



2011 MANAGEMENT REPORT

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1 Financial and legal information

1.1 Key figures

Pursuant to European regulation 1606/2002 of July 19, 2002 on the adoption of international accounting standards, the EDF group's consolidated financial statements at December 31, 2011 are prepared under the international accounting standards published by the IASB and approved by the European Union for application at December 31, 2011. These international standards are IAS (International Accounting Standards), IFRS (International Financial Reporting Standards), and interpretations issued by the SIC and IFRIC.

The accounting and valuation methods applied by the Group are presented in note 1 to the consolidated financial statements at December 31, 2011.

Restatements

The figures presented in this document are taken from the EDF group's consolidated financial statements at December 31, 2011.

In compliance with accounting principles, the figures for 2010 have been restated for the effect of the change in presentation of the energy purchase and sales optimization activities of EDF Luminus (formerly SPE). This has no impact on EBITDA.

Adjustments

For analysis of Group results, organic growth in 2011 is measured against adjusted 2010 figures, i.e. on a comparable scope of consolidation: excluding EnBW, the British networks and the Eggborough plant in the UK, and including RTE under the equity method.

The net indebtedness table presented in section 1.4 also analyses changes compared to adjusted 2010 figures as far as the Free cash flow.

The table below shows details of restated and adjusted figures.

	2010 (restated)	Impact of equity method for RTE	Impact of sale of EnBW ⁽¹⁾	Impact of disposals in the UK ⁽¹⁾	Total impacts	2010 (adjusted)
In millions of Euros						
Sales	65,320	(211)	-	(1,187)	(1,398)	63,922
Operating profit before depreciation and amortization (EBITDA)	16,623	(1,525)	-	(942)	(2,467)	14,156
Operating profit (EBIT)	6,240	(886)	-	(636)	(1,522)	4,718
Income before taxes of consolidated companies ⁽²⁾	1,814	(558)	39	(473)	(992)	822
EDF net income	1,020	-	(360)	(251)	(611)	409
Net income excluding non- recurring items ⁽³⁾	3,961	-	(475)	(381)	(856)	3,105

(1) Including interest on net proceeds of disposals, set by convention at 1% before taxes.

(2) The income before taxes of consolidated companies corresponds to the EDF group's net income before income taxes, the share in net income of associates, net income attributable to non-controlling interests and the net income of discontinued operations.

(3) Net income excluding non-recurring items is not defined by IFRS, and is not directly visible in the consolidated income statements. It corresponds to the Group's share of net income excluding non-recurring items and the net change in fair value on Energy and Commodity derivatives, excluding trading activities, net of tax (see section 3.9).

Key figures for 2011 are shown in the following table. Variations in value and percentage are calculated with reference to adjusted 2010 figures.

Extract from the consolidated income statements

	2011	2010 (adjusted)	Variation	Variation (%)	Organic growth (%)
In millions of Euros					
Sales	65,307	63,922	+1,385	+2.2	+2.7
Operating profit before depreciation and amortization (EBITDA)	14,824	14,156	+668	+4.7	+5.4
Operating profit (EBIT)	8,286	4,718	+3,568	+75.6	
Income before taxes of consolidated companies	4,506	822	+3,684	+448.2	
EDF net income	3,010	409	+2,601	+635.9	
Net income excluding non-recurring items	3,520	3,105	+415	+13.4	+12.9

Extract from the consolidated balance sheets

	31/12/2011	31/12/2010
In millions of Euros		
Non-current assets	128,318	123,844
Inventories and trade receivables	34,489	32,209
Other assets	52,032	50,333
Cash and cash equivalents, other liquid assets and loans to RTE ⁽¹⁾	16,184	16,944
Assets held for sale (excluding cash)	684	17,229
Total assets	231,707	240,559
Equity (EDF share)	30,570	31,317
Non-controlling interests	4,337	5,586
Special concession liabilities	41,769	41,161
Provisions	55,528	54,475
Loans and other financial liabilities ⁽²⁾	49,469	51,333
Other liabilities	49,897	47,320
Liabilities related to assets classified as held for sale (excluding loans and other financial liabilities)	137	9,367
Total equity and liabilities	231,707	240,559

(1) Including cash and cash equivalents of discontinued operations.

(2) Including hedging derivatives and the financial liabilities of discontinued operations.

Operating cash flow

	2011	2010 (adjusted)	Variation	Variation (%)
In millions of Euros				
Operating cash flow ⁽¹⁾	10,281	9,899	382	+3.9

(1) Operating cash flow is not an aggregate defined by IFRS as a measure of financial performance, and is not necessarily comparable with indicators of the same name reported by other companies. This indicator, also known as Funds From Operations (FFO), is equivalent to net cash flow from operating activities excluding changes in working capital, adjusted for the impact of non-recurring items, less net financial expenses disbursed and income taxes paid.

Operating cash flow for 2011 was up by +3.9% for a comparable scope of consolidation compared to adjusted operating cash flow for 2010.

Net indebtedness

In millions of Euros	31/12/2011	31/12/2010	Variation	Variation (%)
Loans and other financial liabilities	50,034	47,777	2,257	4.7
Derivatives used to hedge liabilities	(834)	49	(883)	n.a.
Cash and cash equivalents	(5,743)	(4,829)	(914)	18.9
Liquid assets	(9,024) ⁽¹⁾	(9,285)	261	-2.8
Loans to RTE	(1,400)	(1,914)	514	-26.9
Net indebtedness of discontinued operations	252	2,591	(2,339)	-90.3
Net indebtedness ⁽²⁾	33,285	34,389	(1,104)	-3.2

(1) Including available-for-sale financial assets amounting to €9,024 million.

(2) Net indebtedness is not defined in the accounting standards and is not directly visible in the consolidated balance sheets. It comprises total loans and financial liabilities, less cash and cash equivalents and liquid assets. Liquid assets are financial assets consisting of funds or securities with initial maturity of over three months that are readily convertible into cash regardless of their maturity and are managed according to a liquidity-oriented policy. The definition of net indebtedness was revised in 2010 to include the Group's loans to RTE, which is accounted for by the equity method from December 31, 2010.

1.2 Economic environment and significant events of 2011

1.2.1 Economic environment

1.2.1.1 Trends in market prices for electricity and the principal energy sources

During 2011, energy prices in Europe were marked by three major external events that had worldwide repercussions: the political upheaval in Egypt, Libya and Tunisia, the nuclear accident at Fukushima in March, and the macroeconomic uncertainties caused by Euro-zone countries' sovereign debt throughout the second half of the year.

1.2.1.1.1 Spot electricity prices in France, the United Kingdom, Italy and Germany¹

	France	UK	Italy	Germany
Average baseload price for 2011 (€/MWh)	48.9	55.0	72.2	51.1
Variation in average baseload prices, 2011/2010	+2.9%	+14.1%	+12.3%	+14.9%
Average peakload price for 2011 (€/MWh)	60.7	61.5	82.3	61.1
Variation in average baseload prices 2011/2010	+2.9%	+10.6%	+8.7%	+11.1%

In **France**, the rise in spot electricity prices was associated with the increase in fossil fuel prices and lower national hydropower output, down by 25.6%² from 2010. This rise was considerably mitigated by record low levels of domestic consumption due to mild temperatures in the early months of the year and the autumn, and good nuclear availability. As a result French spot prices were lower than in neighboring countries, and this was good for French electricity exports for much of the year.

In the **United Kingdom** and **Italy**, the upturn in gas prices caused a noticeable rise in spot electricity prices, as gas-fired plants account for an important share of the British and Italian energy mix.

In **Germany**, the energy mix lost competitiveness following the moratorium on nuclear power announced in mid-March leading to the final shutdown of seven nuclear power plants, setting off an upward trend in spot prices. Germany now has to make greater use of fossil-fired generation to satisfy its demand-supply balance. This trend was further accentuated by the rise in fuel prices despite the partly moderating effect of the fall in CO₂ prices.

1.2.1.1.2 Forward electricity prices in France, the United Kingdom and Germany³

	France	UK	Germany
Average baseload price for 2011 (€/MWh)	56.0	62.3	56.0
Variation in average baseload prices, 2011/2010	+6.9 %	+19.8%	+12.4%
Forward baseload price at December 31, 2011	50.6	55.7	52.1
Average peakload price for 2011 (€/MWh)	70.5	70.3	69.0
Variation in average peakload prices, 2011/2010	+1.7%	+19.1%	+7.0%
Forward peakload price at December 31, 2011	63.0	63.1	63.3

European annual contract baseload prices rose on average compared to 2010, especially in the first half of the year.

¹ *France and Germany: Average previous day EPEX price for same-day delivery; United Kingdom: Average previous day EDF Trading OTC price for same-day delivery; Italy: Average previous day GME price for same-day delivery.*

² *Source: RTE.*

³ *France and Germany: Average year-ahead EPD price; United Kingdom: Average ICE annual contract prices, April 2011 then April 2012 (in the UK, annual contract deliveries take place from April 1 to March 31).*

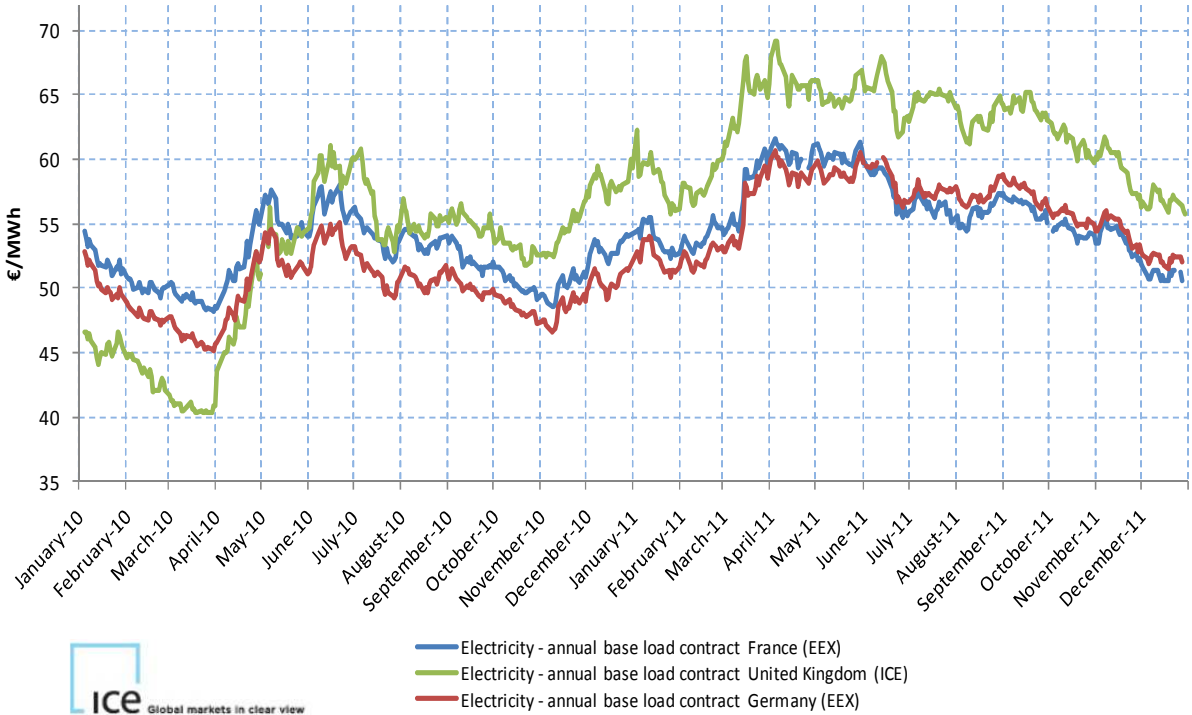
In **France**, the 2011 annual contract baseload price settled at an average level that was 6.9% higher than in 2010. Early in the year, fossil fuel price movements caused a proportional rise in the costs of fossil-fired generation plants, resulting in higher French annual contract prices.

In mid-March, the accident at Fukushima, followed by the German nuclear moratorium and reconsideration of nuclear power in certain European countries, reshaped the future patterns for use of the nuclear generation fleet. Forward electricity prices in **France** rose abruptly by approximately €5/MWh in response to the prospects of structural change in the European generation fleet and rising fuel prices. From June until the end of the year, the 2012 annual contract price fell sharply in the wake of CO₂ prices and forward gas prices, and due to growing awareness of how the end of German nuclear activities would truly affect the supply-demand balance. Mild temperatures combined with good windpower and hydropower output in December led to a more relaxed supply-demand balance. This brought the annual contract price down as market players anticipated a trouble-free winter 2011-2012.

In **Germany**, the baseload annual contract price was higher than in 2010. 2011 German prices were on average close to French prices, whereas they were €2.5/MWh lower in 2010. The nuclear moratorium announced in mid-March resulted in German prices rising faster than French prices, which reduced the price differential between the two countries. This price differential saw a long-term reversal from early June after the decision was made to shut down seven nuclear plants.

In the **United Kingdom**, the 2011 April Ahead baseload contract price followed the same pattern as forward gas prices until the early summer, then successive decreases in CO₂ prices from June onwards also brought forward prices down. This trend was accentuated from September by lower gas prices, and the April Ahead contract was trading at €63.1/MWh at peak levels at December 31, 2011.

Forward electricity prices in France, the United Kingdom and Germany



- Electricity - annual base load contract France (EEX)
- Electricity - annual base load contract United Kingdom (ICE)
- Electricity - annual base load contract Germany (EEX)

1.2.1.1.3 Use of interconnections⁴

France to :	Germany	UK	Belgium	Switzerland	Italy	Spain	TOTAL
2011 exports, baseload (TWh)	10.8	7.7	7.9	27.6	16.9	4.5	75.4
2011 imports, baseload (TWh)	(8.4)	(2.9)	(2.1)	(2.4)	(0.8)	(3.1)	(19.7)
2011 net import/export balance (TWh) ⁽¹⁾	2.4	4.8	5.8	25.2	16.1	1.4	55.7
2010 net import/export balance (TWh) ⁽¹⁾	(6.7)	3.0	(0.9)	19.5	16.2	(1.6)	29.5
2011/2010 changes in energy exchanges, baseload (TWh)	+9.1	+1.8	+6.7	+5.7	-0.1	+3.0	+26.2

(1) Positive figures indicate net exports, negative figures net imports.

2011 saw a substantial rise in exports compared to 2010, as French spot prices were lower than in neighboring countries. Overall, the net balance in France increased by 26.2 TWh between 2010 and 2011 to reach 55.7 TWh, a level not attained since 2006. Most of this increase concerned the eastern arc: Belgium, Germany and Switzerland (+21.5 TWh).

In 2011 the balance of exchanges was highly positive with Switzerland and Italy (25.2 TWh and 16.1 TWh respectively). While the balance of volumes exchanged with Italy was stable compared to 2010 (-0.1 TWh), volumes exchanged with Switzerland grew by 5.7 TWh (+29.2%).

France was a net importer from Germany in the first quarter of 2011, then from mid-March to September, French exports to Germany rose as the German energy mix lost competitiveness and French domestic demand was low. From October, the balance of exchange with Germany reversed: France was again a net importer due to high German windpower generation and growing demand in France as winter approached.

1.2.1.1.4 CO₂ emission rights prices⁵

	CO ₂ (€/t)
Average price for 2011	13.3
Average price variation, 2011/2010	-8.4%
Highest price in 2011	17.4
Lowest price in 2011	6.5
Closing price, 2010	14.2
Closing price, 2011	7.3

In 2011, the price of CO₂ emission rights under Phase II (2008-2012) stood at an average €13.3/t for delivery in December 2011, down by 8.4% from its 2010 level of €14.5/t. However, this slight downturn masks the sharp drop in CO₂ prices from June.

In the first half of the year, the German nuclear moratorium caused a rise in CO₂ prices, as market actors expected the closure of several nuclear plants in Germany to lead to more extensive use of coal-fired and gas-fired plants. This brought the CO₂ price thus close to €17/t at June 1.

During June, the European Commission proposed a directive to encourage member states to meet the target 20% improvement in energy efficiency between 2008 and 2020, given that only half this target will be achieved at the current pace of change. The directive focuses on cutting energy consumption, which will ultimately reduce CO₂ emissions. The volume of allocated quotas will remain unchanged, and the prospects of reduced CO₂ emissions led to a €4/t decline in CO₂ emission rights prices in just a few days.

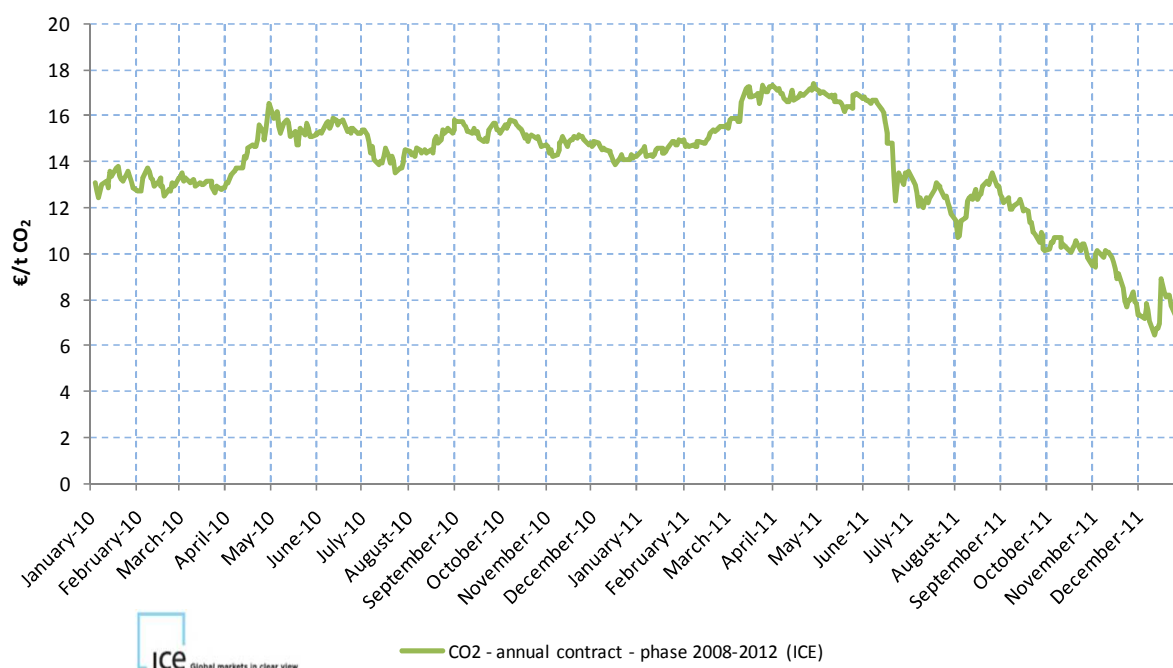
From August onwards, negative economic indicators resulted in a continuation of the downward trend. Against this background, the European Investment Bank's announcement in November that it was putting 300 million tonnes of EUAs⁶ on the market – to finance CO₂ capture and storage, and innovative technologies for renewable energies – substantially increased the offering and accelerated the fall in CO₂ prices. Quota prices ended the year at €7.3/t, close to its lowest level for all of Phase II (€6.5/t).

⁴ Source: RTE.

⁵ Average ICE prices for the annual contract of Phase II (2008-2012). This is the price for quotas physically delivered by December 2011.

⁶ EUA: European Union Allowance (carbon quota).

CO₂ emission rights prices (Phase II, 2008-2012)



1.2.1.1.5 Fossil fuel prices⁷

	Coal (\$/t)	Oil (\$/bl)	Natural gas (p/th)
Average price for 2011	123.8	111.0	66.4
Average price variation, 2011/2010	+24.7 %	+38.2 %	+38.3%
Highest price in 2011	134.5	126.7	72.9
Lowest price in 2011	111.9	93.3	56.1
Closing price, 2010	122.2	94.8	59.8
Closing price, 2011	111.9	107.4	63.1

Forward prices for coal saw an average rise from 2010, driven by forecasts of greater demand for coal in Germany (following the country's decision to close several nuclear plants ahead of schedule), and growing demand in Asia. From September, these prices fell as the Euro declined against the US dollar.

Oil prices (price per barrel of Brent) were very volatile in 2011. They continued to move upwards during the first half of the year against a background of political unrest, especially in Libya, reaching a peak of \$126.7/bl in early April. In May, fears of a slowdown in demand caused oil prices to fall to almost \$110/bl. Crude oil prices came under pressure during the summer from contradictory economic signals combined with the sovereign debt crisis in Europe, and to a lesser extent the United States. Market apprehensions – more pronounced for European debt than US debt – then led the Euro to decline against the US dollar, and the price of a barrel of Brent oil ended the year at \$107.4/bl.

Natural gas prices under the **United Kingdom's** annual contract rose significantly over the first quarter of 2011. From February, market players feared that supplies would fall if the Libyan conflict spread to other gas-producing countries. Subsequently, the aftermath of the Fukushima accident suggested that a large amount of LNG (liquefied natural gas) would be diverted to Japan, and that demand for gas would be higher in Germany. In both

⁷ *Coal*: Average ICE prices for delivery in Europe (CIF ARA) for the next calendar year (\$/t);

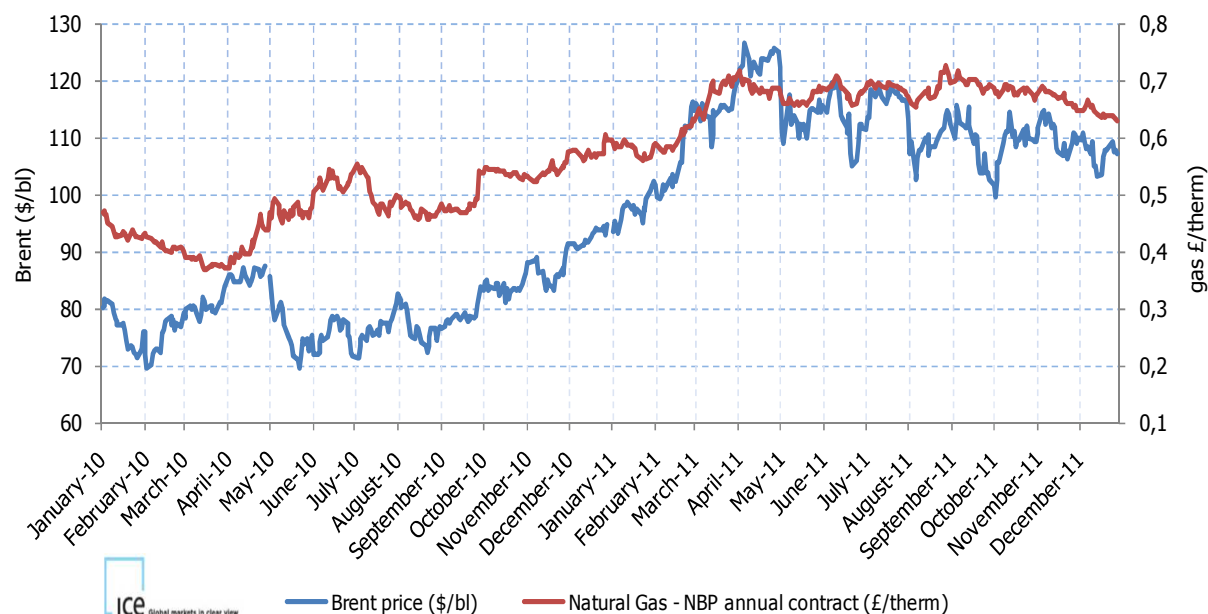
Oil: Brent first reference crude oil barrel, IPE index (front month) (\$/barrel);

Natural gas: Average ICE OTC prices, for delivery starting from October of the following year for the UK (NBP) (p/therm).

these countries, combined cycle gas facilities partly compensated for the lower nuclear power output. This rise in worldwide demand pushed British gas prices upwards.

In the second quarter, large-scale LNG supplies in the United Kingdom, together with a more relaxed situation in the short term, made significant injections into inventories possible and led to a downturn in annual contract prices. Despite fears for LNG supplies after the announcement in late August that maintenance work was to take place on LNG trains in Qatar, the short-term supply-demand balance remained relaxed until the end of the year due to the mild temperatures, and drawings on inventories were low. The year-end annual contract gas price was 63.1p/th.

Natural gas and oil prices



1.2.1.2 Electricity⁸ and natural gas⁹ consumption

Overall electricity consumption in **France** during 2011 was 6.8% lower than in 2010. The difference is mostly explained by higher-than-normal temperatures, especially in the spring, well above the temperatures of 2010 which with 1996 is considered the coolest year in the past two decades.

After adjustment for weather effects, consumption reached 484.1 TWh, 6 TWh less than in 2010. The main explanation for this is a 6.8 TWh decrease in Eurodif consumption. The slight increase (+0.8 TWh) in consumption excluding Eurodif reflects a rising trend in the first half of 2011 followed by the reverse movement from the middle of the year.

Consumption of natural gas in **France** fell sharply (-11.6%) compared to 2010: similarly to electricity, the main reason was the effect of temperatures. After adjustment for weather effects, consumption grew by +0.9%. This slight rise in demand was chiefly associated with consumption by large industrial customers and electricity plants (+2.4%), whereas consumption by residential customers, the service sector and small industrial customers was practically stable.

⁸ Sources:

France: RTE, 2011 electricity report and internal data;

Italie: data supplied by UCTE;

United Kingdom: Department of Energy and Climate Change for the first 3 quarters, estimates for the final quarter.

⁹ Sources:

France : Pégase database, Ministry of Energy and Commodities for the first nine months of 2011 ;

United Kingdom : Department of Energy and Climate Change for the first 3 quarters, estimates for the final quarter.

Estimated domestic electricity consumption in 2011 was around 314 TWh in the **United Kingdom**, down by 2.0%. Gas consumption decreased by 10.8%, mainly due to unfavorable weather effects (2011 had a milder winter than 2010), to 535 TWh for 2011.

In **Italy**, estimated domestic electricity consumption was stable (+1%) compared to 2010.

1.2.1.3 Electricity and natural gas sales tariffs

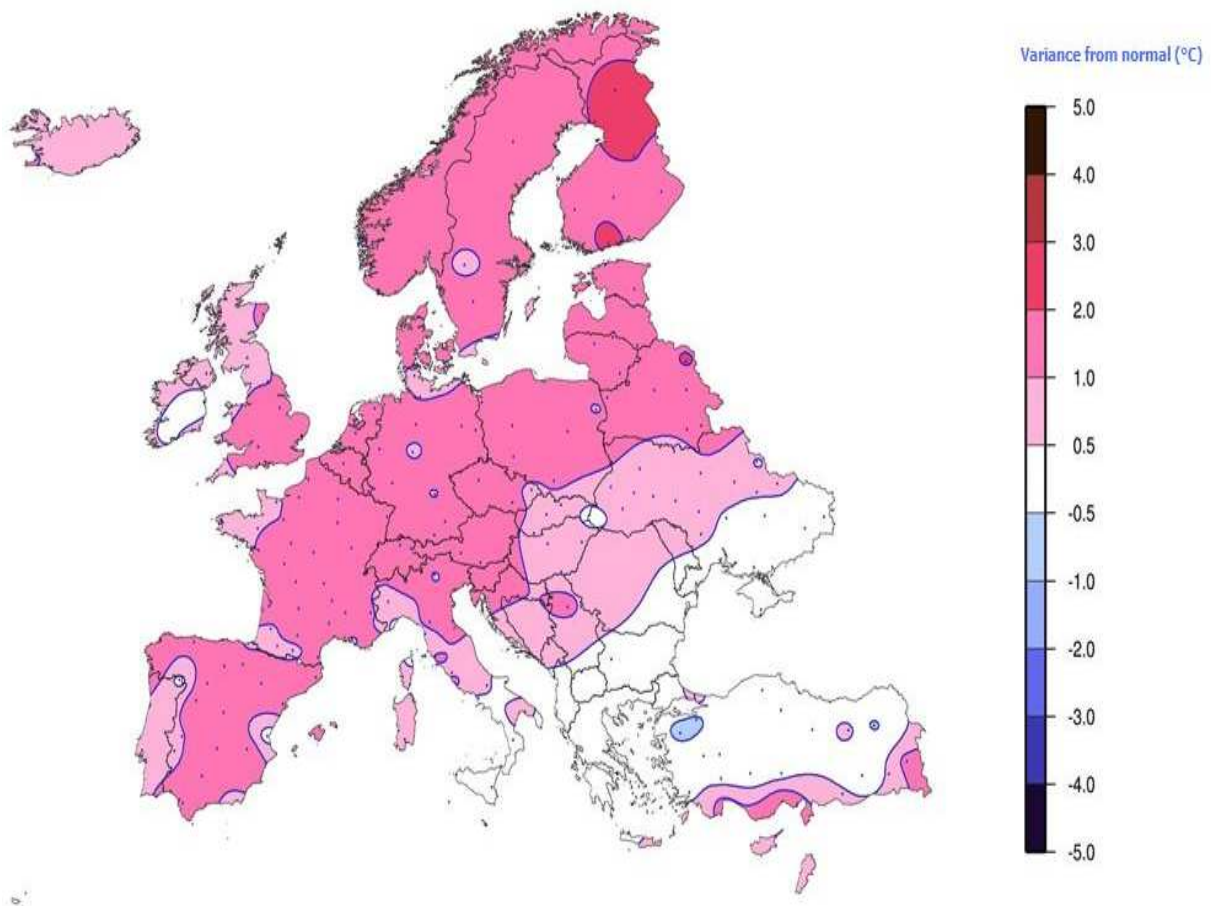
In France, on June 28, 2011 the Minister for Industry, Energy and the Digital Economy raised the average “blue” tariff (for residential customers) by 1.7% and the “yellow” and “green” tariffs (for industrial and large business customers) by 3.2%. These rises have been in application since July 1, 2011.

Under the indexation rules set for the TURPE 3¹⁰ network access tariff adopted by the French authorities on June 5, 2009, the tariffs for using the distribution and transmission networks were raised by 3.9% and 2.6% respectively from August 1, 2011.

In the United Kingdom, EDF Energy raised its electricity and gas tariffs for residential customers by 7.5% and 6.5% respectively on March 2, 2011, then by 4.5% and 15.4% respectively on November 10, 2011. In the previous year, electricity tariffs had been increased by 2.6% at October 1, 2010.

1.2.1.4 Weather conditions: temperatures and rainfall

Temperature: variance from normal levels, January to December 2011¹¹

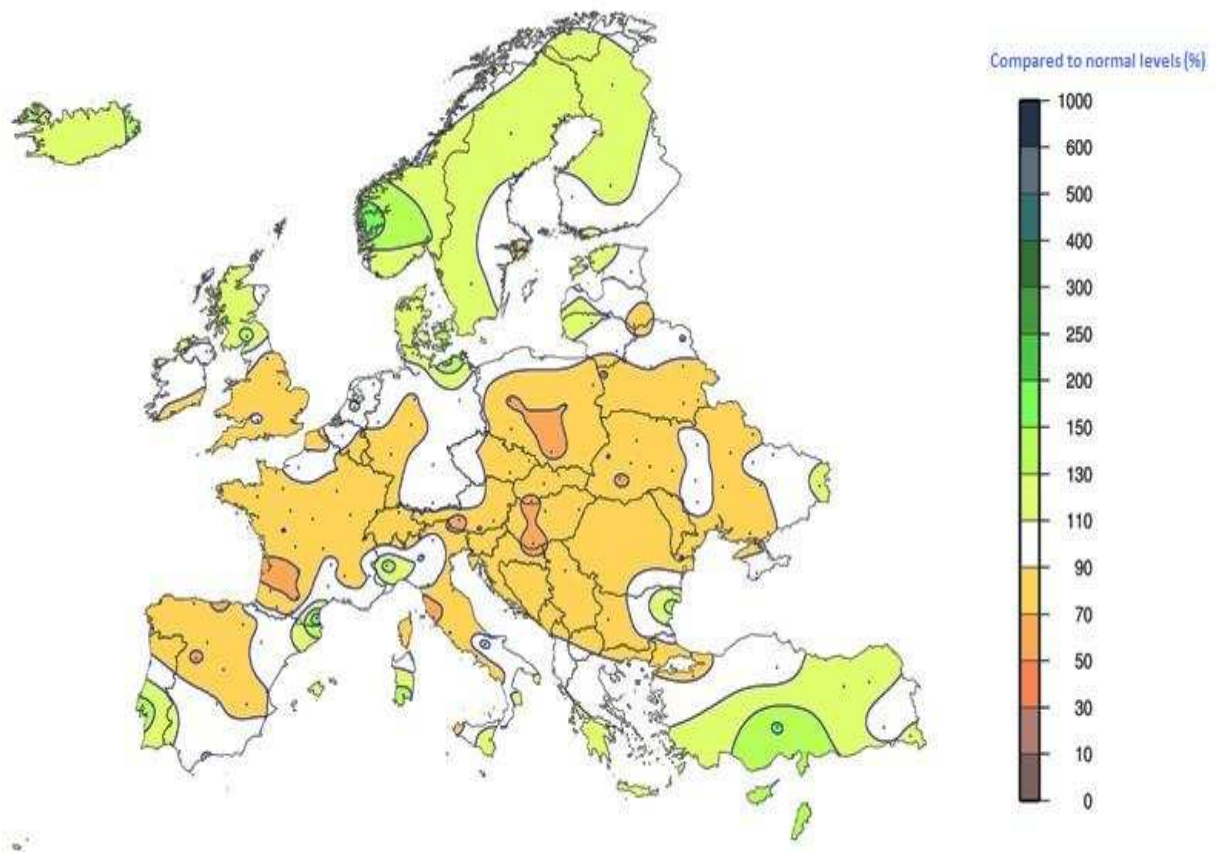


¹⁰ The Tarifs d'Utilisation du Réseau Public de distribution d'électricité, or TURPE 3 network access tariffs took effect on August 1, 2009.

¹¹ Map comparing average temperatures with normal levels between January and December 2011.

Normal temperatures are measured over 30 years (1971-2000 for Western Europe and 1961-1990 for Eastern Europe). Source: Base de Données Climatologiques, Météo France

Rainfall: variance from normal levels, January to December 2011¹²



France and its neighboring countries (Spain, Italy, Switzerland and Germany) experienced unusually high temperatures in the spring and autumn, particularly for November. The spring and November of 2011 were among the warmest and driest in France for more than 50 years.

For much of Europe, France in particular, 2011 was a year of significant rainfall shortages: the very wet summer was unable to make up for the year's two dry periods (January to May, then the autumn). In France, the cumulative precipitation from January to May was generally below the lowest levels recorded in more than 50 years.

As a result, hydropower capacity in France gradually deteriorated over the months to reach record lows in April/May for the whole French fleet. The shortfall continued until the autumn. The low water situation only improved at the very end of the year when high water levels were observed in several reservoirs.

For 2011 as a whole, hydropower capacity in France was the third-lowest for 60 years (just behind 1949 and 1989), close to 2005 levels.

The very low water levels of spring and autumn also affected countries bordering France (especially the Alpine basins in Switzerland, Austria and Northern Italy), where abnormally low levels of rainfall and temperature were registered.

Only the extreme south of Portugal, Turkey and more than half of Scandinavia (Norway in particular) recorded excess rainfall.

¹² Map comparing average rainfall with normal levels between January and December 2011.

Normal rainfall is measured over 30 years (1971-2000 for Western Europe and 1961-1990 for Eastern Europe). Source: Base de Données Climatologiques, Météo France.

1.2.2 Significant events of 2011^{13/14}

1.2.2.1 Partnerships and strategic investments

1.2.2.1.1 Finalization of the sale of EnBW

The Group completed the disposal of its 45.01% stake in EnBW to the Bade-Württemberg region on February 17, 2011 for the sum of €4.7 billion (€4.5 billion was paid in addition to the €169 million down payment paid on December 16, 2010), generating a gain of €253 million net of tax. This disposal reduces the Group's net indebtedness by €7.3 billion (€7.1 million of which concern the 2011 financial year).

1.2.2.1.2 Simplified alternative public cash or exchange offer for EDF Energies Nouvelles shares

On April 8, 2011, EDF announced the launch of a simplified alternative public offer to purchase or exchange the 50% of the capital of EDF Energies Nouvelles not held by the Group. The offer was made for cash at the price of €40 per EDF Energies Nouvelles share (ex coupon) or for shares based on the parity of 13 new EDF shares (to be issued, with dividend rights effective from January 1, 2011) for 11 EDF Energies Nouvelles shares (ex coupon).

On May 24, 2011, the French financial markets authority AMF officially approved this offer, which was open from May 27 to June 16, 2011 inclusive.

In compliance with the AMF's decision of August 1, 2011 approving the compulsory squeeze-out initiated by EDF for the remaining EDF Energies Nouvelles shares, the squeeze-out took place on August 16, 2011 and the shares of EDF Energies Nouvelles were delisted from Euronext Paris. The shareholders concerned received an indemnity of €40 per share.

EDF also carried out share repurchases amounting to €324 million in order to neutralize this operation's dilutive effect on EDF shareholders' percentage control. This neutralization became effective on September 28, 2011 after a reduction in the capital of EDF SA through cancellation of treasury shares.

The EDF group now owns 102,568,416 shares representing 100% of the capital and voting rights of EDF Energies Nouvelles.

1.2.2.1.3 ERDF consolidates operations in Russia through signature of a delegated management contract

On June 17, 2011, at the Saint Petersburg international economic forum, ERDF and MRSK Holding signed a delegated management contract for the Russian electricity distribution company for Tomsk (TRK).

At the previous Saint Petersburg international economic forum in June 2010, the two companies had signed a Memorandum of Understanding with the main aims of developing cooperation in projects concerning delegated management for Russian electricity distributors and technical matters.

ERDF has thus become the first foreign partner to enter into a delegated management contract for energy distribution in Russia.

1.2.2.1.4 EDF and AREVA sign several technical and commercial agreements

On completion of the discussions initiated after the Nuclear Policy Council held by the French President, on July 25, 2011 EDF and AREVA signed a technical and commercial agreement covering three key aspects of the cooperation between EDF and AREVA:

- continued optimization of the EPR, drawing on experience gained at the current EPR project sites (Olkiluoto, Flamanville, Taishan 1 and 2);

¹³ Significant events related to litigation are described in chapter 1.8.

¹⁴ The reference document and a full list of press releases are available from the EDF website: www.edf.com.

- improvement in maintenance and operation of the existing nuclear fleet, to raise operating performance and prepare for the possible extension of operating lives to more than 40 years,
- management of the nuclear fuel cycle, to qualify new fuel products and reinforce industrial cooperation in radioactive waste storage.

In September 2011, EDF also placed an order with AREVA for 32 steam generators, to be installed from 2017 in the 1,300 MW nuclear power plants.

In December 2011, EDF awarded AREVA a contract to upgrade the monitoring and control systems that underpin the safety of its 1,300 MW-series power plants. The work will begin in 2015 when the third 10-year inspections of the reactors take place.

1.2.2.1.5 New shareholders join the South Stream gas pipeline

On September 16, 2011 in Sochi, EDF, Gazprom, ENI and Wintershall signed the shareholder agreement for South Stream Transport AG, the company that will be responsible for studying, constructing and operating the undersea portion of the South Stream gas pipeline in the Black Sea. EDF will own 15% of this company: the other shareholders are Gazprom (50%), ENI (20%), and Wintershall (15%).

1.2.2.1.6 Proposed reinforcement of the EDF-Veolia Environnement partnership

On November 22, 2011 EDF's Board of Directors approved the principle of continuing negotiations for a new industrial partnership between EDF and Veolia Environnement which would broaden the scope of Dalkia's activities in fast-growing areas such as energy efficiency, and increase EDF's investment in Dalkia Holding from 34% to 50%.

This change in EDF's role in the new Dalkia group would be accompanied by simplification of the company's holding structures. The Dalkia group as a whole would be owned 50/50 by EDF and Veolia Environnement.

1.2.2.1.7 Agreement for acquisition by EDF of EnBW's investments in Poland

EDF and EnBW signed an agreement on December 21, 2011 for the acquisition by EDF of investments in two Polish companies, ERSa and Kogeneracja, owned 32.45% and 15.59% respectively by the EnBW group. After completion of the transaction, the EDF group will own 97.34% of Ersa and 50% plus one share in Kogeneracja, enabling EDF to pursue its development and integration strategy in Poland.

1.2.2.1.8 Preliminary agreement for the EDF group to acquire Edison and A2A to acquire Edipower

On December 26, 2011, EDF, A2A, Delmi, Edison and Iren signed a preliminary agreement for reorganization of the shareholding structure of Edison and Edipower. The EDF group will take control of Edison by purchasing Delmi's entire investment in TDE (50%) at the negotiated price of €0.84 per Edison share or a total of €705 million.

After completion of the operation, which is subject to certain conditions particularly concerning approval by the regulatory and competition authorities, the EDF group will hold 78.96% of the capital and 80.7% of the voting rights in Edison.

This agreement also provides for a subsequent offer by the EDF group to Edison's minority shareholders, to buy out their investments at a price no higher than the price of the Edison shares acquired via TDE, i.e. €0.84 per share. When EDF takes control of Edison, Delmi will take control of Edipower by purchasing the investments in Edipower held by Edison (50%) and Alpiq (20%) for the total sum of €805 million.

In accordance with the timeline defined in the preliminary agreement, on January 24, 2012 the Boards of Directors of Edison and EDF validated the draft preliminary agreement for reorganization of the shareholding structure of Edison and Edipower. The governance bodies of the other companies concerned by the transaction also gave their approval.

The preliminary agreement of December 26, 2011 also stipulates that a long-term (6-year) gas supply contract is to be signed between Edison and Edipower to cover 50% of Edipower's gas requirements.

The final agreements were signed on February 15, 2012. Their execution is conditional upon confirmation by the Italian market regulator Consob of the price of €0.84 per share for the offer to minority shareholders, and approval of the operations by the Italian competition authorities and the European Union.

Acquisition of TDE will enable the EDF Group to have exclusive control over Edison, from a date that should normally be before June 30, 2012.

1.2.2.2 Investment projects

1.2.2.2.1 Flamanville 3

In July 2011 EDF released an updated schedule for the Flamanville 3 EPR, setting 2016 as the year for the first commercial output produced at Flamanville, and revising the cost of the project to some €6 billion.

Significant milestones were reached during 2011:

- completion of construction of civil engineering structures and several buildings (pumping station, diesels for buildings 1 and 2, effluent processing building, etc);
- acceptance and installation of the main equipment in the machine room;
- electromechanical assembly in the nuclear island.

By the end of 2011, 88% of engineering work and around 20% of electro-mechanic assembly work had been completed.

1.2.2.2.2 Supercritical coal-fired power plant in Poland

In early December 2011, the EDF Group announced that a 900 MW supercritical coal-fired power plant would be erected on the Rybnik site in Poland for an investment of approximately €1.8 billion. This project will involve replacing the four oldest units at the Rybnik plant with a single, more efficient unit. The advantage of "supercritical" technology is its capacity to achieve some of the highest net efficiencies in the market, i.e. 45%. Rybnik's specificity will be to combine biomass combustion with coal combustion, in order to produce up to 10% of green energy and as a result reduce CO₂ emissions by 30% compared to traditional coal-fired units. The supercritical technology used at the Rybnik power plant will thus be able to produce more competitive electricity using local coal, and cut CO₂ emissions by one million tonnes per year for an equivalent energy output.

1.2.2.2.3 Investment in the Dunkirk methane terminal

On June 29, 2011, having received the approval of the Board of Directors on May 24, 2011, EDF announced its final decision to invest in the methane terminal at Dunkirk along with Fluxys G and Total, which confirmed their respective shares of 25% and 10% in Dunkerque LNG, the company responsible for building the industrial installations for the terminal. This company is now 65%-owned by EDF.

The Dunkirk methane terminal is due to come on stream at the end of 2015. It will have an annual re-gasification capacity of 13 Gm³ and will increase the LNG import capacity into France by some 20%.

This new terminal will enable EDF to offer a balanced and diversified supply portfolio including natural gas. The Group will be better-placed to respond to the demands of end customers through dual-energy (electricity + gas) offerings, and to optimize sourcing for its gas-fired electricity plants. Thanks to the terminal's strategic location, it will be able to supply all the markets in north-west Europe.

The total value of the investment in this national and European-scale project is €1.5 billion. There will be three project managers: Grand Port Maritime de Dunkerque, which will be in charge of port infrastructures, Dunkerque LNG for industrial installations, and GRTgaz for connections to the gas transmission networks.

1.2.2.2.4 New generation Combined Cycle Gas turbine (CCGT) at Bouchain (north France)

EDF and GE Energy signed a partnership agreement in early December 2011 to co-develop the first next-generation combined cycle gas turbine (CCGT) featuring GE Energy's FlexEfficiency50 technology. This combined cycle gas turbine, at Bouchain in North France, is due to begin production in 2015 and will have an installed capacity of 510 MW able to provide electricity for the equivalent of 600,000 French households. The new technology will achieve 61% efficiency and reach maximum load in less than 30 minutes. More flexible and more effective, this CCGT will help respond to increasing fluctuation in production needs, in an environment where highly intermittent renewable energy solutions are becoming increasingly important in the French electric system. This new technology also offers good environmental performances, with CO₂ emissions 10% lower on average than those of a traditional CCGT.

1.2.2.2.5 Installation of the dome on unit 1 of the Taishan EPR

At the Taishan EPR nuclear power plant in China, the dome was successfully lifted onto the reactor building of unit 1 on October 24, 2011. This operation, coordinated by the project manager Taishan Nuclear Power Joint Venture Company (TNPJVC) – a joint venture owned 70% by CGNPC and 30% by EDF – took place just over two years after the first concrete was poured for the reactor building raft.

1.2.2.3 Response by the authorities to the Fukushima accident

Following the Fukushima accident, the administrative authorities of various countries where the Group operates have taken decisions concerning nuclear plants already in operation and proposed new plants.

1.2.2.3.1 Stress tests in France

In France, the Prime Minister asked the Nuclear Safety Authority (ASN) in a letter dated March 23, 2011 to conduct further assessments of the safety of France's nuclear facilities. To ensure coherence in the actions undertaken at national and European level, the ASN presented specifications for these assessments on May 9, 2011.

In parallel, EDF decided to enhance its existing crisis structure to respond to accident situations, by setting up a national unit able to provide human and material aid rapidly for a site in major difficulty. This task force, named the *Force d'Action Rapide Nucléaire (FARN)*, is currently in preparation and the target start date is in 2012.

On September 15, 2011, EDF submitted its 19 additional safety assessment reports on the nuclear sites currently in operation and under construction to the ASN. This in-depth re-examination of plant design showed that safety levels are good across all of EDF's nuclear fleet. The ASN's permanent groups of experts were asked to give an opinion on the operators' reports, which they examined on November 8, 9 and 10, 2011 based on the IRSN¹⁵ analysis. The ASN stressed that the additional safety assessment reports show no significant shortcomings in definition of the level of external events considered (earthquakes, floods, etc).

The ASN also acknowledged and approved EDF's proposed action, particularly the FARN task force and the concept of "core" focus on a limited number of plant buildings, systems and components that should be able to withstand stressful events. This approach goes beyond consideration of the scale of potential problems alone and ensures installations are robust to the situations studied in the assessment reports.

On January 3, 2012, the ASN released its conclusions on these assessment reports. Following these assessments of priority nuclear installations, the ASN considers that the facilities examined are sufficiently safe and there is no need to demand immediate closure for any of them. It also concludes that for ongoing operation, the plants' capacity to withstand extreme situations must be increased over and above current safety margins as soon as possible.

¹⁵ Institut de Radioprotection et de Sûreté Nucléaire (French institute of radioprotection and nuclear safety).

1.2.2.3.2 Stress tests in the United Kingdom

In the United Kingdom, at the request of the Secretary of State for Energy, the Chief Inspector of Nuclear Installations released the provisional "Weightman report" on May 18, 2011 then the final report on October 11, 2011. This report concerns the consequences of Fukushima for the British nuclear industry and considers the UK's nuclear program unaffected. It calls for the British government, the nuclear industry and the regulators to examine 38 areas in which the UK could learn from the Japanese nuclear crisis: chiefly dependence on off-site infrastructures such as the electric offering in case of extreme events, emergency response systems, plant design, flood risks, control scheduling for nuclear installations and definition of priorities in terms of safety controls.

The Office for Nuclear Regulation asked EDF Energy to take part in stress tests as requested by the European Commission, and on October 31, 2011 EDF Energy remitted its reports to the Office. These reports confirmed that the British nuclear fleet was of robust design, even in the most extreme scenarios. EDF Energy has identified new ways to increase safety, for example by investing in additional safety equipment such as cooling machines and emergency control and command systems so that control can be retained in extreme events.

EDF Energy also analysed the design of the Hinkley Point EPR project using the same criteria, and reconfirmed that it was safe. In late October, a development application was sent to the independent Infrastructure Planning Commission, which approved the application and released it publicly on November 24.

1.2.2.3.3 Situation in other countries

In the **United States**, the Nuclear Regulatory Commission (NRC) began a review to learn the lessons to be drawn from detailed understanding of the Fukushima accident. Prior to this, it declared that the reactors in operation in the United States were safe, and ruled out any prospect of shutdown in the absence of any proven risk. American operators added further lines of defense after the attacks of September 11, 2001 to make them highly resistant to external attacks, or after "Individual Plant Examination for External Events" conducted in the 1990s that resulted in reinforcement of installations, particularly to cope with earthquake risks.

In early October 2011, following the report of an ad-hoc expert commission, the NRC defined eight short-term priorities: to reevaluate seismic and flooding risks, strengthen the plants' blackout mitigation capability, provide additional mobile onsite units, reinforce safety in the vent systems in boiling water reactors, enhance instrumentation in spent fuel pools, reinforce the organization's crisis communication resources and improve procedures for managing emergencies. In addition to these short-term actions, the NRC notes the need for reinforcement of spent fuel pool makeup capacity, vent system capacity in pressurized water reactors, and vent filtering capacity for boiling water reactors or pressurized water reactors, hydrogen control, and analysis of loss of the ultimate heat sink.

Based on these orientations, CENG has worked closely with other operators to establish and begin implementation of a 3-year action plan starting in the final quarter of 2011. In December 2011, the NRC instigated consultations with the US nuclear industry in order to define new regulatory requirements related to the Fukushima accident, to be published by March 2012. The NRC's official deadline for completing and implementing post-Fukushima measures is 2016.

In **Belgium**, the political parties agreed during negotiations on the formation of a new government on October 30, 2011 to withdraw from nuclear power. The plan is to close the country's three oldest reactors by 2015, then the four other reactors by 2025. However, to avoid any shortages this plan will only be implemented if alternative non-nuclear power sources are available.

In **Switzerland**, the federal government announced on May 25, 2011 that nuclear power would be phased out. Current nuclear plants will not be replaced, and will be permanently shut down after they have been in operation for 50 years, i.e. between 2019 and 2034. The Council of States adopted the proposal confirming this decision in September 2011.

In **China**, the authorities decided to audit their power plants. The Chinese Council of State also decided to freeze authorizations for new nuclear reactors (in May 2011, 26 of the 34 reactors already authorized were under construction).

In **Italy**, in a referendum held on June 12 and 13, 2011, the electors voted in favor of repealing the law of July 2009 that had initiated a return to nuclear power in the country.

1.2.2.4 Regulatory environment

1.2.2.4.1 France

1.2.2.4.1.1 "NOME" Law on the new electricity market organization

The French "NOME" law on the new electricity market organization was enacted on December 7, 2010 and the first implementation decrees were issued in April and May 2011. The basic principles of this law, which is intended to encourage greater competition on the electricity market in France, are:

- development of competition, by allowing other suppliers temporary access to a portion of EDF's baseload nuclear energy output until 2025 (no more than 100 TWh excluding network operators' losses). This is the principle of regulated access to historical nuclear energy (ARENH – *Accès Régulé à l'Électricité Nucléaire Historique*),
- contribution to security of supply, obliging every supplier to have a sufficient demand response capacity for consumption or generation to supply all customers, particularly in peak consumption periods,
- continuation of the "blue" tariff for residential and small business customers; the calculation method will be modified from 2015 to reflect the ARENH principle,
- discontinuation of the "yellow" and "green" tariffs for business customers from 2015,
- deferral by 5 years, to June 29, 2016, of the deadline for building up the dedicated assets portfolio¹⁶, provided certain criteria are met.

The ARENH principle came into force on July 1, 2011. The first ARENH deliveries to EDF's competitors are for an initial annual volume of 61.3 TWh. This volume cannot exceed 100 TWh each year, to be increased from August 2013 by the quantities sold to network operators to cover technical losses.

The ARENH price has been set at €40/MWh for the second half of 2011 and €42/MWh from January 1, 2012 for the first half of 2012. This initial price will move towards the full production cost of the existing nuclear fleet, in application of a future decree defining the costs included in the ARENH.

The capacity obligation system is due to come into force from 2015.

1.2.2.4.1.2 CSPE

The Contribution to the Public Electricity Service (*Contribution au Service Public de l'Électricité* or CSPE) is intended to compensate for certain public service charges assigned to EDF in particular. This tax is collected directly from the final customer and applies to electricity consumption. It was raised by €3/MWh on January 1, 2011 to €7.5/MWh until July 30, 2011. The amended Finance Law for 2011 set the CSPE at €9/MWh from July 31, 2011 to June 30, 2012, then €10.5/MWh from July 1, 2012.

Since 2007, CSPE income has been unable to cover expenses, which have been steadily rising, primarily due to the higher level of windpower and solar power output covered by purchase obligations. The shortfall is borne

¹⁶ *Financial Assets built up in compliance with the Law of June 28, 2006 to cover long-term nuclear commitments.*

solely by EDF, and amounts to €3,821 million at December 31, 2011 after deduction of CSPE income invoiced. It also generates a CSPE liability of €579 million for energy delivered but not yet billed.

The unit amount proposed by the CRE for 2012 to cover the estimated expenses for 2012 and past shortfalls for 2010 was €13.7/MWh.

To control the expenses covered by the CSPE, particularly the significant rise in the costs of purchasing photovoltaic electricity, a decree of December 9, 2010 suspended the obligation to purchase photovoltaic solar power for three months for all new projects except those concerning less than 3kW. At the end of this photovoltaic moratorium, new rules came into force on March 9, 2011 to regulate the photovoltaic solar power sector, setting quotas for new projects and lowering the purchase tariff. The purchase tariff for photovoltaic electricity is recalculated quarterly: it was reduced on July 1 and on October 1, 2011.

In July 2011, the CRE issued a call for tenders for installation of offshore windfarms. The surplus generation costs of these installations compared to market prices will be incorporated into CSPE expenses.

In October 2011, the Ministry of Energy filed a decree to make CSPE-funded social tariffs automatic in 2012. Almost 1.5 million French households are in a situation of energy precarity and should benefit from these special tariffs but only 600,000 of them have registered.

1.2.2.4.2 United Kingdom

1.2.2.4.2.1 Introduction of a carbon price floor

On March 24, 2011, the British government announced the introduction of a “carbon price floor”, i.e. a minimum carbon price, one of the conditions necessary for the spread of low-carbon energies such as nuclear power.

This carbon price floor was set in the UK’s 2011 Budget at £16/t, for application from April 1, 2013. It is expected to reach £30/t in 2020 with a long-term target of £70/t in 2030, expressed in 2009 prices. This tax should encourage development of new low-carbon energy sources in the United Kingdom.

1.2.2.4.2.2 British Parliament ratification of the nuclear new build program

On July 18, 2011 the British Parliament voted on the National Policy Statement for Nuclear Power Generation, ratifying the program for building new nuclear power plants in the United Kingdom. This vote confirmed the government’s decision to use nuclear power to meet the UK’s growing need for low-carbon electricity generation capacities.

Parliament also confirmed the list of authorized sites for new nuclear plants, which includes Hinkley Point and Sizewell, the two priority sites identified by EDF for construction of its future power plants.

This vote is a major step forward for the development of nuclear power in the UK and for the EDF group. It followed the British government’s announcement of July 12, 2011 confirming its decision to reform the UK electricity market.

1.2.2.4.3 Hungary

An amendment to the law on electricity adopted on March 16, 2011 ended all support for cogeneration in Hungary from July 2011, and stipulated that heat tariffs would now be regulated. The price must now be set by the government after proposal by the regulator, instead of freely negotiated between suppliers and their customers. This amendment particularly affects EDF’s Hungarian subsidiary BE ZRT.

1.3 Analysis of the business and the consolidated income statements for 2011 and 2010

Presentation and analysis of the consolidated income statements for 2010 and 2011 is presented on two levels for sales and EBITDA: a first focusing on the Group, then a second examining the different business segments (France, United Kingdom, Italy, Other International and Other activities). EBIT (operating profit) and net income are analyzed from a more general standpoint.

Reminder: organic growth is measured in relation to adjusted 2010 figures.

In millions of Euros	2011	2010 (adjusted) ⁽¹⁾	2010 (restated) ⁽²⁾
Sales	65,307	63,922	65,320
Fuel and energy purchases	(30,195)	(29,378)	(26,176)
Other external expenses	(9,931)	(9,890)	(10,582)
Personnel expenses	(10,917)	(10,418)	(11,422)
Taxes other than income taxes	(3,101)	(2,750)	(3,227)
Other operating income and expenses	3,661	3,050	3,090
Prolongation of the TaRTAM transition tariff system – Laws of June 7 and December 7, 2010	-	(380)	(380)
Operating profit before depreciation and amortization (EBITDA)	14,824	14,156	16,623
Net changes in fair value on Energy and Commodity derivatives, excluding trading activities	(116)	15	15
Net depreciation and amortization	(6,285)	(6,434)	(7,426)
Net increases in provisions for renewal of property, plant and equipment operated under concessions	(221)	(428)	(428)
(Impairment) / Reversals	(640)	(1,743)	(1,743)
Other income and expenses	724	(848)	(801)
Operating profit (EBIT)	8,286	4,718	6,240
Financial result	(3,780)	(3,896)	(4,426)
Income before taxes of consolidated companies	4,506	822	1,814
Income taxes	(1,305)	(682)	(1,079)
Share in income of associates	45	504	134
Net income of discontinued operations	-	-	380
Group net income	3,246	644	1,249
Net income attributable to non-controlling interests	236	235	229
EDF net income	3,010	409	1,020
Earnings per share (in Euros)	1.63	0.22	0.55
Diluted earnings per share (in Euros)	1.63	0.22	0.55

(1) 2010 figures are based on a comparable scope of consolidation to 2011, excluding EnBW, the networks and the Eggborough plant in the UK, with RTE accounted for under the equity method.

(2) 2010 figures have been restated in accordance with accounting principles (see section 1).

1.3.1 Sales

Consolidated sales rose by 2.2%, with organic growth of 2.7%.

1.3.1.1 Change in Group sales

In millions of Euros	2011	2010 (adjusted)	Variation	Variation (%)	Organic growth (%)
Sales	65,307	63,922	+1,385	+2.2	+2.7

Sales amounted to €65,307 million in 2011, up by €1,385 million (+2.2%). Excluding foreign exchange effects of -€302 million, principally resulting from the fall of the pound sterling against the Euro, and excluding changes in the scope of consolidation amounting to -€37 million, organic growth stood at +2.7%.

1.3.1.2 Change in sales by segment

In millions of Euros	2011	2010 (adjusted)	Variation	Variation (%)	Organic growth (%)
France	37,171	35,951	+1,220	+3.4	+3.4
United Kingdom	8,568	9,496	-928	-9.8	-8.0
Italy	6,552	5,647	+905	+16.0	+17.5
Other International	7,501	7,033	+468	+6.7	+8.9
Other activities	5,515	5,795	-280	-4.8	-5.8
Total excluding France	28,136	27,971	+165	+0.6	+1.8
Group sales	65,307	63,922	+1,385	+2.2	+2.7

Sales outside France for 2011 represented 43.1% of total consolidated sales compared to 43.8% for 2010 (adjusted).

1.3.1.2.1 France

Change in sales in the "France" segment

France's contribution to Group sales amounted to €37,171 million, showing organic growth of 3.4% from 2010 (adjusted).

Despite a very negative weather effect (-€1,866 million) that adversely affected sales to end customers, sales progressed by €1,351 million as a result of positive price and tariff effects: the tariff increases of August 15, 2010 and July 1, 2011, and market prices that were slightly higher on average than in 2010 (+€1.4/MWh). The rest of the increase is essentially attributable to the increase in volumes sold under the ARENH system, and on the wholesale markets due to the favorable supply-demand balance.

At December 31, 2011, EDF's share of the electricity market for all end customers was 80.2%, 3.2 points lower than at December 31, 2010. EDF's share of the natural gas market was 3.6%, down by 0.4 points from 2010.

Breakdown of sales for the "France" segment between deregulated activities¹⁷, network activities¹⁸ and island activities¹⁹

In millions of Euros	2011	2010 (adjusted)	Variation	Variation (%)
Sales	37,171	35,951	+1,220	+3.4
Deregulated activities	35,270	34,197	+1,073	+3.1
Network activities (ERDF)	12,254	12,182	+72	+0.6
Island activities	862	833	+29	+3.5
Eliminations	(11,215)	(11,261)	+46	-0.4

The 3.1% increase in **sales by the deregulated activities** is primarily attributable to the favorable impact of the 2010 and 2011 tariff rises.

Sales by the network activities saw a slight increase of 0.6% driven by tariff rises, despite the lower volumes delivered in winter 2011, which was milder than in 2010.

Electricity generation

Nuclear generation produced 421.1 TWh in 2011, compared to 407.9 TWh for 2010, a +13.2 TWh rise. This improvement, despite the nine 10-year inspections that took place (compared to five in 2010), is explained by the very good availability of the fleet: the number of unscheduled outages was significantly reduced. The availability factor was 80.7% in 2011, up by 2.2 points from 2010.

Hydropower generation produced 26.8 TWh, a noticeable downturn from 2010 (-12 TWh) caused by poor water availability (for a description of weather conditions see section 1.2.1.4.).

Fossil-fired generation produced 11.8 TWh, -5.1 TWh less than in 2010. This decline is mainly attributable to the differential between electricity and fossil fuel prices: the situation was less favorable for fossil-fired generation due to a more relaxed supply-demand balance in milder weather conditions. The fossil-fired fleet was also used less because of the nuclear fleet's good availability.

Sales volumes to end customers, including Eurodif and local distribution firms, were down by -40.5 TWh, including -26.4 TWh attributable to temperature differentials. In contrast to 2011 and its very mild weather, 2010 was marked by very cold temperatures.

Electricity supplied under the NOME law in the second half of 2011 represented a volume of 30.8 TWh.

EDF was a net buyer of 7.3 TWh on the wholesale markets in 2011, corresponding to a 11.2 TWh decrease in net volumes purchased.

1.3.1.2.2 United Kingdom

Since the sale of the Networks activities to the CKI group on October 29, 2010, **EDF Energy** has comprised three operating divisions: Energy Sourcing and Customer Supply, the Nuclear Generation division, and development of the UK's Nuclear New Build project.

Sales in this segment amounted to €8,568 million in 2011, down by 9.8% compared to 2010 (adjusted), or an organic decline of 8.0%. The unfavorable foreign exchange effect of -€166 million resulted from the pound sterling's fall against the Euro between 2010 and 2011.

There was a decrease in volumes sold in 2011, which was partly offset by favorable price effects.

¹⁷ Generation, supply and optimization in mainland France, and sales of engineering and consulting services.

¹⁸ Network activities only include Distribution from 2011, as a result of application of the equity method to the Transmission activity from December 31, 2010. In mainland France, network activities are regulated via the network access tariff TURPE (Tarifs d'Utilisation des Réseaux Publics d'Électricité). Sales for the regulated activities include the delivery cost included in integrated Tariffs.

¹⁹ EDF's generation and distribution activities in the island energy systems (IES).

This downturn in volumes mainly concerned electricity sales to industrial customers which were under greater competitive pressure. Sales volumes to residential customers were also down, principally in gas sales, due to unfavorable weather effects (milder temperatures in the first and final quarters of 2011).

The overall tariff rise had a favorable impact on sales, especially the rises of October 1, 2010 (+2.6% on electricity), March 2, 2011 (+7.5% for electricity and +6.5% for gas), and to a lesser extent November 10, 2011 (+4.5% for electricity and +15.4% for gas), which compared to competitors' tariff increases was lower and introduced later.

1.3.1.2.3 Italy

Italy²⁰ contributed €6,552 million to consolidated sales, up by 16.0% with organic growth of 17.5%.

Sales by Edison rose by €893 million or +17.3% (organic growth of +19.0%), boosted by the electricity business which benefited from a positive price effect and a generally favorable volume effect driven by the wholesale markets, despite a downturn in volumes sold to end customers. In the hydrocarbon business, the rise in volumes sold on the wholesale and thermoelectric markets was accompanied by a rise in commodity prices.

Sales by Fenice increased by €11 million (+2.3%, corresponding to an organic change of +1.3%), primarily due to the start-up of new cogenerations in Italy and development of foreign subsidiaries. This rise was partly counterbalanced by a slowdown in sales for Fiat.

1.3.1.2.4 Other International

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

This segment contributed €7,501 million to Group sales in 2011, up by €468 million or +6.7% from 2010 (adjusted).

Foreign exchange effects between 2010 (adjusted) and 2011 amounted to -€107 million. The effect of changes in the scope of consolidation in this segment essentially reflects changes in the consolidation method for the Polish subsidiaries Zielona Gora and Kogeneracja²¹. Without these scope and exchange effects, sales would show organic growth of 8.9% compared to 2010 (adjusted).

Most of this increase concerns Belgium, and to a smaller extent Austria and Brazil, but sales were down in Hungary.

In **Belgium**, sales amounted to €3,595 million, registering organic growth of +17.7%. This growth chiefly results from the rise in sales of short-term electricity and gas optimization, and to a lesser extent, the higher volumes of electricity sold to end customers, combined with a favorable price effect. However, gas sales were down slightly, as the lower volumes sold due to weather effects were not partly offset by higher tariffs.

In **Austria**, sales reached €417 million corresponding to organic growth of +36.7%, reflecting an increase in electricity sales volumes due to the cold winter of early 2011, and an upturn in business with industrial customers.

Sales in **Brazil** showed organic growth of +17.2%, essentially driven by higher contractual prices and a good level of export sales, particularly to Argentina.

²⁰ Edison and Fenice groups.

²¹ From full consolidation to proportional consolidation in February 2011 after completion of the sale of EnBW.

In **Hungary**, in contrast, sales totaled €684 million reflecting an organic decline of 9.4%, principally caused by the fall in volumes sold by EDF Demasz on the wholesale market and lower electricity prices for eligible customers, combined with a decline in purchase costs.

1.3.1.2.5 Other activities

Other activities comprise, among other entities, EDF Energies Nouvelles, EDF Trading, Electricité de Strasbourg and the investment in Dalkia.

The contribution by the **Other activities** segment to Group sales in 2011 was €5,515 million, down by €280 million or -4.8%, with an organic decline of 5.8% from 2010 (adjusted).

EDF Energies Nouvelles contributed €1,214 million to Group sales, an organic decline of 16.0% from 2010 (adjusted). After an exceptional year in 2010, sales by Development–Sales of Structured Assets returned to a comparable level with previous years. EDF Energies Nouvelles' core activity of Generation registered significant growth of 24% compared to 2010 (adjusted).

EDF Trading's²² sales saw organic growth of 5.6% from 2010 (adjusted), essentially through short-term optimization of EDF's positions in France.

Dalkia's contribution to sales reflected an organic decline of €74 million (-3.2%) due principally to the downturn in solar power activities in Spain and Italy.

²² EDF Trading sales consist of trading margins.

1.3.2 EBITDA

EBITDA rose by 4.7%, with organic growth of 5.4%. Excluding the impact of the decision of July 4, 2011 concerning the non recurring compensation for TaRTAM transition tariff expenses (-€170 million²³), organic growth in EBITDA was 6.6%, above the objectives presented in July 2011.

	2011	2010 (adjusted)	Variation	Variation (%)	Organic growth (%)
In millions of Euros					
Sales	65,307	63,922	+1,385	+2.2	+2.7
Fuel and energy purchases	(30,195)	(29,378)	-817	+2.8	+3.7
Other external expenses	(9,931)	(9,890)	-41	+0.4	-0.2
Personnel expenses	(10,917)	(10,418)	-499	+4.8	+5.1
Taxes other than income taxes	(3,101)	(2,750)	-351	+12.8	+12.9
Other operating income and expenses	3,661	3,050	+611	+20.0	+20.4
Prolongation of the TaRTAM transition tariff – Laws of June 7 and December 7, 2010	-	(380)	+380	n.a.	n.a.
EBITDA	14,824	14,156	+668	+4.7	+5.4

1.3.2.1 Change in consolidated EBITDA and analysis

Consolidated EBITDA for 2011 amounted to €14,824 million, up by 4.7% from 2010 (adjusted), corresponding to organic growth of 5.4%. Foreign exchange effects amounted to -€73 million, mainly reflecting the unfavorable movements by the pound sterling against the Euro.

Fuel and energy purchases amounted to €30,195 million, an increase of €817 million (+2.8%) compared to 2010 (adjusted). The organic growth in these purchases stood at +3.7%. **France** registered an organic rise of 5.4%, explained essentially by higher purchase obligations. In **Italy**, the organic growth of 24.1% was driven by both natural gas and electricity purchases. In the **Other International** segment, the 13.4% organic growth was mainly associated with the higher volumes sold in Belgium and fuel price and CO₂ cost effects in Poland. For fuel and energy purchases in the **United Kingdom**, however, the organic change was negative at -19.0% due to unfavorable developments in sales volumes combined with higher nuclear output.

The Group's **other external expenses** amounted to €9,931 million, stable compared to 2010 (adjusted) (+0.4%), corresponding to an organic change of -0.2%. Most of this variation is explained by lower external expenses at EDF Energies Nouvelles, in keeping with the lower level of sales. This was offset by the unfavorable change, essentially in France, where the organic growth of 2.8% is chiefly attributable to the increase in maintenance expenses for the nuclear generation fleet.

The Group's **personnel expenses** totaled €10,917 million, €499 million (+4.8%) higher than in 2010 (adjusted), with organic growth of +5.1%. This change essentially related to **France**, where personnel expenses totaled €8,147 million, corresponding to organic growth of 5.6% from 2010 (adjusted). This reflects the increase in the workforce, pay measures, and pension-related expenses.

Taxes other than income taxes stood at €3,101 million for 2011, up by €351 million from 2010 (adjusted) (+12.8%, with organic growth of +12.9%). The increase was mainly located in **France**.

²³ Net of re-invoicing to partners.

Other operating income and expenses generated a net income of €3,661 million in 2011, €611 million higher than in 2010 (adjusted), or an organic variation of +20.4%. In **France**, the organic €562 million growth in other operating income and expenses was mainly driven by the rise in CSPE. In the **United Kingdom**, other operating income and expenses showed an organic decline of €172 million due to the unfavorable effect of the fair value adjustment of various items, including electricity sale contracts, at the time of EDF's acquisition of British Energy. This effect was partly counterbalanced by positive effects in 2011 that had no equivalent in 2010, mainly gains on disposals. In **Italy**, the decrease is largely explained by the indemnity for early termination of the CIP6 system for certain plants, recorded by Edison in 2010. The organic rise of €168 million in the **Other activities** segment's contribution reflects the recognition of various gains on disposals.

A net €380 million allocation to provisions was recorded on a specific line in 2010 in connection with the **extension of the TaRTAM** transition tariff mechanism (Laws of June 7 and December 7, 2010).

1.3.2.2 Change in consolidated EBITDA by segment and analysis

In millions of Euros	2011	2010 (adjusted)	Variation	Variation (%)	Organic growth (%)
France	9,111	8,599	+512	+6.0	+6.3
United Kingdom	1,912	1,790	+122	+6.8	+8.5
Italy	592	801	-209	-26.1	-25.2
Other International	1,280	1,084	+196	+18.1	+19.5
Other activities	1,929	1,882	+47	+2.5	+3.3
Total excluding France	5,713	5,557	+156	+2.8	+4.0
Group EBITDA	14,824	14,156	+668	+4.7	+5.4

1.3.2.2.1 France

Change in EBITDA for the France segment

France contributed €9,111 million of consolidated EBITDA for 2011, 6.0% higher than in 2010 (adjusted), corresponding to organic growth of 6.3%. This contribution accounted for 61.5% of Group EBITDA, compared to 60.7% in 2010 (adjusted). The growth in EBITDA for the France segment reflects the fact that the gross margin registered a greater increase than operating expenses (+4.7%).

Breakdown²⁴ of EBITDA for the "France" segment between deregulated activities, network activities and island activities

In millions of Euros	2011	2010 (adjusted)	Variation	Variation (%)
EBITDA	9,111	8,599	+512	+6.0
Deregulated activities	6,056	5,905	+151	+2.6
Network activities	2,795	2,475	+320	+12.9
Island activities	260	219	+41	+18.7

²⁴ Further details of this breakdown can be found in section 1.3.1.2.1.

Despite very unfavorable water availability (-€582 million) and higher maintenance costs for the nuclear fleet, EBITDA for the deregulated activities rose slightly between 2010 and 2011 (+2.6%) due to higher regulated tariffs (+€490 million) and an increase in nuclear power output (+€587 million).

2011 saw the end of the TaRTAM mechanism (at June 30, 2011) and introduction of deliveries of 30.8 TWh under the ARENH system described in section 1.2.2.4.1.1. This additional energy supply obligation means EDF must reduce either its market sales or purchase volumes on the market, depending on the supply-demand balance. As the ARENH sale price was lower than market prices, the system has a negative impact on EDF's financial statements in 2011.

EBITDA for the network activities registered a 12.9% increase despite the decline in volumes carried (reflecting the weather effects of 2010), due to higher TURPE tariffs and a fall in purchases to cover network losses.

EBITDA for the island activities increased by €41 million (+18.7%) due to the tariff increase and the rise in payments under the CSPE compensation system.

1.3.2.2.2 United Kingdom

The United Kingdom's contribution to Group EBITDA for 2011 was €1,912 million, up by 6.8% from 2010 (adjusted), with organic growth of 8.5%. The unfavorable foreign exchange effect (-€31 million) relates to the pound sterling's fall against the Euro between 2010 and 2011.

Operating performance was marked by nuclear power output of 55.8 TWh in 2011, a rise of 7.5 TWh (+15.5%) driven by better performances by the fleet in 2011 and unscheduled outages affecting 2010, essentially at the Sizewell B plant.

The resulting decrease in energy purchases more than offset the effect of the sales downturn described in section 1.3.1.2.2. EBITDA in the United Kingdom also benefited from the movement in wholesale prices, but was adversely affected by fair value adjustment of various items, including electricity sale contracts, at the time of EDF's acquisition of British Energy.

1.3.2.2.3 Italy

The **Italy** segment contributed €592 million to the Group's consolidated EBITDA, down by 26.1% (organic decline of -25.2%).

Edison contributed €480 million to consolidated EBITDA in 2011 against €693 million in 2010 (adjusted), corresponding to an organic decline of €206 million or -29.7%.

EBITDA for the electricity activities declined, due to the combined effect of early termination and expiry in late 2010 of the CIP6 subsidies for certain plants, and shrinking margins. The electricity segment nonetheless benefited from the positive contribution by renewable energies and business outside Italy.

The hydrocarbon activities' contribution to EBITDA was noticeably lower than in 2010 (adjusted), despite the progression of Exploration and Production. These activities were strongly affected by the fall in margins on gas sales to end customers, which resulted from pressure on gas sales prices in a fiercely competitive environment, as well as ongoing negotiations and arbitration procedures concerning supply costs on long-term contracts. However, the effect of shrinking margins was limited by renegotiations in February 2011 for Norwegian gas import contracts and July 2011 for Russian gas import contracts, with impacts of €26 million and €101 million respectively in 2011.

Fenice's contribution to consolidated EBITDA showed organic growth of €2 million between 2010 (adjusted) and 2011.

1.3.2.2.4 Other International

EBITDA for the **Other International** segment stood at €1,280 million in 2011, up by 18.1% compared to 2010 (adjusted), with organic growth of 19.5%.

EBITDA in **Belgium** registered organic growth of 74.4%, reflecting an increase in electricity sales volumes and better margins on electricity and gas.

In **Brazil**, EBITDA showed organic growth of 22.6%, largely associated with the favorable effects of export sales.

Poland's EBITDA saw organic growth of +10.5%, including a gain resulting from deconsolidation of Zielona Gora and Kogeneracja, which was partly counterbalanced by a fall in margins. This was explained by the increase in coal and biomass purchase prices, together with lower sales of heat due to milder weather than in 2010.

In **Hungary**, EBITDA showed organic decline (-14.3%), especially at Be ZRt where margins fell following changes in the regulatory context.

EBITDA in the **United States** saw a marked decrease (-28.0%) compared to 2010 (adjusted). The organic decline in EBITDA was -16.7% and is explained by the adverse effect of unscheduled outages at CENG, and a change in status for Unistar's new nuclear project Calvert Cliffs 3. This project has now been classified as being in the pre-development phase, the related expenses are recorded as charges and no longer capitalized (see section 1.4.3).

1.3.2.2.5 Other activities

Other activities contributed €1,929 million to Group EBITDA for 2011, €47 million more than in 2010 (adjusted), with organic growth of +3.3%.

EDF Energies Nouvelles' contribution to consolidated EBITDA amounted to €540 million²⁵, an organic increase of 17.4% from 2010 (adjusted). The principal factor in this increase was the growth of the company's wind and solar power generation business.

EBITDA at **EDF Trading** showed organic growth of 7.2% compared to 2010 (adjusted), in line with the increase in sales²⁶.

Dalkia's EBITDA saw an organic decline of €124 million (-34.4%), primarily due to the gain recognized in 2010 on the sale of Usti in the Czech Republic, and lower earnings, especially in Italy.

²⁵ €560 million at EDF Energies Nouvelles, before EDF group consolidation adjustments.

²⁶ EDF Trading's sales consist of its trading margin.

1.3.3 EBIT

75.6% increase in EBIT.

	2011	2010 (adjusted)	Variation	Variation (%)
In millions of Euros				
EBITDA	14,824	14,156	+668	+4.7
Net changes in fair value on Energy and Commodity derivatives, excluding trading activities	(116)	15	-131	n.a.
Net depreciation and amortization	(6,285)	(6,434)	+149	-2.3
Net increases in provisions for renewal of property, plant and equipment operated under concessions	(221)	(428)	+207	-48.4
(Impairment)/reversals	(640)	(1,743)	+1,103	-63.3
Other income and expenses	724	(848)	+1,572	n.a.
Operating profit (EBIT)	8,286	4,718	+3,568	+75.6

The Group's **consolidated EBIT** amounted to €8,286 million for 2011, €3,568 million higher than in 2010 (adjusted), chiefly as a result of changes in impairment (essentially concerning the United States and the United Kingdom in 2010, and Edison and Dalkia in 2011) and other income and expenses (the provision recorded in respect of the Group's Italian operations in 2010, changes in ERDF's provisions for renewal of property, plant and equipment operated under concessions, and the gain on disposal of EnBW in 2011).

1.3.3.1 Net changes in fair value on Energy and Commodity derivatives, excluding trading activities

The net changes in fair value on Energy and Commodity derivatives, excluding trading activities, fell from €15 million in 2010 (adjusted) to -€116 million in 2011. Negative changes were mainly located in the **Other activities** segment (Belgium) and in **France**, and were partly offset by positive changes in the **United Kingdom** segment.

1.3.3.2 Net depreciation and amortization

Net depreciation and amortization was down slightly compared to 2010 (adjusted) (-2.3%).

The **United Kingdom** and **Italy** both registered lower net depreciation and amortization in 2011. In the UK, this was essentially due to extension of the operating lifetimes of the Heysham 1 and Hartlepool plants authorized by the Nuclear Installations Inspectorate (NII)²⁷ in 2010, while in Italy it is explained by the fact that impairment was recorded on fossil-fired assets in 2010.

France reported higher net depreciation and amortization (+€177 million) as a result of new investments. Commissioning of new facilities in the generation fleet at EDF Energies Nouvelles also led to a €34 million increase in net depreciation and amortization.

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

The €207 million decline in **net increases in provisions for renewal of property, plant and equipment operated under concessions** in 2011 compared to 2010 is attributable to ERDF, and relates to the reduction in the scope of assets renewable during the term of concessions.

1.3.3.4 Impairment / reversals

The €1,743 million of impairment recorded in 2010 principally concerned the United States, the United Kingdom and to a lesser extent the Other activities and Italy segments.

²⁷ Part of the Office for Nuclear Regulation (ONR) since April 1, 2011.

In 2011, impairment of €640 million was recorded, concerning Edison in **Italy** (€320 million, including €280 million for Edipower), the **Other activities** segment (€267 million), and the **Other International** segment with BE ZRt in Hungary (€53 million).

Impairment in the **Other activities** segment concerns Dalkia (€151 million, for operations in Italy and to a lesser extent Spain) and EDF Energies Nouvelles (€78 million, particularly for photovoltaic solar activity in France, which was affected by changes in French regulations for solar energy since late 2010).

1.3.3.5 Other income and expenses

Other income and expenses totaled a net €724 million in 2011 compared to €848 million in 2010 (adjusted).

In 2010, this item included a €750 million allocation to provisions related to operations in Italy.

In 2011, other income and expenses mainly comprise the positive €414 million impact of changes in the estimated useful lives of certain French public distribution facilities on the provision for renewal, and the €276 million gain on sale of EnBW.

1.3.4 Financial result

In millions of Euros	2011	2010 (adjusted)	Variation	Variation (%)
Cost of gross financial indebtedness	(2,271)	(2,424)	+153	-6.3
Discount effect	(3,064)	(2,971)	-93	+3.1
Other financial income and expenses	1,555	1,499	+56	+3.7
Financial result	(3,780)	(3,896)	+116	-3.0

The financial result for 2011 is a financial expense of €3,780 million, down by €116 million from 2010 (adjusted) as a result of:

- a drop in interest expenses (-6.3%) due to action to optimize the structure of gross indebtedness;
- a €93 million increase in discount expenses, mainly in France;
- an increase in other financial income and expenses, principally related to optimization of cash and liquid assets.

1.3.5 Income taxes

Income taxes amounted to €1,305 million in 2011, corresponding to an effective tax rate of 29.0% (compared to an expense of €682 million corresponding to an effective tax rate of 83.0% for 2010 (adjusted)).

The decrease in the effective tax rate is mainly explained by the recognition in 2010 of impairment in the United States and United Kingdom, and the provision in respect of Italian operations. Excluding this provision and the impairment booked in 2010 and 2011, the effective tax rate was stable (26.6% in 2011 against 26.4% in 2010 (adjusted)).

1.3.6 Share in income of associates

The Group's share in income of associates was a positive €45 million in 2011, compared to €504 million for 2010 (adjusted). This decrease is mainly due to recognition of €320 million of impairment by Alpiq, and the decline in RTE's and Alpiq's net income between 2010 and 2011.

1.3.7 Net income attributable to non-controlling interests

Net income attributable to non-controlling interests amounted to €236 million for 2011, stable compared to 2010 (adjusted).

1.3.8 EDF net income

EDF net income for 2011 was €3,010 million, up by €2,601 million compared to 2010 (adjusted).

1.3.9 Net income excluding non-recurring items

The Group's net income excluding non-recurring items²⁸ stood at €3,520 million for 2011, €415 million (13.4%) higher than 2010 (adjusted).

Based on a constant scope of consolidation and exchange rates, the increase was 12.9%.

²⁸ Group net income excluding non-recurring items and net changes in fair value on Energy and Commodity derivatives, excluding trading activities, net of tax.

Non-recurring items and net changes in fair value on Energy and Commodity derivatives, excluding trading activities, net of tax amounted to -€510 million in 2011, mainly comprising:

- +€253 million for the gain on disposal of EnBW,
- -€320 million for the impairment on Alpiq,
- -€304 million for the impairment on Edison,
- -€135 million for the impairment on Dalkia International,
- -€217 million of impairment on shares in Veolia,
- +€266 million of reversals from provisions for renewal related to the change in estimated useful lives of certain assets,
- -€58 million of net changes in fair value on Energy and Commodity derivatives, excluding trading activities, net of tax,
- +€5 million of other items.

Non-recurring items and net changes in fair value on Energy and Commodity derivatives, excluding trading activities, net of tax amounted to -€2,696 million in 2010 (adjusted), primarily including impairment and other income and expenses, particularly concerning the United States and Italy, and the TaRTAM provision in France.

1.4 Net indebtedness, cash flows and investments

Net indebtedness comprises total loans and financial liabilities, less cash and cash equivalents and liquid assets. Liquid assets are financial assets consisting of funds or securities with initial maturity of over three months that are readily convertible into cash regardless of their maturity and are managed according to a liquidity-oriented policy. The definition of net indebtedness was revised in 2010 to reflect the Group's loans to RTE, which is accounted for under the equity method from December 31, 2010.

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

In millions of Euros	2011	2010 (adjusted)	Variation	2010 (restated)	Variation
Operating profit before depreciation and amortization (EBITDA)	14,824	14,156	668	16,623	(1,799)
Cancellation of non-monetary items included in EBITDA	(1,925)	(1,186)	(739)	(1,165)	(760)
Net financial expenses disbursed	(1,623)	(1,748)	125	(2,197)	574
Income taxes paid	(1,331)	(1,814)	483	(1,967)	636
Other items	336	491	(155)	152	184
Net cash flow from operations ⁽¹⁾	10,281	9,899	382	11,446	(1,165)
Change in working capital	(1,121)	25	(1,146)	298	(1,419)
Net operating investments (gross CAPEX less disposals)	(10,637)	(10,094)	(543)	(12,053)	1,416
Free cash flow	(1,477)	(170)	(1,307)	(309)	(1,168)
Allocation to dedicated assets, France	(315)	n.a	n.a	(1,343)	1,028
Net financial investments	3,277	n.a	n.a	3,613	(336)
Dividends paid	(2,383)	n.a	n.a	(2,353)	(30)
Other changes ⁽²⁾	8	n.a	n.a	(287)	295
(Increase)/ decrease in net indebtedness, excluding the impact of changes in scope of consolidation and exchange rates	(890)	n.a	n.a	(679)	(211)
Effect of change in scope of consolidation	2,607	n.a	n.a	9,358	(6,751)
Effect of change in exchange rates	(516)	n.a	n.a	(782)	266
Effect of other non-monetary changes ⁽³⁾	(97)	n.a	n.a	15	(112)
(Increase)/Decrease in net indebtedness	1,104	n.a	n.a	7,912	(6,808)
(Increase)/Decrease in net indebtedness of discontinued operations	0	n.a	n.a	195	(195)
Net indebtedness at beginning of period	34,389	n.a	n.a	42,496	
Net indebtedness at end of period	33,285	n.a	n.a	34,389	

(1) Operating cash flow is not an aggregate defined by IFRS as a measure of financial performance, and is not directly comparable with indicators of the same name reported by other companies. This indicator, also known as Funds From Operations (FFO), is equivalent to net cash flow from operating activities excluding changes in working capital after adjustment for the impact of non-recurring items, less net financial expenses disbursed and income taxes paid.

(2) Mainly the change in accrued interest on debt, contributions received on concessionary assets, investment subsidies and the payment to AREVA for decommissioning of the plant at La Hague (€664 million excluding taxes in 2011, €633 million in 2010).

(3) Mainly corresponds to changes in fair value and accounting reclassifications affecting net indebtedness.

In the table above:

- Figures for 2010 (adjusted) are not reported after the Free cash flow: adjustment for changes in the scope of consolidation is less relevant for the items concerned, since they are by nature related to disposals and changes in consolidation method.
- The decline in EnBW's net indebtedness is reported on a specific line in 2010 (discontinued operations), but this is not the case for RTE and the UK networks. Explanations of the variances between 2010 (adjusted) and 2011 therefore indicate the effects of the disposals undertaken in the United Kingdom and the application of the equity method to RTE.

In the following analyses, comparisons are based on:

- 2010 (restated) figures as far as the Free cash flow (see section 1.4.4),
- 2010 figures (adjusted), from allocations to dedicated assets (see section 1.4.5) to the change in net financial indebtedness (see section 1.4.9).

1.4.1 Operating cash flow

The operating cash flow amounted to €10,281 million in 2011 compared to €9,899 million in 2010, an increase of €382 million.

This change essentially reflects the rise in EBITDA (€668 million) and the decline in income taxes paid in 2011 (-€483 million), mainly resulting from variances in payment of outstanding prior-year income taxes in France and the United Kingdom and the reimbursement of tax by RTE to EDF SA under the French tax consolidation system, which was higher in 2011. These positive impacts were offset by the increase in non-monetary items (-€739 million), mainly related to fair value adjustments on hedging instruments.

1.4.2 Change in working capital

Working capital increased by €1,121 million over 2011.

This rise was caused by higher inventories (-€1,031 million), mainly concerning France (-€475 million including -€240 million for nuclear fuels), the United Kingdom (-€142 million, essentially for nuclear fuels) and EDF Energies Nouvelles (-€230 million), and the increase in the CSPE income receivable including income related to billed energy (- €1,009 million for EDF SA). It was partly mitigated by the rise in trade payables net of advances paid (€676 million), mostly recorded by EDF Trading.

The decrease in working capital in 2010 reflected the advance received under the contract with the Exeltium consortium (€1,747 million). Excluding this advance, working capital would have increased by €1,722 million in 2010.

1.4.3 Operating investments (Gross capex)

Operating investments (gross capital expenditure) amounted to €11,134 million in 2011, €860 million higher (+8.4%) than for 2010 (adjusted). Changes over the period in the Group's gross capital expenditure were as follows:

In millions of Euros	2011	2010 (adjusted)	Variation	2010 (restated)	Variation (%)
Network activities	2,754	2,558	196	3,724	(970)
Deregulated activities	3,896	3,655	241	3,655	241
Island activities	728	495	233	495	233
France	7,378	6,708	670	7,874	(496)
United Kingdom	1,179	1,078	101	1,871	(692)
Italy	318	381	(63)	381	(63)
Other International	436	553	(117)	561	(125)
Total International	1,933	2,012	(79)	2,813	(880)
Other activities	1,823	1,554	269	1,554	269
Operating investments	11,134	10,274	860	12,241	(1,107)

Capital expenditure in **France** increased by €670 million or +10.0%. In the network activities, this increase is largely explained by ERDF's investments in connections for customers (€122 million) and the quality of supply (€153 million). For the deregulated activities, the increase was concentrated in nuclear maintenance (€367 million), mainly for asset maintenance and extension of the plants' operating lives. For the island activities, the increase is attributable to investments in new production capacities under construction in Corsica, Guadeloupe (Pointe Jarry), Martinique (Bellefontaine) and Réunion island (Port Est).

In the **United Kingdom**, gross capital expenditure was up by €101 million (+9.4%). This increase is chiefly explained by the higher level of investments in the New nuclear program and renewable energies.

In **Italy**, the €63 million decline in capital expenditure (-16.5%) was principally located at Fenice (-€59 million).

In the **Other International** segment, capital expenditure was down by €117 million lower in 2011 than in 2010, primarily in the United States, Poland and Other Western European countries.

Capital expenditure in the **Other activities** was up by €269 million (17.3%). This change was mainly explained by higher investments by EDF Energies Nouvelles (€141 million), essentially in North America, and by Dalkia (€111 million).

1.4.4 Free cash flow

The Group's free cash flow at December 31, 2011 was negative at -€1,477 million, compared to -€170 million for 2010. The main factors were:

- operating cash flow of €10,281 million (see section 1.4.1),
- a decrease in working capital over 2011 (-€1,121 million, see section 1.4.2),
- gross capital expenditure of €11,134 million (see section 1.4.3).

The €1,307 million difference from 2010 (adjusted) results mainly from the advance received in April 2010 under the contract with the Exeltium consortium (€1,747 million), which had no equivalent in 2011.

1.4.5 Allocation to dedicated assets

In compliance with the French Law of June 28, 2006 on the sustainable management of radioactive materials and waste, EDF is continuing to build up a portfolio of dedicated assets to cover certain long-term nuclear obligations.

The cash allocation to dedicated assets in France for 2011 amounted to €315 million. This is less than in 2010 (-€1,028 million), due both to the impacts of allocation of 50% of RTE shares (€2.3 billion) to dedicated assets at December 31, 2010, and article 20 of the NOME law (on France's new electricity market organization) authorizing extension of the period for building up the dedicated assets portfolio to June 30, 2016. A further factor in this decline was the suspension of allocations from August 2011 due to market conditions.

1.4.6 Net financial investments (excluding the allocation to dedicated assets)

2011 was marked by a net financial divestment (excluding allocations to dedicated assets) of €3,277 million, comprising:

- gains on disposals (€4,942 million), primarily the receipt in February 2011 of €4,500 million for the sale of EnBW (the total sale price was €4,669 million including the €169 million payment already received in 2010),
- investments for external growth (-€1,996 million), mainly in France with the purchase and exchange offer for shares of EDF Energies Nouvelles (€1,462 million).

1.4.7 Dividends

Dividends paid in cash (€2,383 million) comprise the balance of the 2010 dividends (€1,069 million) and the interim dividend for 2011 (€1,053 million), and dividends paid by Group subsidiaries to their minority shareholders (€261 million), principally Centrica in the UK (€140 million). In 2010, dividends paid cash amounted to €2,353 million.

1.4.8 Changes in scope of consolidation and foreign exchange effects

Changes in the scope of consolidation primarily result from deconsolidation of EnBW's financial debt, which contributed €2,591 million of the reduction in net indebtedness.

The foreign exchange effect (appreciation of the US dollar and the pound sterling against the Euro²⁹) had an unfavorable impact of -€516 million on the Group's net financial indebtedness.

1.4.9 Net financial indebtedness

The Group's net indebtedness stood at €33,285 million at December 31, 2011 compared to €34,389 million at December 31, 2010, a decrease of €1,104 million over the year.

The main factor in this decrease was the sale of EnBW (€7,091 million), offset by the negative free cash flow (-€1,477 million, see section 1.4.4), the negative impact of the purchase and exchange offer for EDF Energies Nouvelles shares (-€1,462 million), payment of dividends (-€2,383 million, see section 1.4.7) and the final payment for decommissioning of La Hague (-€664 million excluding taxes).

1.4.10 Financial ratios

	2011	2010
Net financial debt /EBITDA	2.2	2.2 ⁽¹⁾
Net financial debt /(Financial debt + equity) ⁽²⁾	49%	48%

(1) The 2010 ratio comprises: in the denominator, adjustment of EBITDA for the effect of sale of the UK networks (10 months) and RTE's EBITDA; in the numerator, adjustment of EnBW.

(2) Equity including non-controlling interests.

²⁹ The US dollar rose by 3.3% against the Euro: December 31, 2010: \$0.7484/€1; December 31, 2011: \$0.7729/€1.
The pound sterling rose by 3.0% against the Euro: December 31, 2010: €1.1618/£1; December 31, 2011: €1.1972/£1.

1.5 Research and development

1.5.1 Research and development, patents and licenses

The primary objective of the EDF group's Research and Development (R&D) Division is to contribute to performance improvement in the operational units, and identify and prepare medium and long-term growth engines. In 2011, the Group's total R&D expenses amounted to €518 million, around 20% of which were directed into environmental protection. These expenses particularly concerned research into energy efficiency, use of electricity as a substitute for fossil energies, renewable energies and their incorporation into the electricity system, sustainable cities, the local impacts of climate change, and other environmental issues such as biodiversity, water quality, and reduction of pollution. Investments in dedicated innovation funds are also part of this strategy.

Close to 70% of EDF's R&D activities each year concern projects instigated by the operational divisions and Group subsidiaries, with the rest concentrated on medium and long-term actions for the future - one of the priority areas of R&D. EDF's Research and Development Division employed more than 2,000 members at December 31, 2011 on seven sites (three in the Paris area, one in Germany, one in the UK, one in Poland and one in China). In November 2010, EDF's Board of Directors validated the plan to establish EDF's principal R&D center on the Paris-Saclay Campus, to benefit from a stronger cooperation dynamic with the higher education and research establishments located nearby.

1.5.2 R&D priorities

EDF's R&D ambitions focus on three priority areas:

- consolidating and developing a carbon-free energy mix,
- fostering flexible, low-carbon energy demand,
- adapting the electricity system in response to the latest issues.

In the first of these areas, the key objectives are to consolidate the Group's nuclear advantage and develop renewable energies, and to examine the industrial feasibility of carbon capture and storage. In the field of nuclear, hydropower and fossil-fired generation, EDF R&D develops instruments and methods to improve operating performance and safely optimize the operating life of the Group's generation facilities, while also preparing for new, stricter environmental constraints. In the field of renewable energies, R&D seeks to identify technological breakthroughs with significant competitive value, and helps to bring the most promising technologies into industrial existence to benefit the Group, particularly in solar and marine energy. For carbon capture and storage, the role of R&D is to evaluate processes in order to take a long-term position in coal-fired generation. R&D works alongside EDF's Heat generation and engineering division on pilot schemes, for instance at Le Havre power plant units with a pilot scheme for amine-based carbon capture.

In the second priority area, R&D is innovating with new uses for electricity: mobile electricity, heat pumps, energy-saving buildings for different market segments. The R&D teams also contribute to preparation of new offers for customers who are actors in the energy markets, and propose tools and methods to develop customer knowledge, design benchmark energy solutions and improve sales management. To advance sustainable development, EDF R&D is investing in several experiments in Europe to assist future "smart cities" with local-scale infrastructure optimization, and also participates in other innovations, notably concerning mobile electricity.

The third priority area for R&D is adapting the electricity system to a carbon-free economy: this will require skills for managing intermittent supply, incorporating new uses of electricity while optimizing generation facilities and network requirements, developing energy management systems on a local scale, and optimizing electricity flows on a continental scale.

The shift towards "smart grids" is a cornerstone of these R&D efforts. To prepare for the arrival of new technologies and evolution in the energy landscape, the R&D teams draw up forecast scenarios and develop energy system models that offer better control of the supply-demand balance. They supply innovative solutions that facilitate incorporation of decentralized intermittent generation, improving management of network assets (wear and tear of equipment, metering procedures, automation to optimize quality and cost, etc). R&D is

contributing to several smart grid demonstrators in Europe, and preparing for the emergence of large continuous-current networks or “super grids” in Europe and throughout the world. EDF’s R&D thus covers themes relevant to all areas of the group (smart grids, smart cities, super grids).

1.5.3 EDF R&D: an integrated actor in French, European and worldwide research

To carry out its research and development programs, EDF R&D concludes partnerships across the whole world. In France, R&D has a total 12 shared laboratories set up over the years with academic research partners, and technical or industrial centers. Through these laboratories the Group contributes to joint research projects financed by national agencies. R&D also supports four specific chairs of research and development, including through its Foundation for Tomorrow’s Energies (*Fondation pour les Energies de Demain*). In Europe, EDF R&D is involved in some thirty projects. Working with the Energy Technology Institute, the Engineering and Physical Sciences Research Council and several UK universities, it reinforces its profile in partnership-based research in the United Kingdom.

R&D internationalization continued in 2011 with the creation of a R&D center at Beijing in China, where work focuses on large-scale Chinese smart grid demonstration projects, sustainable cities, carbon capture and storage, and certain renewable energy technologies. Development of academic and industrial partnerships in China has been stepped up in parallel with the opening of this new Center.

Also in 2011, EDF R&D entered projects for France’s Low carbon energy Excellence awards (part of the French government’s “Program for Investments with a Future” (*Programme des Investissements d’Avenir*), and participated in the Group’s smart grid demonstration projects. It also took part in two “Knowledge and Innovation Communities”, European Commission initiatives to encourage knowledge and skill transfer between the worlds of education, research and industry. The priority areas are climate change, intelligent networks and cities, storage, and renewable energies.

1.5.4 Intellectual property policy

At December 31, 2011, EDF had a portfolio of 479 patented inventions protected by 1,448 intellectual property titles in France and other countries.

EDF is also a registered trademark in more than 60 countries.

1.6 Management and control of market risks

1.6.1 Management and control of financial risks

This chapter sets forth the policies and principles for management of the Group's financial risks (liquidity, interest rate, foreign exchange rate, equity and counterparty risks), defined in the Financial Management Framework and the Group counterparty risk management policy set up by the EDF group. These principles apply only to EDF and operationally controlled subsidiaries (i.e. entities other than Edison, Dalkia and CENG) or subsidiaries that do not benefit by law from specific guarantees of independent management (i.e. entities other than RTE and EDF Réseau Distribution France-ERDF). In compliance with IFRS 7, the following paragraphs describe the nature of risks resulting from financial instruments, based on analyses of sensitivities and credit (counterparty) risks.

In view of the Group's international development, a dedicated body was formed at the beginning of 2002 – the Financial Risks Control Division (*Département Contrôle des Risques Financiers* - DCRF) - to control financial risks at Group level by ensuring correct application of the principles of the Financial Management Framework. This body also has the task of carrying out a second-level check (methodology and organization) of EDF and operationally controlled group subsidiaries, and an operational verification of financing activities at parent company level.

The DCRF issues daily monitoring reports of risk indicators relevant to activities in EDF's trading room. Regular internal audits are carried out to ensure controls are effectively applied.

1.6.1.1 Liquidity position and management of liquidity risks

Liquidity position

At December 31, 2011, the Group's liquidities totaled €14,767 million and available credit lines amounted to €10,179 million. The Group also has access to financial resources through short-term issues and bond issue programs.

For 2012, the Group's scheduled debt repayments (principal and interest) are forecast at €9,071 million at December 31, 2011, including €2,673 million for bonds.

At December 31, 2011, no Group company was in default on any borrowing.

Management of liquidity risks

As part of its policy to manage liquidity, finance its operating investment and external growth program and reinforce long-term debt, the Group undertook bond issues during 2011 (for details see note 39.2.1 to the consolidated financial statements at December 31, 2011 "Changes in loans and other financial liabilities"). These bonds were issued as part of the EMTN program in respective amounts of €300 million and £1,250 million, plus a *schuldschein* bond for €188 million. RTE also issued a €500 million bond on February 3, 2011, followed by a further €250 million on October 28, 2011.

The average maturity of consolidated debt was thus 9.2 years at December 31, 2011 compared to 8.9³⁰ years at December 31, 2010, and EDF SA debt now has average maturity of 10.4 years compared to 10.2 years at December 31, 2010.

At December 31, 2011, the residual maturities of financial liabilities (including interest payments) are as follows under IAS 39 (values based on exchange and interest rates at December 31, 2011):

³⁰ Change of methodology at June 30, 2011: average maturity is calculated based on quarterly flows, instead of annual flows in 2010.

(in millions of Euros)	Debt	Hedging instruments ⁽¹⁾		Guarantees given on bonds
		Interest rate swaps	Currency swaps	
2012	9,071	(44)	70	13
2013 - 2016	22,297	(171)	149	26
2017 and later	43,465	(316)	48	119
TOTAL	74,833	(531)	267	158
- Debt repayment	48,947			
- Interest expense	25,885			

(1) Data on hedging instruments include both assets and liabilities.

The EDF group was able to meet its financing needs by conservative liquidity management, and obtained financing on satisfactory terms.

A range of specific levers are used to manage the Group's liquidity risk:

- the Group's cash pooling system, which centralizes cash management for controlled subsidiaries. The subsidiaries' cash balances are made available to EDF SA in return for interest, so as to optimize the Group's cash management and provide subsidiaries with a system that guarantees them market-equivalent financial terms,

- centralization of financing for controlled subsidiaries at the level of the Group's cash management department. Changes in subsidiaries' working capital is financed by this department in the form of stand-by credit lines provided for subsidiaries, which may also receive revolving credit from the Group. In this context, EDF Energy and EDF Trading now have credit lines with EDF. The investment subsidiary EDF Investissements Groupe (EDF IG), set up in partnership with the bank Natixis Belgique Investissements, also provides medium-term financing for EDF group subsidiaries, arranged independently by EDF IG. The company sets its own terms, which are the same as the subsidiary would have in an arm's-length market transaction,

- active management and diversification of financing sources used by the Group: the Group has access to short-term resources on various markets through programs for French commercial paper (*billets de trésorerie*), US commercial paper and Euro market commercial paper. For EDF SA, the ceilings for these programs are €6 billion for its French commercial paper, \$10 billion for its US commercial paper and \$1.5 billion for its Euro market commercial paper.

At December 31, 2011 the amount of commercial paper outstanding was €1,489 million for French commercial paper, and \$2,434 million for US commercial paper. No Euro market commercial paper was outstanding.

RTE has a short-term French commercial paper program for maximum amounts of €1.5 billion, with €300 million outstanding at December 31, 2011. EDF Energy no longer draws on its short-term issue program as this subsidiary is now included in the centralized financing arrangements.

EDF has access to the world's main capital markets: the Euro markets through its EMTN (Euro Medium Term Note) program, which currently has a ceiling of €20 billion, particularly for Euro and sterling issues; and the domestic markets used for stand-alone issues in US dollars (144A), yen (samurai bonds) and Swiss francs. RTE and Edison also have their own EMTN programs, with ceilings of €7.5 billion and €3 billion respectively. EDF Energy no longer has an EMTN program.

EDF also has a €500 million credit line with the European Investment Bank. A total of €350 million was drawn on this line during 2011, in addition to the €100 million already drawn in 2010, bringing the total credit consumed to €450 million by the end of 2011.

The table below sets forth the Group's borrowings of more than €750 million or the equivalent value in other currencies by maturity at December 31, 2011:

Entity	Issue date ⁽³⁾	Maturity	Nominal amount (in millions of currency units)	Currency	Rate
EDF	11/2008	01/2013	2,000	EUR ⁽¹⁾	5.6%
EDF	01/2009	01/2014	1,250	USD	5.5%
EDF	07/2009	07/2014	3,269	EUR	4.5%
EDF	01/2009	01/2015	2,000	EUR ⁽¹⁾	5.1%
EDF	10/2001	10/2016	1,100	EUR	5.5%
EDF	02/2008	02/2018	1,500	EUR	5.0%
EDF	01/2009	01/2019	2,000	USD	6.5%
EDF	01/2010	01/2020	1,400	USD	4.6%
EDF	05/2008	05/2020	1,200	EUR	5.4%
EDF	01/2009	01/2021	2,000	EUR	6.3%
EDF	09/2009	09/2024	2,500	EUR ⁽²⁾	4.6%
EDF	11/2010	11/2025	750	EUR	4.0%
EDF	04/2010	04/2030	1,500	EUR ⁽²⁾	4.6%
EDF	02/2003	02/2033	850	EUR	5.6%
EDF	06/2009	06/2034	1,500	GBP	6.1%
EDF	01/2009	01/2039	1,750	USD	7.0%
EDF	11/2010	11/2040	750	EUR	4.5%
EDF	10/2011	10/2041	1,250	GBP	5.5%
EDF	09/2010	09/2050	1,000	GBP ⁽²⁾	5.1%

(1) These two bonds were partially redeemed after two €750 million issues in 2010.

(2) These bonds were partly redeemed in 2011.

(3) Date funds were received.

The entities with syndicated loan facilities at December 31, 2011 are EDF, Edison and RTE:

- EDF has two syndicated loans: the first for €3 billion, valid until March 2012; the second for €4 billion maturing in November 2015, extended during 2011 for a further year to November 2016, but with a reduction in the available amount for the final year to €3.879 billion. No drawings had been made on either of these facilities at December 31, 2010.

- Edison has two syndicated loans: on the first, for €1.5 billion valid until 2013, a drawing of €200 million was made in November 2011 in addition to the €850 million outstanding in the first half of 2011. The second has a ceiling of €700 million and was set up in June 2011 on a club deal basis; a drawing of €600 million was made in the second half of 2011, in addition to the €100 million drawn at June 30, 2011.

- RTE has one syndicated loan for €1 billion, valid until May 2013, comprising a €300 million swingline, and another syndicated loan for €500 million was set up in June 2010 and renewed in 2011 until June 22, 2012. No drawings had been made on these credit facilities at December 31, 2011.

1.6.1.2 Credit ratings

The financial ratings agencies Standard & Poor's, Moody's and Fitch Ratings attributed the following long-term and short-term ratings to EDF group entities at December 31, 2011:

Company	Agency	Long-term rating	Short-term rating
EDF	Standard & Poor's	AA – ⁽¹⁾ , creditwatch negative	A-1 +
	Moody's	Aa3, stable outlook	P-1
	Fitch Ratings	A+, stable outlook	F1
RTE	Standard & Poor's	AA- ⁽²⁾ , creditwatch negative	A-1 +
EDF Trading	Moody's	A3, stable outlook	n.a
EDF Energy	Standard & Poor's	A, negative outlook	A-1
	Moody's	A3, stable outlook	P-2
	Fitch Ratings	n.a	n.a
Edison SpA	Standard & Poor's	BBB- ⁽³⁾ , creditwatch negative	A-3
	Moody's	Baa3 ⁽⁵⁾ , creditwatch negative	N/A
	Fitch Ratings	BB- ⁽⁴⁾ , creditwatch negative	B

N/A = non applicable

(1) On July 7, 2011, Standard & Poor's raised the long-term rating for EDF from A+ to AA- with a stable outlook, as State support was judged more likely in the event of difficulties; on December 15, 2011, Standard & Poor's placed EDF on creditwatch negative, associated with putting France on creditwatch.

(2) On October 27, 2011, Standard & Poor's raised the long-term rating for RTE from A+ to AA- with a stable outlook, as State support was judged more likely in the event of difficulties; on December 8, 2011, Standard & Poor's placed RTE creditwatch negative, associated with putting France on creditwatch.

(3) On December 5, 2011, Standard & Poor's downgraded the long-term rating for Edison from BBB to BBB- due to the negative outlook for the gas business, and the deferral of the shareholder agreement to late December 2011. This downgrade was associated with a creditwatch negative.

(4) On December 23, 2011, Fitch downgraded the long-term and short-term ratings for Edison SpA due to the deferral of the shareholder agreement.

(5) On December 7, 2011, Moody's announced that it was putting Edison SpA on creditwatch due to the shareholders' difficulty in reaching an agreement over Edison's governance strategy.

On January 17, 2012, EDF and RTE were downgraded to A+/A-1 (stable outlook) by Standard & Poor's. This decision followed the downgrade of France's credit rating.

1.6.1.3 Management of foreign exchange rate risk

Due to the diversification of its activities and geographical locations, the Group is exposed to the risk of exchange rate fluctuations, which may have an impact on the translation differences affecting balance sheet items, Group financial expenses, equity and net income.

To limit exposure to foreign exchange risks, the Group has introduced the following management principles:

- Local currency financing: To the extent possible given the local financial markets' capacities, each entity finances its activities in its own accounting currency. When financing is contracted in other currencies, derivatives may be used to limit foreign exchange risks.

- Association of assets and liabilities: the net assets of subsidiaries located outside the Euro zone expose the Group to a foreign exchange risk. The foreign exchange risk in the consolidated balance sheet is managed either by matching with liabilities for acquisitions in the same currency, or by market hedging involving use of financial derivatives. Hedging of net assets in foreign currencies complies with risk/return targets, and the hedging rate varies from 70% to 90% depending on the currency. If no hedging instruments are available, or if hedging costs are prohibitive, the foreign exchange positions remain open and the risk on such positions is monitored by sensitivity calculations.

- Hedging of operating cash flows in foreign currencies: in general, the operating cash flows of EDF and its subsidiaries are in the relevant local currencies, with the exception of flows related to fuel purchases which are primarily in US dollars, and certain flows related to purchases of equipment, which concern lower amounts. EDF

and the main subsidiaries concerned by foreign exchange risks (EDF Energy, EDF Trading, Edison, EDF Energies Nouvelles) hedge firm or highly probable commitments related with these future operating cash flows.

After taking into account the financing and foreign exchange risk hedging policy, the Group's gross debt at December 31, 2011 breaks down as follows by currency after hedging: 53% in Euros, 29% in pounds sterling and 13% in US dollars. The balance of 6% includes the Swiss franc, the Hungarian forint, the Polish zloty, the Brazilian real and the Japanese yen.

Gross debt structure at December 31, 2011, by currency, before and after hedging

December 31, 2011 In millions of Euros	Initial debt structure	Impact of hedging instruments ⁽¹⁾	Debt structure after hedges	% of debt
EUR	29,479	(3,129)	26,350	53%
USD	8,890	(2,401)	6,489	13%
GBP	6,822	7,559	14,381	29%
Other currencies	4,843	(2,029)	2,814	6%
TOTAL	50,034	-	50,034	100%

(1) Hedges of liabilities and net assets of foreign subsidiaries.

The table below presents the impact on equity of an unfavorable variation in exchange rates on the Group's gross debt at December 31, 2011. Sensitivity to foreign exchange risks remains stable overall compared to 2010.

Sensitivity of the Group's gross debt to foreign exchange rate risks

December 31, 2011 In millions of Euros	Debt after hedging instruments converted into Euros	Impact of a 10% unfavorable variation in exchange rates	Debt after a 10% unfavorable variation in exchange rates
EUR	26,350	-	26,350
USD	6,489	649	7,138
GBP	14,381	1,438	15,819
Other currencies	2,814	281	3,095
TOTAL	50,034	2,368	52,402

Due to the Group's foreign exchange risk hedging policy for liabilities, the income statement for companies controlled by the Group is marginally exposed to foreign exchange rate risks.

The table below sets forth the foreign exchange position relating to net non-operating investments in foreign currency of the Group's principal subsidiaries at December 31, 2010.

Net asset position

December 31, 2011 In millions of currency units	Assets	Bonds	Derivatives	US CP	Net position after management (Assets)
USD	5,248	4,000	198	502	548
CHF (Switzerland)	2,201	1,706			495
HUF (Hungary)	112,195		78,536		33,659
PLN (Poland)	2,556		1,789		767
GBP (United Kingdom)	14,262	5,285	6,124		2,853
BRL (Brazil)	692				692
CNY (China)	5,790				5,790

The assets in the above table are the net assets of the Group's foreign subsidiaries in foreign currencies at September 30, 2011, adjusted for changes in the fair value of cash flow hedges and available-for-sale financial assets recorded in equity, and changes in the fair value of financial instruments recorded in income at

December 31, 2011. The hedges shown above are bonds, derivatives and commercial paper issues in foreign currencies outstanding at December 31, 2011.

The following table sets forth the risk of foreign exchange loss in equity on the overall net position relating to the net non-operating investments in foreign currencies of the Group's principal subsidiaries at December 31, 2011, assuming unfavorable, uniform exchange rate variations of 10% against the Euro. Net positions are converted at the closing rate and impacts are reported in absolute value.

Sensitivity of net assets to exchange rate risks

In millions of currency units	December 31, 2011			December 31, 2010		
	Net position after management, in currency	Net position after management, converted into Euros	Impact on equity of a 10% variation in exchange rates	Net position after management, in currency	Net position after management, converted into Euros	Impact on equity of a 10% variation in exchange rates
USD	548	424	42	1,227	918	92
CHF (Switzerland)	495	407	40	172	138	14
HUF (Hungary)	33,659	107	12	25,449	92	9
PLN (Poland)	767	172	17	566	142	14
GBP (United Kingdom)	2,853	3,416	341	2,068	2,403	240
BRL (Brazil)	692	286	29	686	288	29
CNY (China)	5,790	710	71	5,187	588	59

The foreign exchange risk on available-for-sale securities is mostly concentrated in EDF SA's dedicated assets portfolio, which is discussed in section 1.6.1.6., "Management of financial risk on EDF's dedicated assets portfolio".

The foreign exchange risk associated with short-term investments and operating liabilities in foreign currencies was not significant for the Group at December 31, 2011.

1.6.1.4 Management of interest rate risk

The Group's exposure to interest rate fluctuations covers two types of risk: a risk of change in the value of fixed-rate financial assets and liabilities, and a risk of change in the cash flows related to floating-rate financial assets and liabilities.

To limit exposure to interest rate risk, the Group (apart from entities it does not control operationally, notably Edison and CENG) fixes principles as part of its general risk management policy, designed to limit the risk of change in the value of assets invested or possible increases in financial expenses. Some of the debt is variabilized and the distribution of exposure between fixed and floating rates is monitored with reference to asset/liability management criteria and expected fluctuations in interest rates. This distribution may involve the use of interest rate derivatives for hedging purposes.

The Group's debt after hedging instruments at December 31, 2011 comprised 80% of debt bearing interest at fixed rates and 20% at floating rates.

A 1% uniform annual rise in interest rates would generate an approximate €100 million increase in financial expenses at December 31, 2011, based on gross floating-rate debt after hedging.

The average cost of Group debt (weighted interest rate on outstanding amounts) was 4.3% in 2011.

The table below sets forth the structure of Group debt and the impact of a 1% variation in interest rates at December 31, 2011. The impact of interest rate fluctuations remains stable compared to 2010.

Group debt structure and sensitivity to interest rates

December 31, 2011 In millions of Euros	Initial debt structure	Impact of hedging instruments	Debt structure after hedges	Impact on income of a 1% variation in interest rates
Fixed rate	42,614	(2,630)	39,984	-
Floating rate	7,420	2,630	10,050	100
TOTAL	50,034	-	50,034	100

Interest rate variations on fixed-rate debt have no accounting impact.

Concerning financial assets, the table below presents the interest rate risk on floating-rate bonds and negotiable debt securities at EDF SA, and their sensitivity to interest rate risks (impact on net income).

December 31, 2011 In millions of Euros	Value	Impact on income of a 1% variation in interest rates	Value after a 1% variation in interest rates
FLOATING-RATE SECURITIES	3,677	37	3,640

1.6.1.5 Management of equity risks

The equity risk is concentrated in the following areas:

Coverage of EDF's nuclear obligations

Analysis of the equity risk is presented in section 1.6.1.6, "Management of financial risk on EDF's dedicated assets portfolio".

Coverage of employee benefit commitments for EDF, EDF Energy and British Energy

Assets covering EDF's employee benefit liabilities are partly invested on the international and European equities markets. Market trends therefore affect the value of these assets, and a downturn in equity prices could lead EDF to recognize actuarial losses above the "corridor" in income. 26% of the assets covering EDF's employee benefit liabilities were invested in equities at December 31, 2011, amounting to €1.9 billion.

At December 31, 2011, the two pension funds sponsored by EDF Energy (*EDF Energy Pension Scheme* and *EDF Energy Group Electricity Supply Pension Scheme*) were invested to the extent of 36% in equities, representing an amount of £242 million of equities.

At December 31, 2011, the British Energy pension funds were invested to the extent of 33% in equities, representing an amount of £1,160 million of equities.

CENG fund

CENG is exposed to equity risks in the management of its funds established to cover nuclear plant decommissioning and employee benefit obligations.

EDF's long-term cash management

EDF continued to reduce the portion of equity-correlated investments in its long-term cash management instruments. At December 31, 2011, these investments amounted to a residual €2 million.

Direct investment securities

At December 31, 2011, EDF's investment in Veolia Environnement amounted to €174 million, with estimated volatility of 37.7% (annualized volatility of monthly returns observed over three years).

At December 31, 2011, EDF's investment in AREVA amounted to €164 million, with estimated volatility of 27.6% (annualized volatility of monthly returns observed over three years).

1.6.1.6 Management of financial risk on EDF's dedicated assets portfolio

The dedicated assets have been built up progressively by EDF SA since 1999 to cover future decommissioning expenses for the nuclear plants currently in operation, and the long-term storage of radioactive waste.

This dedicated assets portfolio, for which guiding principles were redefined in the law of June 28, 2006 on sustainable management of radioactive materials and waste, is managed under the supervision of the Board of Directors and its Committees (Nuclear Commitments Monitoring Committee, Audit Committee).

The **Nuclear Commitments Monitoring Committee (CSEN)** is a specialized Committee set up by EDF's Board of Directors when it updated its internal rules on January 25, 2007, in anticipation of the provisions of article 9 of the decree of February 23, 2007.

A **Nuclear Commitment Financial Expertise Committee (CEFEN)** exists to assist the company and its governance bodies on questions of association of assets and liabilities and asset management. The members of this Committee are independent of EDF. They are selected for their skills and diversity of experience, particularly in the fields of asset/liability management, economic and financial research, and asset management.

In 2011, **dedicated assets** received cash allocations of €315 million, compared to €3,667 million in 2010, including €2,324 million for the Group's 50% investment in RTE (see note 48 to the consolidated financial statements at December 31, 2011).

In view of the economic and financial environment as the Euro zone crisis developed, allocations were suspended in the final quarter to allow for the changes in asset investment principles.

Disbursements for decommissioning expenses incurred in 2011 were financed by the dedicated assets portfolio to the extent of €378 million, compared to €362 million in 2010.

The governance principles set forth the decision-making and control structure for management of dedicated assets. The principles governing the assets portfolio's structure, selection of financial managers, and the legal, accounting and tax structure of the funds are also defined.

Strategic asset allocation is based on an asset/liability review carried out to define the most appropriate portfolio model for financing nuclear expenses. A benchmark index is also set for performance monitoring and control of the dedicated assets excluding RTE (the financial portfolio). Strategic allocation is regularly reviewed, in principle every three years unless circumstances require otherwise. Currently, assets are allocated as follows: 50% to RTE shares, and the rest to a financial portfolio consisting 50% of international equities and 50% of bonds.

The financial portfolio contains two sub-portfolios, "equities" and "bonds", themselves divided into "secondary asset classes" or "pockets" that correspond to specific markets. A third sub-portfolio, "cash", is used to prepare and supply the disbursements related to amounts reversed from provisions for plants currently being decommissioned.

Tactical asset management is organized around four main themes:

- supervision of exposure between the two "equities" and "bonds" classes,
- choice of exposure by geographical area,
- marginal investment in alternative vehicles to those used in the strategic allocation,
- selection of investment funds, aiming for diversification:
 - o by style (growth securities, securities with below-par market value, high-return securities),
 - o by capitalization (major stocks, medium and small stocks),
 - o by investment process (macroeconomic and sector-based approach, selection of securities on a "quantitative" basis, etc.),
 - o by investment vehicle (for compliance with maximum investment ratios).

The allocation policy established by the Operational Management Committee³¹ was developed on the basis of macro-economic prospects for each market and geographical area, and a review of market appreciation in different markets and market segments.

Content and performance of EDF's dedicated assets portfolio

At December 31, 2011, the total value of the portfolio was €15,659 million compared to €15,815 million in 2010.

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

Categories In millions of Euros	December 31, 2011		December 31, 2010	
	Book value ⁽¹⁾	Stock market or realizable value	Book value	Stock market value
1° Bonds, receivables and other securities issued or guaranteed by an EU member state or OECD country	4,168	4,448	3,040	3,342
2° Bonds, negotiable bills, etc issued by private sector entities	1,099	1,155	682	737
3° Equities, shares and other securities traded on a recognized market, giving access to the capital of companies whose head office is located in the territory of a EU member state or OECD country	65	65	117	125
4° Shares or units in funds investing in assets referred to in 1 to 3	6,541	6,865	7,827	8,272
5° Shares or units in funds investing principally in assets other than those referred to in 1 to 3	658	777	749	1,023
6° Real estate shares (shares in unlisted real estate companies)	None	None	None	None
7° Deposits with BNP Paribas Securities Services	0.055	0.055	0.042	0.042
Other payables and receivables (dividends receivable, management fees, currency hedges, etc)	-19	-19	-9	-9
TOTAL FINANCIAL PORTFOLIO	12,514	13,291	12,406	13,491
RTE shares allocated to dedicated assets	2,015	2,368	2,015	2,324
TOTAL DEDICATED ASSETS	14,421	15,659	14,421	15,815

(1) Sources: BNP Paribas Securities Services for the portfolio excluding RTE, net book value in EDF's individual accounts for 50% of RTE shares.

Breakdown by sub-portfolio and performance in 2011

The breakdown of EDF's dedicated assets portfolio at December 31, 2011 and 2010 is as follows:

	December 31, 2011		December 31, 2010
	Incl. RTE	Excl. RTE ⁽¹⁾	
Investments in equities	36.9%	43.5%	50.5%
Investments in bonds	48.0%	56.5%	49.5%
RTE shares allocated to dedicated assets	15.1%	-	-
TOTAL	100%	100%	100%

(1) Relative shares of equities and bond sub-portfolios, excluding RTE shares.

³¹ A permanent internal committee for evaluation, consultation and operational decision-making for management of dedicated assets.

The table below shows the performance by sub-portfolio at December 31, 2011 and at December 31, 2010.

In millions of Euros	Dec 31, 2011 Stock market or realizable value	Performance for 2011		Dec 31, 2010 Stock market value	Performance for 2010	
		Portfolio	Benchmark index ⁽¹⁾		Portfolio	Benchmark index
Equities sub-portfolio	5,783	-6.98%	-3.98%	6,807	+16.15%	+14.03%
Bonds sub-portfolio	6,615	+3.90%	+3.41%	6,683	+2.50%	+0.99%
Cash sub-portfolio	893	+1.11%	+0,89%	1	+0.49%	+0.44%
Total financial portfolio	13,291	-1.62%	-0.06%	13,491	+8.79%	+7.60%
RTE shares allocated to dedicated assets	2,368			2,324		
TOTAL DEDICATED ASSETS	15,659	-0.52%		15,815		

(1) Benchmark index: 50% MSCI World DN EUR hedged for the equities sub-portfolio, Citigroup EGBI for the bonds sub-portfolio, 50% MSCI World DN EUR hedged + 50% Citigroup EGBI for the total portfolio.

As the sovereign debt crisis that had affected Europe since 2010 amplified in 2011, and oil prices rose as a result of the upheaval in North Africa and uncertainties over US budget and monetary policies, EDF adopted a prudent investment policy in 2011, particularly in the second half of the year. Exposure was reduced in countries affected by their level of sovereign debt (negligible investment in Greece, Portugal, Ireland and Spain, limited investments in Italy), positions were streamlined on the equity markets (43.5% of the financial portfolio at December 31, 2011 compared to 50.5% in 2010), and cash assets were reinforced (6.7% of the financial portfolio at the year-end).

While the portfolio performance was in line with its benchmark in early November 2011, this prudent management approach brought performance below the benchmark in a rising equity market. The RTE shares allocated to dedicated assets fully played their buffer role in the overall portfolio performance for 2011.

Against this background, the overall after-tax performance of dedicated assets (impact on reserves and net income) was -€15.2 million: -€147.9 million on the financial portfolio (-€231.5 million before tax) and +€132.8 million for the RTE shares allocated to dedicated assets).

The distribution of the portfolio between reserved funds and other financial instruments is also presented in note 48 to the consolidated financial statements at December 31, 2011.

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

The market value of the "equities" sub-portfolio in EDF's dedicated assets portfolio was €5,782 million at December 31, 2011. The volatility of the "equities" sub-portfolio can be estimated on the basis of the volatility of its benchmark index, the MSCI World index, which at December 31, 2011 was 19.06% based on 52 weekly performances, compared to 15.5% at December 31, 2010. Applying this volatility to the value of equity assets at the same date, the Group estimates the annual volatility of the equities portion of dedicated assets at €1,102 million. This volatility is likely to affect the Group's equity.

At December 31, 2011, the sensitivity of the "bonds" sub-portfolio (€6,615 million) was 4.81, i.e. a uniform 100 base point rise in interest rates would result in a €318 million decline in market value which would be recorded in consolidated equity. While this sensitivity was higher than in 2010 (4.65), it remained well below the sensitivity of the benchmark index (6.22).

1.6.1.7 Management of counterparty/credit risk

Counterparty risk is defined as the total loss that the EDF group would sustain on its business and market transactions if a counterparty defaulted and failed to perform its contractual obligations.

The Group has a counterparty risk management policy which applies to the parent company and all operationally controlled subsidiaries. This policy defines the organization of counterparty risk management and monitoring, and reporting procedures and circuits. It involves monthly consolidation of the exposures on financial and energy markets and half-yearly consolidation for all activities. The policy also includes close supervision of Group counterparties (daily review of alerts, special cautionary measures for certain counterparties).

These supervision procedures proved their robustness during the financial crisis, when the Group moved to a more frequent (quarterly) consolidation of all counterparty risks.

The table below gives details, by rating, of the EDF group's consolidated exposure at the end of September 2011. 85% of the main counterparties for the Group's business qualify as "investment grade", a stable proportion overall compared to the consolidated risk at September 30, 2010.

	AAA	AA	A	BBB	BB	B	CCC/C	Unrated	Total
September 30, 2011	9%	20%	45%	11%	2%	0%	0%	13%	100%
September 30, 2010	10%	23%	50%	5%	1%	0%	0%	11%	100%

The exposure to counterparty risk by nature of activity is distributed as follows:

	Purchases	Insurance	Distribution and sales	Cash and asset management	Fuel purchases and energy trading	Total
September 30, 2011	4%	34%	7%	40%	15%	100%
September 30, 2010	5%	45%	8%	34%	8%	100%

Exposure in the energy trading activities is concentrated at EDF Trading. Counterparty risk management for this subsidiary has explicit limits for each counterparty according to its financial robustness. A range of means are used to reduce counterparty risk at EDF Trading, primarily position netting agreements, cash-collateral agreements and establishment of guarantees from banks or affiliates.

Particularly for counterparties dealing with EDF's trading room, the Financial Risk Control team has drawn up a framework specifying counterparty authorization procedures and the methodology for calculation of allocated limits (which must correspond to requirements). The level of exposure can be consulted in real time and is systematically monitored on a daily basis. The suitability of limits is reviewed without delay in the event of an alert or unfavorable development concerning a counterparty.

The credit risk related to trade receivables is presented in note 26 to the 2011 consolidated financial statements ("Trade receivables").

In the context of the Euro zone's financial crisis, the prudent management policy for EDF's cash investments was continued for countries neighboring the zone. Exposure remained nil for Ireland, Portugal and Greece, and there was no longer any exposure to sovereign risk for Italy and Spain at December 31, 2011. Some exposure remains as regards the Italian and Spanish banks, but the amounts involved are relatively limited and have short maturities (no later than April 2013), and the banks are considered systemic by the Financial Stability Board, meaning they have low risk of default.

1.6.2 Management and control of energy market risks

1.6.2.1 Framework for management and control of energy market risks

In conjunction with the opening of the end customer market, development of the wholesale markets and on the international scene, the EDF group is exposed to price variations on the energy market which can have a significant impact on its financial statements.

Consequently, the Group has an "energy markets" risk policy (for electricity, gas, coal, oil products and CO₂ emission quotas) applicable to EDF and entities in which it has operational control.

This policy aims to:

- define the general framework in which the various Group entities carry out their operational activities (energy generation, optimization and distribution), and their interaction with EDF Trading,
- consolidate the exposure of the various entities controlled by the Group on the structured energy-related markets,
- implement a coordinated hedging policy at Group level.

At Edison, which at December 31, 2011 is not operationally controlled by EDF, the energy market risk policy and associated control process are reviewed by the company's governance bodies. CENG, which similarly is not operationally controlled by EDF at December 31, 2011, partly applies the EDF group's policy for energy market risks.

1.6.2.2 Organization of risk control

The process for controlling energy market risks for entities operationally controlled by the Group is based on:

- a governance and market risk exposure measurement system, clearly separating management and risk control responsibilities,
- an express delegation to each entity, defining hedging strategies and establishing the associated risk limits. This enables the COMEX to set an annual Group risk profile consistent with the financial objectives, and thus direct operational management of energy market risks within the Group, generally over 3-year market horizons, and
- a specific control process, given its close interaction with the decisions made within the generation and supply businesses. This process involves Group management and is based on a risk indicator and measurement system incorporating escalation procedures in the event risk limits are exceeded.

The Group's exposure to energy market risks through operationally controlled entities is reported to the COMEX on a monthly basis. The control processes are regularly evaluated and audited.

1.6.2.3 Principles for operational management and control of energy market risk

The principles for operational management and control of energy market risks for operationally controlled entities and CENG are based on clearly-defined responsibilities for managing those risks, distinguishing between management of assets (generation and supply) and trading.

Managers of generation and supply assets are responsible for implementing a risk management strategy that minimizes the impact of energy market risks on their financial statements (the accounting classifications of these hedges are described in note 42 to the consolidated financial statements). However, a residual risk remains that cannot be hedged on the market due to factors such as insufficient liquidity or market depth, uncertainty over volumes, etc.

For operationally controlled entities in the Group, positions on the energy markets are taken predominantly by EDF Trading, the Group's trading entity, which operates on the markets on behalf of other group entities and for the purposes of its own trading activity. As such, EDF Trading is subject to a strict governance and control framework in line with current practices in trading companies.

EDF Trading trades on organized or OTC markets in derivatives such as futures, forwards, swaps and options (regardless of the accounting classification applied at Group level). Its exposure on the energy markets is strictly controlled through daily limit monitoring overseen by the subsidiary's management and by the entity in charge of energy market risk control at Group level. Automatic escalation procedures also exist to inform members of EDF Trading's Board of Directors of any breach of risk limits (value at risk limit) or loss limits (stop-loss limits). Value At Risk (VaR) is a statistical measure of the company's potential maximum loss in market value on a portfolio in the event of unfavorable market movements, over a given time horizon and with a given confidence interval. EDF Trading assesses VaR by the Monte Carlo method, which refers to historical volatilities and correlations estimated on the basis of market prices observed over the 40 previous trading days. The stop-loss limit stipulates the acceptable risk for the trading business by setting a maximum level of loss over a rolling three-month period. If the limit is exceeded, EDF Trading's Board of Directors takes appropriate action, which may include closing certain positions.

In 2011, EDF Trading's commitment on the markets was subject to a daily VaR limit of €45 million³² (with a daily confidence interval of 97.5%), and a stop-loss limit of €225 million³³. VaR fluctuated between €4.3 million and €18.7 million over the year.

The table below shows the VaR and stop-loss limits for 2011 and 2010:

In millions of Euros	H2 2011	H1 2011	H2 2010	H1 2010
VaR limit (97.5% 1-day)	45	45	45	45
Stop-loss limit	225	225	225	
Minimum VaR	4.3	4.7	3.8	6.9
Average VaR	6.9	10.4	7.3	14.8
Maximum VaR	10.4	18.7	11.3	23.0

In a context of low market volatility, the VaR and stop-loss limits were not exceeded in 2011 and EDF Trading's risks remained within the limits of the mandate from EDF at all times. The stop-loss has never been triggered since its introduction.

At Edison, the governance model³⁴ separates risk management and control from operational trading activities. For operational purposes, Edison calculates its net exposure³⁵ based on its entire portfolio of assets and contracts (industrial portfolio), other than those related to trading for the company's own purposes (trading portfolio).

The level of economic capital engaged in the markets, expressed in terms of Profit at Risk (PaR)³⁶, is then determined using this net exposure.

To meet obligations under IFRS 7, Edison measures the maximum potential decrease in the fair value of financial contracts hedging the risks on its industrial portfolio using a PaR with a confidence interval of 97.5%. For trading activities, which concern a separate portfolio distinct from the industrial portfolio, Edison sets a daily limit of 95% VaR. Like the industrial portfolio, Edison's trading portfolio was allocated an amount of economic capital³⁷. This allocation takes account of the risks related to the portfolio's VaR and the risks estimated through stress tests on any non-liquid structured positions³⁸.

For an analysis of the fair value of the Group's commodity hedging derivatives, see notes 42.4.3 and 42.5 to the consolidated financial statements for the year ended December 31, 2011. For details of commodity contracts not classified as hedges by the Group, see note 43.3 to the same consolidated financial statements.

1.6.3 Management of insurable risks

The EDF group has an extensive insurance program that covers EDF SA and controlled subsidiaries as they are integrated, including ERDF and RTE. The coverage, exclusions, excesses and limits are appropriate to each business and the subsidiaries' specificities.

The main insurance programs cover:

- Conventional damage to Group property: EDF is a member of OIL³⁹. Additional insurance coverage is provided by EDF's captive insurance subsidiary Wagram Insurance Company Ltd⁴⁰, other insurers and reinsurers.

³² The VaR takes into account diversification of risks between the activities of EDF Trading and the activities of EDF Trading North America. This limit does not take into account the diversification associated with the joint venture Chubu, whose VaR limit of €2 million is added to EDF Trading's VaR limit of €43 million.

³³ Five times the VaR, i.e. €225 million from December 15, 2010.

³⁴ This model could change in 2012 following EDF's additional investment in Edison.

³⁵ Net exposure is the residual exposure after using all natural hedging options provided by vertical and horizontal integration of the various techniques.

³⁶ Profit at Risk or PaR is a statistical measure of the maximum potential decline, related to unfavorable market movements, in the margin compared to budget for a given time horizon and confidence interval.

³⁷ Economic capital is the capital allocated to deal with market risks.

³⁸ Figures will be available when Edison has published its annual results.

³⁹ Oil Insurance Limited Mutual Insurance Company.

⁴⁰ An Irish insurance company fully-owned by EDF.

RTE has taken out a conventional damages insurance program specific to its own property (substations, buildings and technical premises),

- Damage to the EDF group's nuclear facilities: in addition to coverage through EDF's membership of OIL, physical damage (including following a nuclear accident) to EDF's nuclear installations in France and British Energy's nuclear facilities in the United Kingdom, and nuclear decontamination costs have been covered since March, 2010 by a Group insurance policy involving the French nuclear pool (Assuratome), the British atomic pool National Risk Insurers (NRI) and the European Mutual Association for Nuclear Insurance (EMANI).

In connection with CENG's operations in the United States, EDF Inc became a member of NEIL (Nuclear Electric Insurance Limited). Once the provisions of French law 2006-686 of June 13, 2006 on nuclear transparency and safety come into force, EDF will have to adjust its insurance coverage to comply with the new guaranteed indemnity cap of €700 million for nuclear facility operator's liability. To this end, under the new legislative framework EDF will seek possible coverage solutions (nuclear insurance pools, mutual insurance, etc.) aiming to share the costs of such coverage with EDF Energy. EDF and EDF Energy are thus among the founder members of the European mutual reinsurance company Blue Re, which was formed on June 17, 2011 and specializes in insurance for this type of risk.

The provisions of French law 2006-686 of June 13, 2006 will not be applicable until the effective date of the Protocols amending the Paris and Brussels conventions on civil liability in the nuclear energy field, which require ratification by two thirds of member States.

- General civil liability: this program covers the Group against the possible financial consequences for third parties of the (non-nuclear) risks inherent to the EDF group,

- Civil liability of directors and senior executives: EDF's insurance program covers the Group's directors and chief executive officers.

For construction risks, EDF takes out insurance policies covering specific worksite risks (general worksite risks/general assembly risks). These policies are not part of a Group program but are purchased on an ad hoc basis for major projects such as the Flamanville EPR, or construction of combined cycle power plants, dams, combustion turbines, etc.

On August 11, 2011 ERDF took out a policy with Natixis/Swiss-Re to cover ERDF's aerial distribution network against the consequences of exceptional events such as storms and gales until June 30, 2016 (five storm seasons). With a maximum benefit of €150 million, payouts under this "cat-bond" depend on a parametric trigger based on wind speed. On December 27, 2011, additional coverage for €40 million was subscribed for a four-year period, to reduce the excess.

The arrangements for setting up damage insurance for the Island Energy Systems' aerial distribution networks are still under examination.

The total value of premiums for all types of coverage provided by EDF's insurance programs and Group programs managed by EDF Assurances was €100.45 million in 2011, of which €60.24 million was borne by EDF (excluding investments) and €9.4 million was for coverage of ERDF's overhead networks.

1.7 Principal risks and uncertainties

The principal risks and uncertainties to which the EDF group considers itself exposed are described in section 4.1 of the reference document.

The EDF group policies for risk management and control are described in section 4.2 of the reference document.

This presentation of the major risks describes the principal risks and uncertainties affecting the Group. The Group remains subject to the usual risks specific to its business.

1.8 Significant events related to litigation in process

Litigations concerning the EDF group are described in section 20.5 of the 2011 reference document. This chapter reports on litigations which have seen significant developments since the release of the 2010 reference document and the half-year financial report of 2011.

1.8.1 Proceedings concerning EDF

General Network

On December 15, 2009, the European Union Court cancelled the European Commission's decision of December 16, 2003 that had classified the tax treatment of provisions created for the renewal of the General Network at the time of EDF's capital increase in 1997 as state aid, and ordered repayment to the French State of the discounted value, i.e. €1,224 million (duly repaid by EDF in February 2004). The State therefore reimbursed this amount to EDF on December 30, 2009, then in February 2010 the European Commission filed an appeal before the Court of Justice of the European Union. A hearing was held in July 2011 and on October 20, 2011 the Advocate General issued his opinion, in which he considered that the decision of December 15, 2009 should be overturned and the case should be referred back to the Court. This opinion cannot be considered indicative of the final decision of the Court of Justice, which is expected in 2012.

Syndicat national des producteurs indépendants d'électricité thermique (SNPIET)

On December 1, 2010, France's National Association of Independent Producers and Heat Engineers (*Syndicat National des Producteurs Indépendants d'Electricité Thermique* – SNPIET) filed a complaint and an application for interim measures with the French Competition Authority. SNPIET alleged that EDF and RTE EDF Transport used anticompetitive practices between 2005 and 2007 in order to exclude independent producers belonging to SNPIET. In a decision of June 8, 2011, the Competition Authority rejected SNPIET's complaint and application due to lack of supporting evidence. SNPIET did not lodge an appeal against this decision, which is therefore final.

Alcan Saint-Jean-de-Maurienne

On December 31, 1985, EDF, Pechiney (now named Alcan France) and Aluminium Pechiney signed an energy supply contract principally for the supply of Pechiney's primary aluminum plant at Saint-Jean-de-Maurienne. Under the terms of this contract EDF undertook to supply volumes of electricity at a set price. The duration of the contract was modified by amendments, and it is due to expire on December 31, 2012 for the Saint-Jean-de-Maurienne plant. Further to several written requests from Alcan France to extend the duration of the contract, Alcan France and Aluminium Pechiney served a summons on EDF on August 2, 2007 to appear before the Paris Commercial Court. In a ruling issued on January 18, 2010, the Commercial Court dismissed all of the claims by Alcan and Aluminium Pechiney, which filed an appeal on March 19, 2010. On September 20, 2011, the Court of Appeal formally noted that the case was closed, since Alcan had filed a withdrawal of proceedings accepted by EDF.

Greenpeace

A preliminary investigation was initiated in February 2009 before the Nanterre Criminal Court for "*complicity and concealment of invasion of an automated data processing system*" after a computer expert from a non-Group

company claimed that in 2006 he had hacked into the computer used by former Greenpeace spokesman, Mr Yannick Jadot, at the request of an EDF employee. The said employee and his supervisor were formally placed under investigation on March 24 and June 10, 2009 respectively, and have been subject to disciplinary transfers. EDF was placed under investigation on August 26, 2009. On October 15, 2010, the examining magistrate ordered EDF and the two employees to be sent before the Nanterre Criminal Court. They were found guilty on November 10, 2011 of complicity and hacking into a computerized data processing system. EDF was ordered to pay a fine of €1.5 million. The employee received a three-year prison sentence (including 30 months suspended), and his supervisor also received a three-year prison sentence (including 24 months suspended) and was fined €10,000. In the civil courts, EDF and the employees were jointly ordered to pay damages of €500,000 to Greenpeace France, and €50,000 to Mr Yannick Jadot. The case will be re-examined by the Versailles Court of Appeal.

Bugey 1

After EDF obtained permission to completely dismantle the Bugey 1 nuclear facility by a decree of November 18, 2008, an association filed an action for cancellation of the decree before the French Council of State on January 21, 2009. This action was notified to EDF on May 6, 2009. A public *rapporteur* was appointed in October 2010, and in a decision dated December 9, 2011, the Council of State rejected the association's application, thus terminating the litigation.

Packaging and interim storage installation for radioactive waste (ICEDA)

A decree of April 23, 2010 authorized EDF to establish a regulated nuclear installation, specifically a packaging and interim storage installation for radioactive waste (*Installation de Conditionnement et d'Entreposage de Déchets Activés* – ICEDA), on land belonging to the town of Saint-Vulbas in France's Ain region. Roozen, a horticultural company operating near the site, filed two petitions with the Lyons Administrative Court against the local administrative authority's decision of February 22, 2010 granting the ICEDA building permit. The first of these petitions was filed on April 21, 2010 and sought cancellation of the building permit.

In a ruling of December 13, 2011, the Administrative Court cancelled the building permit on the grounds that it breached the local planning rules of the town concerned. EDF has filed an appeal before the Lyons Administrative Court, applying for the judgement to be suspended pending the appeal hearing. The town is also to begin a procedure in conjunction with other stakeholders to review its local planning rules, and EDF is preparing a new building permit application.

The second petition, dated November 25, 2010, requested an emergency injunction to suspend the building permit. This petition was dismissed by an order of the Lyons Administrative Court on December 13, 2010, and on May 24, 2011 the Council of State upheld this decision following an appeal lodged by Roozen.

Fessenheim

On July 25, 2008 an association and some private individuals petitioned the French Ministers in charge of nuclear safety (the Ministers for Energy and Ecology) to order permanent shutdown and decommissioning of the nuclear power plant at Fessenheim, France. This request was founded on article 34 of French law of June 13, 2006 relating to transparency and safety in nuclear matters; under this law, when no other course of action is possible the French Council of State may, after consultation with the Nuclear Safety Authority (ASN), issue a decree ordering permanent shutdown and decommissioning of a nuclear power plant that involves serious risks.

After the dismissal of this petition by the Ministers, the petitioners filed an appeal with the Strasbourg Administrative Court on December 10, 2008, which was rejected on March 9, 2011. The petitioners appealed this decision on May 4, 2011.

The same petitioners also filed a request on April 18, 2011 asking the ministers in charge of nuclear safety and the ASN to suspend operations at the Fessenheim plant. This petition was founded on articles 34 and 35 of the decree of November 2, 2007 concerning regulated nuclear installations and nuclear safety control of transportation of radioactive substances, which authorizes these ministers and the ASN to suspend a regulated nuclear installation in the event of serious risk. After this request was refused, the petitioners took their action to

the Strasbourg Administrative Court (for the implicit refusal decision by ministers) and the Council of State (for the implicit refusal decision by the ASN).

EDF's disputes concerning photovoltaic energy

The announcement by the French Ministry of Ecology, Energy, Sustainable Development and the Sea in autumn 2009 of a decrease in the photovoltaic electricity purchase prices set by the order of July 10, 2006 caused an upsurge in applications for purchase contracts that was likely to generate a very significant increase in costs to be compensated by the CSPE. The French Government therefore decided, by an order of January 12, 2010, to modify both the purchase prices of electricity generated from photovoltaic energy and their terms of application.

Several producers, including the Casino supermarket group subsidiaries the *Green Yellow* companies, then decided to bring proceedings against EDF, asking the courts to order EDF to purchase the generated electricity at the more favorable tariff conditions set out by the previous order of July 10, 2006.

In a judgment of July 11, 2011, the Paris Commercial Court declared itself competent and ruled that the electricity purchase contracts concerned by this dispute should be deemed to exist as soon as EDF receives the completed contract application. The Court thus considered that for contracts meeting this requirement, the plaintiffs are entitled to the tariffs set in the order of July 10, 2006.

The Paris Prefect took the case before France's Conflict Tribunal (*Tribunal des Conflits*) which declared the decision of July 11, 2011 by the Commercial Court to be null and void on December 12, 2011. It also rejected the Paris Prefect's plea regarding arbitral jurisdiction and issued a decision regarding the substance of the *Green Yellow* companies' claims. Following this decision, the case will return before the Commercial Court.

Meanwhile, some producers have begun action to challenge the application of tariff decisions to their situations. These procedures are currently pending before the judicial or administrative judges.

Brennilis

After EDF was authorized by a decree of July 27, 2011 to proceed with partial decommissioning of the regulated nuclear installation at Brennilis, the installation storing equipment from the Monts d'Arrée nuclear power plant, several associations filed an appeal against the decree before the Council of State on September 28, 2011, followed by an additional memorandum filed on December 28, 2011.

Tax litigation

In 2008 and 2009 EDF underwent a tax inspection covering the tax years 2004, 2005 and 2006. At the end of 2011, EDF received a tax reassessment notice. One of the grounds for the reassessment concerns the tax-deductibility of the provision for annuities following work-related accidents and illness; as this is an issue that relates to the special gas and electricity (IEG) statutes, it also concerns RTE, ERDF and Electricité de Strasbourg. The Group is contesting the tax authorities' position on the deductibility of this provision. In late 2011 France's National Commission for Direct Taxes and Sales Taxes issued an opinion in favor of EDF on the main grounds for reassessment resulting from the inspection covering the years 2004 to 2006, notably confirming the deductibility of the provision for annuities following work-related accidents and illness. If the outcome of this dispute is unfavorable, the financial risk for the Group associated with payment of income taxes could amount to some €250 million.

During 2010, a further inspection was begun of the years 2007 and 2008, and in late 2011 EDF was notified of a proposed tax reassessment for 2008.

EDF is contesting most of the tax reassessments, amounting to approximately €900 million, concerning deductibility of certain long-term liabilities. The Company considers it is likely to win this dispute, and no provision has been established for the principal types of tax reassessment.

Labor litigation

EDF is party to a number of labor lawsuits with employees, primarily regarding the calculation and implementation of rest periods. EDF estimates that none of these lawsuits, individually, is likely to have a significant impact on its profits and financial position. However, because they concern situations likely to involve a large number of EDF's employees in France, any increase in such litigations could present a risk with a potentially significant, negative impact on the Group's financial results.

The Group is also party to a number of litigations with social security bodies. The main such dispute is between EDF and the Toulouse URSSAF and concerns inclusion of certain bonuses, indemnities and other benefits in kind in the bases for calculation of social security charges.

1.8.2 Proceedings concerning EDF subsidiaries and investments - BE ZRT

1.8.2.1 ERDF

Direct Energie

Article 23 of the law of February 10, 2000 allows suppliers to offer their customers a single contract for both supply and network access, and enter into a contract known as a GRD-F contract with the network operator for access to the network in order to perform such supply contracts. The current wording of the GRD-F contract provides that if the final customer defaults on payment, the supplier must pay ERDF the price corresponding to delivery through the network. Direct Energie challenged this provision through a petition filed on July 20, 2010 with the CRE's Committee for the settlement of disputes and sanctions (CoRDIS). In a decision of October 22, 2010 notified to ERDF on November 17, 2010, the CoRDIS ruled that no provision in the current legislation authorized ERDF to force the supplier to bear the risk of non-payment of the share due to the distributor, and that the supplier must have recovered the amounts due for network use from the final customer before paying them to the network operator. The CoRDIS therefore requested that ERDF should send Direct Energie a new GRD-F contract in compliance with this decision. ERDF lodged an appeal before the Paris Court of Appeal, as this decision undermines the overall balance of the single contract and would increase the complexity of market rules, as well as generating a surplus cost for its implementation that would ultimately be borne by end customers.

The Court of Appeal upheld the CoRDIS decision in a ruling of September 29, 2011. Suppliers and ERDF have worked together, under supervision by the CRE, to agree on an adjustment of the GRD-F contract to reflect the CoRDIS decision upheld in appeal. So far, the CRE has made no proposal for changes to the GRD-F contract.

Meanwhile, Direct Energie (which in September 2011 became the main shareholder of Poweo) and Poweo brought actions against ERDF before the Paris Commercial Court on December 11, 2009 and March 3, 2011 respectively. The two companies sought an order for ERDF to bear, retroactively, the cost of outstanding receivables recorded in their accounts since the markets were opened up in 2004, and applied for the GRD-F contract to be declared null and void, and for retroactive reclassification of that contract as an agency contract from the same date. In this context, Direct Energie and Poweo refused debits in favor of ERDF in 2010 and 2011 to the extent of the amounts they considered they had borne unduly as a result of unpaid bills. At the date of publication of this management report, no ruling on the substance of the case has been issued by the Paris Commercial Court.

Dispute with photovoltaic producers

Photovoltaic installations benefit from an obligation incumbent on EDF (or local distribution companies) to purchase the electricity they generate, in a regulatory framework designed as an incentive to foster development of photovoltaic energy in France. As the sector grew very rapidly, the French government issued a series of decisions lowering the purchase tariffs on January 12, March 16, and August 31, 2010, followed by a "moratorium decree" on December 9, 2010: this decree suspended conclusion of new contracts for a three-month period and stipulated that applications for which the technical and financial proposals had not been adopted by December 2, 2010 would have to be resubmitted after that three-month period, based on a photovoltaic power purchase tariff

set in a new decision. This decision was issued on March 4, 2011 and significantly reduced the purchase price for photovoltaic electricity.

In anticipation of the coming tariff changes, there was an upsurge in the number of applications for connection received by ERDF's units. Despite the significant measures taken to process these applications, ERDF was not always able to issue technical and financial proposals in time for the power generators to benefit from the pre-March 4, 2011 tariffs.

A Council of State decision of November 16, 2011 rejecting appeals against the moratorium decree of December 9, 2010 generated a large volume of legal proceedings against ERDF in late 2011. Most action was initiated by generators who found themselves forced to abandon their projects since the new electricity purchase tariffs made operating conditions less favorable; they consider ERDF responsible for this situation since it did not issue the technical and financial connection proposals in time for them to benefit from more advantageous terms. Although ERDF considers that it cannot be held liable, provisions have been established.

Tax litigation

Since February 2010 ERDF has been subject to a tax inspection for financial years 2007 and 2008. At December 31, 2010, ERDF had received no proposed tax reassessment for 2007, and the deadline for tax reassessments in respect of that year has now expired. The tax inspection concerning the year 2008 ended with issuance of a proposed tax reassessment in late 2011. The reassessments notified do not have any significant financial impact.

EDF received a proposed tax reassessment in late 2009 after an inspection of financial years 2004, 2005 and 2006. This reassessment also concerned ERDF, since under the agreements signed when the distribution activities were transferred to a subsidiary, tax adjustments relating to periods before the transfer are payable by ERDF. The amounts concerned became due in December 2011, and in application of the tax consolidation agreement, ERDF paid its share of the non-contested reassessments. The reassessment concerning the tax-deductibility of the provision for annuities following work-related accident or illness remains contested by the Group.

1.8.2.2 RTE

Tax litigation

In 2008 and 2009, RTE underwent a tax inspection covering the tax years 2005, 2006 and 2007. At the end of 2011, EDF, the parent company responsible for payment of taxes for the tax consolidation group which includes RTE, received a tax reassessment notice. The amounts concerned were paid for accepted reassessments, and RTE reimbursed EDF SA. The reassessment concerning the tax-deductibility of the provision for annuities following work-related accident or illness remains contested by the Group.

During 2010 and 2011, a further inspection took place at RTE of the years 2008 and 2009, and in late 2011 the tax authorities issued a proposed tax reassessment that has no significant financial consequences for the company.

1.8.2.3 BE ZRt

Following an inquiry relating to the European regulations on State aid, on June 4, 2008 the European Commission issued a decision requiring the Hungarian government to terminate existing long-term electricity purchase agreements (PPAs) without any indemnity by the end of 2008, and the electricity producers to refund by April 2009 any amounts of State aid received since May 1, 2004, the date on which Hungary joined the European Union.

BE ZRt decided to appeal this European Commission decision before the European Union General Court on May 4, 2009 and the proceedings are still ongoing. The Hungarian Government did not challenge the European Commission's decision, and the Hungarian legislator enacted a law on November 10, 2008 terminating all PPAs on

December 31, 2008. In late April 2010, the European Commission and the Hungarian government accepted the principle of netting stranded costs with the State aid paid, and as a result BE ZRt had no illegal State aid to repay.

In order to pursue its business after termination of its PPAs, BE ZRt negotiated an 8-year sales contract with MVM (the state-owned sole Hungarian buyer) for half of its electricity output, and benefited from the "Cogen decree"⁴¹ for the sale of the other half of its output, for a period initially due to run until 2013. However, on March 16, 2011 Hungary adopted an amendment to its law on electricity, ending support for cogeneration in Hungary from July 2011.

EDF International, whose investment in BE ZRt was undertaken after the company's privatization on specific terms that are now in question, sent a notice of arbitration to the Hungarian State on May 12, 2009 founded on the Energy Charter Treaty (ECT), in accordance with UNCITRAL regulations. These arbitration proceedings were postponed to October 1, 2011 following several successive agreements, and resumed at that date. On December 30, 2011 EDF International filed a claim for compensation for the loss of the PPAs with the Permanent Court of Arbitration at The Hague. The prejudice related to heat prices in 2011 was included in this claim as an interim measure.

1.8.2.4 SSE

In 2002, the Slovakian regulator adopted a resolution setting electricity tariffs applicable for 2003, without waiting for publication of a specific decree. Seven companies challenged this procedure and took the matter before the constitutional court in 2004. They won the case in 2006 when the court declared the regulator's resolution invalid. The same companies, considering that the prices for 2003 had therefore not been validly set and that the lower tariffs of 2002 should apply, sued the State for reimbursement. They were unsuccessful, as the court ruled that the only consequence of the regulator's error was unwarranted additional income for electricity suppliers.

Following this decision, one corporate customer of SSE began legal action against SSE on September 4, 2009, claiming reimbursement of the difference between the amount received by SSE in application of the 2003 tariffs wrongly set by the regulator and the amount it would have received if the 2002 tariffs had applied. Five other customers of SSE also filed similar actions in late 2009 and early 2010, initially claiming the total sum of approximately €10 million. All these customers have since withdrawn their action, and the last two withdrawals were recorded officially in two decisions terminating proceedings during January 2012.

SSE also made a similar claim on the same grounds against its electricity supplier on July 6, 2010, for €37.5 million. After the action was withdrawn by SSE, a termination decision was issued in October 2011.

1.8.2.5 EDF Luminus – Legal action by Test-Achats

On May 17, 2010, the Belgian consumer association Test-Achats initiated an action before the European Union Court for cancellation of the European Commission's decision of November 12, 2009 approving EDF's acquisition of the Belgian operator EDF Luminus (formerly SPE). Test-Achats alleged in particular that in examining the transaction, the European Commission had failed to give sufficient consideration to the fact that it would lead to French players with a common shareholder taking control over the electricity sector in Belgium. The European Union Court rejected this claim on October 12, 2011, confirming the validity of the Commission's decision of November 12, 2009 to allow EDF's takeover of EDF Luminus.

1.8.3 Proceedings after the year-end

No other significant litigation has arisen since December 31, 2011.

⁴¹ Decree setting out terms including the tariff for renewable energies and cogeneration, adopted by the Hungarian government on November 28, 2008.

1.9 Subsequent events

1.9.1 French Court of Audit report on the costs of nuclear electricity

Following a Government request in May 2011, France's Court of Audit (*Cour des Comptes*) published a report on the costs of nuclear electricity on January 31, 2012.

The report contains all the essential available factual data on the past, present and future costs of nuclear electricity in France.

The Court of Audit concludes that the various types of cost borne by operators are all well-identified and included in their accounts. Taking into consideration return on capital, based on the "current economic cost" method, the Court estimates the average cost of a MWh at €49.50 using 2010 data. This cost confirms EDF's valuations.

Regarding decommissioning costs, the Court "*considers that the methods used by EDF for this calculation are appropriate, but cannot validate the technical parameters used in the absence of in-depth studies by experts*". The Court shows that while the change in future costs for decommissioning and waste management has only a limited impact, the change in maintenance investments is more substantial. Maintenance costs are estimated at an average €3.3 billion per year before Fukushima, for the period 2011-2025.

Details of other post balance sheet events can be found in note 51 to the consolidated financial statements at December 31, 2011.

1.10 Financial outlook for 2012

In view of the sustained investments planned for the next 5 years, the increased selectivity in development projects and the savings made through the Group's Synergies and Transformation, the Group has set itself the following financial objectives for the period 2011-2015⁴²:

- Average annual growth in EBITDA⁴³ of between 4% and 6%,
- Average annual growth in net income excluding non-recurring items of between 5% and 10%,
- Net indebtedness/EBITDA ratio for the period of less than 2.5 over the period,
- A dividend distribution rate for the period of between 55% and 65%.

2012 objectives are in line with this financial guidance, with a dividend at least stable compared to the one paid for 2011.

The Group's net investment budget will remain under €15 billion for 2015.

⁴² Excluding the potential impacts of Edison PPA.

⁴³ Growth based on constant scope of consolidation and exchange rates.

1.11 Information on EDF's capital and governance bodies

1.11.1 Capital

1.11.1.1 Changes in the capital

At the date of this document, EDF's share capital totals €924,433,331 divided into 1,848,866,662 fully subscribed and paid-up shares with nominal value of €0.50 each.

The Company has not issued or authorized any preference shares.

A capital increase raising the capital to €930,406,055 divided into 1,860,812,110 shares took place on June 24, 2011 when new shares were issued in exchange for EDF Energies Nouvelles shares tendered to the exchange component of EDF's simplified alternative public cash or exchange offer for shares of EDF Energies Nouvelles. The capital was then reduced on September 28, 2011 to €924,433,331 divided into 1,848,866,662 ordinary shares, when the treasury shares purchased under the share repurchase program were cancelled in order to neutralize the dilution resulting from the offer.

1.11.1.2 Capital structure and voting rights

At the date of this document, EDF's share capital consists of registered or bearer shares which must at all times be held at least 70% by the French State, pursuant to article 24 of the Law of August 9, 2004.

These shares are freely negotiable subject to the laws and regulations in force and the statements below, and their sale or transfer is not restricted by any statutory provision.

To the best of the Company's knowledge, no restriction approved by a member of the Board of Directors exists concerning transfer of his shares within a certain time period, except for restrictions resulting from the Company's code of trading ethics.

Shares held through investment funds under the EDF group's corporate savings plan invested in EDF shares, or shares acquired from the State in application of privatization laws, are subject to the unavailability or non-transfer rules resulting from the special provisions applicable to such operations.

Each share entitles the holder to one vote, and at the date of this document, there is no statutory restriction on the exercise of voting rights by shareholders.

At the date of this document, to the Company's knowledge no shareholder agreement concerning EDF shares has been concluded.

1.11.1.3 Shareholding structure and thresholds

At December 31, 2011, EDF's shareholding structure was as follows:

- French State: 84.44%
- Institutional and private investors: 13.70%
- Employees: 1.80%
 - incl: employee investment fund⁴⁴: 1.51%
- Treasury shares: 0.06%
- Total number of shares: 1,848,866,662

⁴⁴ Company investment fund invested in EDF shares.

1.11.1.4 Treasury shares

No EDF share is to be attributed to employees under the employee profit-share plan.

Information on transactions undertaken by the company on its own shares in 2011 under a share repurchase program (repurchase programs authorized by the shareholders at the General Meetings of May 18, 2010 and May 24, 2011):

Number of shares purchased and sold in 2011: during the year, EDF purchased 15,877,947 shares and sold 3,305,464 shares in EDF.

- Between January 1, 2011 and December 31, 2011 the Company purchased 3,932,499 of its own shares for an average unit value of €25.16, and sold 3,305,464 shares for an average unit value of €25.63. These purchases took place under a liquidity contract.
- EDF also purchased 11,945,448 treasury shares between April 11 and August 8, 2011, with the purpose of cancelling the share repurchase program, for a total amount of €324,455,659.63 or an average price of €27.16 per EDF share. These shares were purchased for cancellation, in order to neutralize the dilution resulting from the simplified alternative public cash or exchange offer for EDF Energies shares.

Average price of share purchases and sales: during 2011, the average purchase price for shares was €26.67 and the average sale price was €25.63.

Brokers' fees: the fixed commission defined in the liquidity contract and modified by an amendment of July 11, 2011, was €120,000 for 2011.

Value of the portfolio of treasury shares at December 31, 2011:

1,175,594 shares were registered in the company's name at December 31, 2011.

- The book value of these shares at December 31, 2011 (based on purchase price) was €25,740,912.75 and their nominal value was €587,797.
- The market value of the portfolio at that date (based on the closing market price of €18.80 at December 30, 2011) was €22,101,167.20.

These shares represented 0.06% of the total share capital at December 31, 2011, distributed as follows by purpose:

Distribution of the repurchase program by purpose at December 31, 2011	Number of shares held	Book value of shares (€)	Volume of shares (% of share capital)
Liquidity contract	1,125,000	22,785,353.24	0.06
Share purchases for the "ACT 2007" plan ⁽¹⁾	50,594	2,955,559.51	0.003
Total	1,175,594	25,740,912.75	0.06

(1) Shares acquired on the market for attribution to employees under the "ACT 2007" free share plan, but not attributed to employees.

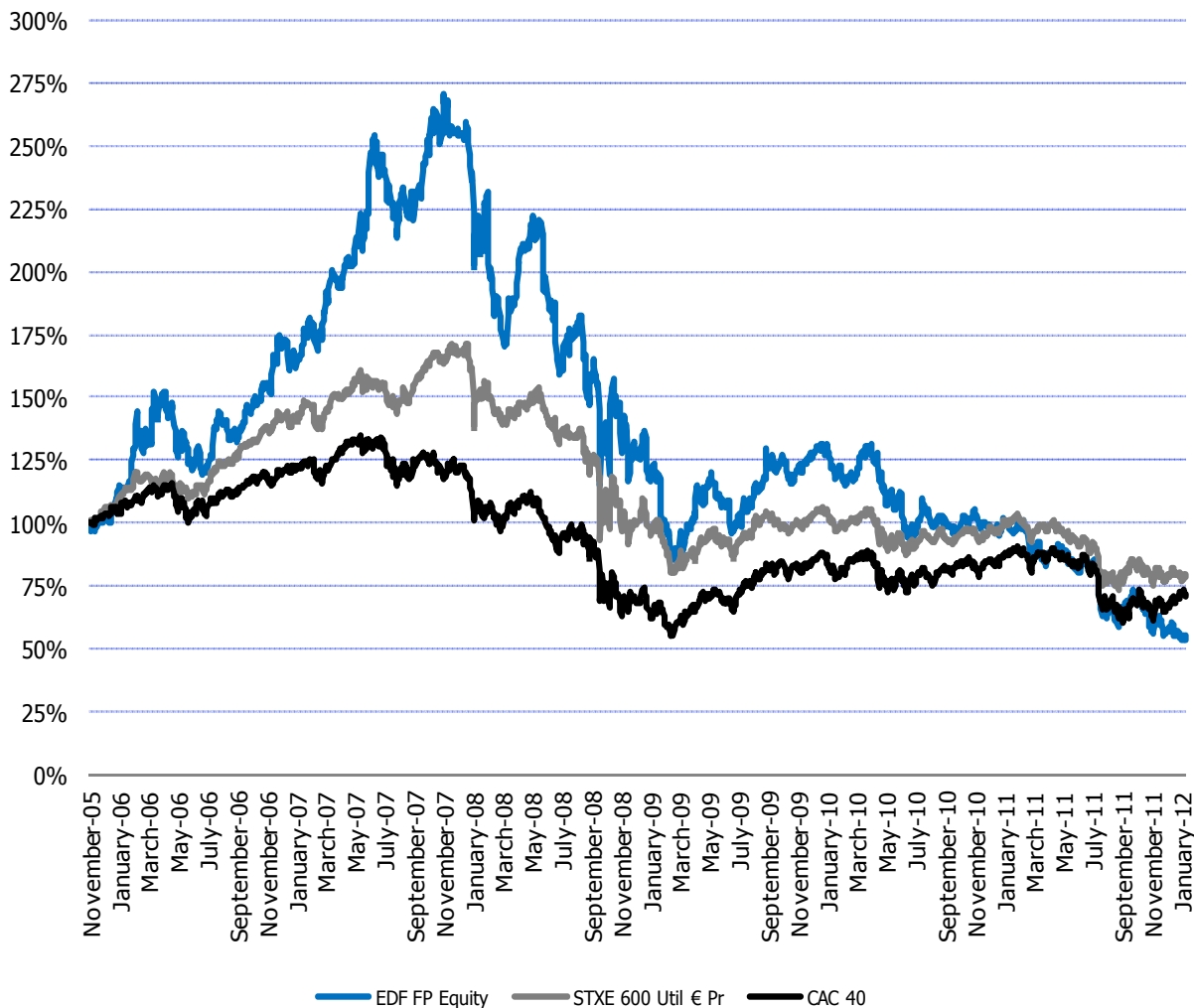
No shares were reallocated to other repurchase program purposes in 2011.

During 2011, 11,945,448 shares acquired under the repurchase program with a view to cancellation were cancelled.

1.11.1.5 Share price⁴⁵

Movements in the EDF share price, which is part of the CAC 40 index, were as follows from its initial listing on November 21, 2005 up to January 31, 2012:

EDF share price from the IPO to January 31, 2012



From January 3, 2011 to January 31, 2012, the EDF share price decreased by -43.4%, the Euro Stoxx Utility index declined by -17.2%, and the CAC 40 declined by -15.4%.

At January 31, 2012, the EDF share price at close of business was €17.62 (€31.11 at January 3, 2011). Its lowest closing price during the period was €17.075 on January 23, 2012, and the highest closing price was €32.62 on February 17, 2011.

EDF's market capitalization at January 31, 2012 was €32.577 billion.

⁴⁵ Source: Bloomberg

1.11.1.6 Authorizations to issue shares

The following table summarizes the authorizations to increase or reduce the capital in force at December 31, 2011 granted to the Board of Directors by EDF's shareholders at their General meetings of May 18, 2010 and May 24, 2011⁴⁶ and details of their utilization at the same date:

Securities concerned / type of emission	Duration ⁽¹⁾ of the authorization and expiry date	Maximum total nominal value of the capital increase (in millions of Euros)	Utilization of authorizations (in millions of Euros)
Delegation of authority to the Board to increase the capital, maintaining the shareholders' preferential subscription right	26 months July 18, 2012	45 ⁽²⁾	none
Delegation of authority to the Board to increase the capital, with no preferential subscription rights for shareholders	26 months July 18, 2012	45 ⁽²⁾	none
Delegation of authority to the Board to make private placement offering ⁽³⁾ with no preferential subscription rights for shareholders	26 months July 18, 2012	45 ⁽²⁾	none
Authorization to the Board to increase the number of shares to be issued in the event of a capital increase with or without preferential subscription rights	26 months July 18, 2012	15 % of the initial issue ⁽²⁾	none
Delegation of authority to the Board to increase the capital by capitalization of reserves, profits, premiums or other amounts eligible for capitalization	26 months July 18, 2012	1 000	none
Delegation of authority to the Board to increase the capital as a result of an exchange offer instigated by EDF	26 months July 18, 2012	45 ⁽²⁾	5.97
Authorization to the Board to increase the capital in return for contributions in kind ⁽⁴⁾	26 months July 18, 2012	10% of the company's share capital up to a maximum of 45 ⁽²⁾	none
Delegation of authority to the Board to increase the capital to the benefit of members of an EDF group savings plan	26 months July 18, 2012	10	none
Authorization to the Board to reduce the capital by canceling treasury shares	26 months July 24, 2013	10 % of the capital per 24-month period	5.97

(1) From the date of the shareholders' meeting that approved them.

(2) Nominal overall limit for capital increases approved at the Shareholders' Meeting of May 18, 2010.

(3) Offerings covered by article L.411-2 II of the Monetary and Financial Code.

(4) Article L. 225-147 of the commercial code.

1.11.1.7 Scope of consolidation

A list of all consolidated companies is included in the notes to the 2011 consolidated financial statements.

⁴⁶ All these resolutions were approved by the General Shareholders' Meeting of May 18, 2010 except for the authorization to the Board to reduce the share capital by canceling treasury shares, which was approved at the Meeting of May 24, 2011.

1.11.2 Rules applicable to changes of bylaws

Under the French commercial code and article 20-4 of the bylaws, only an extraordinary General Shareholders' Meeting has the power to change the bylaws.

However, it is not entitled to increase shareholder commitments, except for operations resulting from reverse share splits carried out under the proper procedures.

Subject to the laws applicable to capital increases by capitalization of reserves, profits or issue premiums, the meeting can only validly take decisions if the shareholders present, represented or voting by correspondence own at least one quarter on the first call, and at least one fifth on the second call, of shares carrying voting rights. If this quorum is not met, the second meeting may be postponed to a date no later than two months after the date the meeting was initially called for.

Subject to the same requirement, decisions at the extraordinary meeting require a two thirds majority of shareholders present, represented or voting by correspondence

1.12 Corporate governance

Corporate governance is described in detail in section 16 of the 2011 Reference Document.

1.12.1 Board of Directors

During 2011, the Board of Directors met 11 times, and the Committees held a total of 31 preparatory meetings.

The attendance rate at meetings of the Board of Directors was 85.4% on average in 2011.

1.12.1.1 Members of the Board of Directors

In compliance with article 6 of the Law of July 26, 1983 on the democratization of the public sector, the Board of Directors has eighteen members: one third of members are elected by employees and two thirds are appointed by the shareholders after nomination by the Board of Directors, apart from members representing the French government who are appointed by decree.

At December 31, 2011, the Board of Directors consisted of the following Directors:

• Directors appointed by the General Shareholders' Meeting:

Henri Proglia

Date of birth: June 29, 1949

Chairman and CEO of EDF since November 2009

Chairman of the Board of Directors of EDF Energy Holdings and Transalpina di Energia

President of the Fondation EDF Diversiterre and Electra

Director of EDF Energies Nouvelles

Director of EDF International

Director of Edison

Director of Veolia Propreté

Director of Veolia Environnement

Member of the Supervisory Board of Veolia Eau

Vice-President of France's Strategic Nuclear Energy Committee

Director of CNP Assurances, Dassault Aviation, Natixis, Fomento di Construcciones y contratas and the European Foundation for the Energies of Tomorrow

Member of the Atomic Energy Committee, the High Committee for transparency and information on nuclear safety and the National Committee for Business Sectors of vital importance

Director of EDF since September 2004

Philippe Cruzet

Date of birth: October 18, 1956

Chairman of the Supervisory Board of Vallourec

Director of EDF since November 2009

Mireille Faugère

Date of birth: August 12, 1956

General Manager of *Assistance Publique – Hôpitaux de Paris*

Director of Essilor

Director of EDF since November 2009

Michael Jay

Date of birth: June 19, 1946

Crossbench member of the House of Lords, Chairman of the House of Lords Appointments Commission and member of its EU Sub-Committee on foreign, defence and development policy

Director of Associated British Foods, Candover Investments, and Valeo SA

Chairman of Merlin (International medical NGO)

Director of EDF since November 2009

Bruno Lafont

Date of birth: June 8, 1956

Chairman and CEO of Lafarge

Chairman of the French association *Entreprises pour l'Environnement* (EPE)

Director of Arcelor-Mittal and HEC business school

Advisor to the Mayor of Chongqing (China)

Director of EDF since May 2008

Pierre Mariani

Date of birth: April 6, 1956

Delegate director and Chairman of the Management Committee of Dexia

Member of the Board of Directors of Deniz Bank

Director of Dexia Crédit Local and Dexia Banque Internationale, Luxembourg

Director of *Etablissement public de la Réunion des Musées Nationaux et du Grand Palais*

Director of EDF since November 2009

• Directors representing the French government, appointed by decree**Pierre-Marie Abadie**

Date of birth: July 13, 1969

Director of Energy at the General division for energy and climate for the French Minister of Ecology, Sustainable development, Transport and Housing, the Minister of the Economy, Finance and Industry and the Minister of Industry, Energy and the Digital Economy

Government representative at the *Agence Nationale pour la gestion des déchets radioactifs* (ANDRA)

Member of the Governing Board of the International Energy Agency (IAE)

Director of EDF since August 2007

Jean-Dominique Comolli

Date of birth: April 25, 1948

Equity investments Commissioner at the French Ministry of the Economy, Finance and Industry

Member of the Supervisory Board of AREVA

Director of Fonds Stratégique d'Investissement, France Telecom, Air France-KLM, SNCF and *Etablissement Public de l'Opéra Comique*

Director of EDF since September 29, 2010

Yannick d'Escatha

Date of birth: March 18, 1948

Chairman of the government space policy agency Centre National d'Etudes Spatiales (CNES)

Member of the Academy of Technologies

Chairman of the Board of Directors of Troyes University of Technology

Permanent representative of the CNES on the Board of Arianespace SA and Arianespace Participation

Director of Thalès

Director of EDF since November 2004

Julien Dubertret

Date of birth: June 9, 1966

Director of the National Budget for the Ministry of the Budget, Public Accounts and State reform

Director of SNCF

Director of EDF since June 2011

Pierre Sellal

Date of birth: February 13, 1952

Secretary General of the Ministry of Foreign and European Affairs

Member of the Supervisory Board of AREVA

Member of the Atomic Energy Committee and the High Council of the *Institut du monde arabe*

Director of *Ecole Nationale d'Administration, Audiovisuel extérieur de France, Institut Français, Agence nationale des titres sécurisés, Commission de récolement des dépôts d'oeuvres d'art* and the *Etablissement de préparation et de réponse aux urgences sanitaires*

Director of EDF since April 2009

Philippe Van de Maele⁴⁷

Date of birth: December 29, 1961

Member of France's General Council for the Environment and Sustainable Development

Director of CEMAGREF

Director of EDF since November 2009

• **Directors elected by the employees:**

Christine Chabauty

Date of birth: July 19, 1971

Commercial attachée for Major Accounts at EDF's Sales Division

Member of an industrial tribunal

Director of EDF since November 2009, sponsored by the CGT union

Alexandre Grillat

Date of birth: December 8, 1971

Director of Studies for ERDF's General Manager in Alsace-Franche Comté

Director of EDF since September 2004, sponsored by the CFE-CGC union

Philippe Maïssa

Date of birth: November 21, 1949

Engineer at EDF's Fossil-fired engineering center

Director of EDF since November 2009, sponsored by the CGT union

Marie-Hélène Meyling

Date of birth: October 30, 1960

Attachée at EDF's Upstream/Downstream Optimization and Trading division

Director of EDF since September 2011, sponsored by the CFDT union

Jean-Paul Rignac

Date of birth: May 13, 1962

Research engineer at EDF's Research and Development division

Director of EDF since November 2007, sponsored by the CGT union

Maxime Villota

Date of birth: November 25, 1959

Purchase policy coordinator at the Finance and Industrial relations mission, Tricastin nuclear electricity generation plant

Director of EDF since December 2006, sponsored by the CGT union

⁴⁷ Mr François Loos was appointed as a director representing the French government by decree of February 13, 2012, to replace Mr Philippe Van de Maele.

- **Directors whose term of office ended during 2011:**

Philippe Josse

Director of EDF from April 2006 to June 2011, replaced by Julien Dubertret on June 21, 2011.

Philippe Pesteil

Director of EDF from September 2004 to July 2011, replaced by Marie-Hélène Meyling on September 1, 2011.

1.12.1.2 The Board of Directors' Committees

To carry out its duties, the Board of Directors has set up five committees whose members are directors selected by the Board. These committees are:

The Audit Committee

The Audit Committee is chaired by Pierre Mariani, an independent director appointed by the shareholders who is external to the EDF group. The committee's other members are Messrs Comolli and d'Escatha, directors representing the State, and the employee-elected directors Ms Meyling, Mr Grillat and Mr Villota.

The Nuclear Commitment Monitoring Committee

The Nuclear Commitment Monitoring Committee is chaired by Philippe Crouzet, an independent director appointed by the shareholders who is external to the EDF group. The committee's other members are Messrs Abadie and d'Escatha, directors representing the State, and the employee-elected directors Ms Meyling and Mr Villota.

The Strategy Committee

The Strategy Committee is chaired by Henri Proglio, Chairman and CEO of EDF. The committee's other members are Mr Jay, an independent director appointed by the shareholders who is external to the EDF group, Messrs Abadie, Comolli and Sellal, directors representing the State, and the employee-elected directors Ms Meyling, Mr Grillat and Mr Rignac.

The Ethics Committee

The Ethics Committee is chaired by Mireille Faugère, an independent director appointed by the shareholders who is external to the EDF group. The committee's other members are Mr Van de Maele, a director representing the state, and the employee-elected directors Ms Chabauty, Ms Meyling, Mr Maissa and Mr Grillat.

The Appointments and Remuneration Committee

The Appointments and Remuneration Committee is chaired by Bruno Lafont, an independent director appointed by the shareholders who is external to the EDF group. The committee's other members are Mr Jay, an independent director appointed by the shareholders who is also external to the EDF group, and Mr Comolli, a director representing the State.

1.12.2 Chairman and CEO and directors' remuneration

The tables below show the remuneration and various benefits paid and payable during 2011 to EDF's directors and the chairman and CEO by EDF and its controlled companies at December 31.

1.12.2.1 Remuneration of the Chairman and Chief Executive Officer

Pursuant to Article 3 of Decree No. 53-707 of August 9, 1953 and Article L. 225-47 of the French Commercial Code, the elements of the remuneration paid to the Chairman and Chief Executive Officer are set by the Board of Directors on the recommendation of the Appointments and Remunerations Committee, as approved by the France's Minister of Economics, Industry and Employment and Minister for Energy.

Details of components of remuneration

The Chairman of the Board of Directors is not paid directors' fees.

No stock subscription or purchase options were awarded to the Chairman and CEO in 2011, and no options were exercised by him during the year. Similarly, no performance shares were attributed to the Chairman and CEO in 2011, and no performance share became available.

Henri Proglio benefits from no special pension scheme from EDF, received no starting bonus and will receive no termination indemnity for leaving his functions in the Company. He does not have an employment contract with the Company.

Summary of remuneration of the Chairman and Chief Executive Officer

The following table summarizes the remuneration due to the Chairman and CEO for 2011 and paid to him during the year:

2011	Due for 2011 (in Euros)	Paid during 2011 (in Euros)
Henri Proglio, Chairman and CEO		
Fixed salary	1,000,000	1,000,000
Variable salary	n/d ⁽¹⁾	555,708
Exceptional salary	none	none
Directors' fees	n/a	n/a
Benefits in kind ⁽²⁾	4,820	4,820
TOTAL	1,004,820	1,560,528

(1) The maximum amount of the CEO's variable salary for 2011 calculated under the criteria set by the Board of Directors is €600,000. The actual amount payable has not yet been determined at the date of this report.

(2) Company car and benefits in kind in the form of energy.

n/a: not applicable

1.12.2.2 Remuneration of Board Members

In compliance with the law, the Chairman of the Board of Directors receives no director's fees, and directors representing the government and employee representative directors also receive no fees for their services as directors. The Board of Directors submits the amount of directors' fees, to be allocated as the Board decides, to the General Shareholders' Meeting for approval. Since 2005, the amount of directors' fees paid depends on attendance at Board and Committee meetings.

The General Shareholders' meeting of May 24, 2011, approved the amount of €200,000 as the annual budget for directors' fees until a new resolution is submitted. This amount comprises a fixed portion and a variable portion of €100,000 both.

The Board of Directors' meeting of June 22, 2011, modified the rules for the allocation of director's fees and decided that, from 2011, the total budget will be allocated as follows:

- The fixed portion of €100,000 is shared equally between all directors, giving an amount of €20,000 each;
- The variable portion of €100,000 is allocated between directors using a coefficient that varies according to the type of meeting (Board or Committee) and the specific functions of each director (chairman or ordinary member):
 - coefficient 2 for attendance at a Board meeting;
 - coefficient 2 for attendance at a Committee meeting as Chairman;
 - coefficient 1 for attendance at a Committee meeting as a committee member.

To determine the unit value of the coefficient, the variable portion is divided by the total coefficients for the year.

Summary of directors' fees paid to directors

Directors	2011 ⁽¹⁾	2010 ⁽²⁾
Philippe Crouzet	32,000	16,000
Mireille Faugère	34,000	18,000
Michael Jay	29,000	17,000
Bruno Lafont	20,000	26,000
Pierre Mariani	32,000	20,000
Henri Proglio ⁽³⁾	-	10,000
TOTAL (en euros)	147,000	107,000

(1) For the second half of 2010 and the first half of 2011.

(2) For the second half of 2009 and the first half of 2010.

(3) Until his appointment as Chairman of the Board of Directors.

The differences in directors' fees paid during 2010 and 2011 are explained by the fact that directors only began to attend meetings from November 23, 2009 when the first meeting of the new Board was held.

1.12.2.3 EDF share ownership by Directors

The following directors owned shares in EDF at December 31, 2011:

	Number of EDF shares
Henri Proglio (shares held directly)	51
Christine Chabauty (shares held through an employee investment fund - FCPE)	50
Philippe Crouzet (shares held directly)	200
Mireille Faugère (shares held directly)	106
Alexandre Grillat (shares held through an employee investment fund - FCPE)	328
Michael Jay (shares held directly)	200
Bruno Lafont (shares held directly)	150
Pierre Mariani (shares held directly)	1
Philippe Maïssa (shares held directly)	39
Marie-Hélène Meyling (shares held directly)	28
Maxime Villota (shares held through an employee investment fund - FCPE)	26

Messrs Abadie, Comolli, D'Escatha, Dubertret, Rignac, Sellal and Van de Maele held no shares in EDF at December 31, 2011.

1.12.3 Governance bodies

1.12.3.1 Executive Committee

On February 4, 2010, the EDF group formed a new management team headed by Henri Proglio. The members of the Group's Executive Committee (COMEX) at December 31, 2011 are: Henri Proglio, Chairman and Chief Executive Officer, Marianne Laigneau, Group Senior Executive Vice President, Human Resources, Pierre Lederer,

Group Senior Executive Vice President, Customers, Optimization and Trading, Hervé Machenaud, Group Senior Executive Vice President, Generation and Engineering, Jean-Louis Mathias, Group Senior Executive Vice President, Activities Coordination in France, Information Systems, Gas and Renewable Energy sources, Thomas Piquemal, Group Senior Executive Vice President, Finance, Vincent de Rivaz, Chief Executive of EDF Energy, and Alain Tchernonog, General Secretary. Denis Lépée, Advisor to the Chairman, is Secretary to the Executive Committee.

1.12.3.2 Management Committee

Henri Proglio heads the EDF group's Management Committee, whose members are the members of the COMEX plus: Michèle Bellon, Chair of ERDF's Management Board, Jean-Paul Bouttes, Director of Strategy and Prospective, Catherine Gros, Deputy Group Executive Vice President, Group Communications, Bruno Lescoeur, Deputy Group Executive Vice President, Gas, Philippe Méchet, Director of Institutional Relations, Bernard Salha, Director of Research and Development, Gérard Wolf, Deputy Group Executive Vice President in charge of International Activities. Denis Lépée is Secretary to the Management Committee and Alain Tchernonog chairs the committee in the absence of the Chairman and CEO.

1.12.4 Report of the Chairman of the Board required by article L.225-37 of the Commercial Code

The Chairman's 2011 report issued in application of article L.225-37 of the Commercial Code, and the Statutory Auditors' report, are sent to the Board of Directors at the same time as the management report.

1.13 Other information

1.13.1 Summarized corporate financial statements of EDF S.A. at December 31, 2011:

In millions of Euros	2011	2010
Sales excluding taxes	41,950	40,906
Operating profit	3,957	3,693
Profit before exceptional items and tax	1,277	1,898
Net exceptional profit (loss)	197	254
Net income	1,118	1,492

1.13.2 Net income

The 2010 income statement is marked by growth of more than 2% in sales and an increase of 7.1% in operating profit.

Despite a strongly negative weather effect with an adverse influence on sales to end customers, sales rose due to the positive price and tariff effects resulting from the tariff increases applicable from August 15, 2010 and July 1, 2011, and spot market prices that were slightly higher on average than in 2010.

The net financial income was down by €886 million, mainly due to net impairment in respect of financial assets, particularly dedicated assets, and the lower dividends received compared to 2010.

1.13.3 Allocation of net income

The dividend distribution policy is defined by the Board of Directors, depending on the Company's results and financial position and taking into consideration the dividend policies of major French and international companies in the same business sector.

The following dividends were paid for the previous three years:

Year	Number of shares	Dividend per share	Total dividends paid (after deduction of treasury shares)
2008	1,822,171,090	€1.28	€2,328,200,485.12 ⁽¹⁾
2009	1,848,866,662	€1.15	€2,111,146,365.85 ⁽²⁾
2010	1,848,866,662	€1.15	€2,122,291,972.68 ⁽³⁾

(1) Interim dividend paid in 2008: €1,164,067,897.60

(2) Interim dividend paid in 2009: €1,002,006,770.05 (including €937,815,444.36 paid in the form of new shares)

(3) Interim dividend paid in 2010: €1,053,582,029.82

100% of the dividend is eligible for the special 40% tax allowance under paragraph 3-2 of article 158 of the French tax code.

1.13.3 Five-year summary of EDF results

	2011	2010	2009	2008	2007
Capital at year-end					
Capital (M€)	924	924	924	911	911
Capital contributions (M€)					
Number of ordinary shares in existence	1,848,866,662	1,848,866,662	1,848,866,662	1,822,171,090	1,822,171,090
Number of priority dividend shares (with no voting rights) in existence	-	-	-	-	-
Maximum number of future shares to be created	-	-	-	-	-
by conversion of bonds	-	-	-	-	-
by exercise of subscription rights	-	-	-	-	-
Operations and results of the year (M€)					
Sales excluding taxes	41,950	40,906	38,895	39,003	33,638
Earnings before taxes, employee profit sharing, depreciation and provisions	5,417	4,906	4,531	3,842	5,838
Income taxes	356	660	402	(346)	835
Employee profit share for the year					
Earnings after taxes, employee profit sharing, depreciation and provisions	1,118	1,492	4,580	867	4,934
Earnings distributed		2,122 ⁽¹⁾	2,111 ⁽¹⁾	2,328 ⁽¹⁾	2,330 ⁽¹⁾
Interim dividend distributed	1,053	1,054	1,002	1,164	1,057
Earnings per share (€/share)					
Earnings after taxes and employee profit sharing, before depreciation and provisions	2.74	2.30	2.23	2.30	2.75
Earnings after taxes, employee profit sharing, depreciation and provisions	0.60	0.81	2.48	0.48	2.71
Dividend per share		1.15 ⁽¹⁾	1.15 ⁽¹⁾	1.28 ⁽¹⁾	1.28 ⁽¹⁾
Interim dividend per share	0.57	0.57	0.55	0.64	0.58
Personnel					
Average number of employees over the year	62,479	60,380	59,837	59,131	58,778
Total payroll expense for the year (M€)	3,600	3,377	3,265	3,178	2,940
Amounts paid for employee benefits and similar (social security, company benefit schemes, etc) (M€)	2,161	2,125	2,025	1,917	1,737

(1) Including the interim dividend paid out

1.13.5 Payments to Suppliers

Since December 1, 2008, the Company has applied the French law on modernization of the economy and settles supplier invoices within 60 days of the invoice date. EDF SA's trade payables excluding invoices receivable amounted to €3,029 million, distributed as follows:

- Invoices due: €24 million (less than 1%);
- Invoices payable within 60 days: €2,798 million (92%);
- Invoices payable after 60 days: €207 million (7%).

Most supplier invoices payable after 60 days relate to contracts for nuclear activities that were negotiated before January 1, 2009 and have not been renegotiated. A smaller proportion of these invoices relate to contracts that are not governed by the French law because they concern activities taking place outside France.

2 Corporate responsibility

With its core values of respect for individuals, environmental responsibility, striving for excellence, a commitment to solidarity and a demand for integrity, ever since it was formed the EDF group has applied a strategy that focuses on the public interest, based on a corporate responsibility approach.

This is reflected in EDF's constant concern for the safety of people and the security of its industrial facilities, while contributing to secure supplies of quality electricity at a competitive price in each country where the Group does business.

The EDF group's policies are part of this corporate responsibility approach:

- The Group strategy to 2020, as validated at the 2011 General Shareholders' Meeting,
- The Group-level sustainable development policy signed by all Group companies in 2009, itself comprising environmental, societal and governance policies,
- The Human Resources and social policy, particularly through a worldwide Corporate Social Responsibility agreement signed with the union organizations of 16 Group companies,
- A Group code of ethics, currently being rolled out to replace EDF SA's Ethics Guide.

2.1 Ethics, transparency to stakeholders and governance

2.1.1 Ethical framework and principles

The Group Management decided in late 2010 to renew and adjust its ethical guidelines based on the Group's five values (the 2007 Ethics Guide), leading to concerted elaboration of a **new Code of Ethics** presenting simple principles of action and rules for behavior, applicable to and shared by all. The proposal was adopted by the Group Management Committee on October 19, 2011. A second phase of concertation is due to take place in the first quarter of 2012 to ensure that these principles are understood as fully as possible in national languages and that the new code will be adopted despite differences in businesses and culture; once this is completed, the Code will be rolled out across the whole Group.

The Chairman and CEO's decision of September 14, 2010 on **anti-fraud action in the Group**, with its basic principle of zero tolerance, has been in application since late 2010: the managers responsible for implementing this decision have used the Group Fraud prevention guidelines which specifically address risks of fraud and corruption.

On the issue of corruption, all procedures for validation of intermediaries' contracts have been refocused following application of the Chairman's decision of May 31, 2010 on **consultancy and agency agreements**.

A program to raise **awareness of EDF's criminal risk** (Chairman's decision of July 28, 2011) has been launched in response to the emergence of higher exposure to this type of risk as the Group has expanded and diversified its operations across the world. This also results from tightening of anti-corruption laws in the US (the 1997 Foreign Corrupt Practices Act, reactivated in 2008) and UK (the Anti-Bribery Act effective from July 1, 2011): due to the extraterritorial aspect of these laws, international anticorruption regulations are taking shape.

To reduce the Group's exposure to the risks associated with application of **competition rules**, the competition compliance program deriving from the Chairman's decision of December 22, 2010 extended its awareness-raising and training action in 2011 to the greatest possible number of operative staff in all subsidiaries, both in and outside France.

All these ethical actions are subject to the Group's internal control, which was broadened in 2011 to generalize practices that encourage auto-evaluation and sharing of good practices, in line with the recommendations on Ethics and Anti-fraud measures that make up some of the earliest sections of the Group's Internal Control Manual guide.

The scope and practicalities of EDF's **ethical alert procedure**, which also receives employees' calls on the free "life at work" number when EDF's intervention is required, were validated by the French data protection agency CNIL on November 24, 2011. EDF's ethical delegate examined 53 cases in 2011, mostly concerning positions or relations in the workplace, and 5 concerning integrity.

In 2011, EDF, DONG Energy, Enel/Endesa, E.ON, GDF-Suez/Electrabel, RWE and Vattenfall/Nuon all worked together on the **Better Coal** initiative to improve responsible commitment by businesses belonging to the coal supply chain, with particular emphasis on respect of fundamental rights at mining sites. The initiative's operational launch is scheduled for the first half of 2012 and is built on a common standard for social, environmental and ethical principles (in line with existing international standards and the international initiative concerning extractive industries): audits and auto-evaluations of suppliers under the standard will include the mining sites, and audit results will be shared using a dedicated database managed by Better Coal. The Chairman of EDF signed the Better Coal membership charter on January 9, 2012.

2.1.2 Governance arrangements

The EDF group's environmental and societal policy draws on the principles stated in its "Agenda 21" and the United Nations Global Compact, which the Group joined in 2001. The Group has formally defined its action in a sustainable development policy that addresses the relevant key issues, guided by EDF's ethical approach. This is reflected in an environmental policy focusing on climate change prevention and protection of biodiversity, and a societal policy promoting access to energy, local responsibility and contributions to education on energy issues.

Governance of sustainable development takes place through the following organizations, systems and monitoring bodies:

- A **sustainable development department**, whose task is to encourage, coordinate, support and report on actions by EDF departments and Group companies to achieve its commitments under the sustainable development policy.

- A **Group Sustainable Development Committee** formed in late 2008, made up of the heads of sustainable development from the principal Group companies and divisions. While respecting the independence of each Group entity, the Committee's task is to supervise implementation of Group policy and coordinate certification applications in coherence with the Group's ISO 14001 certification, as well as to develop sharing of experiences and best practices between its entities.
This Committee held three plenary meetings in 2011: one in Hungary at the request of EDF Demasz tp examine the Hungarian context, one in London at the invitation of EDF Energy to discuss the 2012 London Olympic Games, and one at EDF Energies Nouvelles' operating and maintenance site in Colombier-Béziers in France, focusing on the question of renewable energies.
During these meetings the Committee undertook its annual review of the Group's Environmental Management System, and the stakeholder relations approach and the Group's new Code of Ethics under preparation were presented. Additional sector-specific work was initiated on priority themes such as the acceptability of facilities, biomass sustainability, changes in legislation (at European and world level) and energy poverty. The top priority for 2012 is to re-examine the Group's Sustainable Development policy.

- An **environmental management system** (EMS) that is used in all entities (see 2.2.1.1).

- **Project screening** through the COMEX's Commitments Committee. Before being submitted to this committee, the Group's major investment projects undergo an assessment of their exposure to the risk of "non-achievement of sustainable development commitments".

- A system to **incorporate sustainable development issues into project management**. Project managers have instruments (the Durabilis program) to help them develop action plans for sustainable development, and encourage them to identify the stakeholders concerned by their project, the project's consequences for local employment, creation of value in the local area, secure working conditions, reasonable use of local resources, biodiversity impacts, etc. Durabilis was tested with some twenty project managers in the Group in 2011 (at EDF Energy, EDF Energies Nouvelles, EDF, and other entities), and is now operational in French and English. It is applied in the business line management divisions as part of the

“improving project success” program. Also, the “project management” training offered to employees of EDF, Tiru, ERDF and EDF Energies Nouvelles covers sustainable development concerns using practical case studies. These awareness-raising training courses were attended by 150 project managers during 2011 and will be repeated in 2012.

Meanwhile, EDF Energy joined forces with the University of Cambridge to set up management training on the issues of climate change and local acceptability of industrial facilities, attended by 60 managers in 2012.

2.1.3 Dialogue with stakeholders

All Group companies engage in dialogue with stakeholders, each using its own procedures. This dialogue covers 5 areas:

- Local consultation concerning generation sites and proposed new industrial establishments,
- Organized customer relations, suppliers, sector partners, socio-professional associations, local authorities and national and international institutions,
- Operational partnerships with NGOs and the academic world,
- Gatherings of experts and representative personalities in independent boards or panels to provide Group managers with external critical analysis,
- Information and education in energy and sustainable development issues, especially for young people.

Local information near generation sites and consultation on industrial projects

In France, 38 local information commissions consisting of elected officials, State representatives, associations and professional bodies keep local residents informed of nuclear facility activities, as required by regulations. EDF works with these commissions at its power plants and provides the information needed to fulfill their mission.

In addition to this regulatory system, EDF has set up a public information center at each nuclear power plant to inform local populations of the plants’ operations and impacts, energy-related issues, control of energy consumption and presentation of business lines that will provide jobs in the electricity sector in the future. In 2011, these information centers registered a 13% increase in visitor numbers: tours of the nuclear plants increased in the second part of the year after the Fukushima accident, reaching a total of over 216,000 visitors. In 60% of cases the reason for visiting was to find out more about the way nuclear electricity is produced. In continuation of the past two years, EDF’s image with local populations remained broadly positive, with 83% declaring it has a good image. This indicator thus appears to show that the Fukushima accident has had only a moderate impact.

In hydropower, EDF pursued its permanent information and safety campaigns to warn water users of the risks of variable water flow in the rivers, including installation of boards with photographs showing the “before and after” situation. In 2011, the R&D teams carried out in-depth analysis of certain critical sites at the request of the hydropower engineering division, raising ideas for enhancing communication procedures, improving risk perception by different types of water users and identifying where relations should be developed with actors such as sports clubs. The conclusions of their report will be shared with all hydropower generation units in 2012 to improve control of the risk associated with variable water flow. Once again, hydroguides were employed in the summer season to guard against on-site incidents (50 hydroguides in 2011 with a communication budget of around €1 million). These guides were able to put forward useful proposals for additions or changes to the information boards, or repositioning of lifebuoys.

For new industrial projects, Group companies are reinforcing their consultation and information approaches based on tried and tested models used by NTPC for the Nam Theun dam in Laos, Edison for the Rovigo regasification terminal and the IGI gas pipeline in Italy, and EDF for installation of the marine turbine demonstrator at Paimpol-Bréhat in France. For the Hinkley Point EPR project in the UK, EDF Energy set up large-scale consultation with local residents between 2009 and 2011. More than 6,500 people were consulted, 34 exhibitions were organized presenting the project and setting aside time for personal dialogue with visitors, and 67 debates were held with local authorities. A dedicated website was also created. 33,000 comments were posted, forming the basis for a consultation report included with the application for permission to build the EPR that was submitted to the Infrastructure Planning Commission in October 2011.

Reorientation of the sustainable development partnership strategy

EDF rethought its sustainable development partnership policy in 2011, and every Group project in the area is now examined by the Partnership committee. Sustainable development partnerships were concentrated in two areas over the year: Nature/biodiversity, and action against energy poverty (see chapter 2.3.2 for more details on the second of these themes). As regulations are being tightened up and all Group business lines and projects are facing the question of biodiversity, priority has been given to the subject of Nature, to raise expertise and know-how in EDF's divisions and companies regarding knowledge of environmental impacts, and to go beyond the action already undertaken in compliance with regulations.

Nature partnerships are entered into, primarily with the Group's longstanding NGO partners (including the French Committee of the International Union for Conservation of Nature, French Nature Reserves (*Réserves Naturelles de France*), the Coastal Protection Agency (*Conservatoire du Littoral*), the Bird Protection League (*Ligue pour la Protection des Oiseaux*), Nicolas Hulot Foundation, and the National Federation for Fishing in France (*Fédération nationale pour la pêche en France*), to enhance action for biodiversity and develop joint projects: studies of bird migration, mapping of areas around hydropower reservoirs, restoration of the natural environment around coastline power plants, introduction of resources for knowledge of natural areas, etc.

Other partnerships have been reoriented to focus on practical operations, like EDF's work with the International Weather Forum *Forum International de la Météo* : in September 2011, EDF organized lectures for a non-specialist audience on climate change and the options for adaptation.

Meanwhile, the Sustainable Development division has continued its action with think tanks and research chairs, for instance at the prestigious *Ecole des Mines* (the "New Energy Strategies" chair) and Paris-Dauphine University. It increased its support to the *Institut du développement durable et des relations internationales*, a think tank set up by the *Institut des études politiques*, to develop its international dimension and help it enter into strategic partnerships with emerging countries. EDF is providing support in three programs that are closely related to its sustainable development activities and commitments: climate, biodiversity and the urban fabric.

In Morocco, a country where the Group intends to invest in the long term, EDF has been working since May 2011 through R20-Regions of Climate Action (an NGO covering 37 regions in the world) with the Eastern Morocco region, which plays a key role in development of renewable energies. The first project is to improve energy efficiency.

Advice from independent panels

Several panels of experts provide their outside view to Group managers and companies: the Sustainable Development Panel at Group level, the Environmental, Societal, Scientific and Medical Councils at EDF in France, the Stakeholder Advisory Panel for EDF Energy, and the Social Committee at Edison.

Themes debated by external panels in 2011

EDF	<ul style="list-style-type: none">- Consequences of the Fukushima accident for the EDF group- Societal and environmental issues of sustainable cities- Evolution of the public service model
EDF Energy	<ul style="list-style-type: none">- Electricity market reform in the United Kingdom- New Nuclear- Transparency on nuclear activities following Fukushima
Edison	<ul style="list-style-type: none">- Human Rights- Consumers and environment

Information on energy and sustainable development issues

In 2011 Group companies stepped up their programs to raise young people's awareness of energy control and sustainable development issues, via internet or through talks held in schools.

Principal actions of 2011

EDF	<ul style="list-style-type: none">- Renovation of the <i>Energie Sphère</i> website (http://jeunes.edf.com), reinforcing the educational programs on energy control,- Development of the Facebook game Kompany, where young internet users can form and grow a company by buying energy,- 3,000 talks given in primary schools on electricity-related risks in the home,- 500 talks on the risks of variable water flow in rivers given in primary schools located near hydropower dams,- 2,400 talks on sustainable development issues given in senior schools at the request of teachers, in connection with the school curricula.
EDF Energy	<ul style="list-style-type: none">- Continuation of <i>The Pod</i> web portal in partnership with the European Eco-School program and the British NGO Eden Project (bringing environmental topics to the attention of 2.5 million children),- Creation of a program on the company website to inform children about the risks and dangers of electricity.
Edison	<ul style="list-style-type: none">- Continuation of the <i>Eco Generation. Schools as climate's friend</i> campaign in pilot schools, giving 2,500 pupils an introduction to sustainable development and control of energy consumption; this campaign now has its own Facebook community,- Membership of the <i>Cres.Co</i> program with 23 other companies, to encourage students of 4 major cities in Lombardy to adopt responsible behaviors for water consumption, waste recycling and electric mobility.
EDF Luminus	<ul style="list-style-type: none">- Elaboration of an educational program to teach primary school pupils (from three different language communities) about rational use of energy. This program will be partly led by company employees.

2.1.4 Reporting systems

The commitment of transparency to stakeholders is put into practice through reporting action. At Group level, EDF publishes an annual sustainable development report on its website (<http://rapport-dd-2010.edf.com>), analyzing the environmental, societal and social impacts of Group companies' industrial and commercial businesses. This reporting uses the non-financial indicators defined in the Global Reporting Initiative, complies with France's NRE law and is in line with the international commitments of the Global Compact to which the EDF group was one of the earliest signatories.

The form and content of the Group's reporting are constantly reviewed for improvement: broadening qualitative data to include the Group's new companies (in 2011 this involved incorporation of the impacts of CENG's nuclear activities, and the hydropower and windpower activities of EDF Luminus in Belgium); simplifying access to information for internet users; comparing of EDF's performance with others in the sector; taking on board stakeholder views (service providers, customers); including educational graphics (showing the environmental impacts of hydropower facilities, and chemical and gas discharge from nuclear power plants); and publishing assessments by non-financial ratings agencies.

The Group is also progressively rolling out a process to have the quality of these non-financial indicators verified by the Statutory Auditors.

At EDF's request, for 2010 the statutory auditors issued a review report equivalent to a "moderate assurance" opinion on a selection of environmental and social indicators published in the sustainable development report. For 2011, in addition to renewal of this assessment for the selection of indicators, the Group is also aiming for "reasonable assurance" on the "CO₂ emissions (for electricity and heat generation)" and "total workforce at year-end" indicators.

The sustainable development information published by the Group is based on evaluations by ratings agencies or non-financial analyst departments acting on behalf of investors.

Since 2005, EDF has been included in the ASPI index, an “ethical” index comprising 120 firms assessed on the basis of their sustainable development performance by the French CSR rating agency Vigeo. In 2011 EDF was ranked first in its sector for 2010 results, with an overall score of 60 out of 100.

The companies of the EDF group prepare their non-financial reporting in the form of an annual sustainable development report (Edison in Italy, ERDF, RTE in France, EDF Energies Nouvelles), by including sustainable development issues in their annual report (UTE Norte Fluminense in Brazil), or by publishing commitments and indicators on their website (EDF Energy in the United Kingdom, CENG in the United States).

2.2 Environmental information

2.2.1 General environmental policy

2.2.1.1 Organization and ISO 14001 certification

Environmental management system

The Group’s entities use an environmental management system (EMS). Initiatives, objectives and indicators are coordinated through the system at Group level according to the commitments in the Group’s environmental policy, overseen by a Supervisory Board and groups focusing on specific themes.

This system gained ISO 14001 certification in 2002, renewed in 2008 then 2011 for a three-year period by AFNOR certification. When the certification was renewed in March 2011, almost 80% of sales was covered by ISO 14001 certification.

In connection with operation of EMS across the group, EDF has structured its approach in an environmental management program (EMP).

The 2012 program, which will receive final validation at the Supervisory Board’s review in March 2012, aims at consolidating environmental initiatives in order to achieve the targets set in EDF’s sustainable development policy, particularly:

- Continuing to reduce the Group’s CO₂ emissions by improving nuclear fleet availability and adjusting the energy mix (developing renewable energies and commissioning new generation units, particularly combined cycle gas units),
- Limiting environmental impacts, especially on biodiversity,
- Improving management and recycling of non-nuclear waste,
- Screening sustainable development criteria for industrial investment and maintenance projects,
- Maintaining the good level of employment and management awareness,
- Demonstrating continuous improvement and performance,
- Giving greater recognition to employees’ efforts to achieve targets,
- Improving organization further, ensuring that activities are in compliance with regulations.

The EDF group’s Sustainable Development policy will be reviewed in 2012, followed by all the action plans of Group companies, in line with the chosen orientations.

Oversight of environmental risks

Risk mapping and risk control levels, including EDF’s environmental risks, are prepared by the Group’s Risk Control Division, in relation with all Group subsidiaries and entities.

Financially and economically, the most significant factors associated with environmental risks relate to:

- Deployment of energy efficiency actions and achieving the associated certificates,
- Impacts of EDF businesses on the air water and ground quality and waste production,
- Greenhouse gas emissions.

These risks are fully integrated into EDF’s environmental management system and are covered by action plans resulting from the orientations laid down in the Group’s Sustainable Development policy.

2.2.1.2 Employee information and training

EDF instigated a program to raise employee awareness of sustainable development in 2009. It takes the form of service operations (*Action Planète*, renamed *Wattitude* in 2011) offering French employees products and services at special rates to reduce their energy consumption and carbon footprint, and an associated campaign to educate users and promote environmentally responsible behavior in everyday life.

The company has also chosen to include sustainable development criteria in calculation of its employee profit share. For 2011, the five criteria used included two Sustainable Development criteria: the recycling rate for waste managed by EDF, and the proportion of employees who followed at least one training course during the year. 40% of employee profit share is linked to achievement of these objectives.

To raise employee awareness of biodiversity issues in the operational business lines, EDF has prepared a series of guides on information, methodology and good practices. Guides for hydropower and building management were produced in 2011, and further guides for the network, nuclear and fossil-fired businesses will be brought out in 2012. Alongside these targeted actions, an e-learning course on biodiversity, devised jointly with the French Foundation for Nature and Man, is accessible on the e-campus intranet training platform.

2.2.1.3 Identification and prevention of risks

To control the risks of industrial accidents with consequences for the natural environment and/or public health, each Group company identifies potential events with environmental impacts, manages the emergencies that may result and carries out the corresponding crisis drill exercises. Emergencies are handled in conjunction with Group Management through a centrally-organized procedure, and the necessary information is supplied to the administrative authorities and the media. Intervention processes are regularly reviewed and consequently improved.

The most significant major environmental risks identified in 2011 for the Group's business activities concern ground pollution, waste management, elimination of remaining PCBs, preservation of biodiversity, and management of both the quality and quantity of water resources. Working parties organized through the environmental management system are set up to monitor certain risks common to all the Group's entities and subsidiaries. The risk identification and classification is reviewed annually as part of the internal control procedure.

In EDF's entities and subsidiaries, these risks are covered by specific action plans focusing on prevention and remedial action for such situations.

There were no major significant events in 2011. Each operational unit has its own monitoring system and reports on the environmental events under its responsibility.

Such events are of minor importance and generally relate to operating problems such as low-volume, localized hydrocarbon spills, dust emissions in the air, and changes in water flow downstream of hydropower facilities. Each event is analyzed individually, and the necessary corrective action is defined based on an overall review using the ISO 14001 certified management system.

2.2.1.4 Environmental research

With its forward-looking action for the medium and long-term, EDF's R&D is preparing for the Group's future in line with the environmental issues it faces.

Its research areas focus on three major priorities:

- | | |
|---|--|
| Consolidation of a carbon-free energy mix | - by reinforcing the Group's nuclear potential through actions designed to generate further improvements in the existing fleet's safety and performance, operating lifetime and development of new reactors, incorporating the lessons learned from the Fukushima accident,
- by developing renewable energies: this involves identifying technological breakthroughs with significant competitive value, and working to bring the most promising technologies into industrial existence, |
|---|--|

Development of a flexible demand for low-carbon energy	- by improving knowledge of demand and promoting new uses for electricity (heat pumps, mobile electricity, etc); and developing technical and economic models for buildings and sustainable cities by promoting energy efficiency.
Adaptation of the electricity system	- by improving management of network assets, optimization models and economic scenarios for proposed new transmission infrastructures, incorporating intermittent energies and developing "smart grids".

Following the 2010 opening of two research units in Poland (biomass and clean fossil fuel co-combustion) and the United Kingdom (offshore wind farms and nuclear power), R&D internationalization continued in 2011 with the creation of a third center in Beijing to participate in large-scale demonstration projects concerning smart grids, sustainable cities, and carbon capture and storage.

The main areas for research in 2011 are:

- Speedy identification of legionella in the nuclear plants (in 48 hours rather than 13 days as previously), to reduce chemical discharge into the environment,
- Carbon capture by processing exhaust gases at the fossil-fired plants (optimization of a Danish test unit, cutting energy consumption and costs by 15%),
- Introduction of energy efficiency services for EDF Energy's large customers, comprising optimization of electric tension, regulation of heating and lighting systems, refrigerating units and waste heat recovery,
- Participation (together with Saint Gobain, Schneider, the CEA, and other entities) in the SIMBIO project to develop digital tools to help the building industry rise to the challenge of the new RT 2012 heat regulations and BEPOS rules for positive energy buildings.

2.2.2 Safety of industrial facilities, and personal safety for employees and third parties

2.2.2.1 Nuclear safety

Plant safety during operation is the top priority for the EDF group. It is taken into consideration from the initial design stage, and is regularly monitored, together with implementation of an employee motivation policy and large-scale investment programs. A large number of nuclear safety inspections are carried out both by external and internal bodies.

In France, the safety of nuclear facilities is inspected by the Nuclear Safety Authority (ASN). The International Nuclear Event Scale (INES) classifies events on a scale of 1 to 7, with 7 being the most serious. Incidents of no consequence for nuclear safety are classified as "deviations" or level 0 events.

In the United Kingdom, the Office for Civil Nuclear Security (OCNS) is the independent watchdog authority for safety in the civil nuclear sector. It monitors compliance with security rules, including for transportation of radioactive matter.

In the United States, the Nuclear Regulatory Commission (NRC) oversees the quality and safety of the nuclear fleet's operations. The Institute of Nuclear Power Operations (INPO), of which all US nuclear operators are members, conducts evaluations and analyses with the aim of achieving excellence in operation.

Results for 2011

There was no serious safety event or above-limit discharge in 2011.

The number of significant safety events declared in France to the Nuclear Safety Authority in 2011 (10.6 per reactor) was in line with 2009 and 2010, but with a noticeable fall in the number of events classified as INES level 1 (0.91 per reactor). This achievement deserves note despite the declaration of one level 2 event (in early 2011) due to faults in the backup generators for the 900 MWe units.

At EDF Energy in the UK where differences in declaration procedures reflect different reporting requirements, the number of significant safety events was down (4.7 per reactor). More comparable is the number of events

classified under the INES: the number of events declared, all level 1 in 2011, was up from 2010 and higher than in the French fleet (1.3 per reactor).

Detailed results on nuclear safety for 2011 are published in the annual report drawn up by the Inspector of Nuclear Safety, available from EDF's sustainable development report website (<http://rapport-dd.edf.com>, to be released in April 2012).

After the Fukushima accident of March 2011, the ASN requested additional safety assessments of regulated nuclear installations and site-by-site reports. On September 15, 2011, EDF remitted 19 reports to the ASN, all accessible via the website edf.fr. The EDF group proposes changes to reinforce security in the most extreme circumstances, and recommends creating an additional crisis management unit FARN (*Force d'Action Rapide du Nucléaire* or Nuclear Rapid Action Force), which was tested in real conditions during the Cruas emergency drill exercise of October 18, 2011.

Asked for their opinion on these reports, the ASN's permanent panels of experts stressed their quality, considering they respond well to the remit and provide a good basis for analyzing installations' durability, as well as proposing improvements. The ASN also commented that the additional safety assessments show no significant shortcomings in definition of the level of external events considered (earthquakes, floods, etc).

The ASN also acknowledged and approved EDF's proposed action, particularly the concept of "core" focus on a limited number of plant buildings, systems and components (in an approach that goes beyond consideration of the scale of potential problems alone and ensures installations are robust to the situations studied in the assessment reports), and the FARN crisis unit.

Once the ASN's conclusions on these assessment reports have been published in early 2012, EDF will draw up an action plan for further studies and the modifications that are decided. This plan is likely to cover a horizon of several years.

2.2.2.2 Hydropower safety

In France, EDF operates 447 hydropower plants and manages the water reservoirs held by its 239 large dams. The average age of French hydropower facilities is 60 years. Hydropower safety measures are designed to control risks of breaches in dams or related facilities, the risks associated with operating during high water level periods, and the risks related to water flow variability during operation.

Safety at EDF's hydropower fleet remained satisfactory in 2011:

- There were no major incidents,
- Local detection of significant (non-serious) events was good,
- The number of events with external effects was substantially lower (23 in 2011, compared to 32 in 2010 and 34 in 2009),
- The number of "high-criticality" sites as regards variations in water flow downstream of installations continued to decline, falling from 58 in 2007 to 19 in 2011.

The *SuPerHydro* renovation program for hydropower facilities (standing for *Sûreté et Performance de l'Hydraulique*) is 65% complete, in line with the objectives set. Almost €850 million have been allocated to improving safety, and 368 of the 446 operations scheduled until 2013 specifically concern safety. 240 of these 368 operations had been executed by the end of 2011. The main examples were:

- Dam reinforcements and repairs at Jonc, Lac Mort, and La Bridoire,
- Work to make dykes stronger or more watertight at Curbans and Kembs,
- Work to make tunnels stronger or more watertight at L'Argentière, Escouloubre, and Valabres.

Several large-scale projects were also undertaken in 2011, such as partial reconstruction of floodgates at Vallières, Sarrans and Arreau, replacement of pressure pipelines at Nentilla and Pareloup-Alrance, dyke and lock reinforcement at Fessenheim and maintenance work on the Madières canal.

Control of risks associated with wear and tear is a major concern in hydropower, and was intensified in 2011 when the long-term maintenance policy was reviewed. The objective of organizing a long-term maintenance strategy begun under the *SuperHydro* program is now continuing as part of the *RenouvEau* program, which includes safety reassessments intended to guarantee operating lifetimes in the very long term.

Owners or operators of dams are required by law to carry out safety reviews and danger assessments, and EDF has set itself the target of completing 242 danger assessments by 2014 and 150 safety reviews by 2017. By the end of 2011, 120 danger assessments and 50 safety reviews had been carried out.

For further details, see the 2011 report by the Inspector of Hydropower Safety, available from EDF's sustainable development report website (<http://rapport-dd.edf.com>), to be released in April 2012).

2.2.3 Waste policy and management

2.2.3.1 Nuclear waste

In France, radioactive waste is classified by activity level and lifetime, following the classification used by the French national agency for radioactive waste management ANDRA (*Agence nationale pour la gestion des déchets radioactifs*). Waste is listed in an inventory stating its location, and the data are published and regularly updated by ANDRA.

Four industrial principles govern management of this waste: limiting quantities, sorting by nature, stable conditioning, isolation from humans and the environment. Limited quantities of radioactive waste are produced: 1 MWh of nuclear electricity (equivalent to a month's consumption for 2 households) generates around 11g of radioactive waste, 90% of which is short-life waste.

In 2011, 1,018 tonnes of spent nuclear fuel were processed at the La Hague plant.

EDF applies a strategy of gradually increasing the performance of nuclear fuel. The objective is to raise nuclear energy output by increasing the combustion rate and optimizing operating cycles to improve nuclear plant availability, while allowing for shutdown schedules in line with seasonal variance in demand.

EDF's current strategy for the nuclear fuel cycle, in agreement with the French State, is to process spent fuel and recycle the plutonium separated in this process in the form of MOX fuel. Approximately 1,200 tonnes of fuel are used each year and the current recycling capacities can process close to 1,050 tonnes of spent fuel annually.

To ensure that future generations will not have to bear the cost of managing spent fuel and decommissioning nuclear plants, EDF sets aside provisions and is progressively building up dedicated assets to fund those provisions. In 2011, provisions for decommissioning and last cores amounted to €19,843 million, and provisions for the back-end nuclear cycle totaled €18,830 million. The price per KWh thus includes all expenses related to this obligation, i.e. the cost of managing long-life waste and the cost of plant decommissioning and current waste conditioning.

EDF's research programs also cover:

- Classification of nuclear waste, its conditioning into packages, and its subsequent long-term behavior in storage,
- Geothermal behavior of geological storage and long-term safety,
- Development of a long-term view in keeping with the prospects for developing 4th generation reactors.

EDF's R&D teams and ANDRA are working together on the question of how packages of nuclear waste behave in geological storage, and on models simulating the behavior of the host rock, particularly argillite.

EDF is also participating in the European Carbowaste project on management of the graphite resulting from decommissioning, alongside German research bodies, the CEA, Manchester University and ANDRA.

2.2.3.2 Management of radioactive effluents

Management of the nuclear power plants' radioactive gas and liquid effluents is governed by strict regulations and EDF's ambition to limit the environmental and health impacts of its installations, reaffirmed in the Group's environmental policy. In terms of radioactive emissions, plant performance depends not only on the efficiency of effluent processing systems, but also on operating practices.

The action taken in plant design and operation has brought radioactive gas and liquid discharge to a very low "minimum" level. While already operating well below the regulatory limits, EDF reduced its radioactive liquid emissions (other than tritium and carbon-14) by a factor of 25 between 1990 and 2002, then halved those emissions again between 2002 and 2008.

Measurements taken by the operator are monitored to confirm that running the installations has no impact on the environment.

Sampling and measurement campaigns carried out by external laboratories and universities for radio-ecological and hydro-biological monitoring confirm the lack of impact in the long term. Campaigns are designed to improve control of chemical waste effluents, similar to the efforts deployed for radioactive effluents. Special attention is paid to water cooling circuits due to the volumes of discharge involved. Biocides are used to control the spread of micro-organisms in the water contained in these circuits.

2.2.3.3 Industrial waste

EDF prepares an annual review of management of non-nuclear waste produced by generation and research activities in the previous year. For 2009, 2010 and 2011, the actual recycling rate for all non-nuclear waste produced by generation and engineering work (excluding fly ash and gypsum, which are fully recycled) was 73.6%, 79.6% and 85% respectively.

A number of events were organized in 2011 to encourage Group employees to reduce waste production: a multi-business line day was organized to share experiences, with the participation of the French environment and energy management agency ADEME, and a best practice competition was held during the European week for waste reduction.

One major example of the practical achievements of 2011 was the reduction of scrubbing sludge in boilers at a fossil-fired plant, limitation and reuse of packaging from products delivered to island installations, redeployment of equipment under a donation agreement on a nuclear site, and introduction of environmentally friendly products to replace dangerous products at a site being decommissioned.

2.2.4 Long-term management of resources

The Group has several levers to reduce consumption of natural resources:

- Increasing plant efficiency and limiting loss during generation, transmission and distribution by using the most effective technologies. For example:
 - o Replacing old fossil-fired plants by the latest-generation coal-fired (supercritical) plants or combined-cycle gas plants,
 - o Developing cogeneration, i.e. combined generation of heat and electricity,
- Using more effective fossil fuels (coal, fuel oil, gas) and fissile fuel (uranium),
- Increasing the efficiency of uranium by recycling (of plutonium as MOx fuel), and raising the capacity of certain "breeder reactors" to generate more fissile matter than they consume,
- Developing renewable energies: hydropower, pumped storage power stations (STEP), onshore windpower, solar power (particularly photovoltaic), biomass, and marine energy (marine turbines and tide power) (see section 2.2.4.2).

Energy-saving campaigns are another source of resource protection.

The products developed and marketed by EDF incorporate energy efficiency, use of renewable energies in buildings, and incentives for restraint in energy consumption.

The following factors underpin their organization:

- demand side management (DSM) services: insulation, building renovation, advice and heat diagnoses,
- development and intensive integration of new distributed energies into buildings for heat generation (heat pumps, solar water-heaters, woodburning stoves and fireplaces),
- management of the load curve to reduce or defer peakload CO₂-producing consumption,
- use of smart meters, to optimize networks and carry out remote measurement services and remote actions to reduce greenhouse gas emissions,
- "green" energy options offered to customers, producing no CO₂ emissions, or partly carbon-offset offers.

2.2.4.1 Energy control

Following France's Environment Roundtables known as the *Grenelle de l'Environnement*, EDF is developing offers that encourage customers to control their demand for energy and give priority to the lowest-carbon generation methods.

Its commitment to energy control is guided by the energy saving certificate system, which assigns every supplier obligations to save energy with customers. A three-year target saving is defined and allocated between operators based on their sales volumes:

- 54 TWhp for the first period, from July 1, 2006 to June 30, 2009;
- 345 TWhp for the second period, from January 1, 2011 to December 31, 2013. For this second period, EDF's obligation should be in the region of 140 TWhp (compared to 29.8 TWhp for the first period).

The offering for residential customers focuses on control of consumption, with new tariffs that encourage energy savings. The standing charge is falling and the price per kWh is rising. There are special rates for off-peak consumption, as peak generation is more costly and generates more CO₂.

DSM action by EDF with residential customers in 2011

In France

Monitoring consumption

- the *Suivi Conso* offer, which attracted 120,000 new customers in 2011,
- development of an app for smartphone and PC that enables customers to estimate their bill, taking seasonal effects and past consumption patterns into consideration,
- rollout of a "managing consumption" product line (detailed breakdown of electricity, gas and water consumption),
- launch of two new services integrated into this range: "energy and fluid mapping" for all customers, and "energy and fluid optimization" for industrial customers at the high end of the portfolio.

Awareness-raising / information

- letters are sent out with bills to draw attention to the importance of renovating homes to improve energy-efficiency,
- introduction of the smartphone and iphone application on ecologically friendly habits,
- introduction of a smartphone application about the energy labels given to household electrical appliances, with personalized calculation of energy consumption,
- TV, press and radio advertising campaigns on home renovation all year round,
- letters are sent out on ecologically friendly habits for all customers covered by solidarity measures,
- trials in early 2012 with an in-store home energy diagnosis offer called *Mon Diag Conso Habitat*.

Awareness of energy efficiency

- a self-diagnosis application was set up in late 2011 on the websites edfentreprises.fr and edfcollectivités.fr,

	<ul style="list-style-type: none"> - promotion of global solutions with businesses and local authorities to reduce energy expenses and CO₂ emissions, through EDF Optimal Solutions (EOS).
Heat surveys of buildings	<ul style="list-style-type: none"> - DSM advisory services from EDF experts, sold to almost 1000 customers, - the Électricité de Strasbourg group is continuing to develop its <i>Esprit</i> offers (insulation, wood); numbers are constant compared to 2010 (1,700 offers to residential customers), - Électricité de Strasbourg is enhancing its range with the <i>Esprit Isolation</i> offering, ecological energy diagnosis and improvement of DSM information on the website, which has a dedicated area on environmentally-friendly living.
<u>In the Island Energy Systems</u>	
Energy Efficiency Agreement with social housing	<ul style="list-style-type: none"> - EDF Archipel Guadeloupe signed a partnership agreement with SEMAG (a mixed-economy company for development in Guadeloupe) to promote efficient energy facilities in social housing built during the period 2011-2013. EDF Archipel Guadeloupe is also committed to financing some of the work to improve energy performance in substandard housing.
Management of consumption	<ul style="list-style-type: none"> - 27,000 low-energy consumption lamps were distributed to social housing units on Reunion island in 2011, under an agreement signed between EDF and the moderate-rent housing organization SHLMR, - in Martinique, the <i>info Eko</i> service was introduced: customers are alerted by text message of high-consumption periods, to encourage them to cut down on energy use at such times.
<u>In the United Kingdom</u>	
Management of consumption	<ul style="list-style-type: none"> - EDF Energy has developed the <i>EcoManager</i> energy monitor: over 6,000 customers currently benefit from an <i>EcoManager</i> package, and more than 15,000 sales were registered in 2011. A survey of 700 customers has shown that this monitor is achieving its major aims, helping consumers to understand the running costs of household appliances and control their energy consumption. This survey indicated strong customer commitment: <ul style="list-style-type: none"> • 87% of customers now monitor their energy consumption, • 76% of customers now take more care with their energy consumption, • 68% of customers believe this is helping them to reduce their carbon footprint. - Launch of an iPhone application enabling customers to send in meter readings 24 hours a day, 7 days a week, and receive updated information on their energy use online. More than 12,000 meter readings have so far been received online. <p>Using this application, customers can also:</p> <ul style="list-style-type: none"> • See other information on how to read their meter, and watch a help video, • See information on saving energy, • Contact customer services by telephone or email, • Access all emergency numbers for gas and electricity.
Energy efficiency	<ul style="list-style-type: none"> - When EDF Energy's electricity supply contract was renewed with the UK's 4th-largest supermarket chain Morrisons, an annual consumer of 1.5 TWh of electricity in its 445 stores, an energy efficiency clause was inserted promising Morrisons annual savings of £1 million for three years. Execution of this energy service will rely heavily on the energy efficiency experience and expertise of EDF's R&D in France.

Italy

- Management of consumption
- Launch in 2011 by Edison of a new offer to reduce energy consumption called *Zero Sorprese*: the customer chooses one of ten packages depending on his typical electricity consumption; if he exceeds the contractual consumption level he is informed by text message or on his bill.

Experiments on the DSM market

In Corsica, Guadeloupe and Réunion, IES launched the Millener project in 2011 through a consortium formed with six industrial partners (including Tenesol and Edelia), with backing from the ADEME and the regions concerned by the project.

The aim of this pilot project is to install rooftop solar power systems in 1,500 homes, with individual energy storage and computerized consumption management facilities. The objectives are:

- To achieve better integration of renewable energies in each island's electricity generation mix,
- To reinforce real-time monitoring of the electricity supply-demand balance,
- To help customers save energy,
- To identify durable economic systems that can contribute to internal development and the energy independence desired by certain regions.

Smart grids

The European Commission has made modernization of electricity meters a legal requirement: under a 2009 directive, by 2020, 80% of meters must be "smart meters" which enable users to control their consumption.

Giving new information and communication technologies a greater role in electricity networks will help bring about the transition towards a carbon-free energy economy:

- The new grids will encourage integration of intermittent renewable energies, and adoption of new uses (heat pumps, electric vehicles/PHVs, etc), both key factors for the future of distribution networks.
The aim is to create mesh networks equipped with remote control systems and software to identify damaged areas in the network, and compensate for any shortfalls, even optimize electricity deliveries. The Group's distributors are cooperating on these new networks. Along with other European distributors ERDF took part in the launch of the *EDSO for smart grids* association created to share experiences and establish an industry standard.
- The new grids will allow consumers to take charge of their energy use to achieve greater energy efficiency in interaction with the network.

To meet this requirement in France, ERDF and the French energy regulator CRE launched the **Linky** project to modernize the 35 million electricity meters all over France. More than 250,000 Linky smart meters have been installed in the Lyons and Indre-et-Loire areas of the country in an initial experiment.

ERDF coordinates the European *GRID4EU* project

ERDF is to coordinate this major initiative, which has been set up in response to the European Commission-financed smart grid research program. GRID4EU is the largest program for smart grids co-financed by the European Union (€25 million of the total €54 million cost), and will involve a consortium of six European distributors representing 50% of customers in Europe.

The aim is to work together to move forward on:

- Integration of generation from renewable energy sources,
- Automation and security of the electricity network,
- Effective customer participation in consumption management,
- Support for development of electric vehicle and electricity storage solutions.

DSM action by EDF with business and collective customers in 2011

In France in 2011, EDF's Sales Department launched its "managing consumption" product line for business and collective customers, which provides a detailed breakdown of consumption of one or more utilities (water, gas, electricity, etc). Sales of the *Suivi Conso* service to residential customers also continued during the year, attracting 120,000 new customers.

2.2.4.2 Development of renewable energies

The EDF group aims to have a diversified mix comprising 25% of renewable energies by 2020. It is making significant investments, particularly in hydropower, windpower and solar power, with support from EDF Energies Nouvelles (which became a fully-owned subsidiary during 2011) and its large European companies.

Main developments in 2011

Onshore windpower	<ul style="list-style-type: none">- 598.6 MW of additional gross capacity for EDF Energies Nouvelles, including:<ul style="list-style-type: none">o in France, the Corbières Méditerranée project (20.7 MW) in the Aude region,o in central Greece, the Trikorfo windfarm (24 MW),o in Turkey, the Seyitali windfarm (30 MW) in the Izmir region,o in the United States, the Lakefield project (205.5 MW) in the state of Minnesota.- In Italy, Edison commissioned two windfarms, in Foiano and San Giorgio La Molara (in the southern Italy's Campania region), with installed capacity of approximately 71 MW.
Offshore windpower	<ul style="list-style-type: none">- In Belgium, EDF Energies Nouvelles is continuing the <i>C-Power</i> project with construction of 295 MW,- In October 2011, EDF sank the first tidal turbine off the coast of France near Paimpol and Bréhat island. The tidal farm will ultimately comprise four turbines with unit power of 0.5 MW, and should be able to supply 2,000 to 3,000 households by the autumn of 2012.
Solar power	<ul style="list-style-type: none">- 146.4 MWp of photovoltaic solar power capacities were in operation by the end of 2011 for EDF EN. Several facilities were commissioned in 2011, particularly:<ul style="list-style-type: none">o in France, including Blauvac (2.6 MWp) in the Vaucluse region, Romilly-sur-Seine (7.5 MWp sold) in the Aube region, Bouloc (10.2 MWp) in the Haute-Garonne region, Saint-Symphorien (24 MWp, including 12 sold) in the Gironde area, and the major project at Gabardan in the Landes region (67.2 MWp including 38.6 MWp sold), which was fully connected to the network in autumn 2011.o in Italy, the Cisterna di Latina (3 MWp) project in the Latium region, Ancona (3.3 MWc) in the Marches, and Augusta (6.7 MWp) in Sicily.- In Italy, Edison completed construction of 4 new photovoltaic solar power plant:<ul style="list-style-type: none">o Piedimonte San Germano, Oviglio and Cascine Bianche (VC) totaling approximately 6.5 MWp.o Approximately 90 kWp at the Trofarello research center site near Turin.

Capacities under construction

Onshore windpower	<ul style="list-style-type: none">- EDF EN is continuing its expansion and has the following capacities under construction:<ul style="list-style-type: none">o 242 MW in the United Kingdom and 47 MW in France,o 176 MW in Turkey,o 122 MW in Italy and 69 MW in Greece,o 103 MW in the United States and 230 MW in Canada.
Offshore windpower	EDF Energy Renewables, a 50/50 subsidiary of EDF EN and EDF Energy in the United Kingdom, began construction of the Teesside windfarm (62 MW at sea) off the coast of north-east England.
Solar power	<ul style="list-style-type: none">- EDF EN is continuing construction of solar power plants in Europe and the United States:<ul style="list-style-type: none">o 285 MWp in France, 1 MWp in Greece, 12 MWp in Canada and Spain,o 9.5 MWp in the United States.

Other developments

Geothermal projects In 2011 IES remitted an EDF offer to the government of Dominica (Caribbean) to develop its geothermal potential through a 5-10 MW geothermal storage project. IES set up a business grouping headed by EDF, with a co-investor (building company NGE) and three technical partners (Électricité de Strasbourg for its know-how in geothermal matters, Alstom for the turbine and Cofor for deep drilling).
As well as the first small power plant, this group is preparing for a 120 MW facility with prospects for exporting approximately 100 MW of clean, competitive energy to Martinique, then Guadeloupe.

Marine energies In the short term, progress was made on two tangible projects in 2011:

- A marine STEP (pumped storage power station) in Guadeloupe and a tidal river turbine in Guyana,
- a Harvest prototype tested on the canal at the Pont-de-Claix plant in France's Isère region.

Hydropower – renewal of concessions

EDF is currently the operator for the majority of hydroelectric concessions in France. The concessions had an initial term of 75 years pursuant to the French hydropower use law of October 16, 1919, and are generally renewed for terms of 30 to 50 years.

On April 22, 2010, the French government named the concessions in mainland France that would be renewed by tender during the period up to 2015. Ten valley concessions with a combined capacity of approximately 5,300 MW or 20% of the French hydropower fleet's capacity will be up for renewal (including 200 MW of requests surplus capacity). The State has decided to renew 13 concessions early, including 12 operated by EDF, in order to group facilities by valley.

For EDF, these renewals represent total capacity of some 4,300 MW and average annual generation output of close to 7 TWh or 15% of EDF's total gross hydropower output. About half will be renewed early (approximately 2,150 MW and 3.5 TWh).

Between 2015 and 2025, further concessions covering approximately 1,000 MW and 3 TWh will expire and be put up for tender.

The decree awarding EDF the 60-year concession for the future Romanche-Gavet power plant was published on December 31, 2011 in France's Official Gazette (*Journal Officiel*), together with the decree renewing the Group's term as operator of six existing plants along the Romanche valley in the coming ten years. This marked the culmination of a process initiated in April 2001, and more importantly the largest hydropower project ever undertaken by EDF in France.

The total project investment amounts to €250 million, covering construction of an underground power plant with two generators each of 47 MW, for annual producible hydropower of 560 million KWh.

Preliminary work began in 2011, and the facilities are due to be completed in 2016 and commissioned in 2017.

2.2.4.3 Management of water resources

In view of the importance of water resources needed for its electricity and heat businesses, the EDF group has included consideration of water risks into its overall risk policy. Every investment decision is subjected to detailed risk analysis and impact studies. In France, a strategic committee for water has drawn up a water policy and oversees its implementation. This policy is a response to four major concerns: "preparing for tomorrow" (EDF must meet society's expectations in an increasingly complex context for sharing the resource of water); adjusting to regulatory and societal change; contribution to multi-use management of water and local economic development; and optimizing the energy producer's operational management of water.

2011 was a very dry year with water shortages in France, and EDF managed its reservoirs so as to preserve low-carbon electricity generation, support water flows for fossil-fired and nuclear power plants, and share water resources with local users (farmers, other industrial users, fishermen, and green tourism promoters). In certain valleys including the Dordogne, Truyère and Maurienne valleys EDF decided to cut back sales by 25% in order to protect water reserves in these areas.

EDF and other Group companies are seeking to increase output by industrial facilities, especially fossil-fired plants. In Poland, used water is recycled to cool turbines. At Cordemais (France) a rainwater recovery system is used to irrigate the ash park and thus stop pumping water from the river Loire. In Brazil, UTE Norte Fluminense has introduced a comprehensive program to cut consumption at the Macaé CCG plant, involving identification and reduction of process fluid leaks, less purging, and a research program with the University of Rio to reduce vaporization in water ventilation systems. In 2011, the company built a rainwater collection system and in 2012 it will be launching a program to reuse all process waters and reinject them into its water circuits. These two operations should achieve a combined reduction of 15-20% in water drawings.

EDF is increasingly active on the international scene, through the World Business Council for Sustainable Development (WBCSD) Water working group (EDF joined the Water Leader Group in 2010), and in its commitment to the 6th World Water Forum to be held in Marseille in March 2012.

2.2.4.4 Ground management

The Group's industrial activities can cause ground pollution and may have done so in the past. An action plan is continuing for all Group real estate assets, consisting of four stages: identification of real estate sites (this stage is complete for EDF), identification of sites potentially affected by pollution, analysis of soil samples from the potentially polluted sites - beginning with sensitive areas - and monitoring those sites to control sources of pollution and develop a management plan, and lastly rehabilitation where relevant, depending on the future use and regulatory requirements.

Askarel transformers

European directive 96/59/EC of September 16, 1996 requires an inventory of equipment containing PCBs and PCTs⁴⁸, together with a national plan for decontamination and the gradual elimination of these substances, which are principally found in certain electricity transformers and condensers.

Decontamination of equipment containing these substances was completed by the regulatory deadline of December 31, 2010.

Phytosanitary products

The Group's Real Estate division launched an inventory of phytosanitary product consumption in 2010 across all property sites managed in France. This brought results: in 2011, consumption was reduced by 6% compared to 2009 levels.

2.2.5 Climate change

Thanks to the high proportion of nuclear and low-carbon renewable energy plants in its generation fleet (including hydropower facilities), the EDF group firmly intends to remain the leading energy operator in action to fight climate change and reduce greenhouse gas emissions. It subscribes to the EU objective of cutting emissions by at least 20% between 1990 and 2020, taking into account the diversity of local energy situations.

The Group is addressing the issue of climate change by investing in low-carbon or carbon-free generation facilities, including renewable energies (see 2.2.4.2) and nuclear power, with the aim of achieving installed generation capacity of 160 GW (net) by 2020: 50% nuclear, 25% gas-fired or fossil-fired and 25% hydropower

⁴⁸ Polychlorinated biphenyls (PCBs) and polychlorinated terphenyls (PCTs).

and other renewable energy sources (windpower, biomass, solar power etc). This objective assigns 6% more of the generation mix to renewable energies (from 19% in 2010 to 25% in 2020).

Meanwhile, the Group's strategy also involves helping customers to reduce their own CO₂ emissions by creating and promoting eco-efficient packages and advice on rational energy use.

2.2.5.1 Reducing CO₂ emissions by industrial facilities, particularly in generation

In 2011, the Group produced 70,541 tonnes of CO₂ emissions worldwide. In France, EDF is one of the largest industrial CO₂ emitters, producing 14,360 million tonnes even though more than 96% of electricity generation emits no CO₂, keeping its specific emission rate at 30.4g CO₂/kWh.

EDF has several ways to reduce its greenhouse gas emissions:

- In the short term, optimization of the generation fleet by improving operating performance;
- In the longer term, adapting the generation fleet: renewing plants (CT and CCG), protecting hydropower potential, developing renewable energies and downgrading the highest-pollution facilities.

Fossil-fired plants

The environmental performances of fossil-fired plants have been constantly improved in response to the stricter requirements introduced in successive revisions of the applicable regulations. Investment programs incorporate the requirements for improvement of air quality and reduction of atmospheric emissions. They also respond to the regulations on greenhouse gases, taking into consideration security of supply and the cost of fossil fuels.

Since the DeNox systems to reduce nitrogen oxide were put into operation in 2007 and 2008, atmospheric emissions have fallen considerably. In France in 2011, the Group continued its "BasNOx" emission-cutting projects at unit 3 of the Porcheville plant and unit 3 at Cordemais. With the exception of the Martigues site which is governed by specific regulations, all oil-fired facilities now use oil with very very low sulfur content (0.55% sulfur).

In Poland, the fossil-fired plants are particularly challenged by pollutant emissions in the air. Most of EDF Polska's boilers are now fitted with low-NOx burners. In preparation for application from January 1, 2016 of the EU's Industrial Emissions directive that will limit sulfur dioxide (SO₂) and nitrogen oxide (NOx) emissions to 200 mg/Nm³, EDF Polska issued a call for tenders in late 2011 concerning installation of desulfurization systems in the cogeneration units at EC Krakow, Kogeneracja and EC Wybrzeze.

The Group is pursuing its renovation and adaptation programs for existing fleets. In France, October 2011 saw the commissioning of the first of two CCGTs at the Blénod site (430 MW) and construction work on two CCGs (465 MW each) at Martigues. These three CCGs will replace nine 250 MW coal-fired plants and one 600 MW unit, eliminating SO₂ emissions, halving CO₂ emissions and cutting NOx emissions by two thirds.

The transition from oil to gas for the two combustion turbines at Montereau took place during 2011.

In the United Kingdom, construction continued as planned on the new 1300 MW combined cycle gas plant next to the existing coal-fired plant at West Burton. The new plant, comprising three units, will be operational in 2012.

In Poland, on December 5, 2011, the EDF group announced that a 900 MW supercritical coal-fired power plant would be erected at Rybnik. This plant's "supercritical" technology will be able to produce more competitive electricity using local coal, and cut the Group's CO₂ emissions by one million tonnes per year for an equivalent energy output.

Finally, the EDF group is participating in post-combustion and oxy-combustion harnessing projects with industrial partners, concerning CCS (Carbon Dioxide Capture and Storage) technology, and studies concerning the transmission and storage of CO₂. A carbon capture demonstrator is currently being built at Le Havre in conjunction with Alstom and Veolia Environnement, with the support of the ADEME.

2.2.5.2 Diffuse greenhouse gas emissions

A plan to cut emissions from EDF's buildings and vehicle fleets was rolled out in 2010. In addition to direct emissions by energy facilities, EDF is committed to reducing its diffuse emissions from office buildings, company vehicles and business-related travel, through the DSM program with Group.

The EDF group manages a significant real estate portfolio (more than 4.5 million square meters excluding electricity generation buildings). Most buildings are located in France, but the portfolio extends across all countries where EDF does business. The Group monitors and seeks to reduce the environmental impact of all its buildings, whether owned outright or leased.

The targets for reduction of diffuse emissions by the service buildings owned and leased by the Group fall into the following areas:

- DSM actions through adjustment of the way installations are operated,
- optimization of surface occupation,
- renewal of the portfolio of owned buildings,
- use of the best available technology,
- application of energy performance contracts for all office locations under subcontracted management.

To support this plan, EDF joined the International Sustainability Alliance (ISA) in 2010. The ISA's main objective is to contribute to development of sustainable buildings at European and worldwide level. Since this primarily requires good knowledge of the current portfolio's actual performance, ISA members have joined forces with the BRE (Building Research Establishment) to create an environmental database currently covering some 10,000 buildings. Environmental data are translated into key performance indicators on energy and water consumption, CO₂ emissions, and waste production, in line with the indicators prepared in other international initiatives (including the Global Reporting Initiative).

In 2011, EDF added some 230 buildings located in France and England and considered high priority to the ISA database. It is currently examining how to broaden the sample in 2012.

In Brazil, the "sun roof" at UTE Norte Fluminense supplies the electricity needed for the site's administration. With installed capacity of 320 kWp, the equivalent of annual consumption for 300 households, this roof has 1,800 solar panels on an area of 2,500 m².

Company Commuter Plans have already been introduced in most of France and are being rolled out progressively to all Group companies.

Each Group company now has its own specific strategy adapted from the Group strategy, as appropriate to its business and the energy environment in which it operates.

2.2.5.3 Adapting the Group's businesses to climate change

As climate change also directly affects energy demand and the physical environment in which generation, distribution and transmission are carried out, the EDF group has a strategy for adaptation to climate change, adopted by the Sustainable Development Committee in June 2010. This strategy concerns current and future industrial facilities, customer offers, production/consumption optimization, and R&D themes, organized around the following aims:

- Evaluating the impact of climate change (currently in operation and predicted) on installations and activities,
- Where relevant, adapting installations to reduce their sensibility to extreme weather conditions,
- Taking future weather and climate into consideration in the design of new facilities,
- Improving resistance to extreme changes and situations that are harder to predict.

2.2.6 Preserving biodiversity

Like the struggle against climate change, preserving biodiversity is now seen as a major priority for planners. It is particularly relevant for the EDF group, which constantly monitors the environmental impacts of its industrial

activities in order to better control and reduce them. This is reflected in the inclusion of biodiversity preservation as one of the nine commitments of EDF's sustainable development policy.

In France, the major event in this area concerned the Poutès dam in the Allier region. In October 2011, the French government approved EDF's plan to reconfigure the dam. Through consultation with stakeholders, a solution acceptable to all parties was found such that electricity generation levels could be maintained (90%) while allowing migrant fish to circulate: the dam's height will be reduced from 17 to 4 meters, and swimways will be installed to allow the fish to cross the dam, plus a central floodgate that can be completely lowered in high water periods. The whole project incorporates the recommendations of engineers from the National Water Office (ONEMA).

A 4-year framework agreement for protection and restoration of water environments was also signed in February 2011 between ONEMA and EDF. This partnership covers:

- Research and development (changes in water temperature, movements of sediment),
- Exchange of data on water quality and quantity, incorporating the information system on water,
- Mutual training in hydro-electricity and water environments,
- Joint reviews to improve integration of hydropower facilities into the environment.

Other flagship projects in favor of biodiversity in 2011

EDF Real Estate division	Continuation of the work begun on reasonable management of green spaces: training in biodiversity for managers in the south-west region, and introduction of 6 training courses for service providers in charge of the upkeep of green spaces at the St Alban, Cruas, Belleville-sur-Loire, Gravelines, Paluel and Creys-Malville nuclear plants.
EDF Archipel Guadeloupe (IES)	Signature in January 2011 of a partnership agreement with the Port Autonome de Guadeloupe and the <i>Comité des pêches</i> to rebuild a coral environment using recycled electricity poles. The poles are dropped offshore where they will provide sealife with similar protection to coral reefs.
UTE Norte Fluminense (Brazil)	Reinforcement of the program to protect the primary Atlantic forest in the Macae de Cima region, in conjunction with the Secretary of State for the environment (this action is mandatory), Continuation of the protection program for the lion tamarin monkey, a native endangered species, through reforestation campaigns (this action is voluntary).
EDF Luminus (Belgium)	Work has begun on construction of a fish ladder following a report on aquatic flora and fauna conducted in connection with renewed operation of the Ivoz-Ramet power plant.
EDF Energies Nouvelles	EDF EN has made commitments for regular biological and ecological monitoring of all new generation sites, Protection of the rare Bonelli's eagle at the photovoltaic power plant at Puylobier (Bouches-du-Rhône): whole sections of the site are kept free of installations, and water pools are being developed to encourage growth of frogs and toads, the eagle's main source of food, Creation of biological corridors at the Toul photovoltaic power project (Meurthe-et-Moselle), where three tranches of solar panels will be mounted at a certain height above ground so that rural activities can continue.
EDF Demasz (Hungary)	Stork protection program in the Körös Maros national park, with raised platforms installed on network poles to provide a safe nesting place.

2.3 Societal information

Governance of sustainable development is based on shared organizations, systems and supervisory bodies concentrating on the environmental and societal issues described in section 2.1.1 Management of sustainable development.

2.3.1 Management of societal affairs

The EDF group's societal policy is an integral part of the Group's sustainable development policy, in compliance with the UN Global Compact. The principles of this policy are included in the corporate social responsibility (CSR) agreement.

The three main strategies of the societal policy are:

- to facilitate access to energy and energy eco-efficiency for vulnerable people,
- to contribute to the economic and social development of the areas covered by EDF,
- to contribute to the debate on sustainable development and EDF's activities, fostering local dialogue and knowledge of energy-related issues.

EDF supports and illustrates its social policy in two booklets presenting more than 80 measures for a responsible contribution to society.

2.3.2 Contributing to action against energy poverty

EDF is committed to helping its most vulnerable customers, and goes further than the regulatory obligations in its action against energy poverty.

The issue of energy poverty is growing across Europe, although the associated definitions, public responses and energy operator involvement vary widely from one country to the next.

In France, the charity *Fondation Abbé Pierre* estimates that 3.8 million households (14.4%) were living below the poverty threshold (INSEE 2007) and experiencing energy poverty in 2011.

In the United Kingdom, the number of households concerned by energy poverty was estimated at 5.5 million or 21% of the population at the end of 2009 (*Department of Energy and Climate Change: Annual report on fuel poverty statistics 2011*).

In late 2010, EDF defined an official Group position on the question of energy poverty: "Commitment to support our most vulnerable customers."

As a socially responsible company, we are committed to supporting our most vulnerable residential customers. We are working with Governments, local authorities, non-governmental organizations and other stakeholders to promote the most efficient possible energy use to reduce consumption costs. With our partners, we are developing solutions and programs specific to each country to provide support for vulnerable households."

In France, EDF's commitment to contribute €49 million to the *Habiter mieux* (Better living) program will finance work to modernize heating in 58,000 homes occupied by low-income families over the period 2011-2013. This program was launched by the Government in 2010 to help the most modest householders owning the least energy-efficient homes by financing insulation and other renovation work that should cut energy consumption by at least 25%. This is applied through "local commitment contracts" between the State, the ANAH agency for home improvement subsidies, the local county authorities, EDF and other partners, who determine the practical arrangements and each party's contribution locally. In most cases, local authorities provide funding in addition to the State premium.

Partnerships with actors in solidarity were strengthened in 2011, which saw renewal of the agreement with the the National Union of Social Action Community Centers (UNCCAS), signature of an agreement with the charity *Secours Populaire Français*, and signature of the social mediation agreement with the National housing Information Agency ANIL. EDF also signed a partnership with the *Fondation de France*, following a call for innovative projects on the approach to fighting energy poverty that resulted in selection of 16 projects. All these partnerships reinforce the action undertaken as part of the 2000 homes, 2,000 families operation with the *Fondation Abbé Pierre* or the national partnership with *Unis Cités (Médiaterre)*, in which young volunteers do outreach work with residents in housing estates, to help them adjust their energy consumption behavior.

EDF also participates in mediation centers that provide information and assistance to prevent and resolve difficulties encountered by residential customers. This brings EDF closer to a section of its customer base, with opportunities to advise customers on their rights and energy usage, and address the question of recovery of energy debts. At December 31, 2011, EDF was a partner in close to 200 mediation and other contact points across France.

An Energy poverty observatory (*Observatoire de la précarité énergétique*) launched in France in March 2011 is engaged in research and development work to improve understanding of energy poverty and take action to reduce it. EDF took part in preparation of the Observatory's specifications and selection of the operators who will be in charge of carrying out the observatory's work from 2012.

In the United Kingdom, the government's "Warm Home Discount Regulations" of April 2011 introduced a new obligation incumbent on energy suppliers for the next 4 years, requiring them to provide support for customers at risk or in a situation of energy poverty. This regulation replaces the action taken under the "Supplier Voluntary Commitment". All operators with more than 250,000 customers must spend a combined amount of £250 million in 2011/2012, then £310 million by 2014. EDF Energy estimates that it will have to spend approximately £26 million in the first year, £10 million more than its voluntary commitments in 2010 and 2011. In addition to this obligation, EDF Energy is continuing to support disadvantaged customers through the Energy Assist tariff, donations to the Trust Fund and its three-year financial contribution to the government's "Community Energy Saving" (CESP) project set up to upgrade home insulation in underprivileged areas (concerning over 100,000 homes).

In Krakow in Poland, where winters are harsh and more than 13% of the population is below the poverty line, EDF's subsidiary EC Krakow is planning to contribute to development of the city where it operates. It donates heat to NGOs working to help the most vulnerable people.

2.3.3 Contributing to economic and social development of the areas covered by EDF

The EDF group wishes to live in harmony with the areas where it does business, and accordingly the impacts of its facilities and activities on local areas are identified and managed. Opportunities for long-term contribution to economic and social development in the local area are sought from the outset, such that EDF makes a particular contribution to integration of vulnerable people. EDF is proud to be an actor in local social cohesion.

Contributing to local development and integration of vulnerable people

EDF is particularly attentive to its contribution to local economic development, and gives priority to local employment as far as possible.

In the course of its Haute Marne and Meuse projects in France, 90% of building work on the DPI's industrial archives in Bure was done by local firms, as was 57% of work on the spare parts storage platform at Velaines.

In Italy, the Candela fossil-fired plant has been designed such that the heat recovered can be made available to the local horticultural "cluster", in an arrangement that not only supports local businesses and their exports, but has also created 300 jobs locally.

In Asia, the Nam Theun 2 dam in Laos is an exemplary sustainable development project, with its significant social and economic component, and the developers' special care to integrate it harmoniously into its natural environment. Agriculture was practiced extensively in the area before the dam was built, and "agriculture and livestock" programs are helping to gradually intensify farming activities that contribute to household income. 16 villages were created or moved in order to fill the reservoir, and 1,240 families were rehoused in new traditional-style homes. An extensive health program has been set up to monitor the 6,000 people who live alongside the reservoir, using new and renovated health centers offering services such as advice to local mayors on measures to prevent childhood malnutrition.

In jobseeking support in France, EDF and ERDF have set the objective of offering 1,000 disadvantaged unemployed people the opportunity to gain experience and qualifications through block-release training in a business line "with a future" by 2012.

EDF also has special programs to train young people, particularly those finding it difficult to join block release schemes. Its *Trait d'Union* campaign set up by the Sales Division actively helps young people to gain work and qualifications in customer service positions. By the end of 2011, the *Trait d'Union* and *Tremplin* campaigns had placed 460 people in training programs, especially in customer relations centers (25% more than in 2010).

In Flamanville, almost 200 jobless people identified under criteria proposed by EDF and adapted by employment workers at local job centers were hired to work in an organization that fosters social integration through employment.

In Chambéry, the Tiru Group, an EDF subsidiary specializing in recycling of household waste as renewable energy, set up *Valespace*, a center providing all-round support to help socially vulnerable people construct a career plan and find work. About 70 people are hired each year as sorting staff.

EDF promotes socially responsible purchasing in France through various channels: its three-year agreement for inclusion of disabled workers (in the section on the protected sector and organizations where the majority of the workforce is disabled – the annual objective of €6 million of purchases was exceeded), but also its socially responsible subcontracting agreement. EDF is increasing its purchases from schemes designed to help people back to work through economic activity (almost €2.1 million in 2011).

Contributing to local social cohesion

On September 28, 2010, the French government and nine major public service operators including EDF signed a partnership agreement for more public service entitled "*+ de services*", designed to develop access to a range of services for France's rural populations. The aim of this partnership is to provide inhabitants of rural areas with a range of services in a single place. 60 new contact offices are to be opened with EDF participation, in addition to the sites already in existence. This experiment is taking place in 23 areas of France and covers new Multiservice and Information points, and public service points mostly hosted by local authorities. The purpose is to simplify access for all types of user, by collaboration between signatories to the partnership and complementarities between traditional services, new technologies and physical multi-service offices. 21 of the 23 area contracts had been signed or validated, or were due for signature, by the end of 2011.

2.3.4 Subcontracting and responsible purchasing

EDF's "socially responsible subcontracting agreement" signed in October 2006 is one expression of the Group's CSR agreement, and has been renewed indefinitely, highlighting the intent to maintain industrial and service collaboration in the long term. This approach enables service providers to reinforce their activities and extend their capacity for sustainable development, rather than merely signing short-term or one-off contracts.

For subcontractors and their employees this agreement is a guarantee that their work for EDF will take place in optimum employment, qualification, working and health and safety conditions, and in full knowledge of the risks inherent to the activities exercised. The agreement's monitoring committee was set up in 2007. It holds three meetings a year, attended by signatories and representatives of EDF's various businesses, to examine progress on the action taken under the agreement.

Several types of action have been implemented across all EDF's business lines, for example:

- improving reception and working conditions for subcontractors on the nuclear and fossil-fired generation sites,
- concerted action with outsourcers in the nuclear business, to increase the sector's appeal and develop appropriate training,
- gaining the social responsibility label for the "integrated customer service relations" category, under the new and substantially more demanding label system,
- a sustainable development charter between EDF and its suppliers. Environmental, social and corporate criteria are also incorporated into purchasing strategies (assessment of supplier skills and feedback), starting from the initial preparation of specifications developed in close collaboration with the business activities requiring the outsourcers' services. The charter is integrated into the general terms and conditions and must be signed by all suppliers doing business with EDF. It sets forth reciprocal commitments including:
 - conduction of "sustainable development/corporate social responsibility" audits at the premises of suppliers and service providers to ensure these commitments are respected,
 - integration of social responsibility criteria in forming the panel of suppliers and collecting feedback after completion of services,
 - inclusion of modules on socially responsible subcontracting in training for purchasers, sponsors and actors in the purchasing process.

In 2011, a program of 57 sustainable development audits was executed at EDF suppliers established all over the world, based on the standards contained in SA 8000 and ISO 14001 and a criticality analysis.

2.3.5 Consumer health and safety

In France EDF offers residential *Bleu Ciel* brand customers an Electricity Safety Survey service proposed in partnership with the Consuel (electricity users' safety inspectors). This service is designed to enhance the safety of interior electricity installations: a Consuel inspector can come to customers' homes to look at the key points of their electricity fittings in all accessible rooms, checking that they meet minimum safety requirements under the UTE XP C 16-600 "State of electricity fittings in residential property" standard. A report of any problems noted and the associated risks is remitted to the customer, along with general advice on remedial action which should ideally be carried out by a professional electrician. 2,653 Electricity Safety Surveys were sold in 2011.

2.4 Social information

2.4.1 The Corporate Social Responsibility policy

Background and objectives

EDF has clearly expressed its human resources ambition in a dual social/economic project, reaffirming its HR strategy in three major priorities shared by all of the Group's business lines and companies:

- To develop skills and stimulate social mobility,
- To make recognition of each individual's importance, quality of life in the workplace and constant concern for health and safety drivers of a general commitment to sustainable performance,
- To introduce greater diversity and strengthen the Group's shared culture, particularly at management and expert level.

These priorities lie at the heart of the social dialogue that continued in 2011: 11 agreements were signed by EDF, on its own behalf or for the Group.

Implementation of the Corporate Social Responsibility Agreement

The EDF group's CSR agreement signed in 2005 was renewed in January 2009 for a 4-year period. This second agreement strengthens the Group's commitments, especially regarding subcontracting, the battle against climate change, and biodiversity. In 2011, the agreement monitoring committee elected a new secretary and new

officers. When the review took place, it was also decided to focus specifically on one of the agreement's 20 articles each year for more emphatic communication throughout the year, and a more in-depth assessment at the following review. This year the selected article is article 3, "Employees' adaptability during their careers: training and mobility".

Social responsibility policy towards suppliers and subcontractors

EDF's subcontracting agreement covers three major areas:

- first of all, in view of the industrial stakes and the characteristics of its generation facilities, EDF wants to give its subcontractors good visibility in the medium term, and work with its suppliers as partners,
- EDF also wishes to take its subcontracting practices forward by capitalizing on operational experiences and transferring best practices between business lines,
- Finally, EDF confirms its commitment to development of socially responsible subcontracting by signing or extending socially responsible subcontracting agreements with unions.

The major subcontracting issues at EDF SA in 2011 concerned both industrial and sales activities.

Up to 3,400 subcontractor employees at a time have worked on the Flamanville EPR construction site. The civil engineering work is near completion and work is now focusing on electro-mechanical assembly.

Since the unit attached to the local employment office was opened in late 2007, **2,547** job offers have been posted and 95% of posts were filled.

At December 31, 2011, approximately 78,100 hours of training for subcontractors had already taken place, mostly in electro-mechanical matters.

In anticipation of the consequences for local employment when the project is completed, a framework agreement for development of employment and skills was signed in July 2010 by the Prefect, the Chairmen of the Regional and County Councils, union organizations, financing organizations, and EDF. The action plan was drawn up during 2011 and became official in December.

Subcontracting of generation fleet maintenance (nuclear and other) continued in 2011 as in previous years. The outsourced activities mainly required highly specialized or rare skills that only specialist companies working for other industrial customers are in a position to develop and maintain on a permanent basis.

The highly seasonal pattern of outages in generation facilities leads to peaks that must be absorbed, and this too results in a certain amount of subcontracting.

EDF also uses subcontractors when it needs specialized labor.

Subcontracting thus corresponds to an industrial policy intended to guarantee the best performance in all areas at all times, as regards both skills and organization.

Customer relations, too, require subcontractors to absorb the additional workload generated when major changes occur, for instance when new IT systems are introduced. There were no significant changes in such practices in 2011.

2011 was marked by the nuclear accident at Japan's Fukushima plant. The consequences of this type of natural event for EDF's facilities are currently being analyzed, and the final results of this analysis are not yet known. The resulting future projects will certainly have an impact for subcontractors.

2.4.2 HR ambition: priorities

2.4.2.1 Developing skills

Jobs and skills

EDF is facing new challenges today:

- Its businesses are evolving along with technological, economic, and environmental stakes in the energy sector, and the group's ambitions for development in France and internationally,

- Human resource and skills requirements have also intensified with the resumption of industrial investments and expansion in nuclear engineering activities, particularly the relaunch of nuclear operations,
- More than 20% of the workforce of EDF and ERDF could retire in France between 2012 and 2016, many of them in the maintenance and operative workforce for generation, engineering and distribution.

Recruitment and mobility in the Group are essential drivers for skill renewal and providing support for the Group's development projects in France and internationally.

In 2011, the job website edfrecrute.com began to include EDF Energy offers, and will be extended to include other European countries in 2012. In a highly competitive job market EDF and ERDF took on more than 5,700 new employees in 2011. All the Group's technical business lines hired new staff, chiefly in electricity generation and distribution, but also in sales and R&D. Proportions were comparable for each of the three employee categories (management, supervisory and operative). Most of the new employees are newly-qualified, but EDF also recruits more experienced profiles.

New arrivals greatly outnumbered retirements in 2011, and this will continue to be the case in coming years.

Nuclear engineering and generation began to take on board the lessons of the Fukushima accident as soon as spring 2011, drawing up a program of measures that goes further than a concern for constant improvement in nuclear plant safety. Developing both the number and quality of skills will be a major focus of this program, which is still under construction.

Regarding mobility, EDF and ERDF have introduced systems to encourage career planning for employees. In early 2011 an intranet system went online to make information on career developments more easily accessible. Employees are directed to useful information from the EDF intranet, the business line sites or the ERDF and RTE websites.

Implementation of an international mobility policy is a vector for locating and supplying the skills necessary for projects taking place in some thirty countries. An extranet accessible to all of the Group's employees exists specifically for international information: employees interested in working in other countries can register on the system and recruiters can use it to find candidates to join the skill bank formed in each business line.

Training

The Group has always devoted a significant budget to employee training. Group-wide, EDF spent more than 7% of its total payroll on training. 70% of employees received training in 2011, equivalent to 47 hours per year per employee.

The rate of access to training and the volume of training per employee is also high: 83% of employees followed at least one training course in 2011, with an average duration of 70 hours.

The Group's managers in France benefit from this reinforced focus on training through the courses offered by the *Université Groupe du Management*. Three courses exist to support them as their responsibilities increase (*Pass Managers Première Ligne, Pass Managers Deuxième Ligne, Advanced Management Program*): 940 managers attended these courses in 2011.

Since December 2011, 9,000 managers in France have had access to a distance training platform called e-campus managers, allowing them to follow e-learning modules in the basics of management online.

In France, the "Training Challenge" (*Défi Formation*) agreement signed on September 10, 2010 by all unions representing EDF SA, ERDF, and RTE employees breathed new life into the Group's training policy: boosting social mobility (through restimulation of training leading to promotions, and block release programs) and creating 13 business line Academies, including for cross-functional business areas, all of which were awarded quality labels in 2011. A network of training sites exists in France including a Group Campus open to all divisions and subsidiaries, and three business line campuses for electricity generation, transmission and distribution: the network covers 35 training sites in all.

This approach is gradually being extended to Group companies worldwide, with internationalization of certain business line Academies (Legal, HR), another Campus planned for the Bridgewater site in the United Kingdom (decision made in 2011), and the "People Development Programme" validated by the Group's Management Committee in September 2011, intended to implement 6 commitments to employees in all Group companies in the world from 2012. These commitments concern:

- The annual interview, which should cover both performance and career development,
- Support from a HR contact at key stages in the employee's career,
- Access to appropriate training to gain qualifications for current and future posts,
- Visibility of job and mobility opportunities at company/country level and Group/world level,
- Information on changes in the employee's business line,
- Transfer of skills by block release and placement arrangements.

Block release schemes are the best vector for training, qualifications and employment for young people and others finding it difficult to enter the world of work, and a key element in the identity of EDF. During 2011, more than 3,000 block release trainees from school-leaving to postgraduate level joined EDF and ERDF on apprenticeship or training contracts leading to all types of qualifications and professional titles. This brought the number of such employees close to 5,000 at December 31, 2011 or around 5% of the combined EDF and ERDF workforce.

Block release students trained by the Group are given a key place in recruitment: in 2011, these candidates accounted for 8% of people hired for management jobs and 27% of people hired for supervisory and operational jobs at EDF and ERDF.

More than 4,000 mentors provide guidance and support for these trainee employees. Block release schemes also build on quality partnerships with several training bodies. At the initiative of EDF, ERDF and RTE, a new apprentice training centre for careers in the energy sector opened in the Paris region in September 2011. A total of 5,656 block release trainees were hired by the Group.

Remuneration

In order to attract, encourage and retain the talents that will enable EDF to rise to the industrial and commercial challenges it faces, EDF is developing a global remuneration policy in line with the best practices observed in comparable sectors.

This global compensation policy covers:

- recognition of the level of responsibility and the results achieved through the wage policy,
- recognition of collective performance through profit-sharing,
- employee savings plans and a company contribution to these savings,
- employee shareholding,
- social security coverage and employee benefits.

Since 2011, all EDF's employees in the Operatives-Technicians-Supervisors category have benefited from individual performance-related pay in the same way as managerial employees, based on individual and collective results.

For EDF SA and ERDF, the profit share agreements cover three years. Under these agreements the amounts payable will be determined according to achievement of national objectives (no more "business line" and "local" criteria) reflecting different aspects of the corporate performance (economic, business line, social and environmental). EDF SA's agreement was signed on June 30, 2011 for the period 2011-2013 and includes five national performance criteria (Group EBITDA, electricity generation, customer satisfaction, proportion of trained employees, and percentage of waste reprocessed).

Starting salary policy

At January 1, 2011, the statutory starting salaries for EDF employees were as follows (gross amount, paid in 13 months, 25% residence weighting - no previous experience):

- annual salary for people holding a CAP/BEP: €19,942 (€19,175 for a person with no qualifications)
- annual salary for people with the Baccalauréat: €20,735
- annual salary for people with a qualification involving 2 years studies after the Baccalauréat (BTS): €24,362
- annual salary for people with managerial status: between €34,099 and €41,418

The starting salary offered by EDF for the least-qualified staff was thus 22% higher than France's national minimum wage, which was €16,380 gross (12 months) at January 1, 2011.

Since 2008, EDF SA has offered each of its employees a full individual review of his/her pay and its components. An information booklet on employee savings has also been distributed to all employees of EDF SA and ERDF.

2.4.2.2 Workplace health policy

Health and safety

The EDF group operates in a high-technology sector where workplace risks are also high, and the health and safety of its employees and contractors are a key concern for the company.

EDF's health and safety policy, signed by the CEO in March 2009, takes account of changes in the work environment, new forms of jobs and longer working lives, all factors that brought out new concerns requiring policy reorientation. The policy results from cross-disciplinary dialogue between the actors concerned (management, experts, doctors, employee representatives). It is underpinned by respect for the individual, a value it places at the core of organizations.

A collective agreement on social dialogue for health and safety at work was signed in November 2010. In application of this agreement, eight doctors were designated by their peers to participate in the National Group for Health at Work, which was established in 2011 and met twice in the second half of the year.

November 2011 saw the Central Works Council's first meeting devoted entirely to the subject of health and safety, putting the company's multidisciplinary approach to health issues into practical application. At Group level, all safety measures are presented annually to the Health and Safety Commission of the European Works Council.

In addition to this attention to health, action has been taken to reinforce accident prevention through a focus on the core risks of the company's business.

Regarding industrial accidents, EDF has undertaken wide-scale prevention and training efforts for more than ten years, achieving a very significant reduction in the rate of industrial accidents causing sick leave. The Group has achieved regular improvement in the frequency rate (number of industrial accidents causing sick leave of more than one day during the current year, per million hours worked): 4.5 in 2010 and in 2009. The 2011 rate is 3.9, confirming this trend.

The principal causes of fatal accidents in Group are falls, collapses, and road accidents between home and work. A new system introduced in 2011 to share information on causes of significant events in the Group should foster progress in the area, especially for control of core business risks such as falls, electric risks and road risks.

Occupational dosimetry (radioprotection)

Mobilization of on-site actors has achieved ongoing improvement in the protection of personnel against ionizing radiation. The average annual collective dose of all workers, employees of both EDF and outside companies working in the power plants, was halved in less than 10 years. In 2011, the average collective dose was 0.71 mansieverts (mSv) per reactor (a collective dose of 41.62 mSv for 2011), comparable to the average values recorded by operators of the same type of reactor (PWR). This is slightly higher than in 2009 (0.69 mSv) and 2010 (0.62 mSv), but must be considered in relation to the significant volumes of maintenance work and the type of maintenance undertaken in 2011. EDF is actively continuing the ALARA (As Low as Reasonably Achievable) approach to control the collective dose, in anticipation of major refits and the resulting volumes of work.

EDF is continuing its efforts to bring individual doses from exposure to radiation below the regulatory limit. In 2011, the number of people (EDF and subcontractors' employees) registering an individual dose over a rolling 12-month period above 16 mSv but below 20 mSv (the legal annual whole-body limit) was never more than 2 (compared to 10 in 2009 and 3 in 2010), and none of the people concerned registered higher than 18 mSv.

Given the achievements so far, efforts in future years will focus in priority on plants with the least favorable dosimetry results, primarily through purification of circuits.

The constant improvement in radioprotection results involves a higher-quality radioprotection culture, on an equal footing with the general safety culture.

Quality of Life in the Workplace

In a move to a new level, policy rollout campaigns have focused on extending the health and safety field to incorporate preventive health programs. As a result, a number of programs have been developed concerning ergonomics and psychosocial risks.

The collective agreement on "Preventing psychosocial risks and improving quality of life at work" signed in November 2010 at EDF SA defined various multi-disciplinary dialogue arrangements in close relation to the actors' working situations and backgrounds.

The major campaigns undertaken in 2011 concerned:

- generalization of multidisciplinary groups and joint training for participants in these groups,
- inclusion of psychosocial risks in the single document required by the regulations (a guide has been published so that these risks are taken into consideration and evaluated),
- gradual inclusion of workplace quality aspects in impact studies conducted ahead of organizational change.

France's National Observatory of quality of life in the workplace, set up in June 2007, provides a setting for dialogue between doctors, managers, social partners and external experts and has held ten meetings since it was formed. The Observatory monitors working conditions, commissions studies and issues recommendations.

In 2008, it recommended introducing an EVREST (*Evolutions et Relations en Santé au Travail*) system at EDF, to give the company crossed indicators on health and work concerning employees' working conditions, training, lifestyle and state of health. In the IEG (gas and electricity) sector, by October 2011 98 doctors had registered and 72 of them had already filled in 4,808 questionnaires (up from 1,135 at the end of 2010). The findings of the 1,676 first questionnaires for the period 2009-2010 were reported in June 2011 at the Health and Work days for EDF SA and the IEG sector.

In 2009 and 2011, the Observatory issued other recommendations to encourage work-life interaction and intergenerational cooperation at work. These recommendations were sent to the management and an initial analysis of their application was carried out in 2011.

Also in 2011, one of the debates held by the Observatory concerned a presentation by ANACT, the French agency for improving working conditions, about the issues associated with longer working lives. This presentation stimulated reflection by the various stakeholders on how maintaining skills and health contributes to employee motivation.

Testing of a collaborative "Quality of Life in the Workplace" Web 2.0 area was launched in 2011: the aim is to enable managers and HR staff to share and build on good practices, consult experts' contributions and build a community on this theme.

At Group level, the priority assigned to improving Health and Quality of Life in the Workplace has resulted in sharing experiences, comparing data and observing practices in the business lines, and by invitation in the companies.

Exchanges of this kind are organized regularly in the Health and Safety community through "learning expeditions" of the kind that took place in November 2010 and October 2011 in France and England.

2.4.2.3 Diversity

The EDF group believes in promoting diversity as a performance driver, in order to:

- build up better perception of the diversity of customers, to meet their needs better,
- provide a better reflection of the society in which the group operates,
- enable men and women to express their talents to the best of their ability.

To achieve these aims, EDF has made several commitments to diversity, beginning in 2005 with its Group CSR agreement including several articles devoted to anti-discrimination, respect of diversity and promotion of equal opportunities.

The many actions undertaken include:

- Organization of an annual "Diversity Day" across the Group since 2008, with events to promote diversity, raise awareness of stereotypes and thus help to prevent all kinds of discrimination. These initiatives reached 40,000 Group employees in 2011.

- EDF and ERDF each signed a new 4-year agreement in 2009, covering the period 2009-2012, for integration of disabled people. These agreements both include recruitment targets: in 2011 94 disabled employees were hired by EDF, and 54 by ERDF. Both companies also run voluntary campaigns to hire young disabled people on block release training every year, resulting in 44 people joining the EDF and ERDF workforces in 2011.

- Proactive campaigns for equality in the workplace. A third agreement for **gender equality at work** was signed on February 8, 2012 by the CGT, CFDT, CFE-CGC and FO unions. Signatories undertake commitments on six themes: long-term change in mentalities, promotion of a gender mix in the workplace and in recruitment, equal career opportunities, equal training opportunities, consideration of working hours and conditions, and the work/life balance. Pay equality for men and women has been broadly achieved since 2009 as regards principal salary and performance-related salary. This achievement was rewarded with renewal of the *Egalité professionnelle* label first awarded to EDF in 2006 (and already renewed once in 2008, and once in 2011). EDF is also taking "upstream" action to foster a good gender mix. It promotes its technical business lines to girls through the *FemEnergia* prize awarded to women working in the nuclear sector, and entered into partnership in March 2011 with the *Elles Bougent* association formed to encourage female high school and university students to go into scientific and technical careers.

- Roll-out of the senior action plan presented to the Central Works Committee in December 2009 in compliance with French legislation (decrees of May 20, 2009).

The number of employees aged 56 and over is on the rise: this age group currently represents 9% of the workforce (8% in 2010), and at EDF over 50s account for 33% (34% in 2010), with more than 800 employees over 60 (around 500 in 2010).

The Group is committed to helping employees aged 55 and over to stay in work, and improving working conditions for older employees. Particular aims include changing current perceptions of work for older employees, encouraging career development throughout the employee's working life using milestones in the second part of a career (mid-career interviews are being progressively introduced), facilitating older employees' access to training and improving preparation for the transition from work to retirement (progressive introduction of career-end interviews began in late 2011).

- Signature on November 24, 2011 of a partnership with *L'Autre Cercle*, a French association that campaigns against discrimination based on sexual orientation and homophobia in the workplace. Measures will be taken to raise awareness of these issues.

- Designation of an ethical liaison officer in each entity, and installation of a national free telephone number that all employees can call if they encounter serious problems of this kind at work.

2.4.2.4 Social dialogue

One of EDF's priorities is to uphold its long tradition of social dialogue and consultation, to serve the company's objectives and employee development. Social dialogue has evolved quite extensively.

The employee representative elections held in November 2010 partly shaped the social dialogue of 2011 for two reasons. First, the CFTC union failed to qualify as representative at company level, and only the CFDT, CFE-CGC, CGT and CGT-FO unions are now considered representative at EDF SA. Second, in view of the election results, several collective negotiations took place in 2011 to redefine the unions' permitted resources and practicalities of operation.

In this context the following were negotiated in 2011:

- Amendment no. 2 to the agreement of January 18, 2008 on union delegates and the exercise of union rights at EDF SA, signed on May 13, 2011 by CFDT, CFE-CGC, and CGT.
- Amendment no. 2 to the agreement of March 7, 2008 on the operation of EDF's Central Works Council, signed on July 26, 2011 by CFDT, CFE-CGC, and CGT-FO.
- The NICTs (new information and communications technologies) agreement currently in negotiation was signed on December 9, 2011 by CGT and CGT-FO.

Regarding overall pay, 2011 was covered by an employee agreement signed in late 2010 by the CFDT and CFE-CGC, which set the individual promotion rules applicable to EDF SA employees.

As well as the above, two other important agreements were negotiated. The first concerns profit sharing and significantly altered the structure of profit sharing for the period 2011-2013. The second covers the period 2012-2014 and concerns the terms of the company's contribution based on employee contributions to the Group's corporate savings plan and the collective pension fund plan PERCO. These agreements were signed on June 30, 2011 by CFDT, CFE-CGC, and CGT-FO.

Negotiations took place during October 2011 on the question of whether the special overseas territory indemnity should be included in the scope of article 83 of the IEG statutes in order to improve returns for beneficiaries. After consultation of the Central Works Committee, this agreement was signed on December 2, 2011 by the CFDT and CFE-CGC.

Another significant event was the consultation begun in application of the decree of September 23, 2011, concerning classification of jobs in the special IEG (gas and electricity sector) pension system as "active" or "unsanitary" work. All the divisions concerned by the question of "active work" participated actively in the discussions. As required by the decree, this consultation began at all IEG companies and will continue in early 2012 at sector level.

The European Works Council, set up in 2001, is consulted on the Group's major policies and is particularly informed of the Group's economic, financial and social strategies. At the end of the three-year period set by the agreement, the members of the Council elected a new secretary. The terms of office of more than half the ordinary members were renewed at the same time (May 2011). The European Works Council met twice during the year and celebrated the 10th anniversary of its creation on November 30, 2011.

An agreement for the creation of a France Group Committee was signed on September 1, 2008 by all the unions. This new body for dialogue covers all 14 companies of the EDF group (including RTE and ERDF) and provides a forum for discussion of the Group's strategy and prospects in France in economic, financial and social matters. The Group Committee held 3 meetings in 2011.

2.4.3 Special pension system for the electricity and gas industries (IEG) in France

The special IEG pension system was reformed in 2008 and 2010: the first reform was part of the reform for special pension systems, and the second resulted from the law of November 9, 2010 reforming general pension systems and the French public sector.

Following enactment of this law, the regulations for the special pension system were amended by decree 2011-290 of March 18, 2011 raising the pensionable age progressively by two years, including for early retirement. This will only come into force in 2017 in view of the timetable for implementation of the 2008 reform. As in the ordinary French public sector, special early retirement arrangements based on the number of children will be phased out, and the period of service required to qualify for early retirement in the "active work" category will also be increased progressively by two years.

Decree 2011-289 of March 18, 2011 reflects the consequences of this change, introducing a phased rise in the age at which the employer can terminate the work contract; from 2017, the maximum age will be progressively raised from 65 to 67.

2.4.4 Additional employee protection

Since 2008, IEG employees in French Group companies have benefited from additional social protection concerning:

- the additional invalidity benefit (sector-specific agreement of April 24, 2008), applicable since July 1, 2008;
- welfare provision: life insurance and education allowance (under the sector-specific agreement of November 27, 2008), applicable since January 1, 2009,
- the additional pension scheme (introduced by the sector-specific agreement of February 21, 2008 and a group agreement of December 12, 2008), plus company-specific measures applicable since January 1, 2009 (October 1, 2010 for ERDF),
- additional healthcare coverage (sector-specific agreement of June 4, 2010), applicable since January 1, 2011.

These schemes are co-financed by the employer, and all employees are obliged to join.

To reflect the changes introduced by the law of November 9, 2010, an amendment to the Group agreement on supplementary pensions dated October 10, 2011 now allows employees of companies that are signatories of the agreement to make optional individual payments to their own supplementary pension account. The Group agreement applies to EDF SA, EDF PEI, Electricité de Strasbourg and Tiru.

EDF SA also signed an amendment to the company agreement on the time banking system on October 10, 2011, allowing employees to transfer their time banking rights to their individual supplementary pension account. The same change was made at EDF PEI, and similar negotiations have begun at Tiru.

APPENDIX 1- Summary of environmental and social indicators

ECONOMIC INDICATORS	Unit	2011	2010 ⁽¹⁾	2009 ⁽¹⁾	Scope			GRI ref. ⁽²⁾
					2011	2010	2009	
Provisions for decommissioning and last cores	€ million	19,843	19,684	18,900	2	2	2	
Provisions for back-end nuclear fuel cycle	€ million	18,830	18,020	17,694	2	2	2	
Indemnities paid or payable following a court ruling in an environmental matter	€ thousand	-	8	810	1	1	1	
ENVIRONMENTAL INDICATORS								
	Unit	2011	2010 ⁽¹⁾	2009 ⁽¹⁾	Scope			GRI ref.
					2011	2010	2009	
Fuels and raw materials								
Total fuel consumption								
Nuclear reactor fuel	t	1,205	1,138	1,141	1	1	1	EN 1
Coal	Kt	21,024	20,211	20,248	2	2	2	EN 1
Heavy fuel oil	Kt	1,170	1,625	1,793	2	2	2	EN 1
Domestic fuel oil	Kt	402	448	439	2	2	2	EN 1
Natural gas	10 ⁶ m ³	6,859	8,072	6,296	2	2	2	EN 1
Industrial gas	10 ⁶ m ³	3,555	3,707	2,809	2	2	2	EN 1
Water – consumption of raw materials from sources outside the company								
Cooling water drawn	10 ³ m ³	55.2	53.9	50.9	2	2	2	EN 8
- fresh water	10 ³ m ³	26.8	NC	NC	2	NC	NC	EN 8
Cooling water returned	10 ³ m ³	54.6	53.3	50.3	2	2	2	EN 21
- fresh water	10 ³ m ³	26.3	NC	NC	2	NC	NC	EN 21
Air – gas emissions								
Total CO ₂ emissions (including installations not subject to quotas)	Mt	70.5	75.7	72.5	2	2	2	EN 16
SO ₂ emissions	Kt	140.6	187.9	198.6	2	2	2	EN 20
NO _x emissions	Kt	157.0	167.6	158.6	2	2	2	EN 20
Dusts	t	5 407	7 929	8 333	2	2	2	EN 20
CH ₄ emissions	Kt eq. CO ₂	32.2	41.6	34.5	2	2	2	EN 16
N ₂ O emissions	Kt eq. CO ₂	254.7	287.9	284.7	2	2	2	EN 16
SF ₆ emissions – EDF SA	Kt eq. CO ₂	94.3	98.3	NC	1	1	NC	EN 16
SF ₆ emissions – EDF SA + ERDF	Kt eq. CO ₂	102.8	NC	NC	1b	NC	NC	EN 16
Non-nuclear waste								
Dangerous waste ⁽³⁾	t	60,956	40,679	21,785	2	1	1	EN 22
Non-dangerous waste ⁽³⁾	t	302,251	198,422	138,319	2	1	1	EN 22
Non-nuclear industrial waste recycled or removed for recycling ⁽³⁾	t	251,908	190,353	117,818	2	1	1	EN 22
Ash produced	Kt	3,616.6	3,581.4	3,581.5	2	2	2	EN 22
Energy								
Renewable energies: quantity of electricity and heat generated using renewable energy sources (other than hydro)	GWh	11,032	10,385	8,412	2	2	2	EN 6
Direct energy consumption by primary source								
Internal consumption, pumping electricity	TWh	6.9	6.6	6.8	1	1	1	EN 3
Internal consumption, electricity	TWh	22.8	22.6	22.4	1	1	1	EN 3
Management								
Environmental protection expenses	€ million	2,800	2,579	2,477	1	1	1	EN 30
<i>Including provisions</i>		1,765	1,712	1,691				

(1) Excluding EnBW, except for economic indicators

(2) GRI: Global Reporting Initiative

(3) Extension of the Group scope in 2011

NC: Not communicated

NA: Not Applicable

Scope 1: EDF S.A. (Distribution activities were transferred to the subsidiary ERDF in 2008)

Scope 1b: EDF SA + ERDF

Scope 2: EDF group

NUCLEAR INDICATORS – EDF SA		Unit	2011	2010	2009	GRI ref.
Radioactive emissions to water ⁽¹⁾						
Tritium	TBq/unit	NC	19.1	16.4		EN 21
Carbon 14	GBq/unit	NC	12.6	12.1		EN 21
Radioactive emissions to air ⁽¹⁾						
Carbon 14	TBq/unit	NC	0.17	0.16		EN 20
Tritium	TBq/unit	NC	0.55	0.49		EN 20
Nuclear waste						
Low and medium level short-life solid radioactive waste	m3/TWh	15.6	12.4	12.8		EN 24
High and medium level long-life solid radioactive waste	m3/TWh	0.87	0.88	0.88		EN 24
Transported spent nuclear fuel	t	1,199	1,140	1,102		EN 24

(1) Radioactive emissions to water and air concern the previous year (N-1) and are therefore reported for 2010 but not communicated (n.c.) for 2011.

NUCLEAR INDICATORS – EDF ENERGY (EXISTING NUCLEAR DIVISION CONSOLIDATED IN 2009)		Unit	2011	2010	2009	GRI ref.
Radioactive emissions to water						
Tritium	TBq/unit	46	102	122		EN 21
Radioactive emissions to air						
Carbon 14	TBq/unit	0.30	0.58	0.55		EN 20
Tritium	TBq/unit	0.7	0.9	1.5		EN 20
Nuclear waste						
Uranium sent off site	t	210.7	131	147		EN 24
Low level radioactive waste sent off site	m ³	608	498	607		EN 24
Medium level radioactive waste generated	m ³	161	162	170		EN 24

NUCLEAR INDICATORS – CONSTELLATION ENERGY NUCLEAR GROUP		Unit	2011	2010	2009	GRI ref.
Radioactive emissions to water						
Tritium	TBq/unit	12	11.11	NA		EN 21
Radioactive emissions to air						
Carbon 14	TBq/unit	0.34	0.69	NA		EN 20
Tritium	TBq/unit	1.40	1.41	NA		EN 20
Fuels⁽¹⁾						
Nuclear fuel delivered	t	NC	34	NA		EN 24
Nuclear waste⁽¹⁾						
Low and medium level solid radioactive waste sent off site	m ³	NC	735	NA		EN 24

(1) Nuclear fuel delivered and low and medium level solid radioactive waste sent off site are reported for the previous year (N-1) and therefore not communicated (n.c.) for 2011. Data is consolidated according to the percentage ownership in the subsidiary.

SOCIAL INDICATORS – EDF GROUP		Unit	2011 **	2010 *	2009 *	GRI ref.
WORKFORCE NUMBERS AND BREAKDOWN AT DEC 31⁽¹⁾						
EDF SA + ERDF	Number	103,954	96,571	96,220	LA 1	
TOTAL EDF group	Number	156,168	158,842	159,407	LA 1	
Number of executives (as defined by French regulations)	Number	37,786	39,231	36,102	LA 1	
Percentage of women executives	%	23.9%	22.7%	22.1%	LA 13	
Number of non-executives	Number	118,382	119,611	123,305	LA 13	
Gender equality						
- male workforce	Number	117,023	121,009	122,006	LA 13	
- female workforce	Number	39,145	37,833	37,401	LA 13	
- male executives	Number	28,753	30,306	28,108	LA 13	
- female executives	Number	9,033	8,925	7,994	LA 13	
HIRING / DEPARTURES						
Recruitments	Number	12,755	13,790	11,734	LA 2	
Other arrivals ⁽¹⁾	Number	5,849	3,105	10,130	LA 2	
Retirements	Number	4,200	4,708	4,280	LA 2	
Resignations ⁽²⁾	Number	2,761	2,929	2,415	LA 2	
Redundancies and dismissals	Number	1,689	1,924	1,482	LA 2	
Other departures ⁽¹⁾	Number	9,398	10,457	5,804	LA 2	
WORKING TIME						
Part-time employees	Number	15,296	17,719	18,953	LA 1	
HEALTH AND SAFETY						
Fatal accidents	Number	13	15	12	LA 7	
Injury frequency rates		3.9	4.5	4.5	LA 7	
Work-related accidents (causing leave of one day or more)	Number	933	1,145	1,104	LA 7	
MANAGEMENT-EMPLOYEE RELATIONS						
Percentage of employees covered by collective bargaining agreements ⁽³⁾	%	87%	94%	94%	LA 4	
TRAINING						
Number of employees benefiting from training ⁽⁴⁾	Number	118,930	127,332	99,217	LA 10	
EMPLOYMENT AND INTEGRATION OF EMPLOYEES WITH DISABILITIES						
Number of employees with disabilities ⁽⁵⁾	Number	4,601	3,078	2,854	LA 13	

(1) Entities joining or leaving the scope of consolidation are included respectively in "Other arrivals" and "Other departures". In 2009 the takeover of British Energy by EDF Energy led to 6,016 "Other arrivals", and in 2010 the transfer of the "network" activity is reflected in 5,190 "Other departures".

(2) In 2011, special contracts ("DMOS" social measures, including block-release employees) that reach termination are included in "Other departures" regardless of whether a job offer was made at the end of the contract. Departures during the trial period are included in "Other departures".

(3) Excluding Dalkia International in 2009 and 2010.

(4) Excluding ESTAG in 2010 and 2011; excluding EDF Energy and Dalkia International in 2009.

(5) Excluding EDF Energy and EDF Trading in 2009 and 2010.

(5) In 2011, 2010 and 2009 the figure collected by Edison does not include the subsidiary Abu Qir, first consolidated during 2009.

* Including RTE.

** New definition of workforce: see details on social data in Appendix 2 (methodology).

SOCIAL INDICATORS - EDF SA

	Unit	2011	2010	GRI ref.
WORKFORCE NUMBERS AND BREAKDOWN AT DEC 31				
Total EDF staff covered by collective bargaining agreement (at Dec 31)	Number	63,002	61,615	LA 1
Other permanent EDF staff not covered by collective bargaining agreement	Number	409	287	LA 1
Other non-permanent EDF staff not covered by collective bargaining agreement	Number	3,773	299	LA 1
Total EDF SA staff not covered by collective bargaining agreement	Number	4,182	586	LA 1
Total EDF SA workforce	Number	67,184	62,201	LA 1
Number of executives (as defined by French regulations)	Number	26,644	24,752	LA 1
Percentage of women executives	%	25.1%	24.1%	LA 13
Number of non-executives	Number	40,540	37,449	LA 13
Technicians and supervisory staff	Number	32,871	31,820	LA 13
Operatives	Number	7,669	5,629	LA 13
GENDER EQUALITY				
- male workforce	Number	46,938	44,035	LA 13
- female workforce	Number	20,246	18,166	LA 13
- male executives	Number	19,944	18,781	LA 13
- female executives	Number	6,700	5,971	LA 13
HIRING/DEPARTURES				
Recruitments	Number	4,021	3,519	LA 2
Integration & rehiring	Number	251	327	LA 2
Other arrivals ⁽¹⁾	Number	2,818	744	LA 2
Retirements	Number	1,990	2,180	LA 2
Resignations	Number	123	88	LA 2
Redundancies and dismissals	Number	14	10	LA 2
Deaths	Number	89	86	LA 2
Other departures ⁽¹⁾	Number	3,285	1,508	LA 2
OVERTIME				
Number of hours of overtime	thousands	2,791	2,642	
OUTSIDE CONTRACTORS				
Monthly average number of temporary staff ⁽²⁾	Number	(2011) NA (2010) 1,087	(2010) NA (2009) 989	LA 1

(1) Not including arrivals and departures of seasonal staff on fixed-term contracts.

(2) 2011 figure unavailable at the reporting date.

WORKING TIME		Unit	2011	2010	GRI ref.
Full-time employees	Number		58,157	52,593	LA 1
Part-time employees	Number		9,027	9,608	LA 1
Employees on contracts allowing overtime	Number		6,808	7,395	LA 1
ABSENTEEISM					
Absenteeism	%		3.9%	4.0%	LA 7
Hours of maternity or paternity leave/total working time	%		0.7%	0.8%	LA 7
HEALTH AND SAFETY					
Fatal accidents	Number		8	6	LA 7
Injury frequency rate			3.7	3.8	LA 7
Severity rate			0.14	0.16	LA 7
Work-related accidents (causing leave of one day or more)	Number		358	341	LA 7
WAGES / SOCIAL SECURITY CONTRIBUTIONS / PROFIT SHARE					
Principal monthly salaries					
Executives	€		4,248	4,204	EC 1
Technicians and supervisory staff	€		2,581	2,548	EC 1
Operatives	€		1,874	1,865	EC 1
Personnel expenses	€ million		5,784	5,433	EC 1
Average profit share per employee	€		1,583	1,272	EC 1
MANAGEMENT-EMPLOYEE RELATIONS					
Number of collective bargaining agreements signed(France)	Number		11	19	HR 5
Percentage of employees covered by collective bargaining agreements ⁽³⁾	%		94%	99%	LA 4
TRAINING					
Number of employees benefiting from training	Number		55,905	51,885	LA 10
EMPLOYMENT AND INTEGRATION OF EMPLOYEES WITH DISABILITIES					
Number of employees with disabilities	Number		1,698	1,558	LA 13
Number of employees with disabilities hired	Number		94	111	LA 13
CHARITABLE WORKS					
Committee budgets (1% requirement)	€ million		198	186	

(3) EDF staff are not covered by a collective bargaining agreement as defined by law, but are covered by the IEG (electricity and gas sector) statutes.

APPENDIX 2 - Methodological information on the social and environmental indicators for 2011

Data consolidation

The quantitative social and environmental data in this report was collected via the EDF group's consolidation reporting software packages.

Social and environmental indicators are consolidated under the rules for accounting consolidation, and with reference to relevance criteria for human resources and environmental impact.

Companies fully consolidated for accounting purposes are also fully consolidated for production of the social and environmental indicators.

Companies proportionally consolidated for accounting purposes are also proportionally consolidated for production of the social and environmental indicators.

Companies accounted for under the equity method are not included in the preparation of social and environmental indicators.

In addition to these rules, the Group's scope of consolidation for social data only includes companies with a significant workforce (more than 50 employees) acquired more than 6 months ago.

For environmental information, the criteria applied are based on subsidiaries' industrial activities (generation, distribution and transmission) that are significant in terms of environmental impact. Only companies that have been included in the scope of consolidation for longer than one year and were still in the scope of consolidation at December 31, 2011 are taken into account. Since RTE was sold before the year-end, its data are excluded for the whole of the year 2011.

The main changes in the scope of consolidation in 2011 are:

- Deconsolidation of RTE
- Change of accounting method for the subsidiaries Kogeneracja and Zielona Gora, from full consolidation to proportional consolidation.

Based on the criteria defining the scopes of environmental and social reporting, the subsidiary PEI is included in the reporting for the first time in 2011.

Social indicators

The social indicators are prepared for this report on the basis of a glossary of definitions that has been updated in 2011.

This year, in accordance with the decision by Marianne Laigneau on August 4, 2011, the population concerned by data collection comprises all employees who have a non-suspended employment contract with a Group company.

EDF SA

Since 2007, calculation of the absenteeism rate has only included the following categories of absence: absences for sickness, absences due to work-related accidents, including on the journey between home and work, and miscellaneous absences (unpaid leave, unexplained absences, etc). Absences relative to company and union activities, early retirement leave and maternal absences are not included. The absenteeism rate is calculated based on the theoretical number of hours worked.

EDF SA and ERDF

The EDF SA workforce reported includes employees who are co-employed by both EDF and GDF Suez. An employee working 50% for EDF counts as 0.5 in the published workforce. In 2011 for the first time, the workforce includes company doctors, people employed under various social measures (apprentices, qualification

contracts), and personnel seconded from external organizations, i.e. a total of 3,574 persons at EDF SA and 1,955 persons at ERDF at December 31, 2011. Staff on long-term leave (>90 days) are excluded. Data on the number of days' leave for work-related accident at EDF SA is supplied by the HR information system after consistency checks based on the list of accidents recorded in the Security information system.

Group data

Changes in the consolidated group are not entirely reflected in arrivals and departures recorded by Group subsidiaries, and this is the main reason for the variance between the 2011 workforce as reported and as recalculated based on 2010 workforce and arrivals/departures. In France, the frequency of work-related accidents does not include accidents on the home-work journey. Outside France, such accidents may be taken into account when local legislation considers them as work-related accidents. The number of fatal accidents includes work-related accidents and accidents on the home-work journey, but does not include fatal accidents for subcontractors.

Environmental indicators

The environmental indicators are prepared for this report on the basis of a set of descriptions and methodologies that make up the EDF group reporting standards for 2011. All indicators on consumption and emissions relate to the electricity and heat generation process.

The accounting data on provisions for decommissioning and last cores, and for the back-end nuclear cycle, are consolidated Group data taken from the Group's consolidated accounts.

Indicators for water drawn and returned

Indicators on cooling water include water drawn from and returned to rivers, sea and ground water, and may also include water drawn from distribution networks and returned to waste water networks. For nuclear plants located on the coast and fossil-fired plants, the quantities of cooling water drawn/returned are calculated based on the operating time and nominal debit from pumps. "Fresh water" indicators (including brackish water where relevant) were added in 2010.

Air emissions

CO₂ and SO₂ emissions by EDF's power plants are measured or calculated based on fuel analysis or standard emission factors.

CO₂ and SO₂ emissions by EDF's fossil-fired plants cover all phases of electricity generation, including plant start-up and shutdown.

EDF SA's SF₆ emissions are calculated based on the mass balance of SF₆ bottles or a nominal annual leakage rate of 2% of the volume of SF₆ contained in facilities.

2011 is the first year that the SF₆ indicator has been published for EDF SA + ERDF.

Non-nuclear waste

Data on non-nuclear waste are taken from information available at the year-end concerning the quantities removed and the elimination channels. The reported data do not include:

- Non-nuclear industrial waste of Dalkia International and Investissement
- The portion of non-nuclear industrial waste recycled at certain subsidiaries such as certain Polish subsidiaries and certain subsidiaries in the Asia-Pacific region.

For ERDF, the 2011 reporting on waste concerns a rolling 12-month period, and wooden posts are now included. Concrete posts are excluded, because the current reporting arrangements cannot provide satisfactory monitoring figures.

In 2011, the scope of reporting for dangerous waste, non-dangerous waste and non-nuclear industrial waste that has been recycled or removed for recycling has been extended to the EDF group, rather than simply EDF SA.

Nuclear waste

EDF

The indicator for "Very low level radioactive waste from decommissioning" comprises:

- The actual tonnage of waste sent directly to the low level storage center,
- The tonnage of waste sent to the Centraco fusion unit, weighted by an estimated ratio, calculated annually based on 3-year reports from the processing subsidiary Socodei, to arrive at the share of very low level radioactive waste ultimately sent to the appropriate storage center.

In 2011, all very low level radioactive waste from decommissioning was sent directly to the storage center.

The "Low and medium level short-life solid radioactive waste produced by reactors in operation" indicator does not include waste resulting from occasional maintenance (vessel lids, steam generators). The volume of waste calculated corresponds to the volume of waste stored at the Aube center (after compacting, incineration and fusion). The volume of waste resulting from reconditioning of waste produced and conditioned in previous years is not included.

The "High and medium level, long-life solid radioactive waste" indicator includes an uncertainty relating to the conditioning ratio (number of packages actually made after processing of one tonne of fuel), which can only be observed after the event as this ratio essentially depends on the blends used to optimize operations. This indicator is an estimate based on ongoing application of current practices for conditioning long-life waste which projects the current conditioning into the near future.

EDF Energy

Data for the "Medium level radioactive waste" reported by Existing Nuclear, EDF Energy's nuclear division, are based on the inventory of nuclear waste in the UK drawn up by the Nuclear Decommissioning Authority. The figure is an estimate of the annual volume of waste that will be considered and classified as medium level radioactive waste when the nuclear generation sites are shut down, and includes the volume of conditioning required to transport the waste from the sites. All medium level radioactive waste is stored at the nuclear generation sites to await a national decision on its final treatment.

"Low level radioactive waste" includes desiccants sent for processing in the form of medium level radioactive waste, in compliance with applicable regulations.

Constellation Energy Nuclear Group

The "Solid low and medium level radioactive waste" of Constellation Energy Nuclear Group (CENG) covers radioactive waste that is not high level. The Nuclear Regulatory Commission (NRC) draws a distinction in the US between three types of solid low and medium level radioactive waste: types A, B and C, depending on the activity (A being the lowest-activity). Data reported by CENG are volumes of conditioned waste removed from sites declared to the NRC (volumes of waste generated by the Ginna site in 2010).

The "Nuclear fuel delivered" indicator reported by Constellation Energy Nuclear Group is the quantity of fuel delivered to generation sites. These quantities are expressed in grammes of uranium, and are reported by suppliers and declared to the NRC.

Quantity of electricity and heat produced from renewable energies

Data on Dalkia International's electricity and heat generation from renewable energies are not included in the consolidated figure.

Environmental expenses

Environmental protection expenses are expenses declared by the various entities of EDF.

The definition of environmental protection expenses used by the Group is derived from the CNC recommendation of October 21, 2003 (itself inspired by the European recommendation of May 30, 2001). Environmental expenses are identifiable, additional expenses incurred to prevent, reduce or repair damage to the environment that has been or may be caused by the Group as a result of its business.

They relate, for example, to:

- Waste elimination and waste limitation efforts,
- Anti-pollution measures for the ground, surface water and underground water,
- Protection of air and climate quality,
- Reduction of noise emissions,
- Protection of biodiversity and the landscape,
- Plant decommissioning.

The amount of these expenses is assessed on their cost excluding taxes, allocated between three main categories:

- operating expenses (including studies that qualify as operating expenses), not including expenses covered by a provision,
- investment expenditure (including the related studies),
- amounts allocated to provisions, including discount expenses.