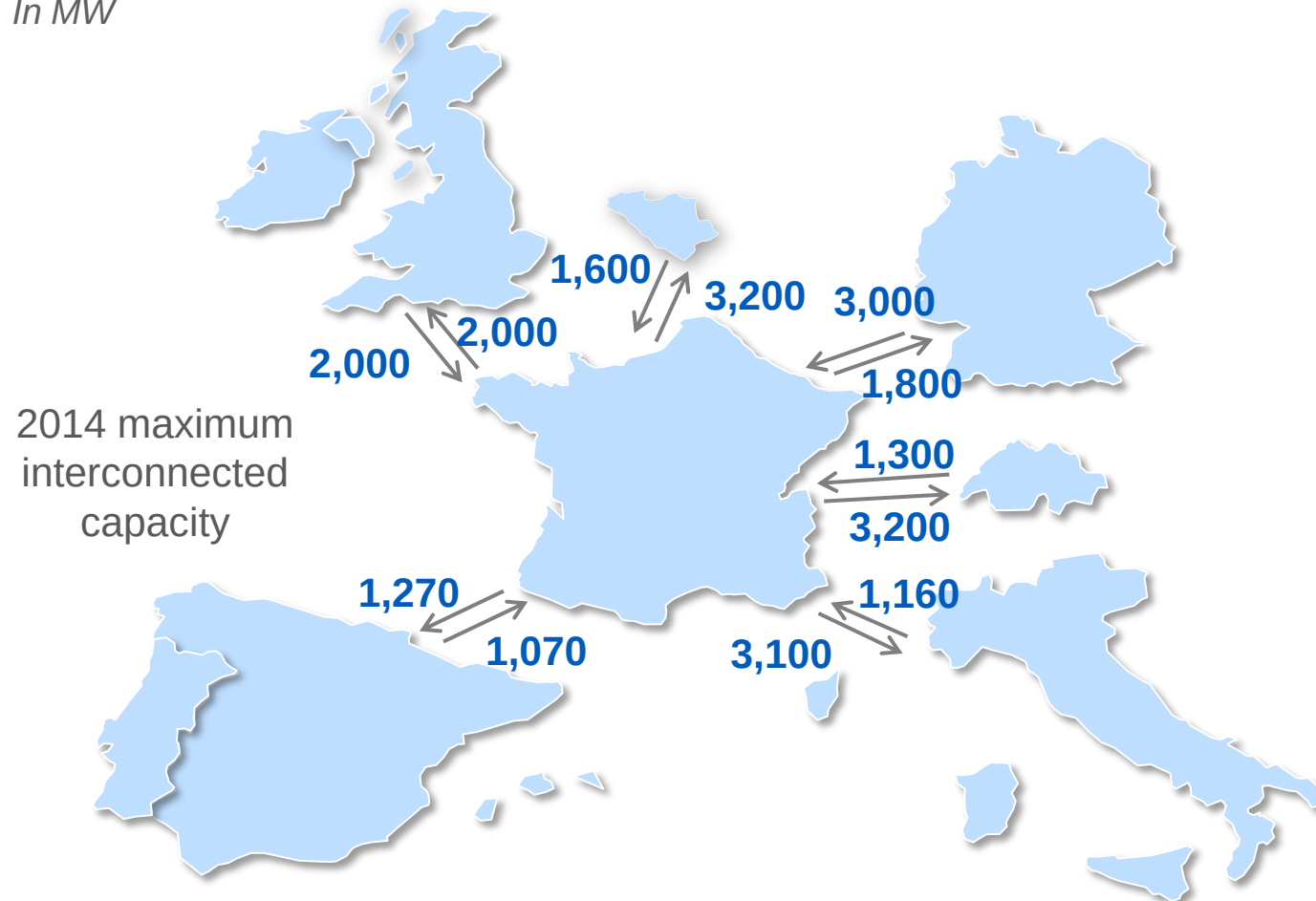
(1) Rounded the nearest tenth compared to 2013 average price

(2) Average annual net transfer capacities calculated by RTE in December 2013 for 2014 (in MW)

(3) Source: ENTSOE, in MW

Maximum interconnected capacity in 2014 and forecast increase

In MW



New interconnections

■ France-Spain

- Baixas-Sta Llogaia (RTE - REE Project INELFE) mid-2015:
 - Export: +1,000MW
 - Import: +1,200MW

■ France-United Kingdom

- Eleclink (Eurotunnel-Star Capital) 2018:
 - Export: +1,000MW
 - Import: +1,000MW

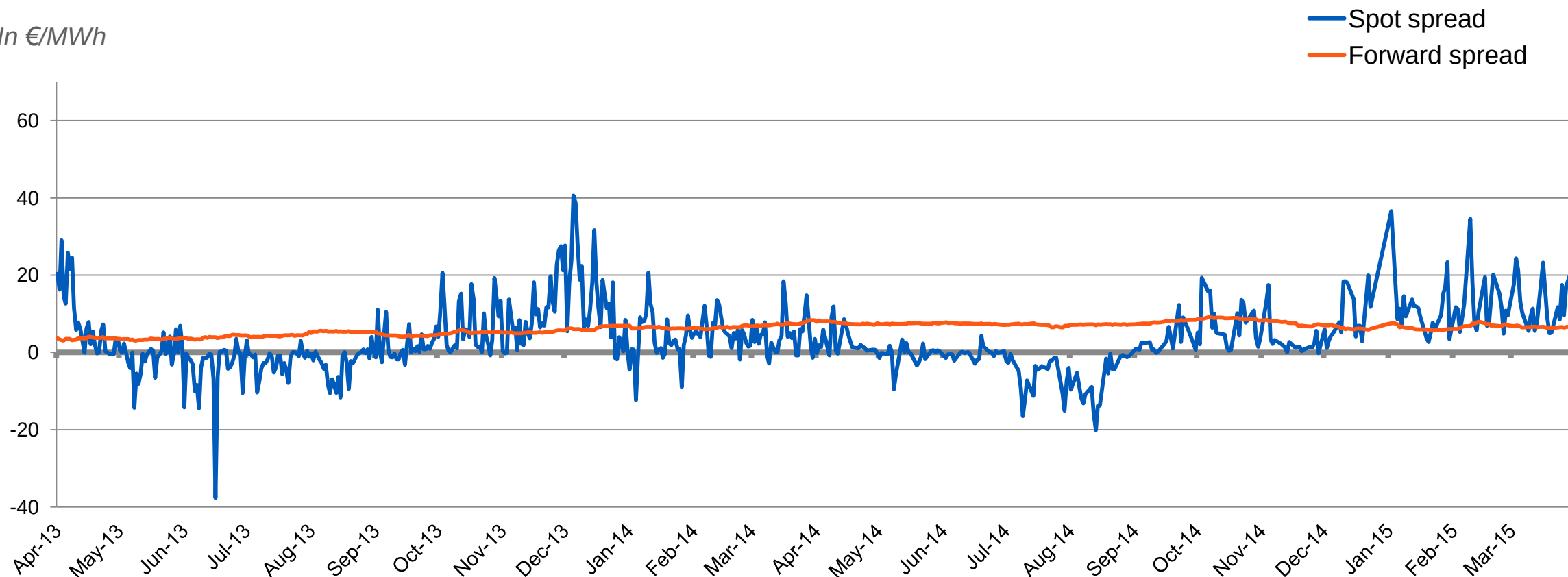
Reinforcements

■ France-Italy

- 2020: +500MW

France/Germany spread (1/3)

In €/MWh



In 2014, France had a positive export balance with Germany from May to August due to good nuclear availability and an easing of supply/demand balance in France

France/Germany spread (2/3)

The French and German markets were coupled 51% of the hours in 2014, with an annual spread between both countries much lower than last year (€1.9/MWh vs. €5.5/MWh)

In 2014, the average annual spread can be explained by...

- A saturation of interconnections between Germany and France
- A diverging situation where the market price in **France** is driven by **gas-fired** plants while the **German** market price is determined by **lignite and coal** plants
- An economic environment where the generation cost of gas plants is higher than the one of coal plants

...but also by uncommon extreme situations:

- Exceptionally **strong negative spreads** that have limited impact on the annual spread formation (August 2014)
- **Positive price peaks** linked to tension situations on the French electric system. Because of the very mild weather in 2014, these price peaks were much less frequent than in previous years

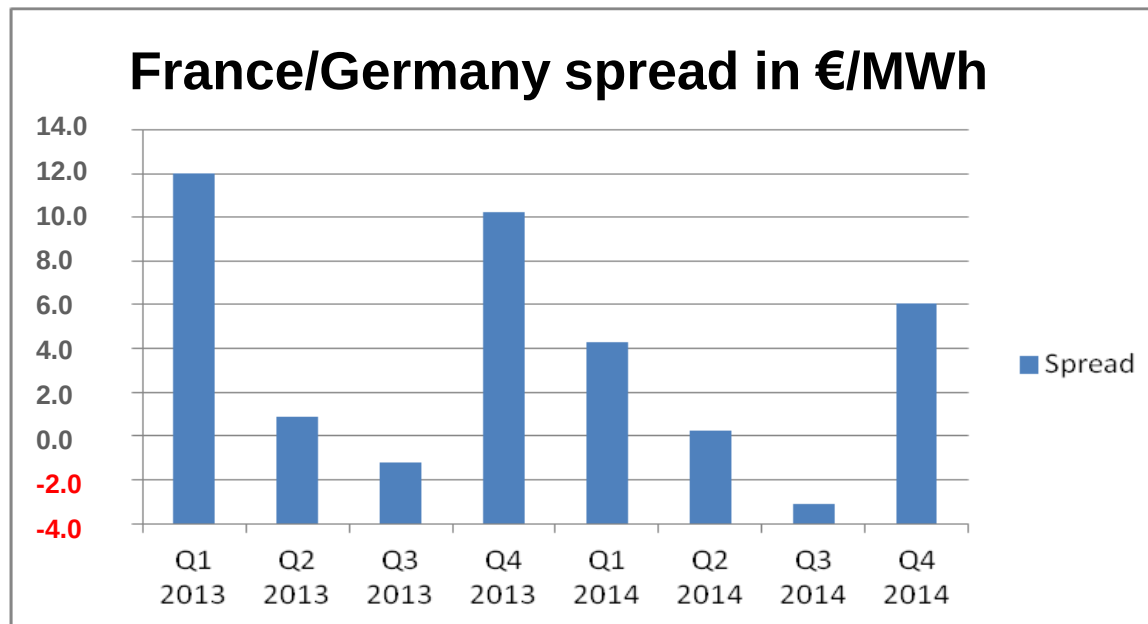
An average spread of €1.9/MWh in 2014

- Prices in both countries are coupled 51% of the time
- The French price is above the German price 31% of the time
- The German price is above the French price 17% of the time

France/Germany spread (3/3)

Due to the thermal sensitivity of French consumption, the spread between France and Germany follows a particularly strong seasonal cycle

- The seasonality of France/Germany spread reflects the high sensitivity of French demand to temperatures
 - During winter, a preponderance of positive spreads. In addition, situations of pressure on the French supply/demand balance may contribute to the formation of a very large spread
 - During summer, a preponderance of negative spreads, French prices being generally lower than in Germany



± 1°C during winter:

= ± 2,400MW in France⁽¹⁾

= ± 450MW in Germany

(1) Source: RTE

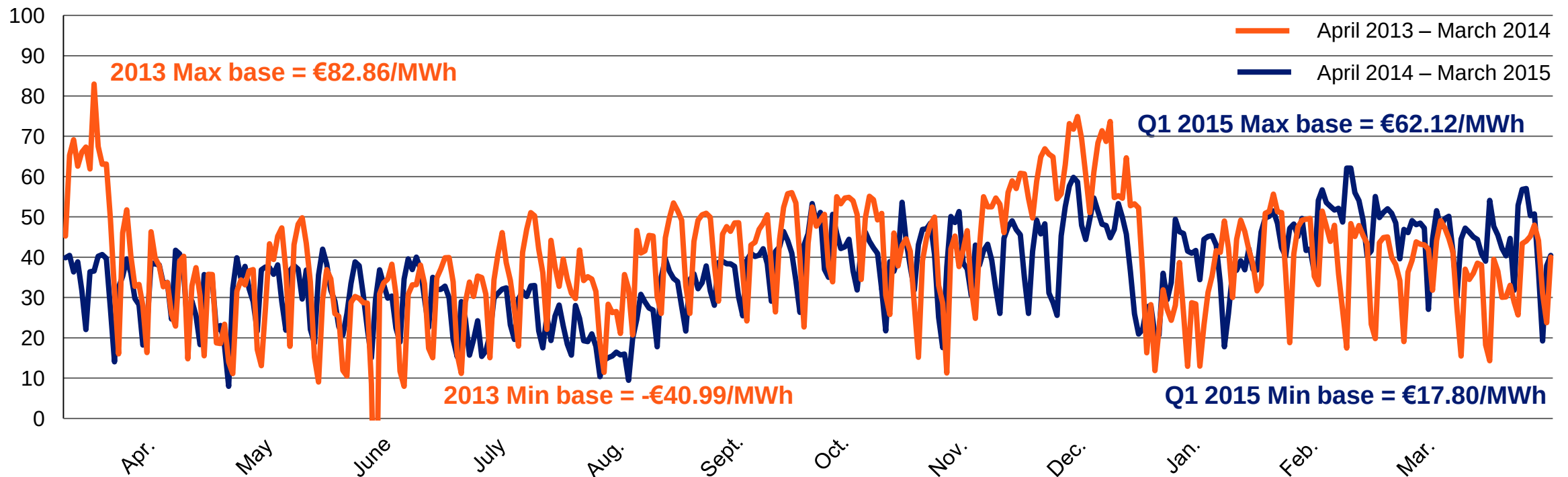
France: historical spot prices in base load power

Spot price fixation is linked to several factors

- Level of demand
- Availability of the generation fleet and demand management
- Fossil fuels prices
- Country's energy mix

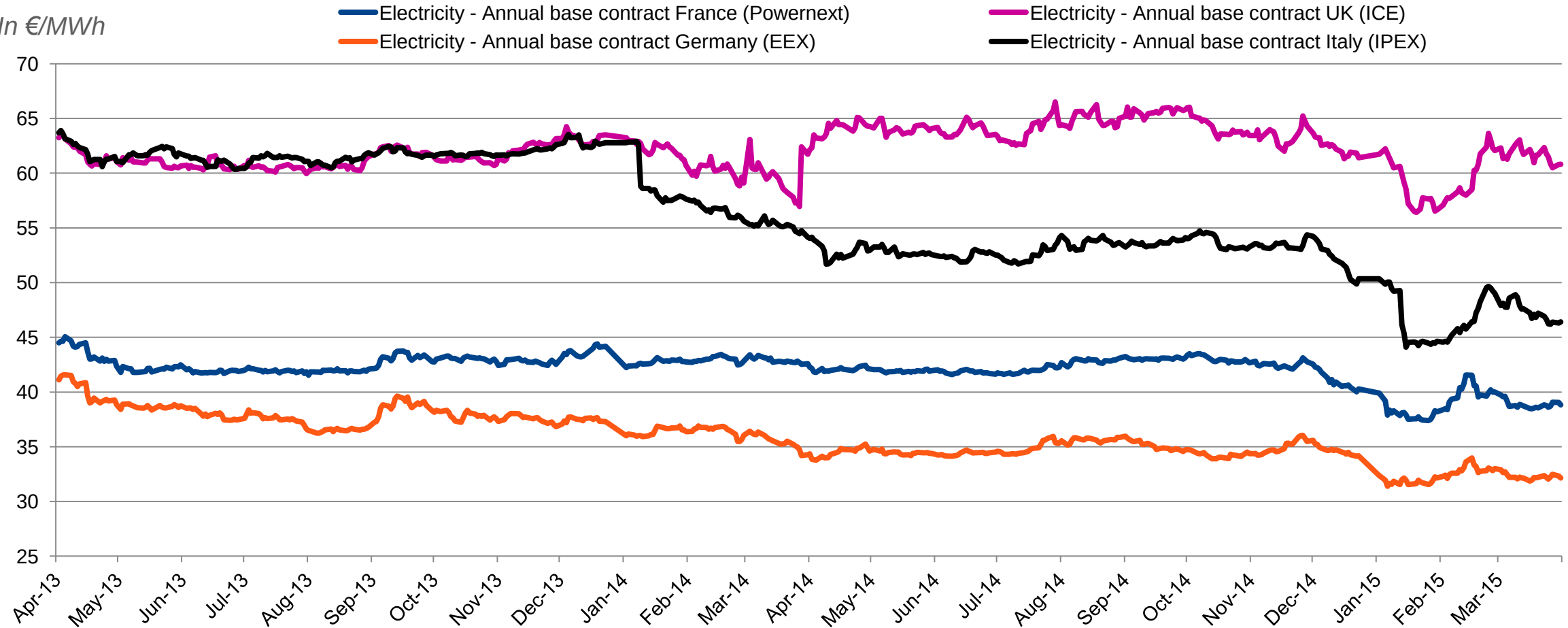
- **In 2014:** decline of €9.2/MWh in average spot prices vs. 2013 following low demand due to mild weather and good nuclear availability
- **In Q1 2015:** increase in the average base load spot price to €44.9/MWh (+€7.1/MWh compared to Q1 2014) due to colder temperatures that increased demand and the use of thermal plants, in particular gas-fired plants

In €/MWh



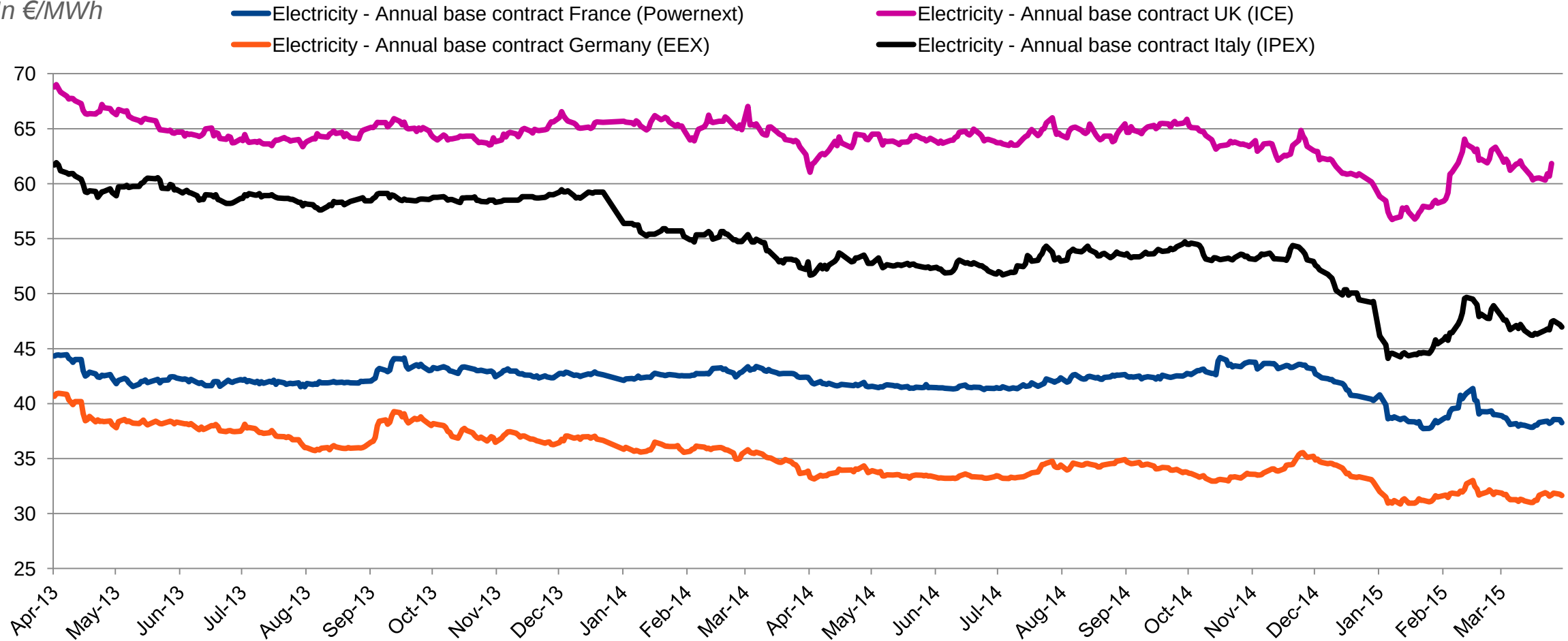
Forward electricity prices in France, the UK, Italy and Germany (Y+1) from 01/04/13 to 31/03/15

In €/MWh



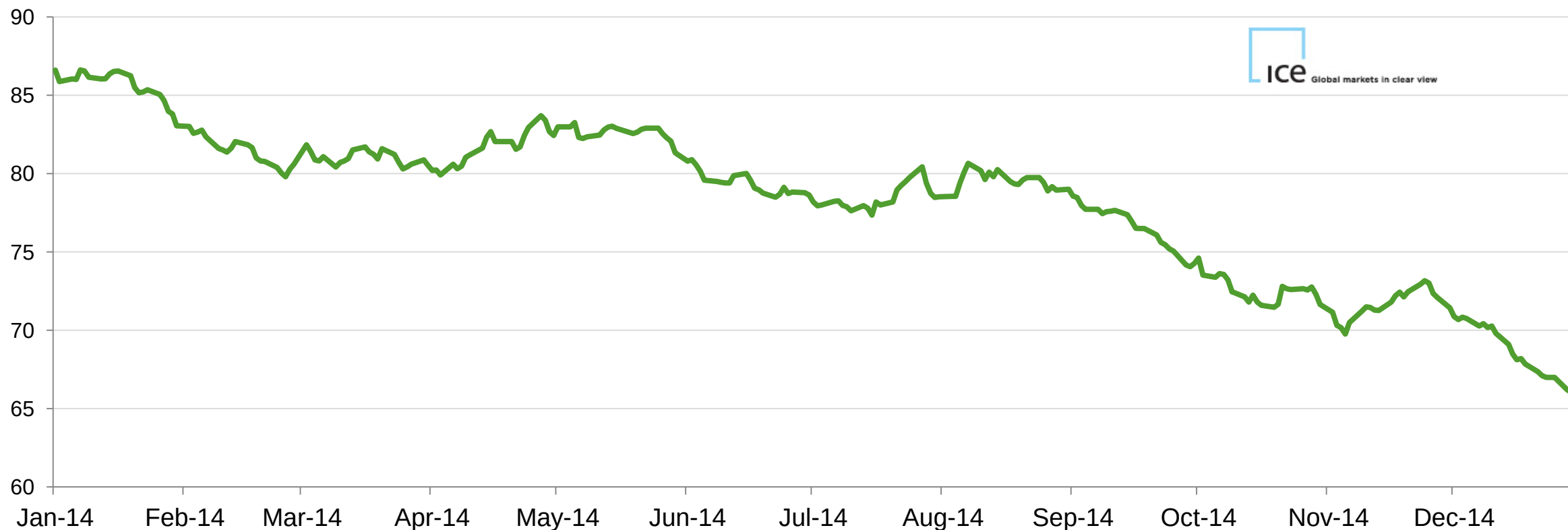
Forward electricity prices in France, the UK, Italy and Germany (Y+2) from 01/04/13 to 31/03/15

In €/MWh



Coal prices (Y+1) in 2014

In \$/t



At \$69.9/t at end-December, forward coal prices decreased by \$10.6/t on average over the whole year, as a result of a global easing of the supply/demand balance

Brent prices (Y+1) in 2014

In \$/bbl



Brent stood at \$57.3/bbl at end-2014, down by \$53.5/bbl vs. end-2013. Prices remained stable until end-June, at around \$110/bbl, and have fallen steadily since July

NBP gas prices (Y+1) in 2014

In p/therm



Annual gas contract prices closed at 50.0p/therm in 2014, down by 16.9p/therm vs. end-2013
Lower gas prices and the short-term easing of the supply/demand balance lowered the forward prices by a storage effect

CO₂ prices (Y+1) in 2014

In €/t



CO₂ prices rose in 2014, ending the year at €6.9/t, up €1.9/t vs. 2013. 2014 featured reactions by market players to announcements relating to back-loading and the Market Stability Reserve (MSR)



2014

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IFRIC 21 interpretation: application to the EDF group

- Application principles:
 - Affects the current accounting method for calculating the annual duties and taxes, other than income taxes
 - Application by the EDF group since 1 January 2015, with retrospective application on 2014 published statements
 - Impacts for the Group:
 - Some taxes will no longer be spread out throughout the year in the accounts, but will be booked in most cases on 1 January of the year
 - Main taxes affected by this accounting change: taxes pertaining to EDF group's activities in France (especially the tax on nuclear facilities, the lump-sum tax on network companies (IFER), property tax, etc.)
- No significant impact on the annual consolidated statements
 - Impact on the restated statements as of June 2014: approximately⁽¹⁾ €(0,8)bn on EBITDA and €(0,6)bn on Group net income

Financial calendar

5 June 2015



Dividend payment

30 July 2015



2015 half-year results

5 November 2015



Q3 2015 sales

A team dedicated to Analysts and Investors

To understand better the EDF group, you can also visit our web page **dedicated to investors and analysts**:
<http://shareholders-and-investors.edf.com/shareholders-and-investors-42678.html>

...on which you can download:

- **The Analyst Pack**, with all the main financial and extra-financial data in an Excel format
<http://shareholders-and-investors.edf.com/investors-and-analysts/essential-283415.html>
- **The Reference Document** of year 2014
<http://shareholders-and-investors.edf.com/news-and-publications/publications/regulatory-information/reference-documents-45430.html>
- All the data relative to our **quarterly results**
<http://shareholders-and-investors.edf.com/news-and-publications/publications/financial-results/annual-results-283451.html>

For more information, our team is available to you at this address: EDF-IRTeam@edf.fr

Glossary (1/6)

- **ANDRA:** the French law of 30 December 1991 established a public industrial and commercial body, the National Agency for the Management of Nuclear Waste (*Agence Nationale pour la gestion des Déchets Radioactifs* – “ANDRA”), responsible for the long-term management of radioactive waste. The Agency, which reports to the Ministers of Industry, Research and Environment, established the storage centers based in the Aube region of France for the long-term management of short-life waste
- **APE:** the French State Shareholding Agency is a national department joined controlled by the Minister for Economy, Industry and Digital, and the Minister for Finance and Public Accounts. Its mission is to act as a shareholder for the French Government in order to develop its assets to maximise the value of its stakes
- **Architect-Assembler:** for EDF, the architect-assembler has control over the design and operation of its power plants; the organization of development projects; the schedule for completion and costs of construction; relations with the Nuclear Safety Authority; and the integration of feedback from operational experience. EDF’s role as architect-assembler ensures control over its industrial policy with respect to the design, construction and operation of its fleet of power plants
- **ARENH:** Regulated Access to Historical Nuclear Energy
- **ASN (Autorité de Sûreté Nucléaire):** the French Nuclear Safety Authority controls nuclear safety and radioprotection in France, on behalf of the French government, to protect workers, patients, the public and the environmental risks associated with the use of nuclear energy. It is notably in charge of the external control of nuclear facilities in France. The ASN is an independent administrative authority with a staff of more than 300. It is represented at the national level by the General Agency for Nuclear Safety and Radioprotection (or “DGSNR”)
- **Clean Dark Spread:** difference between power price and variable generation cost (mainly coal cost and CO₂ cost)

Glossary (2/6)

- **Combined-Cycle Gas Turbine (CCGT):** most recent technology for generating electricity in a natural gas-fired plant. A combined cycle is made up of one or more combustion turbines and a steam turbine allowing for an improved yield. The syngas is routed to the combustion turbine, which generates electricity and very hot exhaust gases (effluents). The heat from the exhaust gases is recovered by a boiler, thus producing steam. Part of the steam is then recovered by the steam turbine to generate electricity
- **Cogeneration:** generation technique for combined electricity and heat generation. The advantage of cogeneration is the ability to capture the heat produced by the fuel, whereas in traditional electricity generation this heat is lost. This process also allows the same facility to meet the heating (hot water or steam) and electricity needs of both industrial and local authority customers. This system improves the energy efficiency of the generation process and reduces fuel use by an average of 20%
- **CRE (*Commission de Régulation de l'Énergie*):** created on 30 March 2000. The CRE, an independent body, regulates the process of the energy market opening. It ensures that all of the generators and eligible customers have non-discriminatory access to the network. Within its jurisdiction, this body supervises and authorizes, settles any disputes and, if required, imposes sanctions
- **Distribution networks:** downstream of the transmission network, medium- and low-tension distribution networks that serve end-users (individuals, Groups, SMEs, SMIs, etc.)
- **Electricity supply:** can be broken down into four types of consumption: “basic” (or “ribbon”) supply of electricity generated and consumed throughout the year; “semi-basic” electricity supply, which is generated and consumed over the winter period; “peak” electricity supply, which corresponds to periods of the year when electricity generation or consumption is significant; and “lace” supply which is a complement to the “ribbon” supply
- **EPIC:** Industrial and Commercial state-owned Company

Glossary (3/6)

- **EPR (European Pressurized Reactor):** latest generation of reactors currently under construction (known as generation 3), it is the result of Franco-German cooperation, and offers advanced safety, environmental and technical performance
- **ETS:** Emission Trading System
- **Fuel cycle:** the nuclear fuel cycle encompasses all industrial operations in France and abroad which enable the supply of the fuel to generate energy in a reactor, then to unload and process it. The cycle can be broken down into three stages: 1) upstream: the processing of concentrates from uranium ore, the conversion, enrichment and production of fuel (which takes more than two years); 2) the core of the cycle corresponding to the use of fuel in the reactor: receipt, loading, operation and discharging (which takes three to five years); 3) downstream: pool storage, reprocessing of spent fuel in reactors of recoverable material, vitrification of highly radioactive waste, then temporary storage of the waste before storage
- **Hydropower generation:** maximum power energy that can be produced from hydraulic sources in normal conditions
- **Interconnection:** electricity transmission infrastructure that allows for exchanges of energy between different countries, by connecting the transmission network of one country to that of a neighboring country
- **LDC:** Local Distribution Companies that provide for distribution of gas and electricity to the end-customers on a delimited geographical area
- **LNG (Liquefied Natural Gas):** natural gas turned into liquid form by reducing its temperature to -162°C allowing for a reduction by 600 in its volume
- **MEDEF:** French companies association ("*Mouvement des entreprises de France*")

Glossary (4/6)

- **Metering:** a system allowing for the recording, at a given network connection point, of the volumes of electricity transmitted or distributed (power, frequency, active and reactive energy)
- **Midstream:** all assets of the gas business, allowing for its availability, transportation and management. These might be infrastructures (gas pipelines, storage facilities, LNG terminals, etc.) or contractual (rights relating to predetermined capacity, procurement contracts, etc.). The midstream segment includes the trading and negotiating activities
- **National Allowances Allocation Plan:** this plan defines the total quantity of greenhouse gas emission allowances that the French state plans to grant for the allowances exchange system for each multi-year period (NAP1 2005-2007, NAP2 2008-2012) and the allocation method used to allocate allowances to the industrial facilities in question
- **NO_x:** nitrogen oxide
- **Nuclear safety:** nuclear safety includes all of the technical, organizational and human measures which are intended to prevent accident risks and to limit the effects of an accident, and which are taken at every stage of the life of a nuclear power plant (from design to operation and finally to decommissioning)
- **Nuclear tranche:** electrical generation unit consisting of a nuclear boiler and a turbo-alternator generator. A nuclear tranche essentially consists of its reactor type and the power of its turbo-alternator generator. EDF nuclear plants include two or four tranches, and occasionally six
- **Ofgem:** Ofgem is the Office of the Gas and Electricity Markets in the UK. Its main missions consist of protecting consumers, regulating gas and electricity monopoly companies, helping to secure Britain's energy supplies by promoting and regulating competitive gas and electricity markets. It also contributes to the drive to curb climate change and promote sustainable development

Glossary (5/6)

- **Plant availability:** fraction of power available, out of theoretical maximum energy, counting only technical non-availability. The availability coefficient (Kd) is defined as the ratio between annual actual generation capacity (or amount producible annually) and maximum theoretical generation capacity, where maximum theoretical generation capacity = installed capacity x 8,760h. The Kd, which includes only technical non-availability, i.e. scheduled shutdowns, unplanned outages and testing periods, characterizes a plant's industrial performance. For EDF's nuclear fleet in France, the maximum theoretical generation capacity is of 553TWh (63.1GW X 8,760h)
- **PPA:** Price Purchase Agreement
- **PWR:** in a Pressurized Water Reactor, the primary coolant (water) is pumped under high pressure to the reactor core where it is heated by the energy generated by the fission of atoms. The heated water then flows to a steam generator where it transfers its thermal energy to a secondary system where steam is generated and flows to turbines which, in turn, spin an electric generator. In contrast to a boiling water reactor (BWR), pressure in the primary coolant loop prevents the water from boiling within the reactor
- **Renewable energies:** energies for which generation does not require extinction of the initial resource. They largely derive from geothermal, water, air, fire and solar sources. They include hydro, wind, solar (the energy produced by marine waves and currents), geothermal (energy derived from the heat of the earth's magma) energies, and bio-mass (energy derived from living matter, particularly wood and organic waste). They often include energy from the incineration of household or industrial waste
- **RTE:** RTE is the operator of the French electricity transmission system. RTE, a public service company, operates, maintains and develops the high and very high voltage network
- **SO_x:** sulfur oxide
- **Storage:** storage consists in placing packages of radioactive waste in a facility, ensuring their long-term management, i.e. under safe conditions allowing for long-term risks control

Glossary (6/6)

- **Storage center:** low or medium-level short-life radioactive waste from nuclear plants, the Hague or CENTRACO facilities are sent to ANDRA's Soulaïnes storage center in the Aube region, which has been operational since 1992. This center has a capacity of 1,000,000cm, and an acceptance capacity of approximately 60 years. Very low-level short-life radioactive waste is sent to ANDRA's Morvilliers storage center (also in the Aube region). This center was commissioned in October 2003 and has an operating life of about 30 years
- **Transmission networks:** networks providing for the transmission of electrical power at high and very high voltages from the generating sites to the distribution networks or industrial sites directly connected to it; this includes the major interconnection transmission network (400,000 volts and 225,000 volts) and the regional distribution networks (225,000 volts, 150,000 volts, 90,000 volts and 63,000 volts)
- **Waste:** nowadays, the nuclear generation of 1MWh of electricity (equivalent to the monthly consumption of two households) produces around 11g of total waste across all categories. Short-life waste represents more than 90% of the total waste, but contains only 0.1% of the total radioactivity of those 11g



2014

FACTS & FIGURES