



ACTIVITY 2013



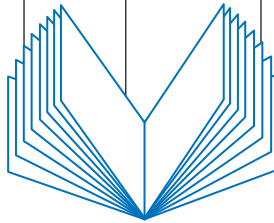
INTERVIEW WITH **HENRI PROGLIO**

8 DECISIVE **ADVANCES**

- Positions bolstered in Europe
- Industrial capabilities boosted across all businesses
- Finance, the basis of our industrial ambitions
- Building a diversified, competitive energy mix
- The energy of innovation and creativity
- Continuously improving customer service
- Our public service ethos: a key strength for the future
- A fine crop of new recruits to ensure the industry's future

CHALLENGES AND COMMITMENTS

- Enhancing our industrialised public service
- Contributing to the development of local economies
- Providing secure energy supplies and electricity systems
- Working for a decarbonised economy



8 DECISIVE ADVANCES

THE EDF GROUP IS EMERGING AS A GLOBAL LEADER IN ELECTRICITY AND AN INDUSTRIAL BENCHMARK SPANNING THE ENTIRE BUSINESS FROM GENERATION AND NETWORKS TO SALES AND MARKETING. THE GROUP IS GROWING STRONGER AND CHANGING. A LONG-TERM VISION AND RELENTLESS DETERMINATION TO PROVIDE A MODERN PUBLIC SERVICE UNDERPIN ITS ROBUST BUSINESS MODEL.

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POSITIONS BOLSTERED IN EUROPE

AFTER A PERIOD OF INTERNATIONAL EXPANSION IN THE 2000s, THE EDF GROUP PRIORITISED STRENGTHENING ITS STRATEGIC POSITIONS IN EUROPE. ITS OVERRIDING PRINCIPLE IS TO HAVE OPERATIONAL CONTROL OF COMPANIES WHERE IT INTENDS TO OPERATE AS AN ELECTRICITY COMPANY, OR PULL OUT.

— EDF has clarified its international portfolio, disposing of its stakes in companies it was unable to control fully, such as EnBW in Germany and SSE in Slovakia. At the same time, it took control of Edison and EDF Énergies Nouvelles. The former strengthens its foothold in the Mediterranean and in gas, the second in renewables. In the United States, EDF transferred its licenses to operate CENG's nuclear reactors (EDF 49.99%) to Exelon, with an option to sell its stake in CENG to Exelon between 2016 and 2022. In Europe, EDF will take full control of Dalkia France, a leading provider of energy services⁽¹⁾, under the terms of a memorandum of understanding signed with Veolia Environnement.

“To be a major global player for the long term, we need to be a strong, acknowledged local player. We need to be not just the industry standard, but

THE LEADER IN EUROPE.”

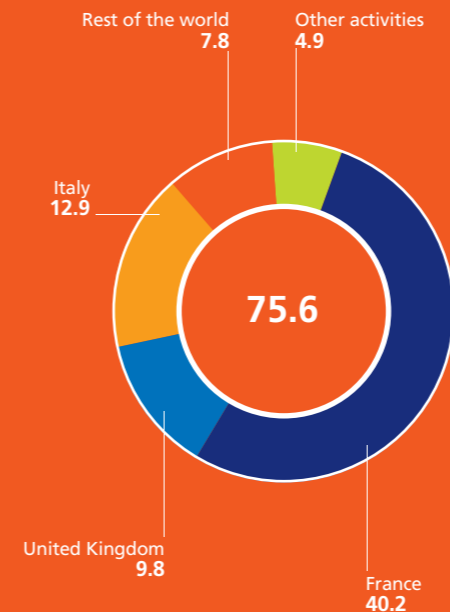
Henri Proglio
Chairman and Chief Executive Officer
of the EDF Group

(1) Subject to the approval of the competition authorities.

At the same time, EDF has strengthened its internal synergies. Most of its companies in Poland have been assembled within EDF Polska. French and British engineers are working together on the British EPR and on CCGT plants in France and the UK. A steering committee on fossil-fired plants is overseeing synergies between the companies concerned. The EDF Group also issued policy in a wide array of fields, including nuclear security and safety, codes of conduct, corporate responsibility commitments, and human resources, among others. Reflecting this overall coherence, the MyEDF in-house survey showed 85% of employees worldwide are proud to be part of the EDF Group, and 81% recommend it as an employer.

From this strong European base, the Group is open for growth in key countries for its businesses, in China, Brazil, the Middle East and Russia, as well as seeking opportunities elsewhere, including Africa.

EDF GROUP SALES BREAKDOWN BY SEGMENT in billions of euros



THE UK PRIME MINISTER AND EDF'S CHAIRMAN AND CEO VISIT HINKLEY POINT

The UK government has picked the EDF Group to build two EPR on this EDF Energy site. EDF Energy became the UK's leading generator of electricity and market leader for business customers when it took over British Energy in 2009. It also gained a number of sites suitable for new nuclear units, including Hinkley Point, creating a strategic platform for organic growth.



130th ANNIVERSARY FOR EDISON

Founded in 1884, Edison was a pioneer of electricity in Europe and the first to drill for gas in Italy, in 1952. EDF has been a shareholder of Edison since 2000 and took control of it in mid-2012. It is now a centrepiece of the Group's industrial activities, serving as EDF's gas hub and driving its growth in the Mediterranean. EDF's gas business is now managed from Milan, and its oil and gas R&D research centre is based there too.

INDUSTRIAL CAPABILITIES BOOSTED ACROSS ALL BUSINESSES

THE EDF GROUP IS FIRST AND FOREMOST AN INDUSTRIAL CONCERN. EVEN THOUGH THE EUROPEAN ELECTRICITY INDUSTRY IS IN DIFFICULTY, EDF HAS PRESERVED ITS LONG-TERM VISION AND IS FOCUSING ON ITS INDUSTRIAL STRATEGY, INVESTING AND FORGING AHEAD WITH NEW PROJECTS.

— A wave of new generation and network projects is in progress, with thousands of workers hired and trained. At the same time the EDF Group has continued to generate and transport electricity in total safety, seamlessly coordinating its project engineering and operating activities.

Several major hydropower projects are breathing new life into the hydroelectric fleet, and EDF Énergies Nouvelles too has brought many projects on stream. Fossil-fired projects have been successfully completed thanks to synergies across the Group, and a Group-wide govern-

ance structure now oversees this segment. Construction of the Dunkirk liquefied natural gas terminal is running to schedule. Fossil-fired plants and hydropower in France played a key role in responding to fluctuating weather conditions and consumption.

In France, the nuclear segment simultaneously conducts several 10-yearly inspections each year (seven in 2013), together with maintenance shutdowns incorporating post-Fukushima safety measures. It is also pursuing the construction of the Flamanville EPR. Further improvements are required in managing scheduled shutdowns while ensuring the overall operational availability of EDF's reactors. But significant gains have been made in security and in safety for employees and outside providers, who now operate under a charter of reciprocal commitments. The nuclear facilities achieved record winter availability in France, while output from the UK nuclear plants was the highest in eight years. The networks, meanwhile, have undertaken major projects such as the Cotentin-Maine power line and the France-Spain connection for RTE, as well as the development of the Linky smart meter for ERDF.

“Our combined experience as operator and project engineer is the strength of our

MODEL AS ARCHITECT AND LEAD CONTRACTOR.”

Hervé Machenaud

Group Senior Executive Vice President, Generation and Engineering

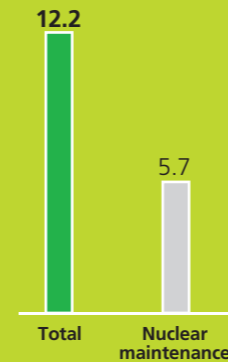


FLAMANVILLE: LOWERING THE 260 TONNE DOME ONTO THE EPR

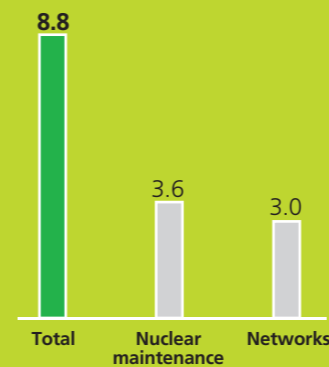
A tricky operation, successfully completed. After early teething troubles, work on the first EPR resumed in earnest in 2011. The project has since remained on budget (€8.5 billion under 2012 economic conditions) and on schedule, with start-up planned for 2016.

EDF GROUP NET MAINTENANCE CAPITAL EXPENDITURE IN 2013 in billions of euros

Group



France



The scale of EDF's maintenance capital expenditure reflects the large number of projects carried out simultaneously in all segments, aimed at boosting efficiency and serving customers better.



FLOOD MANAGEMENT

“We were on constant alert during the storms and floods in southwestern France, to limit the impact of logjams and reconcile generating needs with rising river levels. EDF's weather forecasters and good coordination with the energy purchasing and trading teams played a crucial role.”

Annabelle Pacaut,
Director of the Garonne Hydro Operation Grouping

FINANCE, THE BASIS OF OUR INDUSTRIAL AMBITIONS

THE EDF GROUP'S INDUSTRIAL AMBITIONS DEPEND ON STRICT FINANCIAL MANAGEMENT AND A CAPACITY TO RAISE FINANCE ON A SCALE TO MATCH ITS PROJECTS, KEEP A TIGHT GRIP ON COSTS AND MAKE ITS ACTIVITIES COMMERCIALY VIABLE.

— The EDF Group has optimised capital allocation in order to improve its cash flow generation. It has disposed of assets that it did not fully control (e.g. EnBW in Germany and SSE in Slovakia), and used the proceeds to gain control over strategically important firms such as Edison and EDF Énergies Nouvelles.

It seeks to match its funding to the ebb and flow of its activities, where long investment lead times are followed by long operational phases. The Group successfully extended the maturity of its debt and issued hundred-year bonds, together with €6 billion in hybrid bonds in 2013. It has already raised a further €4 billion in 2014. It also innovated, issuing €1.4 billion in “green bonds” to finance new capacity for EDF Énergies Nouvelles.

Decisions on investment in expansion and improving plant are taken according to strict criteria and EDF's capacity. Under the memorandum of understanding signed in October 2013 for the Hinkley Point EPR, for example, the lead company for this industrial undertaking is obliged to work with a number of

industrial partners in addition to EDF (45-50%), including AREVA and Chinese operators CGN and China National Nuclear Corporation, and discussions are under way with selected investors.

Meanwhile, EDF's most recent cost-cutting programme, Spark, launched in 2013, has yielded €1.3 billion in savings.

In France, EDF has clarified a number of issues that are important for the Group's financial health. Agreements were reached on the repayment of the CSPE⁽¹⁾ receivable in January 2013 and on an increase over two years in electricity prices, which will enable the gap to be closed between energy prices and total generation costs.

“Through innovative financing, a transparent approach to priorities, and honouring our commitments, we have kept up our industrial momentum

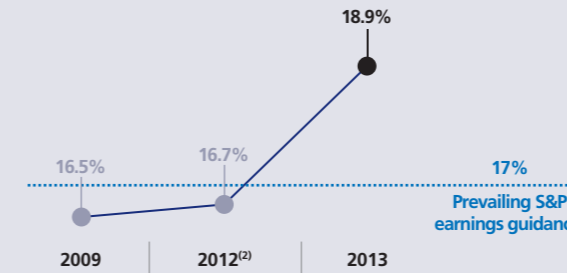
AND REASSURED THE MARKETS.”

Thomas Piquemal
Group Senior Executive Vice President, Finance

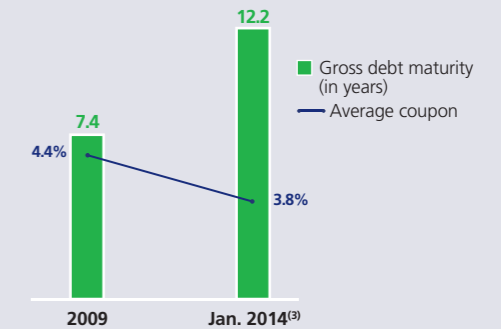
(1) French contribution to the public service charge for electricity.

2010-2013: A STRONGER BALANCE SHEET TO SUPPORT THE EDF GROUP'S INDUSTRIAL STRATEGY

Change in FFO/economic debt adjusted since 2009⁽¹⁾



Average maturity of debt and average coupon



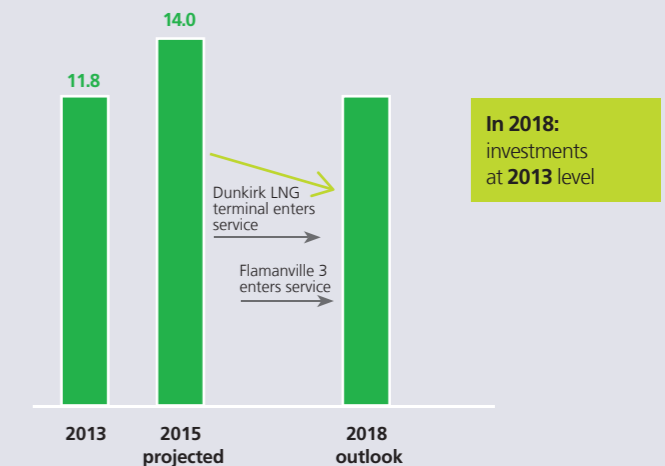
(1) For 2011 and 2012: S&P data based on methodology applicable in 2013. For 2013: EDF data using the same methodology.
(2) Pro forma after allocation of the CSPE deficit to dedicated assets on 13 February 2013 and subtraction of €2.4 billion from dedicated assets portfolio in accordance with the CSPE agreement.
(3) Pro forma after senior bond issuance in January 2014.



SOLAR POWER PLANT, CATALINA, CALIFORNIA

This 143 MWp plant, with more than 1.1 million solar panels over 360 hectares, entered service in September 2013. EDF issued €1.4 billion in green bonds in November 2013, a world first, to enable EDF Énergies Nouvelles to build similar projects. The use of the proceeds is guaranteed based on criteria framed by Vigeo, a French extra-financial rating agency, and overseen by Deloitte. These are exacting standards, and EDF was the only company consulted over the definition of Green Bond Principles published in January 2014 by the banks active in this market.

INVESTMENTS TO PEAK⁽¹⁾ IN 2015 in billions of euros



(1) Net operating expenditure excluding Linky and strategic transactions.

SPARK COST-SAVINGS PLAN IN 2013

€1.3 billion

BUILDING A DIVERSIFIED, COMPETITIVE ENERGY MIX

THE EDF GROUP IS THE WORLD'S NO. 1 NUCLEAR GENERATOR AND THE NO. 1 HYDROELECTRIC GENERATOR IN THE EUROPEAN UNION. IT IS NOW ALSO A EUROPEAN LEADER IN RENEWABLE ENERGY AND HAS MODERNISED ITS FOSSIL-FIRED FACILITIES.

— At close to €12.2 billion, the EDF Group's net investments remained at a high level in 2013. They break down into 45% for maintenance, 27% for development and 28% for regulated activities. The main focus for its nuclear facilities is safety and maintenance, in order to extend their operating life. In France, 19 reactors entered their fourth decade. In the United Kingdom, meanwhile, where the operating life of four advanced gas cooled reactors (AGR) has already been extended, EDF Energy has now applied to operate Dungeness B until 2028. If the planned extensions receive approval, the seven AGRs and the Sizewell B European pressurised reactor (EPR) will remain in service until 2023, when the Hinkley Point C EPR is scheduled to enter into service if the final investment decision is made in 2014. The Group is also continuing its work on construction of an EPR at Flamanville, France, and on two others in Taishan, China, with China General Nuclear Power Corporation (CGN).

EDF's commitment to renewable energy alongside nuclear power gives it one of the most carbon-low energy mixes in the world. It has upgraded its hydro facilities in France (spending €900 million between 2007 and 2015) and is building new structures in the Alps (at Romanche-

Gavet) and in Corsica (at Rizzanese). It has fully integrated EDF Énergies Nouvelles, an important player in renewable energy.

EDF is modernising its fossil-fired plants, building new-generation combined cycle gas turbine (CCGT) capacity, representing a total of 5,600 MW in mainland France since 2006, and 1,300 MW in the United Kingdom in 2013. In France, the 600 MW coal-fired plants are being renovated, while work is in progress on refurbishing the main 740 MW diesel-fired plants in Corsica, which is reducing the environmental impact. EDF is working to secure its gas supplies through Edison and the construction of a liquefied natural gas (LNG) terminal in Dunkirk, France.

"EDF Énergies Nouvelles belongs to a group that leverages the complementarity between modes of generation to

EXTRACT THE MAXIMUM FROM EACH SOURCE OF ENERGY."

Antoine Cahuzac
Chief Executive Officer
of EDF Énergies Nouvelles



TEESSIDE (62 MW), UNITED KINGDOM

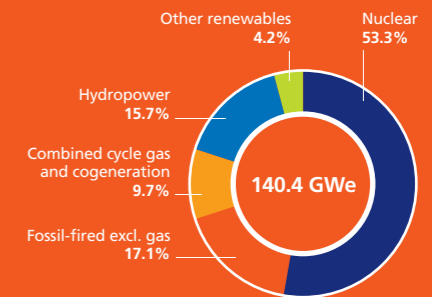
This EDF Energy Renewables (EDF Énergies Nouvelles 50%, EDF Energy 50%) offshore wind farm symbolises the Group's key role in spearheading the development of offshore wind power. Its ambitious growth plans include 1.5 GW in offshore wind in France. EDF Énergies Nouvelles is pursuing its expansion in onshore wind and in solar power in 18 countries, on the sound basis of vast reservoirs of light and wind: photovoltaic in India and Israel, and wind in Mexico, for example.



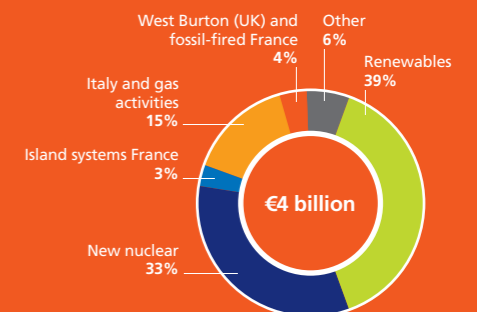
930 MW COMBINED CYCLE GAS TURBINE PLANT, MARTIGUES, FRANCE

This CCGT replaced less environmentally friendly oil-fired units, joining other CCGTs built between 2011 and 2013, including Blénod (430 MW) in France and West Burton (1,300 MW) in the United Kingdom. Another CCGT (510 MW) is under construction at Bouchain in northern France.

GROUP INSTALLED CAPACITY AT 31 DECEMBER 2013



GROSS OPERATIONAL INVESTMENTS FOR DEVELOPMENT



THE ENERGY OF INNOVATION AND CREATIVITY

INNOVATION IS CRITICAL TO THE EDF GROUP'S GROWTH AND VITALITY. AS THE BIGGEST R&D SPENDER IN THE UTILITIES SECTOR, IT ALSO ENCOURAGES INVENTIVENESS AMONG ITS TEAMS AND SEEKS LINKS WITH THE MOST INNOVATIVE FIRMS.

— More than ever before, the EDF Group is fully implicated in the changes taking place in the energy sector and its laboratories muster their wealth of recognised expertise to support major projects such as extending the operating life of its nuclear facilities and enhancing performance in its different activities. The laboratories are experimenting with carbon capture and investigating wind and photovoltaic energy, with a special focus on power generation predictability, energy storage, and breakthrough technologies. They are developing smart grids and services associated with smart meters, as well as designing energy efficiency solutions for customers.

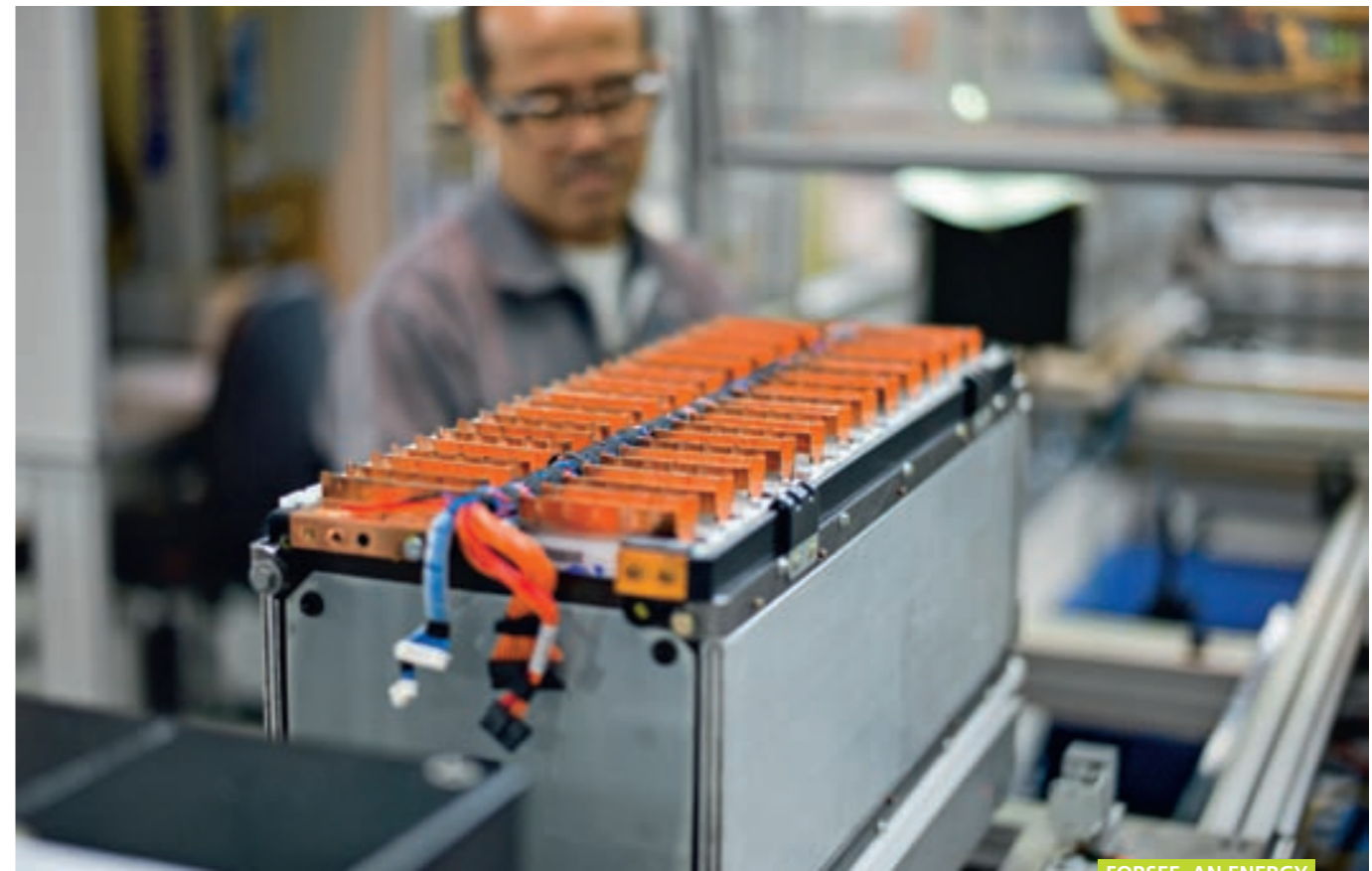
Reflecting the importance of R&D, EDF now has centres in Germany, the United Kingdom, Poland and China, and, thanks to Edison, in Italy. It is currently building its future training and R&D centres, EDF Lab, on the Paris-Saclay Campus. EDF's R&D is increasingly open to innovations from outside, networking with other laboratories, forging partnerships and backing the creation of Electranova Capital, a VC fund to support innovative start-ups.

All EDF Group segments are committed to innovation, supporting innovative SMEs, organising competitions such as EDF Pulse, and inventing new ways of doing things. This change of outlook is reflected in certain post-Fukushima measures, for example, adding a concept of resilience to the various safety systems, via the creation of a Standby Emergency Response Team (FARN) and a core cadre of human and material emergency resources at each site – a world first.

"We have made progress in opening up to outside ideas. We are determined to stimulate new thinking,

IN SEARCH OF WAYS TO DRIVE OUR INDUSTRY FORWARDS."

Bernard Salha
Senior Executive Vice President, R&D

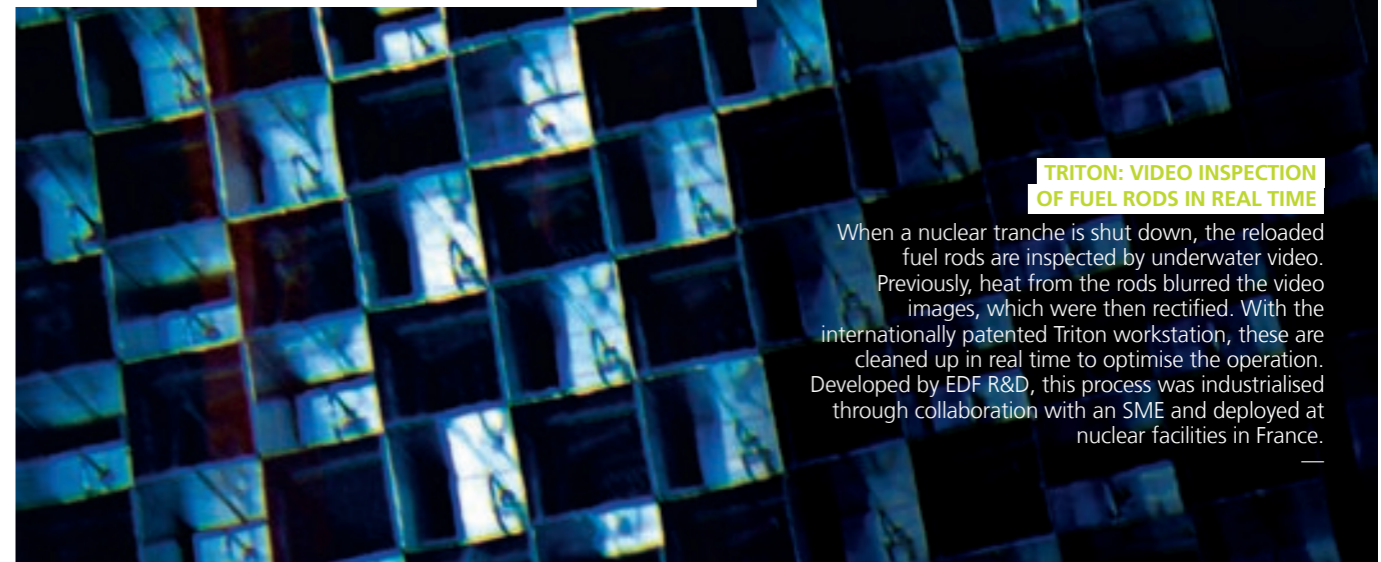
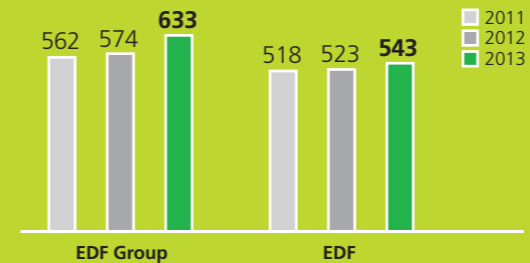


FORSEE, AN ENERGY STORAGE SPECIALIST

Forsee designs, develops and integrates battery systems, and is one of Electranova Capital's first four strategic investments, alongside Activity (smart grids), Enlighted (energy optimisation for buildings), and Seatower (innovative foundations for offshore wind turbines).

RESEARCH AND DEVELOPMENT EXPENDITURE

Net R&D expenditure in millions of euros



TRITON: VIDEO INSPECTION OF FUEL RODS IN REAL TIME

When a nuclear tranche is shut down, the reloaded fuel rods are inspected by underwater video. Previously, heat from the rods blurred the video images, which were then rectified. With the internationally patented Triton workstation, these are cleaned up in real time to optimise the operation. Developed by EDF R&D, this process was industrialised through collaboration with an SME and deployed at nuclear facilities in France.

CONTINUOUSLY IMPROVING CUSTOMER SERVICE

THE EDF GROUP ADAPTS TO LOCAL CONDITIONS IN ORDER TO FORGE DIRECT INDIVIDUAL RELATIONS WITH CUSTOMERS, BASED ON TRUST. IT DEPLOYS DIGITAL TECHNOLOGIES TO OFFER THEM GREATER REPOSIVENESS AND DELIVER ECONOMICAL, LOW-CARBON SOLUTIONS.

— The EDF Group is the French market leader, a major player in the United Kingdom, and the challenger in Belgium and Italy, enjoying the confidence of 38.5 million customers in Europe.

EDF provides high-quality customer service thanks to upgraded information systems. Digital technologies are continuously enriching relations with its customers by offering a range of computer or smartphone-based channels

“Our customers can count on our commitment, expertise and responsiveness in devising

APPROPRIATE, COMPETITIVE ENERGY SOLUTIONS GEARED TO THEIR NEEDS.”

Henri Lafontaine

Group Senior Executive Vice President, Commerce, Optimisation, Trading and Island Energy Systems

through which to contact it, and powerful tools to simulate, track and adjust their consumption. The deployment of smart meters will open up still broader possibilities.

EDF has developed robust and sustainable energy efficiency solutions for consumers, business and public-sector customers. While it is still the leader in electricity, EDF commercialises increasing quantities of gas, giving customers the benefits of its expertise in both energy sources. It now integrates a package of advice, services, and technical and material assistance, operating through a network of specialised subsidiaries and partners in the equipment and construction sectors. EDF Fenice markets energy efficiency services to industrial customers in Italy, Spain, Poland and Russia. With the integration of Dalkia France, EDF can tap the expertise of a leader in energy services and heating systems.

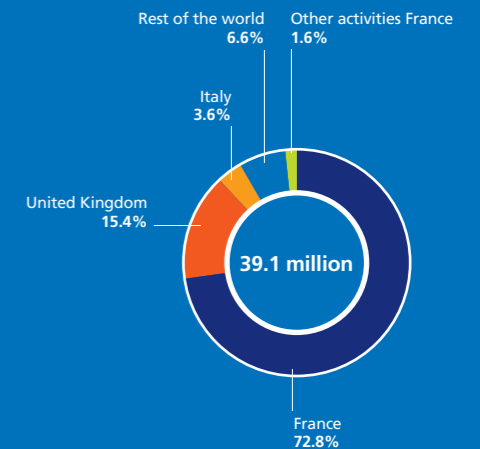


SOLUTIONS FOR ELECTRIC VEHICLES

Electricity is critical to the energy transition where transport is concerned, and the EDF Group has entered the field as an operator of electric mobility services. A key strength is its expertise in charging systems, along with lessons learned from five years of experimenting with different types of vehicle use and charging.



EDF CUSTOMERS WORLDWIDE



AN INNOVATIVE OFFER FOR UK CUSTOMERS

In 2012, EDF Energy rolled out its flagship Blue+Price Promise campaign for residential customers, comprising low-carbon nuclear-generated power, an innovative pricing plan, no cancellation fee, and a pledge to notify the customer if a rival comes out with a plan priced less than £52 per year (£1 a week). Some 2.1 million customers had opted for the package by the end of 2013.

— **IT migration in France, a world first**
5 years of migration in succeeding phases
27.8 million residential customer accounts and 430,000 business and local authority contracts (excl. French overseas departments and Corsica)
€230 million
1 million hours of business-specific and IT training for 9,500 employees

OUR PUBLIC SERVICE ETHOS: A KEY STRENGTH FOR THE FUTURE

THE EDF GROUP'S PUBLIC SERVICE ETHOS AND ITS CAPABILITIES AS AN INTEGRATED ELECTRICITY COMPANY ARE CRITICAL IN AN INDUSTRY DEMANDING EVER GREATER END-TO-END FLEXIBILITY. TO INTEGRATE INTERMITTENT ENERGY SOURCES INTO THE GRID AND COMBINE GLOBAL WITH LOCAL GENERATION, THE ELECTRICITY SYSTEM HAS TO BECOME MORE FLEXIBLE.

— Even as the single European market pushes for the breakup of integrated companies, the EDF Group wants to bring together all of its business activities – generation, networks and commerce, within the limits allowed by regulations – as part of a long-term vision of the public interest that is a fundamental part of its public service culture. Regional and public authorities benefit from its deep and unique knowledge of the electricity business and its capacity to assemble and coordinate generating facilities with consumption sites within a systemic approach that guarantees high-quality electric current.

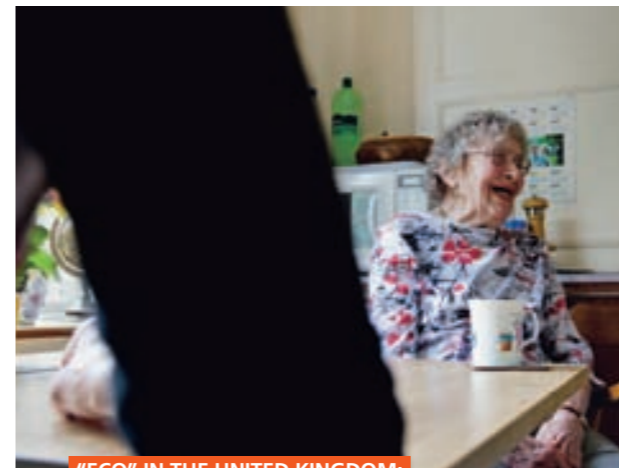
This public service ethos was set down for the Group as a whole in a Code of Ethics and in 11 Social Responsibility commitments in 2013. In France, EDF's public service missions are spelled out in a contract between the government and EDF to be funded by the CSPE⁽¹⁾.

In France, its missions include help for renewable energies, the preservation of inter-regional solidarity by charging the same public prices nationwide, the application of specially low electricity and gas rates for the neediest households, which benefited 1.5 million households in 2013 and may rise to 4 million, dedicated advisers and services, and a contribution to the national housing solidarity fund. But the Group has gone further, encouraging for example all its businesses to step up their drive to boost economic activity and jobs in the regions where they operate.

“The European electricity industry is facing difficulties, but our combination of world-class industrial capability and public service ethos gives EDF ITS ROBUSTNESS.”

Jean-Paul Bouttes
Head of Strategy and Prospects

(1) French contribution to the public service charge for electricity.

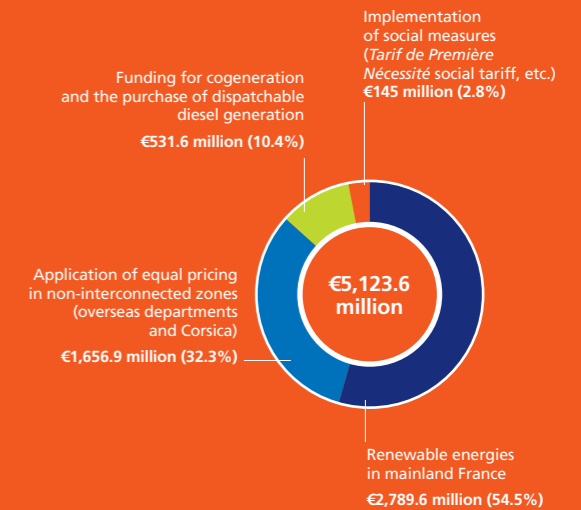


“ECO” IN THE UNITED KINGDOM: EXTRA SUPPORT

Under the UK's “ECO” energy efficiency program, EDF Energy is required to offer energy saving measures to its residential customers. The program offers additional help for needy customers and assistance in making home improvements. This rounds out the “Green Deal”, a government initiative to help residential customers boost their energy efficiency by deducting the cost from their energy bill rather than advancing the requisite funds to them.

FRENCH CONTRIBUTION TO THE PUBLIC SERVICE CHARGE FOR ELECTRICITY (CSPE) IN 2013

Following the 9 October 2012 decision of France's Energy Regulatory Commission



AN UNWELCOME CHRISTMAS VISITOR

On December 23, 2013, a storm called Dirk wreaked havoc from west to east across France, depriving 300,000 customers of electricity, 130,000 of them in Brittany. ERDF began preparing from the first storm warnings and lost no time mobilizing FIRE, its Fast Electricity Response Team, with 400 generator sets and 2,000 ERDF technicians and outside providers. By December 26, power had been restored for 90% of customers. This, together with Cyclone Bejisa in Reunion Island, was just one of many disasters for which EDF Group personnel turned out in 2013.

A FINE CROP OF NEW RECRUITS TO ENSURE THE INDUSTRY'S FUTURE

THE EDF GROUP IS RENEWING ITS TALENT POOL IN ORDER TO SUSTAIN ITS INDUSTRIAL AMBITIONS AND PURSUE THIS TECHNOLOGICAL AND HUMAN ADVENTURE. IT HIRES AND TRAINS THOUSANDS OF MEN AND WOMEN EACH YEAR, BUILDING A FORCE TO INVENT THE FUTURE.

— EDF is under particular pressure to hire staff to cope with the accelerating pace of business and to replace a wave of employees due to retire in the coming years, while ensuring skills are passed on to the new recruits. It hired more than 6,000 people in France in both 2012 and 2013, and is diversifying its recruitment channels to attract top talent via a dedicated website, social networks, forums and an “Energy Day”, where 400 employees meet 2,000 students (the seventh took place in 2013).

Spurred by the 2010 *Défi Formation* (training challenge) agreement, training is critical to this drive. EDF now runs 35 campuses, one of which opened in the United Kingdom in 2014. A Group campus is under construction at Saclay, near Paris, alongside the future R&D centre. The new complex, complete with simulators and training schools, will be home to 1,500 researchers and 20,000 trainees. In addition, 14 vocational academies have been set up and the Group University now caters to Group managers worldwide, with 14,500 employees, 12,000 of them managers, attending online courses in 2013.

To meet the resulting demand for greater safety, the Group has formulated a policy giving management increased responsibility in this area, yielding significant improvements. EDF has also stepped up its efforts to promote diversity to ensure gender equality and include employees with disabilities, and to raise awareness of the need to respect social and cultural differences.

“All round the world, our employees say how proud they are to belong to the EDF Group and they share

ITS VALUES OF RESPECT, SOLIDARITY AND COHESION.”

Marianne Laigneau

Group Senior Executive Vice President,
Human Resources



THE EDF GROUP IS A FORCE FOR SOCIAL MOBILITY

More than 6,000 people attend work-study programmes at EDF each year in France, including more than 100 studying for a basic vocational qualification. A significant portion of permanent contracts is reserved for work-study people – close to half of them are hired at the end of their training. The Group is a force for social promotion, with half of its managerial grade staff not initially hired at that grade. In a first of its kind, it formed a partnership in 2013 with the Vaucanson school and the Conservatoire National des Arts et Métiers, an advanced vocational educational institution, in a ground-breaking experiment in supporting employees promoted directly from operative to managerial grade positions.

RECRUITMENT BY EDF AND ERDF SINCE 2009



Over 75% of Group employees attend at least one training course every year: this is one of the 11 Social Responsibility commitments that the EDF Group published at the beginning of 2013. For 2013, 85% of Group employees attended at least one course, lasting an average of 64 hours each. The Group spent €630 million (8.2% of the total wage bill) on training.

EDF GROUP SAFETY RECORD

Lost-time accidents per million hours worked



ATTRACTING YOUNG GRADUATES

More than 1,000 young engineers and business school graduates joined the Group in France in 2013. Some, in the nuclear segment, will spend three years alternating between periods of theoretical and practical training. Future engineers ranked EDF their top employer in 2013 in a poll by TNS SOFRES, and a special prize went to EDF for the greatest progress made among business school students in the Trendence and Universum awards.



Henri Proglio
Chairman and Chief
Executive Officer

OUR WINNING CHOICES AND STRATEGIES

INTERVIEW WITH HENRI PROGLIO

EDF's 2013 results were good. What stands out for you in particular?

First of all, our very strong operating performance. Total electricity generated rose 1.8% to 653.9 TWh, with record hydroelectricity output in France and nuclear power output in the United Kingdom. Underpinning this growth momentum was a very high level of investment, amounting to €12.2 billion, of which €8.8 billion (up 10.2%) was spent in France. Also in France, the company hired 6,000 people for the second consecutive year. As you can see, the EDF Group is true to its mission and its ambition, which is to have a secure supply of energy that is available, competitive and decarbonised.

Thanks to this industrial performance, we have honoured our financial commitments. EBITDA was up 5.5%, net income increased 7.4%, and we reduced our debt by €3.7 billion. So we ended 2013 with a debt/EBITDA ratio of 2.1, while our share price ended the year up 80%.

How do you account for the EDF Group's relative prosperity despite the serious difficulties besetting Europe's major electricity companies?

True, we've done pretty well given the severe deterioration in the European environment, caused by lower consumption as a result of the crisis, and by the slump in wholesale prices due to the expansion of heavily subsidised wind and photovoltaic power. We owe this resilience to EDF's diversified energy mix, largely based on energy sources with predictable costs, such as nuclear and hydro. We also owe it to our organisation as an integrated company that continuously optimises the split between upstream (generating and purchasing) and downstream, coupled with a very active marketing and sales presence on the ground that focuses on nurturing close relations with customers. In a nutshell, our long-term strategic focus, with little reliance on cyclical windfalls, is proving to be a winner.

EDF is Europe's largest electricity company. What could be done to improve the energy scene in Europe?

Europe's electricity market isn't working, as everyone knows by now. It's not possible to simultaneously foster free competition and encourage massive subsidies for certain generating technologies. Europe's three goals – namely reducing consumption, boosting generation from renewables, and cutting CO₂ emissions – are of different orders. It would be better to focus solely on cutting CO₂ emissions while letting industrial firms pick the technologies they want to achieve this, and to rectify the existing policy of excessive subsidies. At the same time, the best way to curb consumption is through market forces and incentives to use energy more efficiently.

What does a major industrial company like EDF mean when it talks of public service?

In France, public service is part of EDF's DNA, and it has made an essential contribution to the country's prosperity and independence. Nowadays, we operate within the framework of a clear contract with the State, working to promote social and territorial solidarity, contributing to France's energy independence, and making the right energy choices needed to generate a secure supply of electricity competitively. But over and beyond these missions, our culture and public service ethos have shaped our collective identity, and everyone who works for us all over the world, from China to Brazil, shares these values. What distinguishes our corporate culture is our long-term vision and responsible strategy, for example by adopting technologies and pricing plans designed to reduce the CO₂ emissions so damaging to the climate. Allied to this is a constant concern for solidarity, our goal being to bring affordable, good-quality energy to as many people as possible.

The trend is to decentralisation and local energy policies. Is EDF's model fitted to this new approach?

Absolutely, and surely more so than that of its competitors. All over the world, in the United Kingdom, in Italy, China, Brazil or Laos, EDF is determined to provide the best local energy policy solutions, and it partners its customers to help them make best use of their own resources and deploy the best technologies. We are deeply involved in urban policymaking, from London to Singapore, as well as in Lyon or Nice. We operate nationwide in France, in cities and rural areas alike, through our branch offices and our hundreds of industrial installations. We're a front-rank local partner wherever we operate. There is no contradiction between centralised and decentralised generation, and the acquisition of Dalkia has further strengthened our hand in that regard.

What are your international growth ambitions? And do you have the means?

We are the number one electricity company in France and the United Kingdom, number two in Italy and Belgium, and the third largest in Poland. So Europe is our home market, and we are its leading operator. That's where we will remain rooted and continue to build our growth, as an integrated player with an ambitious vision of energy services. We are investing in nuclear

projects in Britain and France, and are considering playing a part in Poland's new energy policy. That does not rule out developments elsewhere. We are already a front-rank energy operator in China. We have ambitions in Russia, Asia, the Middle East and Latin America, and in North America through EDF Énergies Nouvelles and EDF Trading. As the world's foremost nuclear operator, and Europe's leading generator of hydropower, we are ideally placed to pursue these businesses worldwide and we are alert to opportunities everywhere. In renewables, EDF Énergies Nouvelles is already a global operator, investing wherever the elements are favourable, e.g. wind corridors in North America, or sun in Israel. We are already present in energy services, and we will be going further with the integration of Dalkia.

**Is the integration of Dalkia France going well?
What are the expected benefits?**

It's moving forward. After the letter of intent at the end of 2013, we closed the deal in March 2014. Practically speaking, the process of integrating Dalkia into the Group will proceed very rapidly. Dalkia has a strong presence in energy services in France, and a global reputation for know-how with great export potential. Above all, it brings us the scale needed to make our mark from now on in energy services and in district heating and cooling systems. It will enable us to offer our local government and industrial customers the very best in net-bound energy systems, from heating and cooling to electricity and gas. More than ever, we aim to be the supplier of choice for anyone wanting to develop the smart cities of tomorrow.



**“There is no contradiction
between centralised
and decentralised
generation: they
complement each other.”**

What are the EDF Group's main economic, industrial, technological and human projects for the coming years?

The challenges are clear: we've got to roll back the imminent climate risk, as stressed by the IPCC, and guarantee security of supply in a world where energy can be used as a means of geopolitical leverage. As a global leader, we have a responsibility to address these challenges, with solutions across the spectrum from generation to consumption. The Saclay project, which will bring together the Group's university and the R&D centre on a single campus, symbolises this ambition, where the future will blend technology with people.

CHALLENGES AND COMMITMENTS

THE EDF GROUP IS BOLSTERING ITS INDUSTRIAL AND COMMERCIAL CLOUT TO PROVIDE SUSTAINABLE RESPONSES TO THE DEMANDS OF THE REGIONS IT SERVES. THIS WILL ENSURE SECURE ENERGY SUPPLIES FOR ITS CUSTOMERS AND THE COMMUNITY AT LARGE, WHILE FAVOURING COMPETITIVE SOLUTIONS THAT CONTRIBUTE TO A DECARBONISED ECONOMY.

—
Enhancing our industrialised public service

—
Contributing to the development of local economies

—
Providing secure energy supplies and electricity systems

—
Working for a decarbonised economy



The reactor building at the Hinkley Point nuclear facility, United Kingdom.

CHALLENGE

ENHANCING OUR INDUSTRIALISED PUBLIC SERVICE

EUROPE'S ELECTRICITY INDUSTRY HAS BEEN DOUBLY HIT BY THE ECONOMIC CRISIS AND INCOHERENT REGULATION, WITH A MARKET SIMULTANEOUSLY OPEN TO COMPETITION YET DISTORTED BY MASSIVELY SUBSIDISED RENEWABLES. IN ADDITION, LOW CO₂ AND COAL PRICES HAVE ENCOURAGED SOME ELECTRICITY COMPANIES TO BURN MORE COAL, EVEN TO THE POINT OF SHUTTING DOWN BRAND NEW COMBINED CYCLE GAS TURBINE PLANTS. THE EDF GROUP HAS STOOD FIRM IN THESE HOSTILE CONDITIONS. IT HAS CONTINUED TO BUILD FOR THE FUTURE AND PURSUE ITS OWN CHOICES IN KEEPING WITH ITS LONG-TERM VISION AS AN INDUSTRIAL CONCERN AND A PUBLIC SERVICE – THE VISION THAT UNDERPINS ITS STRONG PERFORMANCE. IT IS ALSO CONTRIBUTING TO THE SUPPLY OF ENERGY ON COMPETITIVE TERMS, AS IS VITAL FOR THE FUTURE OF EUROPE.



THROUGH EXPERT EYES

JAN HORST KEPPLER IS PROFESSOR OF ECONOMICS AT UNIVERSITÉ PARIS-DAUPHINE, CO-DIRECTOR OF THE UNIVERSITÉ PARIS-DAUPHINE MASTER'S PROGRAMME IN ENERGY, FINANCE, CARBON (EFC), AND A RESEARCH FELLOW AT THE CENTRE FOR THE GEOPOLITICS OF ENERGY AND COMMODITIES, FRANCE.

What sets electric utilities apart from other industries?

Jan Horst Keppler: Their key advantage is their capacity to bear all of the risks across the value chain, i.e. the technical risks specific to complex facilities, business risks due to the highly volatile nature of electricity prices, and financial risks associated with trade-offs between the short term and the long term. And the social risks too, because for historical reasons these firms act as the final backstop, assuming sole responsibility for the proper functioning of the electricity system, and that goes for private-sector firms as well. The larger the utility, the better it can manage these risks.

But these utilities are experiencing a period of transition affecting their business model.

What form is this transition taking?

JHK: Three developments can dent their profitability. First, there is the erosion of their vertical integration due to the splitting up of management between the regulated sector (networks) and the unregulated sector, imposed by European legislation. Next, subsidised renewables are squeezing wholesale prices and undermining the profits of conventional installations. Last, the emergence of new activities such as traders, aggregators, suppliers, energy-efficiency consultants, etc. Unless utilities themselves stake their claim to these activities, new players can now enter high value added niches and come between utilities and their customers. Not to mention the growth of self-generation and self-consumption. Yet security of supply – a matter of critical public interest – continues to depend on these utilities alone.

People must understand that electricity has many dimensions. Not all megawatt hours are born equal, because they are not equally available at all times. That means they provide different

services, and each ought to be paid for according to its value. If we think that, to ensure security of supply, utilities ought to invest in capacity without receiving anything in return, then they will have a problem, and so will we.

How can the long-term investment needs of the electricity industry be reconciled with the short-term outlook characteristic of the market economy?

JHK: There is an inherent tension between the short and the long term in the utilities business, making it very hard to assess profitability at a given moment in time. A snapshot is relatively meaningless in this regard. One does see attempts at reconciling short- and long-term considerations, as in the Contracts for Difference in the United Kingdom. To be sure, these are a non-market form of financing, but they are not subsidies since they do not discriminate in favour of any particular low-carbon technique. Regulated tariffs are another solution. In either case, the aim is to finance the capital expenditure needed to ensure security of supply.

Why are wholesale prices falling when generating costs are rising?

JHK: Wholesale prices only partially reflect costs. They include neither the cost of financing renewables, which is borne directly by the end consumer, nor the total cost of capacity. Liberalised electricity markets raise a structural question, namely how to finance capacity in its entirety. Sale price and tariffs are higher than wholesale prices, but lower than the total cost. This situation plainly cannot last, and prices and tariffs are going to have to rise in order to cover costs, while whatever is needed should be done to combat fuel poverty. The question of financing cannot be evaded for long, as it will inevitably arise when the time comes to invest in renewing

or upgrading capacity. And we will need to allow for the system costs currently borne by the utilities and network operators, especially the costs entailed by intermittent renewables, which require additional investment in networks and in standby and backup capacity.

What are the investment priorities for the next 20 years in Europe?

JHK: As an economist, it is not for me to substitute for businesses. All I can do is suggest incentives that would encourage utilities to invest in the necessary capacity. We need to establish mechanisms to pay for capacity, introduce a tendering process, and encourage the markets in capacity to adopt peak-time interruptions to power supply, as is now starting to happen in France. To ensure the security of the electricity system, we also need to boost the number of interconnections to create a dense web of generating and consumption systems in the countries concerned. On the other hand, I am not an ardent supporter of subsidies for research into technologies, other than fledgling ones – that's a task for the businesses that will benefit from them. Public money should support measures that serve the public interest, which means security of supply. That is why I think research on electricity storage must be supported. Lastly, instead of subsidising low-carbon technologies, it would be better to ensure a robust and stable price for carbon. A carbon tax would be the simplest solution. The United Kingdom is creating one, and the European Union would do well to do likewise.

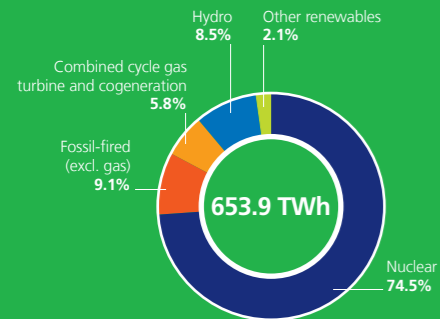


FACTS

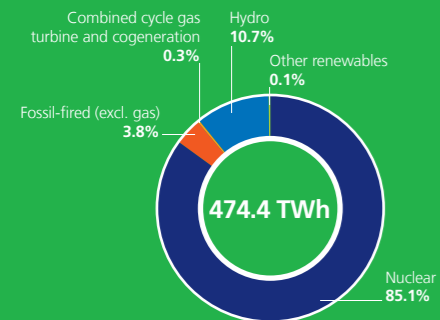
39.1
million customers worldwide

28.5
million customers for EDF in France

EDF Group electricity generation in 2013



EDF electricity generation in 2013



A FORWARD-LOOKING INDUSTRIAL AND MARKETING DYNAMIC

THE EDF GROUP'S PERFORMANCE IS IN LINE WITH ITS OBJECTIVES, WITH IMPROVED SALES VIA A WIDER RANGE OF SERVICES AND MODERNISED GENERATING FACILITIES. FINANCIAL RESULTS HAVE EXCEEDED COMMITMENTS, BOLSTERING THE GROUP'S INDUSTRIAL CAPABILITIES.

Energy efficiency is a lynchpin of the EDF Group's marketing mix

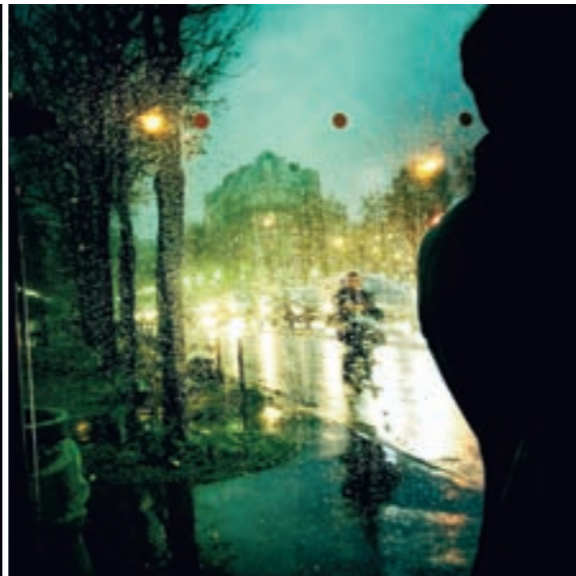
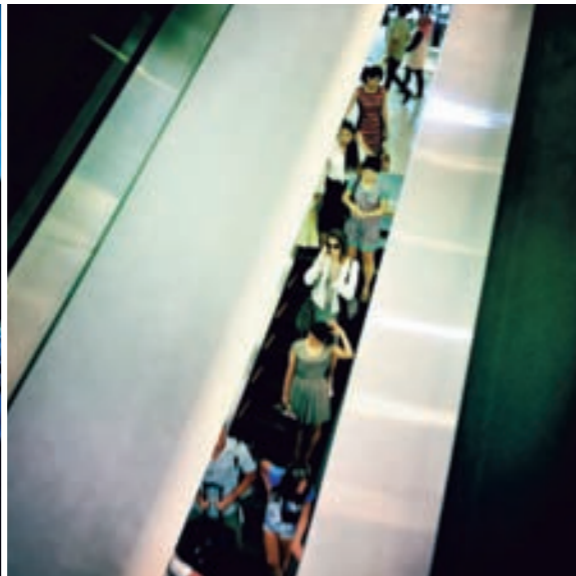
The Group has made energy efficiency a lynchpin of its marketing policy in Europe. Each of its companies now designs advice, services and solutions to assist its customers in managing their energy bill. In France, for its residential customers, EDF partners a network of *Bleu Ciel*® electricians and heating engineers and helps train construction professionals in energy-efficiency techniques.

Committed to assisting business customers in France

Energy optimisation and services are the focal point of the *EDF Entreprises* brand, launched in France in 2013. Champagne-maker Nicolas Feuillatte signed up for 100% carbon-free electricity plus a partnership contract aimed at cutting its cooling system's consumption by 20%. A similar contract with Toyota sets the same goals for its paint booths. For Thales Alenia Space, the solution comprises an expert appraisal, oversight of consumption and training for personnel. Major industrial customers and Valenciennes Hospital signed up to some 20 performance-based "Productivity and Energy Plans" in 2013.

Group companies also market integrated solutions

EDF Fenice offers energy services to industrial companies in Italy, Spain, Poland and Russia. The company renewed its contract with Fiat to manage energy at 23 sites. In the United Kingdom, EDF Energy is counting on a broader array of energy services and low-carbon electricity to expand its share of a highly competitive and volatile market. The company sold 37.6 TWh of electricity to residential customers and holds 20% of the market for major institutions and corporations. It was picked by Network Rail to supply 3.2 TWh of low-carbon electricity for 10 years. It also renewed its contracts with the Tesco and Morrisons supermarket chains, and took charge of the 27,000 Scottish Procurement Services sites, providing energy savings solutions. Thanks to successful make-or-buy trade-offs and close oversight of contract execution, Edison registered a 10.3% increase in electricity sales (56.34 TWh).



Proximity, services and simplicity are key to relations with residential customers

For EDF Group companies, moving ever closer to their residential customers, marketing a broad array of services and communicating proactively are pivotal to their continuing growth. This approach is formalised in the eight *EDF & Moi* ("EDF & Me") commitments in France and EDF Energy's *Customer Commitments* in the United Kingdom.

In France, EDF customers can consult advisers and make use of new tools such as online account opening and payment, electronic billing, and free smartphone apps to manage their contracts. A website, *mamaisonbleuciedf.fr*, meanwhile, provides information and advice on energy efficiency. In the United Kingdom, 2.1 million customers have opted for the *Blue+Price Promise* plan for low-carbon electricity, or for *Blue+Price Freeeeze*, a fixed-price four-year plan with no cancellation charge. In Belgium, EDF Luminus has made it easier to access its call centre and stepped up its Web and social networks presence, earning it a five-star ranking from the Flemish regulator, VREG, and boosting residential customer satisfaction. Satisfaction is up in France too, where 90% of EDF customers said they were satisfied or very satisfied with the response to their requests, and in the United Kingdom, where EDF Energy gained 6 points, rising to second place in the Uswitch ranking. In distribution in France, 92% of customers say they are satisfied with ERDF.

Energy efficiency spells savings for island energy systems

In Corsica and the French overseas territories and departments, annual growth in electricity demand has fallen from around 3% to 0.9% in four years. This was due in part to the economic crisis, but also to deliberate action by EDF, the French energy conservation agency (Ademe) and the regional authorities, where the CSPE⁽¹⁾ is intended to finance the large shortfall between electricity generating costs and the public tariff guaranteed by the fair-price adjustment mechanism. The saving under the CSPE scheme amounted to €78 million in 2013 (15% more than in 2012).

—
EDF serves nearly 28.5 million customers in France. Helping customers better manage their energy consumption is key to its customer relations policy.
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ENHANCING OUR INDUSTRIALISED PUBLIC SERVICE

Differing situations in the UK and Italy

Capital expenditure and maintenance programmes in the United Kingdom enabled EDF Energy to register its highest level of nuclear output in eight years (60.5 TWh). With the start-up of the three CCGT units at West Burton, its line-up of coal and gas-fired plants supplied a total of 25.9 TWh.

In Italy, Edison's output was 20.1 TWh, including 1.3 TWh to other countries. This was lower than in 2012, mainly because of a reduction in generation at its thermal plants due to a fall-off in demand for electricity.

EDF Énergies Nouvelles continues to expand

EDF Énergies Nouvelles' output rose 31.3% to 11.1 GWh. The company is a major player in onshore wind power (87% of its facilities), which is already competitive in windy countries such as Mexico. It started up wind farms at Bii Stinu in Mexico and Lac-Alfred II in Canada, four wind farms in Turkey and four others in France, where it also acquired 362 MW in capacity from Iberdrola and Séchilienne Sided. In the United Kingdom, EDF Energy Renewables started up the Fallago Rig, Glasmoor II and Boundary Lane wind farms, and began construction of those at Burnhead Moss, Roade and Burnfoot Hill. There was growth in the United States too, with the start-up of the 143 MWp Catalina solar power plant, the world's eighth most powerful, and the Pinelands biomass plant.

Net operating expenditure up 3.4%

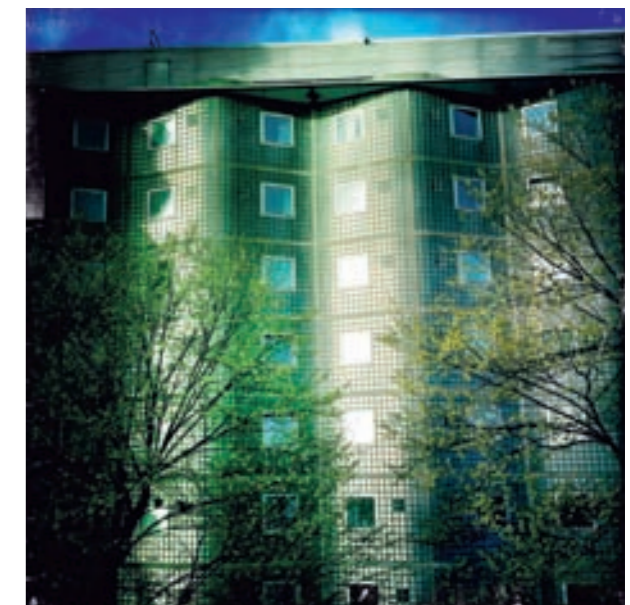
The Group invested €12.2 billion on all segments in 2013, of which €8.8 billion (up 10.2%) in France, with special emphasis on nuclear facilities maintenance (€3.6 billion), hydropower in France (€0.5 billion), and the ERDF grid (€3.17 billion).

Electricity generation up in France

A total of 474.4 TWh was generated in France, versus 466.4 TWh in 2012. Buoyed by exceptional hydrological conditions, net hydroelectric power generated was 50.7 TWh, the highest in 10 years. Capacity continued to expand with the coming on stream of the Rizzanese dam in Corsica, and the Rivière de l'Est facility in Reunion Island.

The 58 nuclear reactors achieved availability of nearly 93% during the crucial winter period, and both operating and safety indicators registered gains. In particular there was a drop in the number of unscheduled shutdowns thanks to the replacement of major components. Output remained stable at 403.7 TWh, given the leap year in 2012 and a more extensive programmes of shutdowns. Fossil-fired facilities play an essential stop-gap role, generating 18.2 TWh⁽²⁾. Capacity was increased with the start-up of the diesel-fired plant at Port-Est, Reunion Island, and the second CCGT⁽³⁾ at Martigues, securing power supply for southeastern France.

(1) French contribution to the public service charge for electricity.
(2) Mainland France, Corsica and the overseas departments.
(3) Combined cycle gas turbine



ENHANCING OUR INDUSTRIALISED PUBLIC SERVICE

Modernising distribution networks

ERDF, an independent wholly owned subsidiary of EDF, together with Électricité de Strasbourg (EDF 88.64%) and the island energy systems (SEI) division, are responsible for electricity distribution in France, while EDF Démász performs the same role in Hungary. In France, ERDF invested €3.17 billion on upgrading the network managed under concession agreements, and on connecting up new producers and improving service quality. Despite eight weather events, four of them major, the average black-out time for all causes combined was kept to 97 minutes per customer in 2013. ERDF continued to revamp its customer relations with a new phone centre procedure; portals dedicated to connections and local authority customers; photo meter reading; and automated calls or text messages. The result has been a continued improvement in overall customer satisfaction and a considerable improvement in that of the concession-granting authorities (up 8% in two years).

RTE has embarked on major infrastructure works

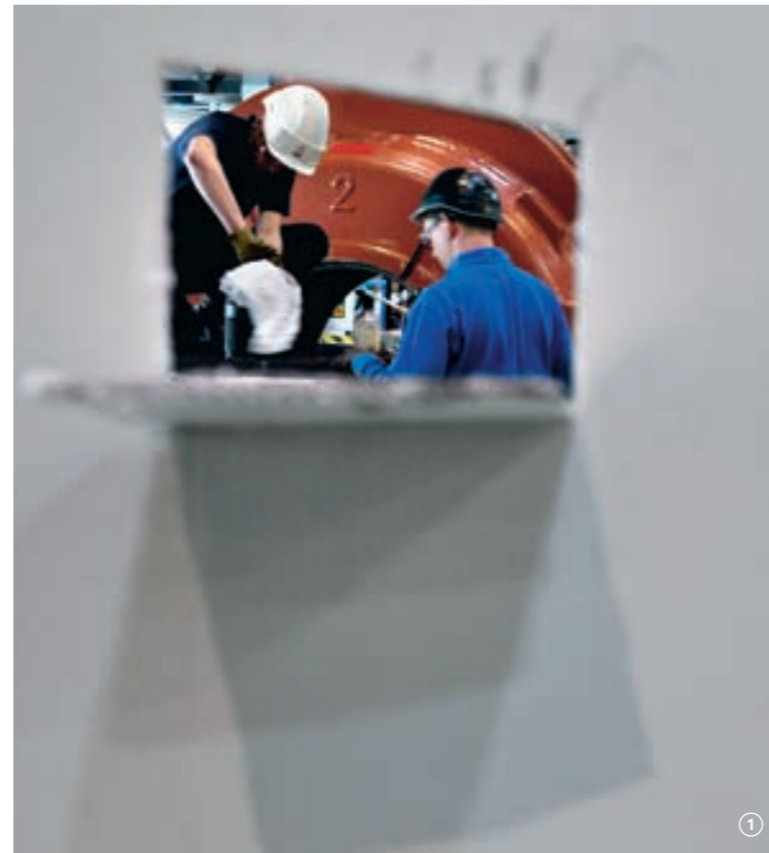
RTE (Réseau de Transport d'Électricité), an independent wholly owned subsidiary of EDF, owns and operates Europe's largest high and very high voltage transmission network. It invested €1.4 billion in 2013 on upgrading its facilities, securing regional electricity supplies and reinforcing Europe's interconnections, including the underground link between France and Spain, and the Cotentin-Maine power line.

Financial performance continues to improve

Powered by its strong operational and financial performance, and by the success of its Spark cost-cutting plan (€1.3 billion in savings in 2013), the EDF Group posted better than expected results. Net income (Group share) increased 7.4% to €3.5 billion, while sales rose 2.9% to €75.6 billion. EBITDA came to €16.8 billion, with organic growth of 5.5%⁽¹⁾. Net financial debt amounted to €35.5 billion at the end of 2013 (€3.7 billion less than in 2012), representing a net financial debt/EBITDA ratio of 2.1.

(1) Organic growth at a constant consolidation scope and exchange rates.

- 1 A maintenance workover during shutdown of a reactor at the Flamanville nuclear plant.
- 2 The Cap de Long dam reservoir, at an altitude of 2,160 metres in the Hautes-Pyrénées (France). Ten kilometres of galleries, completed in 1953, link the dam to a turbine in the valley nearby.



1



2

CONSOLIDATING PERFORMANCE

THE EDF GROUP IS INVESTING HEAVILY TO MODERNISE AND UPGRADE ITS INDUSTRIAL CAPABILITIES AND THEREBY MAINTAIN STANDARDS OF SERVICE. ITS SALES TEAMS ARE PREPARING FOR GREATER COMPETITION. ALREADY FIRMLY ESTABLISHED IN EUROPE, IT IS ALERT TO OPPORTUNITIES IN THE REST OF THE WORLD.

The EDF Group is working to extend the life of its nuclear facilities

Investing to extend the operating life of the nuclear reactors is economically viable. In France, the Group has scheduled a maintenance programme to incorporate post-Fukushima modifications between 2014 and 2025. In the United Kingdom, the operating lives of the Advanced Gas Reactors (AGR) have been prolonged for periods ranging from 10 to 22 years compared with their original durations. EDF Energy also announced in 2013 an application for similar authorisations for Dungeness B. In Belgium, Tihange 1, held 50/50 with GDF Suez, has been authorised to remain in operation for a further 10 years from 2015.

Planning for a new generation of nuclear plants

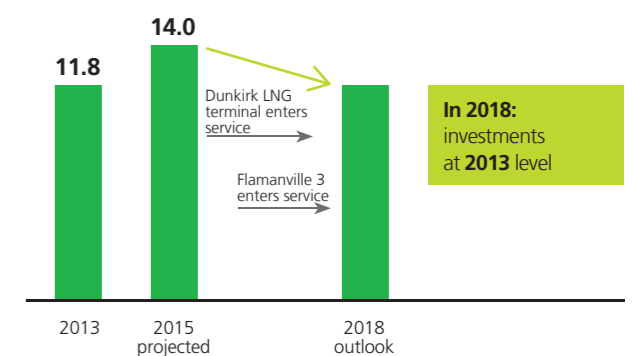
A new generation of reactors is expected to come on stream to meet demand from 2030. The EDF Group is building an EPR at Flamanville in France and two others at Taishan with its Chinese partner. At Flamanville, the reactor dome was lowered into place and the vessel has been installed, while at Taishan work began on systems tests for tranche 1 and electromechanical assembly for tranche 2. The plan for the two Hinkley Point C EPRs in the United Kingdom reached new milestones in 2013, with the awarding of the construction permit, and agreement between the Group and the UK government (subject to European Commission approval) on a strike price of £92.5/MWh for 35 years from the date of the plant's entry into service.

(1) Advanced Gas Reactor.

Boosting hydroelectric capacity

In France, EDF is spending €250 million on a new 93 MW facility to replace six units at Romanche-Gavet in 2017, and €180 million on modernising the La Rance plant and the locks on the Rhine. It plans to increase capacity in existing plants, as has already been authorised for La Coche in 2013, and is now under consideration for Jouques and Vinon. Preparations are also being made for the renewal of concessions. The *SuPerHydro* renovation programme, now 88% complete (cost of €800 million since 2007), and the *Renouv'eau* project currently being deployed are both aimed at enhancing plant performance. Their aim is to modernise EDF's operate and maintain model for increased profitability coupled with complete safety and security. In Belgium, the Group has begun renovating the Lixhe and Andenne facilities.

Investments⁽¹⁾ to peak in 2015 in € billion



(1) Net operating expenditure excluding Linky and strategic transactions.

Wind power on the march

As well as leading the consortium picked by the French government for three offshore wind projects (1.5 GW) off the coast from Saint-Nazaire, Courseulles sur Mer and Fécamp, EDF Énergies Nouvelles completed two offshore projects in partnerships in 2013, namely EDF Energy Renewables' 62 MW Teesside (UK) wind farm, and C-Power's 325 MW wind farm in Belgium. Also offshore from the UK, EDF Energy Renewables and Eneco Wind UK are developing phase 3 of the Navitus Bay project (up to 1,100 MW).

EDF Énergies Nouvelles expands its global presence

EDF Énergies Nouvelles, which had 4,764 MW net in service and 1,578 MW net under construction at the end of 2013, is continuing to expand internationally wherever wind or sun are in abundance, in pursuit of its long-term vision. After Israel, Morocco, South Africa and Poland in 2011 and 2012, it gained a foothold in India in 2013 via a joint venture (EDF Énergies Nouvelles 25%) with ACME Cleantech Solutions, and the first solar power plant has entered service.

Modernising fossil-fired plants

The EDF Group is reinforcing its fossil-fired fleet with less CO₂-emitting technologies – CCGT mainly – while boosting efficiency. In France, after bringing three CCGTs into service at Blénod and Martigues in 2011, it is building an innovative CCGT at Bouchain, 61% more efficient than its predecessors. At Cordemais and Le Havre, meanwhile, work is now planned to continue operating three 600 MW coal-fired plants until 2035 and improve their availability. Investments are now also being made in island energy systems. After the diesel-fired power plant at Port-Est in Reunion Island in 2013, plants at Lucciana in Corsica and Bellefontaine in Martinique are to enter service in 2014, and the one at Pointe-Jarry in Guadeloupe in 2015. Meanwhile, work began in 2014 on renovation of the Pointe-des-Carières diesel-fired plant. EDF Polska is following the same course, with the launch at the end of 2013 of a programme to enhance the economic and environmental efficiency of its facilities.

Global demand for EDF Group's know-how

The EDF Group is forging industrial partnerships with local operators in these markets to find new outlets for its activities. In nuclear power, it can offer its partners its experience as the world's number one operator and its tried-and-tested model as architect and lead contractor, and is working with other French nuclear contractors to market an array of proven technologies. In Saudi Arabia, EDF and AREVA opened a joint office to respond to the needs of the Saudi authorities, which want to develop an energy policy based on replacing fossil fuels by nuclear and renewables. KACARE⁽¹⁾ is the entity in charge of developing a 17.6 GW nuclear programme to be built by 2032, which aims to cover 20% of the country's electricity demand. In Poland, where the government has published a plan for the start-up of a first reactor by 2024, the Group is working on a bid with AREVA.

Already the European leader in hydropower, the Group is working on designs and plans for the 400 MW Nachtigal dam in Cameroon, and continues to cooperate on studies for the Tapajos 10,682 MW project in Brazil. In fossil-fired plants, it is considering building and operating a 570 MW facility with Australis Power and a floating regasification terminal in Chile. Where networks are concerned, the Group is making its expertise available to the Chinese network operator State Grid, and considering the possibility of a joint-management agreement with ROSSETI in Russia, via a Memorandum of Understanding signed in 2013.

Solutions and services for a more attractive commercial offering in France

With the demise of the "Green" and "Yellow" (regulated) tariffs in France at the end of 2015, some 220,000 business and local authority customers of EDF representing annual consumption of around 110 TWh will be free to choose their provider. EDF is developing packages of solutions and services with a view to retaining these customers.

Energy-efficiency services move to centre field

In France, "Thermal Regulation" (RT 2012) favours gas – a higher-carbon, imported energy – rather than electricity to heat new collective residential buildings. Moreover, tougher regulations governing the production of energy savings certificates are to be introduced for the period 2015-2017. The Commerce Department continues to innovate, developing digital solutions for residential customers and services based on smart meters. For other customers, new developments include energy audits, an energy clock, and contractual supply interruptions.

In Italy, Edison and EDF Fenice are marketing solutions to improve customers' energy performance and cut their CO₂ emissions.

In the United Kingdom, EDF Energy is preparing to deploy smart meters for all of its residential and small business customers by 2020, and has begun tests and pilot projects with UK Power Networks, as part of the Low Carbon London project.

(1) King Abdallah City for Atomic and Renewable Energy.

PROGRESS IN ACTION

A TEAM VICTORY FOR EDF ENERGY



ON 28 SEPTEMBER 2008, EDF ENERGY TOOK OVER THE UK NUCLEAR GENERATOR BRITISH ENERGY, WHOSE ASSETS INCLUDED 14 AGR⁽¹⁾, THE SIZEWELL B PWR⁽²⁾, SOME MAJOR CUSTOMERS AND AROUND 6,000 EMPLOYEES.

This was the start of an exciting industrial and human venture that, in the space of five years, has made EDF Energy a leader in energy in the United Kingdom and the country's largest producer of low-carbon electricity. Outstanding progress has been

made. "Our recent output performance has been impressive," says Brian Cowell, Director of Nuclear Operations for EDF Energy and a former British Energy employee. "In 2013, despite some challenges, we generated 60.5 TWh. That's our best performance since 2005." The nuclear industry in Britain is undergoing a new revival. EDF Energy is working on the life extension of its existing plants and its EPR projects have won over the UK government. None of that would have been possible without the engagement of the personnel, which was the result of the highly successful integration. Respect for employees, the concern to give them a long-term vision and career possibilities within the EDF Group, and trust in their managers – considerable investment has been made in human resources and this has played a big part in the industrial success.



(1) Advanced gas-cooled reactors.
(2) Pressurised water reactor.



**“THE LIFE EXTENSION
OF OUR PLANTS DEMONSTRATES
THE GROUP’S LEVEL
OF TRUST IN OUR PEOPLE”**

“Our initial fears about joining an international group were that our freedom to develop as a company would be restricted and we might disappear. Those fears have absolutely been allayed. Within the Group, we exist as a business unit and we have retained our identity. And we exchange our experiences. At Heysham, I implemented what I’d learnt about housekeeping at a French nuclear plant, and likewise French operators have adopted some elements of our Nuclear Leadership Academy approach.

“Also, the Group’s long-term vision and the investments it has been making in our plants over the last three years are very reassuring for our future development. We can plan ahead and all the employees in the Generation business unit see the long-term approach. The life extension of our plants

demonstrates the Group’s level of trust in our people and our assets. The investment in people and plants is really paying off, and we are seeing some of the best performances ever.”

Alan Oulton
Heysham 2 Station Director

PROGRESS IN ACTION



David Akers
Human Resources Director for EDF Energy Generation

The investment in people has paid off, as confirms Brian Cowell, Director of Nuclear Operations: “One of the contributing factors to our industrial success since the integration has been the ability to work together with colleagues in the French nuclear business and develop and deliver synergies. We have similar processes in key areas such as equipment reliability, outage performance and project delivery, and by working together we can be world leading in these areas. Also, we have combined all of EDF Energy’s generation assets – nuclear, gas, coal and renewables – in a single Generation business. This is a good way of making the most of our operational assets and to benefit from shared objectives on safety, lifetime asset management, maintenance strategies and people development. All this is giving a long-term future to our business. As Stuart Crooks, Managing Director of Generation, said, ‘We were good apart, but we will be better together’.”



Brian Cowell
Director of Nuclear Operations

As says David Akers, Human Resources Director for EDF Energy Generation, the integration succeeded because “there was the opportunity to talk to employees on site ahead of the transaction and the overall view was very much in favour”. Also, he says, “EDF Energy recognised the strengths in British Energy. They embraced our people and culture but at the same time focused on the future and the opportunities of being part of a much larger organisation. Our people were also easily able to understand and align themselves with EDF’s values. Our annual employee engagement survey shows continued improvements in people’s confidence with being part of EDF and a commitment to the future.” The industrial success has a knock-on effect on human resources: “This stronger, much longer-term perspective gives us the ability to attract talented people and build strong pipelines of engineers and operators for the future,” says Akers. “We have extended our influence on science, technology, engineering and maths (STEM) development and the curriculum in the UK. What a tremendous accolade for our organisation!”



Inspecting the Roselend dam in Savoie (France). EDF conducts a comprehensive review of its major structures every 10 years, voiding the reservoir and inspecting the dam's structure.

CHALLENGE

CONTRIBUTING TO THE DEVELOPMENT OF LOCAL ECONOMIES

LOCAL AUTHORITIES HAVE AN INCREASING SAY IN ISSUES SURROUNDING ELECTRICITY SUPPLY. THEY WANT ENERGY CHOICES TO BENEFIT THEIR INHABITANTS AND BUSINESSES. THEY ALSO WANT THEIR GROWING TOWNS AND CITIES TO PRESERVE THE QUALITY OF LIFE WHILE LIMITING ENVIRONMENTAL AND CLIMATE IMPACTS. THEY CAN COUNT ON THE EDF GROUP'S SPIRIT OF PUBLIC SERVICE TO HELP THEM ACHIEVE THAT, COMBINING ITS DIFFERENT BUSINESS ACTIVITIES TO PARTNER THEM AND MAXIMISE VALUE FOR LOCAL ECONOMIES.



THROUGH EXPERT EYES

PIERRE VELTZ IS AN ENGINEER, SOCIOLOGIST AND ECONOMIST. HE HAS WRITTEN EXTENSIVELY ABOUT THE PARADOXICAL REVIVAL OF THE LOCAL COMMUNITY IN TODAY'S ULTRA-CONNECTED WORLD.

Local communities want control over their energy strategy. How do you account for this?

Pierre Veltz: Local considerations have moved back to centre stage, given the diversity of renewables, the focus on demand reduction, and the need for an integrated approach to both generation and consumption of the different energy possibilities. This is part of a deeper societal trend, as people want to take back control, in an open, unpredictable world. They want to reassert their power to act, to create "clearings" in the global jungle, as the philosopher Rüdiger Safranski puts it.

What is the most appropriate territorial scale?

PV: Scale is the central question, and it's a difficult one that needs to be tackled pragmatically. With renewables, different echelons need to be treated differently: some forms of energy, such as heating, are local, while others are less so. There are powerful grounds for managing electricity on a broad scale, pending a major breakthrough in storage technology. So we need to strike the right balance.

As for the "right" scale, we need to be clear what we're talking about: technical aspects, regulation, strategy, or governance? Technically, it's often on the neighbourhood level. Strategically, the extended conurbation is more appropriate, since decisions on energy need to be taken within an overarching framework including policies on mobility, spatial planning, the circular economy, etc.

Not all communities are equally well endowed. How can we overcome inequalities between them?

PV: Local autonomy mustn't lapse into territorial egotism, where the better endowed ignore the less well-off. Regulation is key in a decentralised setting, provided it fits the situation and is pragmatic. We should avoid restricting local efforts at optimisation while upholding the principles of solidarity.

You are Chairman and CEO of the Paris-Saclay Public Authority, which is now developing the Plateau de Saclay, near Paris, aimed at building a global high-tech cluster. Where does energy fit into the picture?

PV: Paris-Saclay is part of the plan for *Grand Paris* (Greater Paris), and is subdivided into a series of smaller projects, each of which is of an appropriate scale in energy terms. Working with the local authorities, we have charted an eco-area strategy for the future city-campus around three watchwords: comprehensive, sober, smart. Ours is a systemic approach, treating mobility, buildings, waste, management of natural areas and farmland, and biodiversity as interlocking phenomena. Sustainable development is not an optional extra – it's the matrix for a total rethink of spatial development.

You have written that investing in cities is a priority. Why is that?

PV: Big cities are the forces driving today's economy. Globally, this is now organised around major urban hubs. The great metropolises are ecologically sound because of their density. Still, their inhabitants want to live in pleasant surroundings. So we need to turn the transformation of our cities into a laboratory for innovation and growth, reshaping their anatomy in terms of their buildings and infrastructure, and above all their physiology in terms of mobility, diverse flows and related services. It's a vast field, embracing new forms of organisation, incorporating digital technologies, businesses, work, education, retail stores, and access to healthcare. It's about overcoming the opposition between private cars and public transport by developing on-demand forms of transport and a wide array of "mobile tools". It calls for low-energy and even energy-positive buildings, smart energy grids, shifting from an economy based on ownership of objects to one based on functions and on services rendered. This is an industrial challenge. Putting our cities and regions at the cutting edge of technical and social innovation will make our businesses more competitive. We need to leverage our excellence in electricity especially, which, with digital technologies, is the likely backbone of the city of the future.



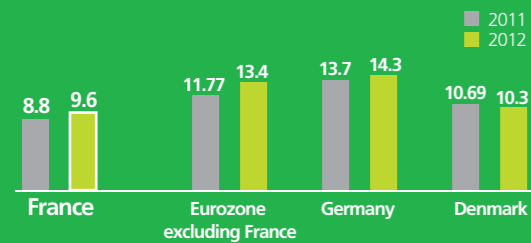
CONTRIBUTING TO THE DEVELOPMENT OF LOCAL ECONOMIES

FACTS

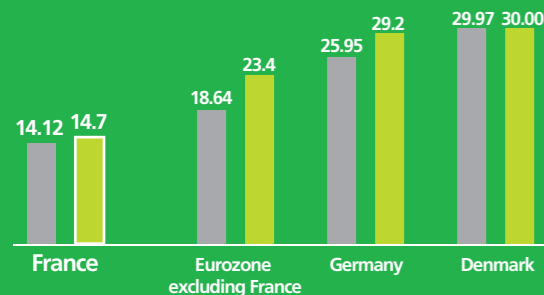
Average price of electricity in 2013

In the European Union, the average price of electricity rose 4% for businesses and 8% for households between first half 2012 and first half 2013. Levels of price rises were very mixed in the different countries. For first half 2013, the price of electricity in France remained about 20% lower than the average EU price for businesses and 26% lower for households. Power generation modes partly explain the price differences between countries. In general, prices are lowest where there is high use of nuclear energy.

Businesses in € cents/kWh



Residential customers in € cents/kWh



Source: Eurostat 2013 data, April 2014.
European Union = average of 28 countries.

HARNESSING OUR FORCES TO SUPPORT LOCAL AUTHORITIES

WITH DEEP ROOTS IN THE LOCAL COMMUNITY, ALL OF THE EDF GROUP'S DIFFERENT BUSINESSES ARE ASSISTING AUTHORITIES IN BRINGING THEIR PROJECTS TO FRUITION, STIMULATING ACTIVITY AND JOBS AROUND ITS SITES, AND HELPING FIGHT FUEL POVERTY.

A new phase for the ERDF network

In France, the local authorities own the electric distribution network, and ERDF holds concessions to operate it. ERDF is investing €3.17 billion to expand and upgrade the network, an investment which, in 2013, financed 35% of the cost of connecting up 135,000 new low voltage customers and 31,700 producers of mainly photovoltaic and wind power. To plan for these investments, ERDF contributed to the regional master plans for connecting renewables to the grid at a cost of €450 million over the period 2009-2013. Meanwhile, ERDF is improving power supply by burying lines and making the network more robust. In 2013, it installed 3,000 remote-controlled switches to the HV grid for more precise network management and to restore power for customers as quickly as possible. To improve responsiveness, ERDF has set up 25 regional centres, modernised its management processes, and enhanced its field operatives' all-round skills. Reflecting the growing dialogue with local authorities, a Memorandum of Understanding was reached with their representative body in 2013.

Helping local authorities implement their energy projects

In France, EDF helps local authorities formulate their energy strategies, designing energy-efficiency solutions based on an analysis of resources and needs, together with advice on urban planning, energy-saving programmes for public buildings, and improving public lighting. Beneficiaries of these services in 2013 in France included Nogent-sur-Marne, Plougasnou and Marseille. EDF Luminus in Belgium takes a similar approach, continuously monitoring consumption for the swimming pool at Seraing and for the Advanced School of Engineering of the Province of Liège, with a view to diagnosing problems and making recommendations. In Germany and Poland, cooperation agreements aimed at cutting carbon emissions and promoting sustainable development were signed in 2013 with the municipal services of Leipzig and the City of Cracow.

Combining services with practical outcomes on the ground

In France, EDF's subsidiary EDF Optimal Solutions specialises in equipping both new neighbourhoods and existing buildings, with an emphasis on renovating the most energy-hungry homes. It designed and built a district heating system for Roquebrune using recovered energy, and renovated the Roc-Noir neighbourhood at Barby using renewable solutions to supply 58% of energy needs. The EDF Group also helps local authorities manage their consumption and educate citizens in how to save energy.

Energy efficiency is paramount in island energy systems

In Corsica and the French overseas departments, each kilowatt-hour saved reduces the contribution to the CSPE⁽¹⁾, representing a gain for everyone. EDF is working closely with the regions, the authorities and Ademe to promote energy efficiency. In 2013, the emphasis was on a massive programme to equip homes with energy-saving devices. EDF also revamped street lighting for Pointe-à-Pitre, Cayenne and Fort-de-France, and upgraded the heating systems in public buildings on Reunion Island, partnering the Regional Council. New innovations and projects included smart grids with the *Millener* project in Corsica, Guadeloupe and Reunion Island, integrating intermittent energy sources into the grid with the *Pégase* system in French Guiana and Reunion Island, a pumped seawater cooling system for Reunion, and a district heating system in Corsica using heat recovered from the future Lucciana power plant.

Working with local authorities to fight fuel poverty

In France, EDF has set up a unique network of 380 "solidarity" advisers. They work with social services and charities to assist households in arrears and show them how to save energy. Additionally, the island energy systems division distributes energy-efficient devices to homes. EDF is also working with the ANAH⁽²⁾ *Habiter Mieux* ("Live Better") programme to renovate homes and boost their energy efficiency. ERDF, meanwhile, is using its PRÉCARITER statistical and mapping tool to assist local authorities.

In the United Kingdom, EDF Energy too is playing its part, offering a personalised service, contributing to the government's Energy Carbon Obligation (ECO) programme and the EDF Energy Trust, and partnering the London Warm Zone and the Citizens' Advice Bureau. Outside Europe, the EDF Group helps people living far from the grid to gain access to electricity via service companies and local partners such as Kukhanaya Energy Services in South Africa, BPC Lesedi in Botswana and ERA in Senegal.



Contributing to the local economy and community

EDF and ERDF together employ 109,754 people in France. The Group is the no. 1 customer of SMEs in France, placing orders worth €2.4 billion with 26,500 companies in 2012. Some 20,000 outside contractors perform 80% of the maintenance work on its nuclear facilities in the same operational, health and safety conditions as for Group employees. Its commitment to energy efficiency and renewables is leveraging local economies. It has helped train more than 60,000 building industry professionals since 2008, via the *Feebat*⁽³⁾ programme, and runs the *EDF Blue Ciel* partners network.

In valleys where EDF operates hydro facilities, its *Une rivière, un territoire* ("one river, one territory") programme provides expertise, support and funding for local actors through innovative, job-creating projects. Agencies were opened in Rodez, Tulle and Foix in 2013, and in Montmélian in January 2014. In the Meuse and Haute-Marne departments of France, where Andra is in charge of the geological storage of nuclear waste, EDF is helping to train young people in nuclear-related skills and supporting metallurgical and mechanical engineering firms. It has also expanded its logistics hub at Velaines, 73% of the work being performed by local contractors, and has located the maintenance base for its nuclear facilities at Saint-Dizier, creating 250 jobs.

For large projects, a focus on consultation and local jobs

The Flamanville EPR project was occupying no fewer than 2,850 people, 60% of them from the surrounding area, at the end of 2013. Since 2007, 770 jobseekers have received training, and 675 of them have been hired. Thirty-nine of the 58 projects comprising the support programme have been completed and the last projects are now under way. A child daycare centre was built in 2013, a school upgraded, and the RD23 departmental road made safer. The same priorities apply in the construction of the Dunkirk LNG terminal, with regional firms taking 60% of the contracts and 92% of the 1,000 jobs involved going to jobseekers. Planning is already under way to redeploy site workers to firms in the region. Meanwhile, the INNOCOLD R&D centre is being set up in conjunction with local authorities. Elsewhere, 2,000 workers, 70% of them local, worked on the Port-Est power plant site that the EDF PEI subsidiary brought into service in 2013 on Reunion Island, along with 150 contractors, 80% of them local. Jobseekers filled 14% of the jobs on this site.

(1) French contribution to the public service charge for electricity.
 (2) French national housing agency.
 (3) An energy efficiency training programme for people in the building industry.



**MORE ENTERPRISING,
BUSINESS-
FRIENDLY REGIONS**

EDF IS HELPING REGIONAL AUTHORITIES TO PURSUE THEIR DEVELOPMENT PROJECTS WITH INNOVATIVE ENERGY SOLUTIONS, IT IS PLAYING AN EXPANDED ROLE AND LEVERAGING ITS UNIQUE ABILITY TO BLEND THE GLOBAL AND THE LOCAL AND VIEW REGIONAL DEVELOPMENT IN A BROADER PERSPECTIVE.

Working with regional authorities to invent tomorrow's urban mobility

Electricity is ideal for urban transport, because it entails no local pollution. EDF stepped up its urban mobility involvement in 2013 via services such as advising on pay-to-use infrastructure, the installation, management and remote oversight of infrastructure, car-sharing solutions, and battery-hire and maintenance for buses, trucks and river shuttles. Meanwhile, R&D teams are testing the interoperability of the French and German charging infrastructure. These initiatives are being developed through partnerships with vehicle manufacturers, operators and local authorities. Among others, EDF is participating in the extension of the *Auto Bleue* car-sharing service in Nice, and in *Blue Mobility* for electric bicycles in Hasselt, Belgium. Other projects include *Mobee* with the Principality of Monaco, and *Smart City* with the Province of Liège.

New district heating and cooling solutions

The EDF Group partners cities in serving their eco-neighbourhoods and plans to supply increasing volumes of gas for that purpose. With the inclusion of Dalkia France, a major player in district heating and cooling systems in Europe, the Group is now seeking to become a leading supplier of energy for these systems, leveraging its capacity to supply top quality electricity, gas and heat. With Citelum, a subsidiary of Dalkia France specialising in public lighting and urban signage, the Group can supply a broad array of responses to authorities' needs.

- 1 New public lighting for Pointe-à-Pitre, Guadeloupe.
- 2 Hydraulic engineering works in the Durance Valley, Alpes-de-Haute-Provence, France.
- 3 The *Auto Bleue* car-sharing service in Nice, France, provides more than 126 electric vehicles and 42 battery charging stations, for individual and business users.



Tomorrow's projects will bring greater prosperity to local economies

The EDF Group presented its future projects to its municipal and industrial partners in 2013. Among them, the programme to extend the operating life of France's nuclear facilities, and the Hinkley Point EPR project in the UK. The latter is expected to attract £100 million into the local economy during construction and £40 million during operation, and to create 25,000 job opportunities for its construction and 900 permanent jobs during the period of operation⁽¹⁾. Consulting with the local community on jobs and resources is a feature of EDF's involvement at Le Havre too, where it plans to invest €300 million between now and 2020 to deconstruct three coal-fired plants and modernise a fourth, and at the Brennilis nuclear reactor, where decommissioning should be completed in 2025.

Renewables are helping to boost activity

With three projects off the coast of Normandy and southern Brittany, EDF Énergies Nouvelles is helping to build a French offshore wind power industry expected to create 7,000 jobs. More than 200,000 hours of training are planned for each site. Seven centres were opened in 2013 to provide O&M services for wind and solar power farms, joining the 15 already open in France.

New synergies between global and local

The rapid growth in electric urban transport, eco-neighbourhoods and local sourcing is spawning a host of interactions between local and global systems, leveraging the best of each at all times. At stake is the ability to develop more easily-monitored smart, interactive networks at each stage in the process, working with local authorities and other industrial and scientific players. EDF is currently involved in 18 smart grid demonstrators in France and other countries.

(1) Report by the Oxford Institute for Sustainable Development.

1 View of construction work on the Dunkirk LNG terminal, France. At the end of 2013, 37% of the 693 contracts for this project had been awarded to local contractors, and 24% to regional businesses.

2 Work is in progress on decommissioning the nuclear facility at Brennilis, France. See here is the cutting shop inside the reactor building.

PROGRESS IN ACTION

THE RIZZANESE DAM IN CORSICA: NEW HORIZONS FOR THE LOCAL POPULATION



LIKE ALL ISLAND ELECTRICITY SYSTEMS, CORSICA'S NEEDS TO BE SELF-SUFFICIENT. MANY CORSICANS STILL RECALL THE WINTER OF 2005, WHEN THEY WERE WITHOUT ELECTRICITY FOR SEVERAL DAYS. THE NEWLY OPENED RIZZANESE DAM WILL DIMINISH THE RISK AND BENEFIT THE LOCAL ECONOMY.

The Rizzanese dam is EDF's fourth major development in Corsica, generating 80 GWh annually and supplying up to 10% of peak winter demand. It raises the share of renewables in the island's energy mix to 30%, avoiding the import of 20,000 tonnes of fuel oil and the emission of 60,000 tonnes of CO₂ annually.

Construction began in 2007, with extensive recourse to local contractors, as part of a €15 billion EDF programme to secure the island's electricity supply. The program also embraced a 100 MW

interconnection with Sardinia, a 40 MW combustion turbine at Lucciana, and a 112 MW diesel-fired generating plant due to enter service shortly. A further €17 million is being invested annually in the power grids. In addition, the local economy will benefit from the water resources made available as a result of the programme.

The dam has been carefully integrated into the landscape. The penstock is partially buried, the olive trees, some hundreds of years old, have been replanted close by, and excavation tailings have been dispersed in the valleys and then planted with vegetation. To protect biodiversity, a demodulation reservoir gradually releases the water discharged from the turbines back into the river, and sediment is transported via a sluice. The dam will be monitored closely, leaving time for the natural environment to restore itself and the macrostigma trout to repopulate the dam reservoir.

Find out more on the Web

Video documentary on the Rizzanese dam



annualreport2013.edf.com



**“ THAT WILL ALLOW
US TO IRRIGATE BETWEEN
300 AND 500 HECTARES
OF FARMLAND”**

“The EDF Group has undertaken to supply us with 1.6 million cubic metres of water stored behind the Rizzanese dam, from May through October. That will allow us to irrigate between 300 and 500 hectares of farmland, mainly forage land and olive groves, improving yields and consolidating the farmers’ activity. This new source of water will also secure the drinking water supply for villages up to 20 km downstream of the dam and improve living conditions. Especially with the growth in summer tourism, some of the villages have experienced brief interruptions to the water supply during exceptionally dry periods. Corsica’s water authority also

has a €1.5 million plan to install 40 km of pipes and build an overload reservoir to supply the entire valley.”

Jean-Michel Palazzi
Director of the *Office d’équipement hydraulique de Corse*
(Corsica Water Management Agency)

PROGRESS IN ACTION



Jules Bartoli
Mayor of Sainte-Lucie-de-Tallano

“I’ve always believed in this project,” says Jean-Jacques Panunzi unhesitatingly, “and it owes its existence to the involvement of local elected officials, citizens, business and other community leaders, as well as to EDF’s commitment alongside us over nearly 20 years. By securing electricity supply, with a greater share of renewables, it will serve the island as a whole. And for a rural department like ours, it will boost local development.”

“The construction site alone generated €205 million in economic benefits for the community, including €60 million for island firms directly. More than a third of the 300 site workers were hired locally. Many of them received training in civil engineering trades, and some then set up their own business. Tradespeople, hoteliers and landlords have benefited too. Several EDF employees have families

(1) National institute for preventive archeology.



Jean-Jacques Panunzi
President of the Departmental
Assembly of Southern Corsica, and
Assembly Member for
Tallano-Scopamène

living locally, breathing new life into the surrounding villages. The eight villages on whose territory the dam is situated have received an annual revenue boost of more than €2 million thanks to business and land taxes.”

Jules Bartoli, too, claims it’s a win-win partnership. “It’s excellent for the local finances as well as for the supply of drinking water to our 500 inhabitants (2,000 in summer), via a draw-off pipe from the main pipeline linking the dam to the power plant. Everyone has gained in safety and convenience with the upgraded road through the village and the addition of a car park. Not forgetting restoration work on the area surrounding the Romanesque chapel of Saint-Jean-Baptiste de Poggio, where INRAP⁽¹⁾ has conducted a dig outside the chapel, and is now pursuing its dig inside the chapel, at our request.”

The very high and high voltage network near Orléans, France.



CHALLENGE

PROVIDING SECURE ENERGY SUPPLIES AND ELECTRICITY SYSTEMS

ENERGY IS CRITICAL TO THE ECONOMY AND WELLBEING. ELECTRICITY, ESPECIALLY, LIES AT THE HEART OF MODERN TECHNOLOGY. ENSURING SECURE ENERGY SUPPLIES AND SAFE ELECTRICITY SYSTEMS IS THEREFORE A CRUCIAL CHALLENGE.

AS AN ELECTRICITY COMPANY SERVING THE PUBLIC, MEETING THAT CHALLENGE IS PARAMOUNT IN ALL OF THE EDF GROUP'S INDUSTRIAL AND COMMERCIAL DECISIONS. IT IS INVESTING IN PLANTS THAT GENERATE A GUARANTEED BASE LOAD, IN LOCAL RENEWABLES, AND IN SMART DISTRIBUTION GRIDS AND RESEARCH INTO STORAGE SYSTEMS TO OFFSET THE INTERMITTENT NATURE OF RENEWABLE ENERGY. IT IS INVENTING NEW WAYS OF CONSUMING WITH ITS CUSTOMERS, TURNING THEM INTO ACTIVE PLAYERS IN THE ELECTRICITY SYSTEM AND ITS MANAGEMENT.



THROUGH EXPERT EYES

CLAUDE MANDIL, FORMER EXECUTIVE DIRECTOR OF THE INTERNATIONAL ENERGY AGENCY (IEA).

As a member of Synopia, a think tank, you co-wrote a report calling for a new European energy policy. You described the current situation as "deeply unsatisfactory". Why?

CM: Having spelled out rules to enable the markets to operate, the European authorities have issued other rules that stop them functioning. Electricity, gas, and CO₂ emissions permits are traded on markets, but the price signals they provide are distorted and cannot guide actors towards allocating resources optimally. Ultimately, the situation satisfies none of the three fundamentals of energy policy, namely security of supply, protecting the environment, and the climate in particular, and competitiveness.

How is that reflected in the electricity market?

CM: The European Union has set a goal of 20% renewables in its consumption. But, because of their cost and intermittent nature, these energy sources can only find buyers with the aid of non-market measures such as guaranteed feed-in tariffs and priority network access. Because they enjoy this protection, producers of renewable energy (other than hydropower) already account for 7.8% of the electricity generated in the EU, and for 16.7% of generating capacity⁽¹⁾. The difference between the two highlights the cost of intermittence. Who pays for the excess cost between the market price and the guaranteed tariff paid to the producer of renewable energy? It's the consumer, via the contribution to the public service charge for electricity (CSPE) in France and via Germany's Renewable Energy Act (EEG), sparing the big industrial consumers. The resulting situation is idiotic, with very volatile wholesale prices, which are falling on average owing to the growth in subsidised renewables, and rising retail prices. So although the domestic electricity market looks like a market, it lacks the features making for a general equilibrium at the lowest cost.

Hasn't the market also been affected by the 2008 crisis and the development of shale gas in the United States?

CM: True, these cyclical factors have aggravated the structural chaos. Because of the crisis, European firms are producing less, and therefore emitting less CO₂. This has caused the market in CO₂ emissions permits to collapse, with the price of a tonne of CO₂ avoided slumping from €25 pre-crisis to €7, instead of the hoped-for €50. Business has nothing to gain from investing to limit these emissions, and coal-fired generating plants are now cheaper than gas ones, even though the latter emit half as much CO₂ per kWh generated.

And there's more: now that the United States has replaced coal by unconventional gas, this coal is now being sold cheaply in Europe. The priority given to subsidised renewables in the networks means that fossil-fired plants are being used for shorter periods, which makes them less profitable. Moreover, the flexibility of gas-fired plants is vital when lack of sun or wind preclude the generation of renewable energy, yet these plants have had to close. In Germany alone, operators have applied to close 28 gas-fired plants. To offset these closures and that of its nuclear plants, Germany is burning more coal, and its consumers are paying a high price for their renewables, supposedly to reduce the country's greenhouse emissions.

What are the main effects of these market malfunctions?

CM: Cheaper gas and electricity for consumers, as promised by the free market, has failed to materialise – quite the reverse, despite abundant supply. This has seriously dented Europe's credibility. The security of the electricity system has been compromised by the chaotic growth of subsidised intermittent energy and the closure of gas-fired plants. We can expect to see power outages on days when demand for electricity is high and there is neither wind nor sun. Europe wanted to be the poster-child in the fight against climate change, versus America's laggard, when in fact it's the US that is cutting its emissions thanks to gas, and the

"star pupil" is boosting its emissions! Obstinate pursuit of these policies and their ludicrous cost is jeopardising Europe's economic recovery.

What do you think should be done?

CM: We believe Europe is the appropriate scale for a coherent energy policy. It has the size, the diversity and the complementary features required for solidarity, which is key to security, and for optimisation of capital expenditure. It would take too long and cost too much to start again from scratch, and it would be preferable to improve the existing system. Our report suggests a number of avenues, of which I want to mention three here. The first is to revert to normal market practice based on actual costs. Feed-in tariffs for renewables should be temporary, decreasing, and identical irrespective of form (solar or wind) so as to favour the most mature technologies or those most likely to improve. Renewables need to reflect the costs their intermittent nature entails, via capacity markets and the extra cost of load monitoring in fossil-fired back-up facilities, etc. The second is to stick to a single binding objective, namely cutting CO₂ emissions, as suggested by the European Commission itself. The third is to educate public opinion and strive to convince it that safe, abundant, clean, non-radioactive and cheap energy, with no facilities "in my backyard" – is a pipedream.

Report: *A new European energy policy? Assessment and proposals* is the title of a report written by a number of energy experts and academics: C. Mandil, A. Bressand, C. van der Linde, G. Luciani, J. McNaughton, M. Mulder, with assistance from Alexandre Malafaye, President of Synopia.

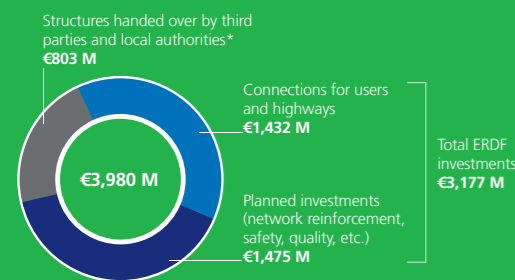
(1) Source: IEA.



FACTS

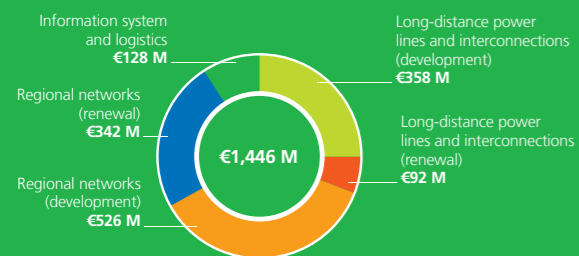
31,700 producers connected to the distribution grid by ERDF in 2013

ERDF: gross network investments in 2013



* After deduction of *Part Couverte par le Tarif* (PCT – “portion covered by tariff”) and article 8 of the concession-granting authorities’ requirements.

RTE investments in 2013



Source: 2013 figures – Eurostat, April 2014



A KEY PLAYER IN NETWORKS

THE EDF GROUP CONSOLIDATED ITS CENTRAL ROLE IN THE FUNCTIONING OF THE ELECTRICITY SYSTEM IN FRANCE AND EUROPE IN 2013, THROUGH ITS GENERATING FACILITIES AND NETWORK SUBSIDIARIES, AND BOLSTERED THE SECURITY OF PRIMARY ENERGY SUPPLIES FOR ITS POWER PLANTS AND CUSTOMERS EVERYWHERE.

The control room at the West Burton combined cycle gas turbine plant, United Kingdom.

The safety of the electricity system depends on balancing supply and demand at all times

Electricity cannot be stored and, to avoid blackouts, supply and demand for electricity need to be balanced in real time. The best solution is an appropriate mix geared to local resources, including nuclear facilities, plants burning coal, gas and biomass, and run-of-river units to ensure a guaranteed base load, plus hydroelectric dams and oil-fired plants to meet peak demand. Intermittent renewables, especially onshore wind power at close to competitive rates, have a useful role to play too, since they emit little CO₂, thus contributing to a country’s energy independence.

Fossil-fired plants continue to play an essential role in the electricity system

While allowing for local conditions and the need to remain competitive, the EDF Group favours the least CO₂-emitting solutions: nuclear power and renewables (hydro, wind and solar). It is also reinforcing its array of fossil-fired plants, which are essential to balancing the electricity system as they offset the intermittent nature of renewables and respond to peak demand in systems that lack sufficient hydro and nuclear capacity. Its extensive programmes in France emphasise CCGTs⁽¹⁾, which are both more efficient and emit less than half as much CO₂ as coal-fired plants.

(1) Combined cycle gas turbine plants.

The network optimises power supply for all

By pooling capacity and forging solidarity among the different players and regions, the distribution networks keep the electricity system running safely. RTE and ERDF are investing heavily to strengthen and develop their networks. RTE’s €440 million Cotentin-Maine transmission line ensures secure power supply for western France and will carry the electricity generated by the Flamanville EPR and the offshore wind farms. ERDF’s investment in distribution networks, meanwhile, has two aims: to improve resistance to climate events, and to accommodate the sharp growth in decentralised renewable output. The number of producers connected to its network jumped from 45,000 to 300,000 between 2009 and 2013. To manage intermittent renewable energy in Reunion Island more effectively, EDF set up a network control centre in 2013 capable of remotely cutting out power from solar farms when wind and solar power exceed 30% of total power generated. This system will be deployed in French Guiana and the Caribbean between now and 2015.



Lifting a condenser on the LNG terminal construction site, Dunkirk, France.

Securing supplies at lowest cost

EDF Trading, an EDF subsidiary, is a global player in the wholesale energy market and works with upstream-downstream optimisation units in each Group company to purchase coal most economically. For nuclear plants, seven suppliers in six countries provide natural uranium, and the Group has signed its first contracts to ensure secure supplies for the post-2020 period.

Edison is bolstering the EDF Group's positions in the gas sector

EDF is working through Edison in particular to strengthen its multi-energy marketing mix, and to keep its generating facilities and customers supplied. The company is a major electricity and gas supplier in Italy. It generated 14.8 TWh in its CCGT units in 2013, sold 15.7 Gm³ of gas, and renegotiated its long-term supply contracts with Algeria and Qatar. Edison also produces oil and gas, with exploration programmes under way in Norway and the United Kingdom mainly, with reserves of 50.4 Gm³. Through Edison, the EDF Group is engaged in a number of gas pipeline projects in southern Europe, namely Galsi between Algeria and Italy; ITGI between Turkey, Greece and Italy; and IGB between Greece and Bulgaria.

Investing in logistic infrastructure to consolidate the system

In France, Dunkerque LNG (EDF 65%, Fluxys 25% and Total 10%) is building a liquefied natural gas (LNG) terminal in Dunkirk with a capacity of 13 Gm³ a year, with 8 Gm³ reserved for the EDF Group. Work on the site is progressing, with lifting of the domes of the three LNG storage tanks and the boring of a tunnel to channel warm water from the Gravelines power plant to regasify the LNG. In addition, the EDF Group confirmed its commitment to take a 15% stake alongside Gazprom (50%), ENI (20%) and Wintershall (15%) in the subsea section of the South Stream pipeline, which is planned to link Russia and Europe at the end of 2015.



BUILDING MORE FLEXIBLE ELECTRICITY SYSTEMS

ELECTRICITY SYSTEMS ARE GOING TO ADAPT TO INCORPORATE LOCALLY GENERATED ELECTRICITY AND HEAT. THAT CONCERNS EVERY LINK IN THE ELECTRICITY CHAIN, FROM GENERATION TO NETWORKS AND PATTERNS OF CONSUMPTION.

1 ERDF is overseeing the Venteea demonstrator in the Aube, France, a rural area producing large quantities of wind-powered electricity. The goal is to measure the voltage of the current generated by the wind turbines and communicate this to an automated regulator to smooth power fluctuations.

Priority to local resources

The best way to ensure secure energy supplies is to rely primarily on national and local resources. That is the appeal of renewables, provided they are competitive. The French government has called for 19 GW of wind power and 5 GW of photovoltaic power, and ERDF is taking steps to integrate power from these sources. The EDF Group is investing in guaranteed-capacity generating facilities to keep the electricity system running at all times, using either local sources such as hydro power or even coal (as in China, for example). For the latter, it is experimenting with carbon-capture techniques to ensure energy independence does not come at the expense of climate disruption. Imported resources such as uranium and gas, meanwhile, must be sourced from a diversified array of guaranteed suppliers. One advantage of uranium is that it accounts for just 5-10% of the cost of generating nuclear electricity, making its price particularly stable.

The distribution network is set to undergo far-reaching change

To accompany these changes, make the best use of renewables and manage their intermittent supply in complete safety for the system, the low voltage grid is about to become smarter. This more automated, more observable, more flexible grid will interact with energy-positive buildings and consumers – once they start producing via their individual generating installations and their electric car batteries. That is why ERDF is investing to equip the network and in the Linky smart meter to furnish a more complete view of the network's functioning and improve its management. This modernisation programme is essential if renewables are to continue to gain ground.

EDF's R&D has deployed its Concept Grid to facilitate the insertion of intermittent, decentralised renewable-generated electricity into the grid. This unique experimental platform is a half-way house between a laboratory trial and a field experiment.



The EDF Group is contributing to local smart grid demonstrators

The Group is working with industrial partners, laboratories and local authorities on 18 smart grid demonstrators, including Venteea in the Aube department, which is about integrating wind power in a rural area, and Issygrid, which is focused on optimizing demand in the Issy-les-Moulineaux eco-neighbourhood. The Nice Grid project to integrate a neighbourhood-wide photovoltaic generation system, being overseen by ERDF, experimented with off-peak solar production in 2013. Smart Grid Vendée, meanwhile, launched in June 2013, has brought together more than 150 local authorities to modernise their distribution.

R&D is experimenting with these transformations

The EDF Group opened the Concept Grid platform at its Renardières R&D site in 2013. This small-scale electricity grid is testing the insertion of smart grid devices and systems prior to incorporating them into the network. In Belgium, EDF Luminus is partnering the Chair of Smart Grids at the University of Liège.

Storage can help cope with the intermittent nature of renewables if its cost can be lowered

The challenge with storage is to bring down its cost, which remains very high in most cases. EDF is investing in this area, especially for island energy systems, which are not interconnected and where electricity supply is more expensive and 25% of the power comes from renewables. The Group is involved in two projects: a seawater-based pump storage plant in Guadeloupe, and a high-capacity (1 MW) sodium-sulphur battery connected to the Pégase control system developed by EDF R&D. Pégase comprises a new model capable of predicting wind and photovoltaic power output based on weather conditions, forecasting a wind or solar farm's output from a few dozen minutes to 48 hours in advance, and to adjust the battery so as to smooth gaps between forecast and actual output. An initial implementation, the Toucan project, is under way in French Guiana in partnership with EDF Énergies Nouvelles. Toucan, winner of the EDF Pulse award, combines Pégase, a 5 MWp photovoltaic farm, and a 2 MW battery.

Changing energy consumption patterns

Consumers are playing an increasingly active role in the electricity system, not just by supplying the electricity they generate or storing electricity in their electric car battery, but also by managing their consumption. EDF companies now provide pricing plans, advice and services to keep customers better informed and enable them to evaluate, monitor, compare and adjust their consumption habits. In particular, incentives encourage them to reduce their peak-hour consumption.

In Belgium, EDF Luminus pays industrial and professional customers willing to cut their consumption at peak demand times, via its *You Balance* plan. Residential customers, meanwhile, can manage their energy budget via its Pulse award-winning *No Surprise* plan. Self-generators can communicate output fluctuations and market conditions via the Web-based Sales Trading Platform. In France, RTE's *EcoWatt Bretagne* and *EcoWatt PACA* services use the media and social networks to urge consumers to reduce their peak-time consumption.

A wide range of experimental programmes now focus on the consumer

Today's digital electrical appliances enable consumers to play an active part in the system, and several experiments are exploring the resulting possibilities. In *Une Bretagne d'Avance* ("Brittany ahead"), 600 volunteers have been equipped with a device allowing EDF to cut off their electric heating briefly at peak consumption times, while leaving them free to resume control of their heating if they wish. In Reunion Island, Corsica and Guadeloupe, *Millener* is testing decentralised solar power generation with peak-load shedding in hundreds of homes. In the Greater Lyon conurbation, *Smart Electric Lyon* is engaged in a large-scale experiment with 25,000 customers, centred around smart meters. As shown by the R&D experiment in 2013, the smart meter will facilitate direct control over utilisation and peak-load shedding for industrial and residential customers, with a response time of just a few minutes. ERDF issued a call for tenders to supply the devices following the French government's announcement of plans to deploy the meters in 3 million homes by 2016.

PROGRESS IN ACTION

IN LYON, SMART ELECTRICITY ENTERS THE HOME



SOME 25,000 CUSTOMERS OF EDF IN THE GREATER LYON AREA – RESIDENTIAL, BUSINESS, AND PUBLIC INSTITUTIONS – HAVE AGREED TO TAKE PART IN *SMART ELECTRIC LYON*, EUROPE'S BIGGEST EXPERIMENT IN ELECTRICITY CONSUMPTION MANAGEMENT SOLUTIONS.

The goal is to cut consumption and abate the costly consumption peaks that put heavy pressure on the electricity system. The heart of the experiment is the Linky meter. The first part of this two-part programme supplies individual customers

with detailed information (in a form to be tested) on their consumption, plus comparisons with that of other customers with the same profile, to help them adjust their consumption. In the second part, their different appliances will communicate with each other via Linky, using home automation solutions. Radiators will shut down when windows open or if the room remains empty for an extended period of time, for example. Now it's the turn of the home network to become smart. A consortium of 21 partners has been formed around EDF, including appliance and telecoms manufacturers, ERDF, technology institutes, as well as behavioural scientists. And a dedicated space has been set up to serve as a showroom-cum-area for cooperation between those taking part.

Find out more on the Web

Video documentary on *Smart Electric Lyon*



annualreport2013.edf.com



**"WE'VE SHAVED
MORE THAN 12%
OFF OUR ELECTRICITY BILL."**

"We totally revamped our supermarket to high environmental quality (HEQ) standards in 2007. Since then, energy costs have risen, but our budget hasn't. *Smart Electric Lyon* suggested new approaches, including a solution to monitor our actual consumption, item by item. We realised certain items were consuming energy unnecessarily, which enabled us to adjust our electricity consumption more precisely and make significant savings. We've shaved more than 12% off our electricity bill since the start of the experiment. We worked with our refrigeration engineer and installed heat pumps, using the energy produced by the electric compressors in our cold storage rooms to heat part of the building. Similarly, with EDF, we now cut our electricity consumption at peak hours."

Vincent Denis
Manager of the Leclerc supermarket, Vaise

PROGRESS IN ACTION



Sophie Breton
Chairwoman of IGNES (*Industries du Génie Numérique, Énergétique et Sécuritaire* – Digital, energy and safety engineering industries)

There are several winners with *Smart Electric Lyon*. By helping to cut customers' bills the experiment showcases EDF's solutions and electricity's role as a key factor in the energy transition.

The role of people is crucial. What information do they need in order to invest? And how far are they prepared to go? "The Lyon initiative examines our relationship with energy, how we consume it, and the way we use technical objects. The University of Lyon has brought its full research potential in human and social sciences to bear on this programme," says Khaled Bouabdallah, President of the University of Lyon.

"This experiment is a fresh opportunity to assemble all of the actors concerned in addressing new societal needs and the new challenges facing us. The collective approach showcases possible ways in which electricity could



be used. Linky's communicating capabilities and solutions downstream of the meter in the service of energy conservation represent a critical challenge. This is a real opportunity for us all to assess users' buy-in and receptiveness to these technologies so as to adjust them, and to give users an active role in their consumption," says Sophie Breton, the new Chairwoman of IGNES, a federation of 60 businesses supplying products and solutions for residential and service-sector buildings.

It is also another step towards a smarter city, lynchpin of the Greater Lyon projects, as stressed by Senator Gérard Collomb, Mayor of Lyon and Chairman of Greater Lyon, at the showroom's inauguration: "We've been thinking about tomorrow's smart city for quite some time here. Our conurbation is a test bench, planning for the transition to sustainable energy for all. Managing consumption and cutting energy bills without compromising comfort is the aim behind the smart grids we are developing for our citizens."



Khaled Bouabdallah
President of the University of Lyon

The Toul-Rosières photovoltaic plant near Metz, France, comprises more than 1.4 million solar panels.



CHALLENGE

WORKING FOR A DECARBONISED ECONOMY

CLIMATE DISRUPTION IS OCCURRING ON A MAJOR SCALE. THERE IS BROAD SCIENTIFIC CONSENSUS THAT ITS MAIN CAUSE IS GREENHOUSE GAS EMISSIONS BY INDUSTRIAL SOCIETIES. WORLDWIDE, THE PRIME CONTRIBUTORS ARE ELECTRICITY GENERATION, HEATING FOR BUILDINGS, AND TRANSPORT AND INDUSTRY. PROVIDED ITS PRIMARY ENERGY MIX IS CARBON-FREE – FROM RENEWABLE OR NUCLEAR SOURCES – ELECTRICITY CAN CONTRIBUTE POWERFULLY TO THE TRANSITION TO A DECARBONISED ECONOMY. THE EDF GROUP HAS SHOWN THIS CAN BE ACHIEVED AT REASONABLE COST.



THROUGH EXPERT EYES

PROF. JEFFREY D. SACHS

IS DIRECTOR OF THE UN SUSTAINABLE DEVELOPMENT SOLUTIONS NETWORK AND THE EARTH INSTITUTE AT COLUMBIA UNIVERSITY.

Some people are still contesting that climate change is happening. Is there a real scientific consensus on the subject and on whether or not it is human-induced?

Jeffrey D. Sachs: The scientific consensus on climate change is strong. Indeed, the first modern theorising on climate change goes back to 1824, when Joseph Fourier identified the role of the atmosphere in the Earth's radiation balance. In 1896, Swedish chemist Svante Arrhenius correctly estimated the effects of a doubling of CO₂ on the Earth's temperature. The Working Group 1 (WG1) report of the Intergovernmental Panel on Climate Change (IPCC) continues squarely in that long and respected scientific tradition.

Of course there are uncertainties on specifics. The Earth's climate system is highly complex, with many kinds of feedbacks and uncertainties. There are many factors driving temperatures and climate at different time scales. Greenhouse gases are one; so too are fluctuations in the state of the oceans, volcanic activity, pollution (affecting aerosols), and even cycles in solar intensity. Scientists have studied these various factors for dozens of years. In all theories, human-induced effects through greenhouse gas emissions – most importantly the CO₂ from fossil fuels – play a fundamental role.

To what extent is a rise of several degrees in the Earth's temperature a threat and what will it change?

JDS: The dangers of climate change are pervasive. It will greatly threaten global food security; the vulnerability to various climate-related hazards (droughts, floods and extreme storms); rising sea levels; disruptions of major ecosystems such as the Amazon rainforest; and the decline of river flow of many rivers such as the Nile. There are serious risks of "positive feedbacks" that will amplify the human effects. In short, we are recklessly gambling with dire future consequences, a point made amply clear in the recent IPCC Working Group 2 (WG2) report.

Is it possible to combine worldwide economic growth with climate-change mitigation?

JDS: That has to be our goal. The growth is needed especially in the poor countries, for which improvements in living standards are important and deeply desired. The combination of growth and climate safety is possible essentially by "decarbonising" the world's energy system. To do so, we need to carry out three main tasks. The first is to achieve far greater energy efficiency. The second is a shift to low-carbon electricity generation, including the expansion of nuclear and renewable energies, as well as carbon capture and sequestration (CCS), at least if it proves to be reliable and economical on a large scale, something that is not yet proved. The third task is "fuel shifting", meaning that the world should move from direct use of fossil fuels in cars and in buildings to electric vehicles and to electricity-based cooling and heating systems in buildings. In all three cases, power companies have a key role to play.

What solutions do you think are economically feasible?

JDS: I believe that the transition to low-cost, low-carbon energy will be feasible, indeed more feasible and economical than it looks to many people today. My optimism is based on the fact that there will be lots of "learning by doing". Many kinds of low-carbon energy – wind, solar, hydro, nuclear – are already the lowest-cost options in many regions. These costs will continue to decline. Indeed, renewable energy sources will become even more useful and economical as new and effective energy-storage technologies are developed.

What obstacles have to be overcome to undertake an energy transition that will hold back climate change?

JDS: There are four main barriers to overcome. The first is the lack of adequate knowledge of political leaders about the potential of

low-carbon energy. A half-century ago, President John F. Kennedy had the confidence to go to the Moon. Today's politicians often lack the confidence to shift to electric vehicles! The second obstacle is the great influence of the oil lobby. The third is the absence of concrete plans on decarbonisation. Decarbonising the energy system requires sophisticated government planning over a time horizon of 20 to 30 years. The fourth obstacle has been the difficulty of achieving effective international cooperation on climate change. Decarbonisation must become a globally agreed goal. But I'm optimistic. I believe that the world is poised to make a significant breakthrough on decarbonisation, starting with the lead of the US, China and the European Union.

What do you think will happen about decarbonising the economy?

JDS: A new, strong global commitment to Deep Decarbonisation should be the main outcome of COP21 in Paris in December 2015. Every country should commit to publishing a Deep Decarbonisation Pathway to show the world its specific plans on deep decarbonisation to the year 2050. The scale of the needed effort is undoubtedly large. Today the world emits around 35 billion tonnes of CO₂ annually. By 2050, with a vastly larger world economy, the world should emit less than half of what it does now, to around 10 to 15 billion tonnes of CO₂. Given population growth, that represents a reduction from roughly 5 tonnes per person to 1.6 tonnes per person. By 2080, the world will need essentially zero net CO₂ emissions in order to stabilise the atmospheric concentration of CO₂ and even begin to reduce it. This is a very steep and rapid decline, achievable only in the context of tremendous global cooperation and collaboration on technological breakthroughs.



SPEARHEADING THE DRIVE FOR LOW-CARBON ELECTRICITY

— Preparing wind turbines for transport to their offshore site and assembly.

THE BULK OF THE ELECTRICITY GENERATED BY THE EDF GROUP COMES FROM NUCLEAR POWER AND RENEWABLES, MAKING IT A COMPETITIVE PLAYER IN THE DRIVE FOR A DECARBONISED ECONOMY. ITS SALES TEAMS AND SPECIALISED SUBSIDIARIES ARE PROVIDING RESIDENTIAL, LOCAL AUTHORITY AND BUSINESS CUSTOMERS WITH THE SOLUTIONS THEY NEED TO REDUCE THEIR CARBON FOOTPRINT.

CO₂ emissions are rising again in several countries

Most of the world's electricity is generated from fossil fuels (coal 41%, gas 22% and oil 5%) and accounts for 40% of global CO₂ emissions. The European Union has targeted a 20% cut in its greenhouse gas emissions by 2020 relative to 1990. Yet coal is experiencing a major comeback in certain European countries, as they turn to fossil-fired plants in order to compensate for their massive recourse to intermittent renewables and so ensure a secure power supply. They have preferred coal to gas even though the latter emits only half as much CO₂, because coal is so cheap.

The EDF Group has a very low carbon mix, in France especially

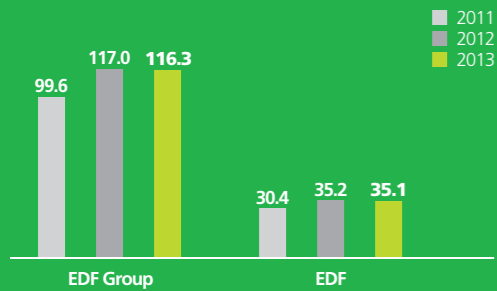
EDF's first contribution to decarbonising the economy lies in its generation mix, made up of 74.5% nuclear (487.1 TWh in 2013) and 10.6% hydropower and other renewables, which supplied 69.4 TWh in 2013, 18.2% more than in 2012. The Group thus confirmed its position as a leading low-carbon electricity company. That explains why it is investing so heavily in France and the rest of Europe to maintain its hydropower and nuclear fleets, boost their efficiency and extend their operating lives in complete safety. In the United Kingdom, where EDF Energy has cut its CO₂ emissions from 813 grammes per kilowatt-hour generated in 2006 to 254.9 grammes in 2013, extending the operating lives of four of its nuclear reactors has avoided the emission of 130 million tonnes of CO₂ relative to fossil fuels since 2011.

EDF is increasingly turning to renewables

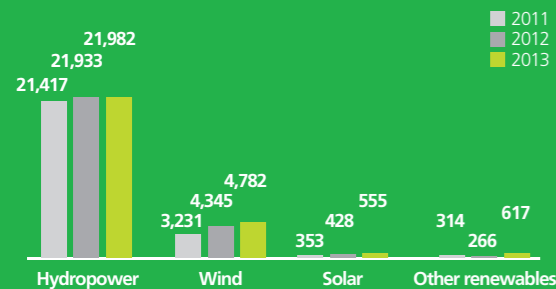
EDF Énergies Nouvelles, the Group's renewables arm, is continuing to expand. It now has an output of 11.1 TWh (up 31.3%), 6.6 GW in service and 1.8 GW gross under construction, and a further 9 GW operated and maintained on its own account or for third parties. It works through partnerships in most of the 18 countries it operates in. In Italy, Edison and EDF Énergies Nouvelles Italia operate wind farms totalling 925.6 MW and photovoltaic farms totalling 108.5 MW. In Belgium, EDF Luminus is a major player in wind power, with 124 MW installed and planned total capacity of 197 MW by the end of 2014.

FACTS

CO₂ emissions due to electricity and heat generation, in g/kWh



EDF Group's installed generation capacity from renewables, in MWe





The EDF Group manages 4.4 million square metres of service-sector buildings in France, almost a third of which are rented out to third parties. The energy consumption of these buildings has been reduced by 11% since 2006, and the Group has now committed to a further 30% reduction by 2020. This effort will involve investments of €9 million and an employee awareness campaign.

Fossil-fired plants are improving their carbon balance

Fossil-fired (coal, gas or oil) plants are flexible, efficient and responsive, and they supply 14.9% of the Group's total output, in varying proportions depending on the country. It provides the base load in Poland but acts as a swing energy source in France, where aggregate emissions have come down from 24 million tonnes of CO₂ in 1990 to 16.6 million tonnes in 2013, and specific emissions have dropped from 60 grammes to 35.1 grammes per kilowatt-hour generated. That progress stems from shutdown of the least environmentally-friendly coal-fired plants, such as Blénod 2 and Le Havre 1 and 2 in 2013. It stems too from the start-up since 2011 of the three CCGTs at Blénod and Martigues, which emit only half as much CO₂ as coal-fired plants. Also, a new generation CCGT is now under construction at Bouchain.

Improving energy efficiency is another factor cutting CO₂ emissions. For example, the new generation diesel engines equipping four new island energy systems plants will cut their CO₂ emissions by 15%. A €450 million modernisation programme is under way at three 600 MW coal-fired plants at Cordemais and Le Havre, with another programme in Poland to modernise plants at Wroclaw, Rybnik, Krakow, Gdansk and Gdynia.

Sales advisers are helping customers to reduce their carbon footprint

Another way in which EDF is helping to decarbonise the economy is by advising customers on how to reduce their carbon footprint. With more than 2.2 million tonnes of CO₂ emissions avoided between mid-2009 and end-2013 in France, its advice is proving effective.

All EDF companies in Europe now market green packages guaranteeing electricity from very low CO₂-emitting renewable sources. Examples include *Blue+Price Promise* in the United Kingdom and *Équilibre* in France, priced to encourage customers to reduce their consumption when electricity is dearest and emits the most CO₂.

They also advise business and local authority customers and supply them with low-carbon solutions that integrate local renewable power generation, renovation of buildings, energy management services, and electric mobility (with charging terminals and car-sharing plans, etc.). In France, EDF Optimal Solutions has made a speciality of low-carbon solutions, with a client list including the Allianz Riviera stadium in Nice, the world's first energy-positive stadium, built for the Euro 2016 football tournament; an eco-neighbourhood for Roquebrune; and renovation of the Roc-Noir neighbourhood aimed at halving its CO₂ emissions.



TOWARDS A LOW-CARBON ENERGY WORLD

THE EDF GROUP WILL CONTINUE TO COUNT ON NUCLEAR POWER AND RENEWABLES BECAUSE THEY ARE LOW-CARBON ENERGY SOURCES. ITS TEAMS ARE WORKING TIRELESSLY FOR A SUSTAINABLE FUTURE RECONCILING ECONOMIC PROSPERITY, URBAN GROWTH, QUALITY OF LIFE AND LOWER GREENHOUSE GAS EMISSIONS.

Nuclear power is still the main route to a decarbonised economy...

With an industrial programme to extend the life of its French nuclear reactors, construction of the Flamanville EPR, projects in the United Kingdom, and studies under way for the first reactors in Poland and Saudi Arabia, the EDF Group is consolidating its leadership in the nuclear sector. For EDF, nuclear power is one of the sources of competitive decarbonised electricity. In the United Kingdom, the government has decided to revive the nuclear sector in order to fill the energy gap and achieve the country's CO₂-emissions reduction goals. The 2013 agreement between EDF and the UK government paves the way for construction of the two Hinkley Point C EPRs. At the same time, EDF and AREVA are designing new reactor models in conjunction with the French Alternative Energies and Atomic Energy Commission.

- 1 The Saint-Alban nuclear plant, Isère, France.
- 2 Post-combustion CO₂-capture demonstrator at the Le Havre fossil-fired plant, France. Amine-based capture chemically extracts carbon from the flue gas.

... alongside all of the different renewables

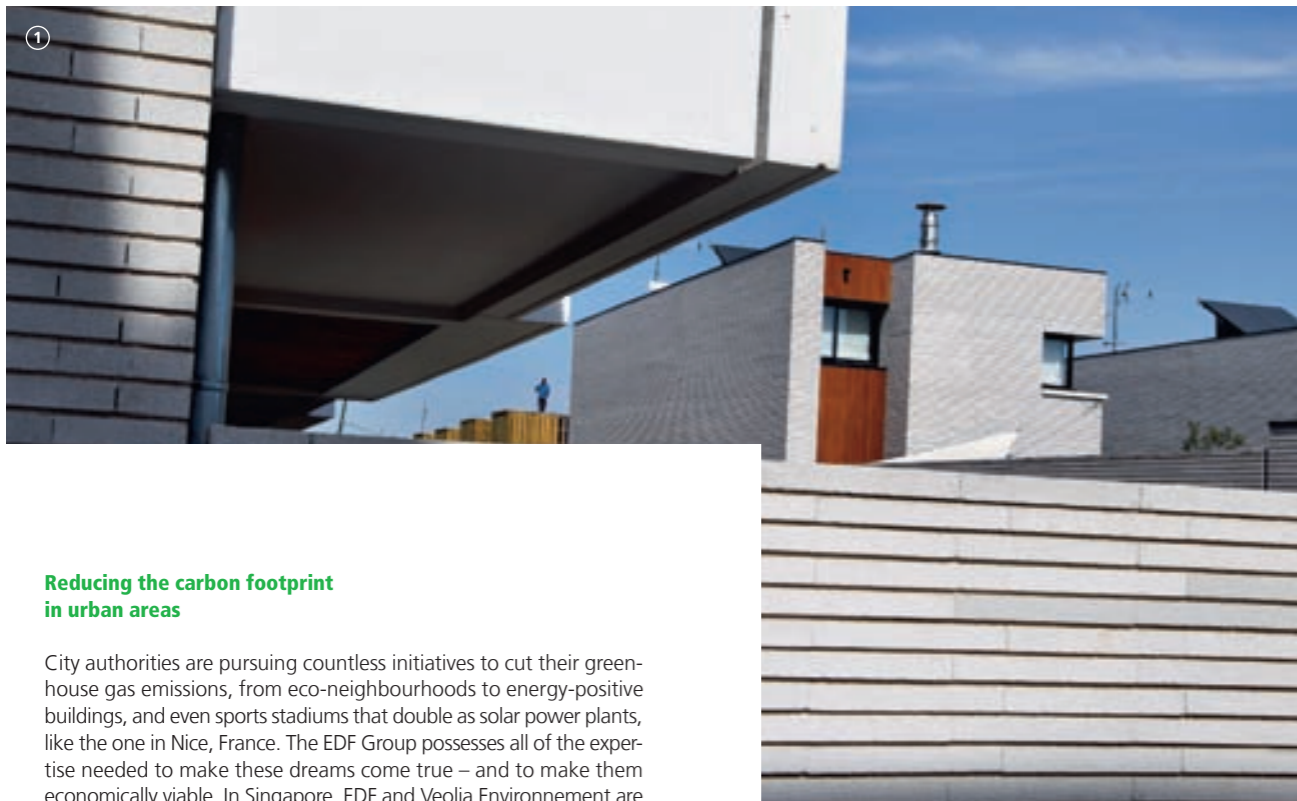
In hydropower, most of France's potential is already being exploited, and current projects are chiefly aimed at boosting the capacity of existing installations and optimising their operation. The main focus in wind power is offshore, with C-Power (325 MW) in Belgium and Teesside (62 MW) in the United Kingdom, the first offshore wind farms built with EDF Énergies Nouvelles, together with the three wind farms planned in France. In addition, bids have been submitted for the Tréport project and for the Yeu and Noirmoutier islands' projects, and for the Navitus Bay offshore project being developed by EDF Energy and EDF Énergies Nouvelles together with Eneco Wind UK. The integration of Dalkia France, a specialist in biomass-fired heat plants that bring green energy to cities via district heating systems, will further broaden the array of low-carbon solutions available to the EDF Group.

Exploring new possibilities

EDF's R&D teams are deploying their expertise in a wide range of experimental projects, such as the *Arcovest* turbine, which is testing tidal power generation in real-life conditions, or the 8 kW prototype run-of-river turbine being tested by the SEI division on the Oyapock river in French Guiana. R&D teams are also working with EDF Énergies Nouvelles on the *Vertiwind* floating wind turbines project, which are better suited to deep water and strong coastal winds. A 2 MW prototype is under construction at Fos-sur-Mer. At the request of EDF Énergies Nouvelles, R&D workers are validating a floating LIDAR project, an enhanced, lower-cost system for assessing the amount of energy offshore wind projects are capable of generating. The Group's R&D teams are also working with the IPVF⁽¹⁾ on the breakthrough technologies that will usher in an era of competitive industrial-scale photovoltaic solar energy. Meanwhile, they are continuing to cooperate on thermodynamic solar technologies with China's Institute of Electrical Engineering.

Coal is an abundant and widely available resource, and CO₂-capture techniques would give it a valuable place in a decarbonised energy mix. The R&D team at the Le Havre coal-fired plant is taking part in an experimental amine-based post-combustion CO₂-capture demonstrator, which captured its first tonne of CO₂ in 2013.

(1) Paris region photovoltaic institute.



Reducing the carbon footprint in urban areas

City authorities are pursuing countless initiatives to cut their greenhouse gas emissions, from eco-neighbourhoods to energy-positive buildings, and even sports stadiums that double as solar power plants, like the one in Nice, France. The EDF Group possesses all of the expertise needed to make these dreams come true – and to make them economically viable. In Singapore, EDF and Veolia Environnement are developing a computer-based urban modelling tool for the Housing Development Board, the city-state's leading landlord, that covers buildings' energy efficiency and air conditioning systems, domestic waste collection, the inclusion of photovoltaic panels on new buildings, green roofs, and local water recycling. This partnership is also laying the basis for the creation of an urban planning research centre, with the support of Singapore's Economic Development Board. This will help Singapore to meet the ambitious goals it has set itself and, based on its example, assist other cities in coping with complex urban planning decisions.

Electricity is driving the energy transition in transport too

Road vehicles are the final link in the ground transport chain not to have gone electric. Yet they are major emitters of greenhouse gases, and the global growth in road traffic will aggravate these emissions. Electric cars, provided they are powered by 50%-decarbonised electricity, are one solution for the future. Credible urban solutions are already making their appearance, employing innovative car-sharing models, and EDF is playing its part.

Longer-range electric vehicles are on their way

EDF's R&D is working to identify and develop the most promising energy storage technologies. Its teams lead the field in the development of technologies such as zinc-air batteries, which are very cheap, and high-performance lithium-air-water batteries with a range of 800 km on a single charge at minimal expense, as demonstrated in an experiment in 2012. R&D is also investigating low-cost batteries capable of standard performance but at a quarter the cost of existing technologies. One example is the 3D iron battery, with 80% iron, replacing the more expensive cobalt or manganese.



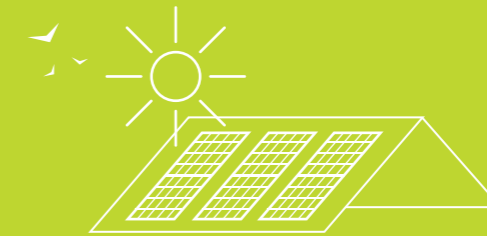
The power of invention

Soft mobility solutions, sustainable housing, low-carbon energy, electricity storage – all these feature in submissions for the *EDF Pulse* awards to spotlight innovations likely to change our everyday lives. Of the five awards, the first is for science and distinguishes an electricity storage project. The second, aimed at businesses and NGOs, goes to a project to provide access to electricity in developing countries. The other three reward startups working on challenges connected with electricity and lifestyles: one prize for a mobility project, one for health, and the third for housing.

- 1 The Andromède eco-neighbourhood, Toulouse, France.
- 2 After its wide-scale introduction of electric mobility, the Greater Nice area is working with EDF, ERDF and RTE on a European experiment, the Grid4EU smart grid, to test electricity storage, decentralised production from renewables and peak-hour consumption cutoff across an entire neighbourhood.

PROGRESS IN ACTION

FRANCE'S MOUNTAIN INFANTRY BATTLE CLIMATE CHANGE



FOR THE 1,100 SOLDIERS AND CIVILIANS MAKING UP THE 13TH MOUNTAIN INFANTRY BATTALION AT THE ROC-NOIR BASE, NEAR CHAMBÉRY, 2013 MARKED A MAJOR CHANGE IN THEIR LIVES, WITH THE INSTALLATION OF "ECOLOGICALLY RESPONSIBLE" HEATING IN THE 30 BUILDINGS MAKING UP THE 41,500 SQUARE METRES OF THEIR BARRACKS.

It was a first for the French Ministry of Defense, currently in the midst of a vast Environmental Plan. In France, buildings account for 42% of energy consumption and 23% of CO₂ emissions. So the government has targeted a 40%

cut in energy consumption and a 50% reduction in CO₂ emissions from state-owned buildings by 2020. As the owner of the largest public-sector stock of buildings, the Ministry of Defense wants to set the example. To cope with its aging buildings and installations at Roc-Noir, the Defence Ministry's Infrastructure Department signed an energy-efficiency partnership contract with EDF's specialist subsidiary EDF Optimal Solutions, covering two years of installation works and 18 years of operation and maintenance. Under this innovative contract, the customer commits to use the premises rationally. It will pay an annual figure on a fixed basis, with energy consumption indexed on weather conditions. EDF Optimal Solutions will pay the customer the difference if results fall below the targeted performance.





**"A 50% CUT
IN OUR CO₂ EMISSIONS
AND A 46% CUT IN
OUR ENERGY CONSUMPTION."**

"The battalion needed a quality energy service combining efficiency with performance. Practically all of the heating and hot-water installations were electric and were constantly breaking down. So we decided to rethink all of the installations from scratch, and to adopt a total cost approach combining capital cost with long-term operating and maintenance costs. The energy-efficiency partnership was considered the most appropriate type of contract for this. With EDF Optimal

Solutions, we are committed to ambitious targets – a service team on call at all times, a comprehensive guarantee for installations, a 50% cut in our CO₂ emissions and a 46% cut in our energy consumption, representing an estimated annual saving of €300,000. And renewable energy must account for 58% of consumption. We are deploying a three-way energy management system split between the Defence Ministry's infrastructure Department, EDF Optimal Solutions and the technical facilities manager to design the additional tools to oversee the contract, verify fulfilment of targets and ensure

users behave in an environmentally responsible manner, making us the first government unit to be ISO 50001 certified."

Colonel Jacques Massot
Government Property Services Bureau Manager,
Ministry of Defence Infrastructure Department

PROGRESS IN ACTION



Nicolas Renault
Director of Major Innovative Projects, EDF Optimal Solutions

The Ministry of Defence demanded a cut of at least 40% in energy consumption and 50% for CO₂ emissions, with modernisation of its buildings to improve comfort for their occupants.

"We deployed a mix of tried and tested solutions," says Nicolas Renault, Director of Major Innovative Projects at EDF Optimal Solutions. "Over two years, we insulated the buildings and replaced the window frames. Technical facilities were renewed, with the installation of a 3 MW heating system powered by a wood-fired boiler producing nearly 1 MW. We laid solar rugs on the roofs of four of the buildings to heat water for the showers year-round; they cover 30% of the site's hot-water needs."



Altogether, 58% of the site's energy needs will be provided by renewables, with biomass (a wood-fired boiler plant operated by Dalkia), solar power (via solar rugs) and aerothermal heating via heat pumps. A centralised control room will manage the heating, hot water and ventilation.

Additionally, 45% of the works contracts were awarded to around 30 local contractors, and the wood comes from neighbouring forests. "So we are contributing to the development of the region's forestry industry," adds Nicolas Renault.



Interior view of a water cooling tower at the Cattenom nuclear facility, Moselle, France.



A wind turbine awaiting assembly.
EDF Énergies Nouvelles is now France's leading
operator and maintainer of wind farms.

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PROFILE & PERFORMANCE 2013



THE GROUP IN 2013



158,467
employees

39.1
million customers

85.1% generation with zero CO₂

€543
million allocated to R&D

PROFILE

THE EDF GROUP IN 2013

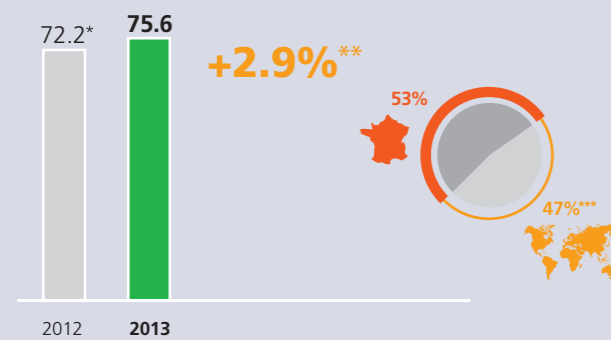
ENVIRONMENTALLY FRIENDLY ELECTRICITY FOR ALL AT THE LOWEST POSSIBLE COST

The EDF Group is one of the world's foremost electricity companies, embracing all of the different electricity-related activities, from generation to commerce. It is the global leader in nuclear generation, the European leader in hydropower, and a front-rank player in other renewables. It has the best low-carbon energy mix of any of the world's major electricity companies, proving that it is possible to generate three-quarters of its electricity with zero CO₂ emissions, and to do so competitively.

It is the leading player in the French and UK electricity markets, well established in Italy and several other European countries, an industrial operator worldwide (in Asia especially), and acknowledged to be one of the world's most respected operators of energy facilities. It is bolstering its involvement across the gas business and developing innovative energy services to provide its customers with extensive, competitive solutions that durably reconcile economic development with preservation of the climate. Its customers and partners can depend on the commitment and expertise of its employees, its R&D capabilities, its know-how in project engineering and the operation of power generation plants and networks, as well as on its financial strength.

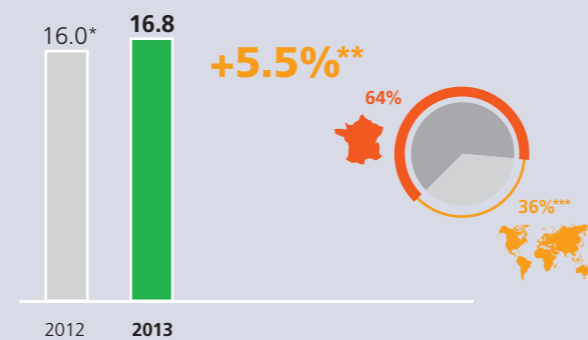
RESULTS AND INVESTMENTS

SALES in billions of euros



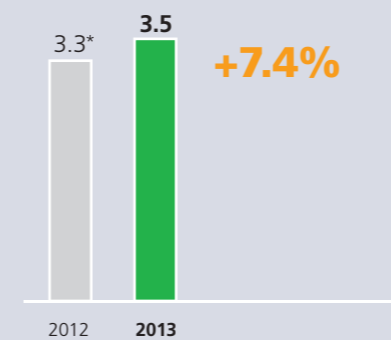
* Data restated for impact of IAS 19 revised and for the change in presentation of EDF Énergies Nouvelles' development and sale of structured assets activities.
 ** Organic growth at constant scope and exchange rates.
 *** International and other activities.

EBITDA in billions of euros



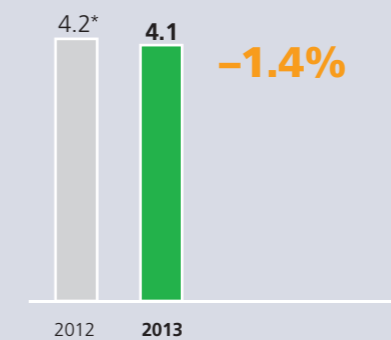
* Data restated for impact of IAS 19 revised and for the change in presentation of EDF Énergies Nouvelles' development and sale of structured assets activities.
 ** Organic growth at constant scope and exchange rates.
 *** International and other activities.

NET INCOME (GROUP SHARE) in billions of euros



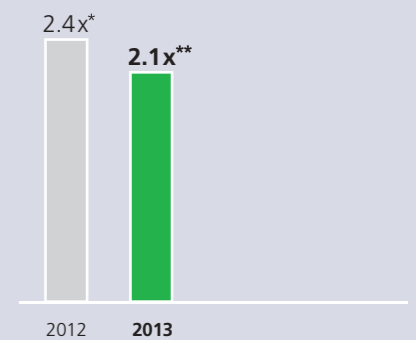
* Data restated for impact of IAS 19 revised and for the change in presentation of EDF Énergies Nouvelles' development and sale of structured assets activities.

NET INCOME EXCLUDING NON-RECURRING ITEMS in billions of euros



* Data restated for impact of IAS 19 revised and for the change in presentation of EDF Énergies Nouvelles' development and sale of structured assets activities.

NET FINANCIAL DEBT/EBITDA



* Pro forma after the allocation of the CSPE receivable to dedicated assets on 13 February 2013 and subtraction of €2.4 billion from the dedicated assets portfolio, enabling 100% coverage of the EDF nuclear liabilities that are eligible for dedicated assets.
 ** Hybrid issuance booked as equity due to their characteristics and in compliance with IFRS.

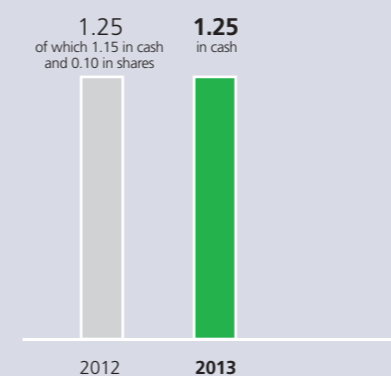
€12.2 BILLION INVESTMENTS⁽¹⁾ OF WHICH 72% IN FRANCE

In millions of euros



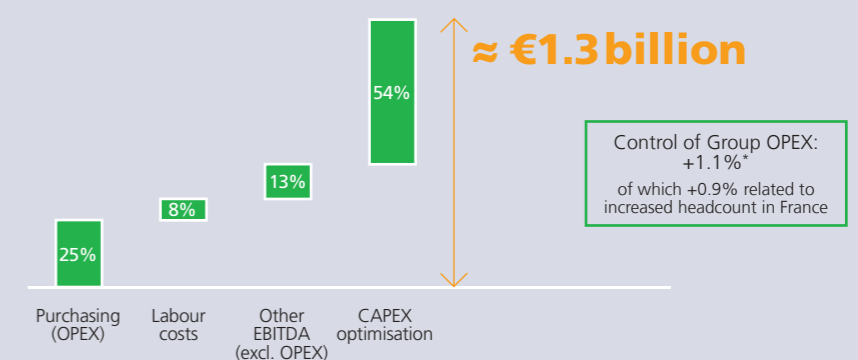
(1) Net investments excluding Linky and excluding strategic operations.

DIVIDEND in euros



EDF's Board of Directors, meeting on 12 February 2014, decided to propose to the Shareholders' Meeting to be held on 15 May 2014 the payment of a cash dividend of €1.25 per share for the 2013 financial year, resulting in a 56.5% payout ratio of net income excluding non-recurring items, in line with the target of 55% to 65% set by the Group.

SPARK COST-SAVINGS PLAN: TARGET EXCEEDED



OPEX: in practice, the term OPEX is used to distinguish expenditure that contributes to income (operating expense) from expenditure on capital investment (for which the term CAPEX is used).

* Excluding Dalkia, at constant scope, exchange rates and methods.

CORPORATE RESPONSIBILITY

ELEVEN GROUP COMMITMENTS

A RESPONSIBLE INDUSTRIAL FIRM

Maintaining the highest levels of security in our installations

Meet the international FTSE4Good⁽¹⁾ index for nuclear safety.

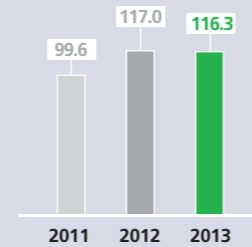
March 2012: inclusion in the FTSE4Good index.

March and September 2013: reselection for FTSE4Good index.

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

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

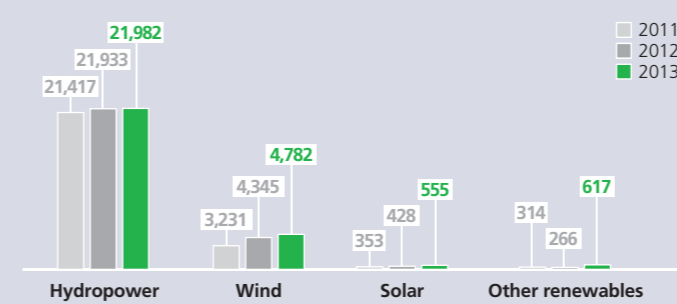
Keep direct CO₂ emissions within the 150 g/kWh⁽²⁾ limit.



(2) From 2012, full consolidation of three international subsidiaries (Edison, Kogeneracja, Zielona Gora), previously proportionately consolidated.

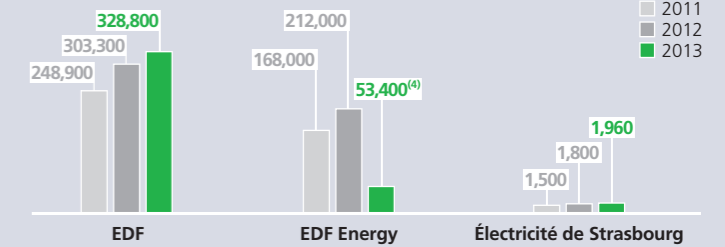
Investing in renewables and increasing their competitiveness

EDF Group installed capacity from renewable energies, in MWe⁽²⁾.



Significantly contributing to the improvement of energy efficiency within households

Number of households supported by Group companies⁽³⁾ in terms of energy efficiency.

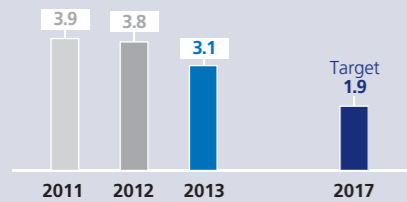


(3) Companies within the scope of consolidation that sell energy to residential customers.
(4) 74.8% reduction in the United Kingdom in early 2013 due to a change in legislation. The allocated budget for building renovations remains the same and is dedicated to more significant actions.

A RESPONSIBLE EMPLOYER

Resolutely reducing workplace accidents among our employees and our subcontractors

Halve the lost-time accident frequency rate⁽⁵⁾ for Group employees within five years.



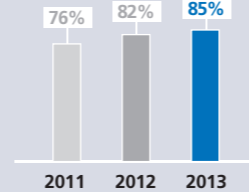
(5) Lost-time workplace accident rate per million hours worked.

Preserving the professional excellence and performance of our employees through training and promoting diversity

A total of 30% of the pool of future top executives has to be women by 2015.

2012: 24.1% 2013: 25%

Over 75% of Group employees receive at least one training session each year.



Refusing to tolerate any violation of human rights, fraud or corruption in any of our companies or among our suppliers

Thirteen companies will include an Ethics/SD clause in their long-term purchasing contracts⁽⁶⁾ by 2015.

2013: eight companies

- EDF
- ERDF
- EDF Energy
- Edison
- EDF Luminus
- EDF Polska
- EDF Démász
- EDF Norte Fluminense

(6) Except energy contracts on the spot market.

Thirteen companies will meet the requirements of the United Nations Global Compact Advanced level by 2017.

In 2013, the United Nations Global Compact Advanced level was awarded to two companies

- EDF (since 2012)
- Edison

At the end of 2013, five other companies had signed the Global Compact

- ERDF (since 2012)
- EDF Énergies Nouvelles
- EDF Luminus
- EDF Polska
- TIRU

A RESPONSIBLE PARTNER

Promoting transparency and dialogue on sensitive issues

Eight companies will set up a formal space for stakeholder dialogue by 2015.

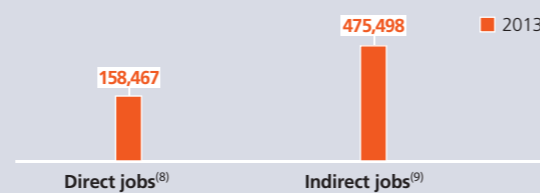
2013 results: three companies

- EDF: France Sustainable Development Council
- EDF Energy: Stakeholder Advisory Panel
- Edison: Social Committee (currently undergoing reorganisation)

Since 2005, EDF has set up the International Sustainable Development Panel, a Group-level stakeholder panel.

Contributing to the development of local economies through employment

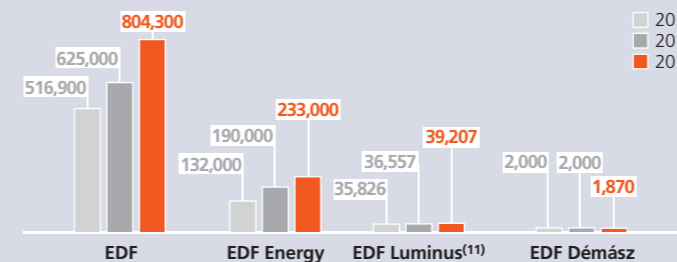
Number of direct jobs and indirect jobs⁽⁷⁾ generated by EDF Group business activities.



(7) Via orders placed with suppliers and service providers.
(8) Consolidated data.
(9) First time implementation of an auditable methodology, Local Footprint. The calculation of the indicator, which excludes uranium and property purchases, includes the following companies: EDF, ERDF, EDF Energy, Edison, EDF Énergies Nouvelles, EDF Polska and Électricité de Strasbourg.

Proactively fighting fuel poverty and promoting access to electricity

Number of actions⁽¹⁰⁾ to support our customers in need carried out by Group companies supplying electricity.



(10) Energy consulting, energy payment plan negotiated, granting of financial aid, etc.
(11) 2011 and 2012 data corrected following retroactive alignment of the calculation method with the Group definition.



GOVERNANCE

EDF, A STATE-OWNED LISTED CORPORATION

EDF is a signatory to the consolidated Afep-Medef code of corporate governance (June 2013 revised version), subject to specific legislative and regulatory provisions applicable to French state-owned corporations.

These provisions are due to EDF being owned by the government and, in particular, application of the French law of 26 July 1983 on democratisation of the state-owned sector, and of the 9 August 1953 decree on state control of public corporations. EDF consequently has less latitude in determining its governance than is customary among large listed companies.

In this context, EDF seeks to reconcile its specific circumstances with best industry practice, having due regard to the provisions of the Afep-Medef code, the recommendations of the AMF (the French financial markets watchdog), and those of representative industry bodies. It strives continuously to improve its governance.

EDF also seeks to maintain a high degree of transparency, in keeping with best practice, with particular reference to the recommendations of the Afep-Medef code, the organisation and functioning of its governing bodies and the remuneration of corporate officers. The Company reports annually on these aspects to shareholders in detail.

THE BOARD OF DIRECTORS

French law requires that the Board of Directors of EDF comprise 18 members, one-third elected by the employees, and two-thirds by the shareholders at the motion of the Board, other than government representatives, who are appointed by executive order. The Board therefore comprises six directors elected by the shareholders, six representing the State, and six elected by the employees.

Directors are elected to the Board of Directors of EDF for a five-year term. The terms of all current directors will expire on 22 November 2014, and the Board of Directors of EDF will therefore be renewed at that time.

The Board of Directors sets general policy governing the activities of the Company and oversees their execution. It may discuss any issue pertaining to the proper running of the Company and, in its deliberations, resolve all relevant matters. Moreover, in accordance with French law, the Board has the power to deliberate on all matters of strategic, economic, financial and technological policy more broadly affecting the Company and the Group.

In order to discharge its duties, the Board of Directors has set up five specialised committees, namely Audit, Nuclear Commitments Monitoring, Strategy, Ethics, and Appointments and Remunerations, to consider specific issues and to prepare

briefings for presentation to the Board. The composition and remit of these committees are laid down in the Internal Rules and Procedures of the Board.

The Board of Directors met 11 times during the 2013 financial year. The average attendance rate of 87.8% reflects the high level of the directors' commitment to the work of the Board. Board committees met 25 times in the course of the year.

The Audit Committee

The Audit Committee reviews the financial condition of the Company, the medium-term plan, the budget, draft company and consolidated financial statements and financial reports, together with risk management, audit and internal control, insurance policy, the choice of external auditors, as well as financial aspects of external growth operations or significant disposals, and expresses its opinion on these matters to the Board.

The Nuclear Commitments Monitoring Committee

This committee monitors provisions for the nuclear activity and expresses its opinion to the Board on the governance of dedicated assets, on the rules relating to the matching of assets to liabilities and on the strategic allocation of assets. Also, it verifies the consistency of the management of assets assembled by EDF within the framework of its policy on the formation and management of dedicated assets.

The Strategy Committee

This committee expresses its opinion to the Board on broad Company strategy, and in particular on its strategic guidelines, industrial and commercial policy, strategic agreements, alliances and partnerships and R&D policy, as well as on external and internal growth plans, and on planned disposals requiring Board approval.

The Ethics Committee

This committee ensures that ethical concerns are taken into consideration in the work of the Board and in the management of EDF. It reviews the reports of the Ombudsman, of the Inspector General of Nuclear Safety and Radiation Protection, and of the Hydro Safety Inspector. It oversees an annual appraisal of the functioning of the Board and the committees and puts forward proposals on areas for improvement. Every three years, an independent consultant is called in to perform this task. In addition, the committee periodically visits operating sites to apprise itself of issues pertaining to its remit.

The Nomination and Remunerations Committee

This committee nominates candidates for election to the Board by the shareholders. In accordance with French law, it submits to the competent ministers its opinion on the comprehensive remuneration of the Chairman and Chief Executive Officer, and also communicates this opinion to the Board of Directors for the purpose of setting this remuneration. The committee formulates its proposals within the limits stipulated by the 26 July 2012 decree on state control of the remuneration of the chief executives of public corporations, pursuant to which the annual remuneration of the Chairman and Chief Executive Officer may not exceed a gross amount of €450,000.

GOVERNANCE

EDF'S MANAGEMENT TEAM



①



②

③



④



⑤



⑥

⑦



⑧

Henri Proglio ①
Chairman and Chief Executive Officer

Henri Lafontaine ②
Group Senior Executive Vice President, Commerce, Optimisation, Trading and Island Energy Systems

Vincent de Rivaz ③
Chief Executive Officer of EDF Energy

Hervé Machenaud ④
Group Senior Executive Vice President, Generation and Engineering

Thomas Piquemal ⑤
Group Senior Executive Vice President, Finance

Marianne Laigneau ⑥
Group Senior Executive Vice President, Human Resources

Alain Tchernonog ⑦
General Secretary

Denis Lépée ⑧
Adviser to the Chairman, Secretary of the Executive Committee

The Chairman and Chief Executive Officer of EDF is appointed by executive order of the President of the French Republic, at the motion of the Board of Directors. Mr Henri Proglio was appointed Chairman and Chief Executive Officer of EDF by Presidential Order of 25 November 2009, after confirmation hearings by the Permanent Commissions of both Chambers of French Parliament, as required under the French Constitution.

Under the Articles of Association of EDF, the position of Chairman of the Board of Directors is combined with that of Chief Executive Officer. The Internal Rules and Procedures of the Board, and in particular the limits they place on the powers of the Chief Executive Officer, strike a balance of power between the chief executive corporate officer and the Board of Directors, while preserving the necessary flexibility and responsiveness in the administration and management of the Company.

The Chief Executive Officer works through the Executive Committee on which all of the Group's businesses, together with the finance, legal and human resources functions, are represented. This committee is a forum for discussion, strategic reflection and decision-making on issues affecting the Group as a whole. It reviews all major matters of substance and issues of topical importance for the Group, and monitors its operating targets and performance. It helps to identify and contribute to the management of key challenges for the EDF Group. It reviews and approves large projects, in particular those entailing capital expenditure or divestitures exceeding specified thresholds.

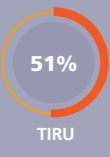
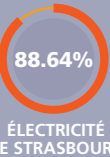
A Management Committee brings the members of the Executive Committee together with the top managers of the Group's main international subsidiaries and those in charge of specific geographic areas, as well as the heads of corporate functions.

OPERATIONS THE EDF GROUP AROUND THE WORLD

(CONSOLIDATED DATA AT 31 DECEMBER 2013)

EUROPE

FRANCE



AUSTRIA



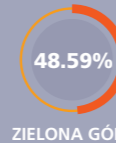
NETHERLANDS



POLAND



UNITED KINGDOM



RUSSIA



RUSSIA

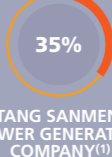


SWITZERLAND



ASIA

CHINA



LAOS



VIETNAM



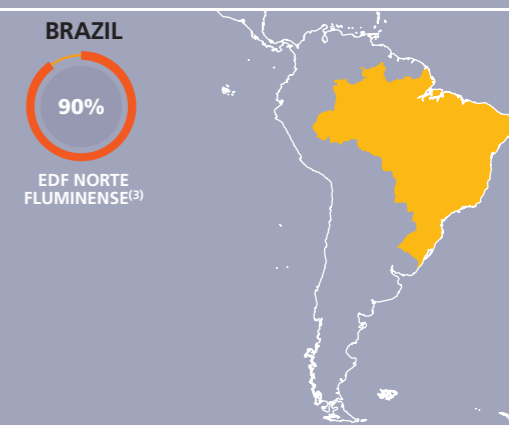
NORTH AMERICA



UNITED STATES



SOUTH AMERICA



BRAZIL



(1) Accounted for by the equity method. (2) Under the agreement signed on 25 March 2014 with Veolia Environnement, EDF will take over Dalkia's business activities in France and Veolia will take over Dalkia's international operations, subject to approval by the competent competition authorities. (3) On 11 April 2014, EDF finalised acquisition of the remaining 10% held by Petrobras in Norte Fluminense.

OPERATIONS

EDF GROUP



DEVELOPMENTS

- Agreement with Veolia Environnement over the EDF Group's takeover of their joint subsidiary Dalkia France.
- Agreement with Exelon, to which EDF transferred its licenses to operate the CENG nuclear reactors in the United States.
- Definitive agreement to sell 49% of Stredoslovenská Energetika AS (SSE) to EPH.

NUCLEAR

- Agreement with the UK government on construction of two EPR reactors at Hinkley Point.
- Agreement with Global Energy Holding Company to form a joint venture in nuclear power in Saudi Arabia.

GAS

- The EDF Group confirmed its commitment to the South Stream gas pipeline project.
- Long-term supply contract with Gazprom came into force in October.

ETHICS

- First meeting of the Group's Ethics and Deontology Commission.

HUMAN RESOURCES

- 6,000 people hired in 2013 / 3,000 work-study contracts in France.
- Chairman and CEO made commitment to a Group safety policy.

R&D

- Foundation stone laid for EDF Lab, the future research and training centre at Saclay.
- Industrial start-up of the Le Havre coal-fired power plant CO₂ capture demonstrator.
- Opening of Concept Grid, Europe's first laboratory dedicated to smart grids.
- Investment via Electranova Capital in US start-up Enlighted, a specialist in building lighting.

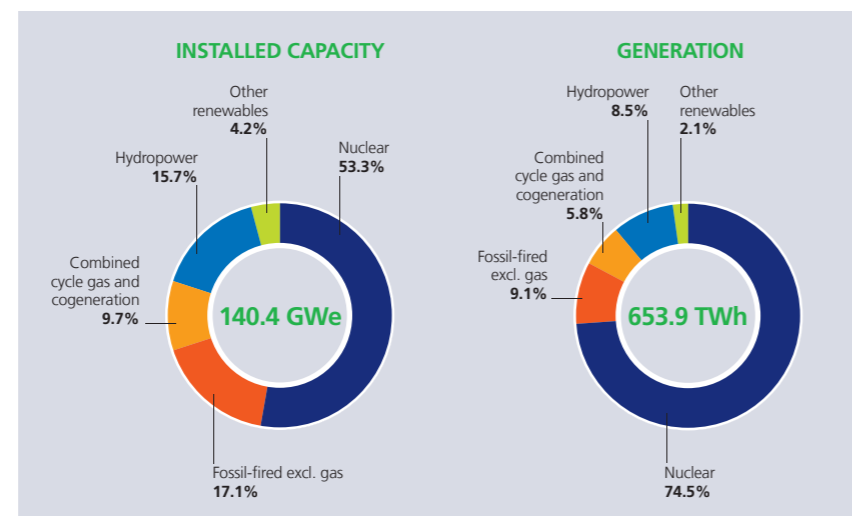
€75.6 billion (up 2.9%)⁽¹⁾
Sales

EBITDA **€16.8 billion** (up 5.5%)⁽¹⁾

Net financial debt/EBITDA **2.1x**⁽²⁾

Net investments **€12.2 billion**⁽³⁾

39.1 million customers
158,467 employees
85.1% generation with zero CO₂



(1) Organic growth on a comparable consolidation and exchange rate basis.
(2) Hybrid emissions recognised in equity due to their characteristics and under IFRS.
(3) Net investment excluding Linky and excluding strategic transactions.

Consolidated highlights at 31 December 2013.

OPERATIONS

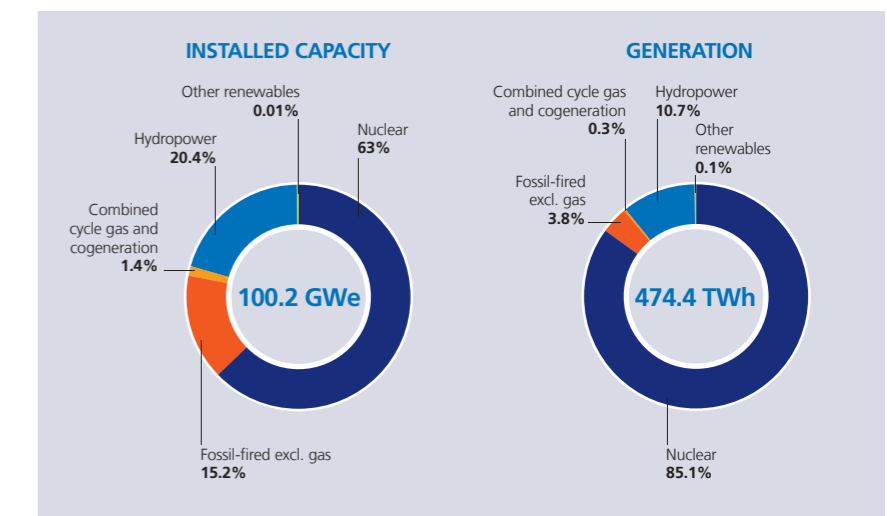
FRANCE EDF



€40.2 billion (up 2.8%)
Sales

EBITDA **€10.8 billion** (up 9.4%)

28.5 million⁽¹⁾ customers
66,561 employees
95.9% generation with zero CO₂



(1) France, Corsica and overseas departments.

GENERATION

- Dome for the Flamanville 3 EPR lowered into place.
- Implementation of nuclear sector "Terms and Conditions for Labour-Management Relations".
- Highest level of hydropower generated in 10 years.
- Two new "Une rivière, un territoire" agencies opened in Foix and Montmélan.
- Start-up of construction of the new generation combined cycle gas turbine (CCGT) plant at Bouchain with GE Energy.
- Entry into service of second CCGT at Martigues.

SALES AND MARKETING

- *Bleu Ciel* brand refocused on energy conservation.
- *Energy optimisation* plans for local authorities launched.
- Energy productivity plan for industrial customers launched.
- Migration of legacy information systems completed (27 million customers).
- Customer Relations Director of the Year 2013, awarded by the French Customer Relations Association.



OPERATIONS

FRANCE SEI

ISLAND ENERGY SYSTEMS – DIVISION



DEVELOPMENTS

- Target of 1,166 MW of guaranteed electricity generation capacity set for Corsica and the French overseas departments by 2020.

CUSTOMERS

- Energy efficiency-centred marketing campaigns in partnership with the Ademe and local institutions.
- Satisfaction rates up 3.2% in Corsica and French overseas departments.

RENEWABLES

- Opening of the Rizzanese dam, the most powerful in Corsica.
- Installation of a run-of-river demonstration turbine in French Guyana.

UPGRADE OF DIESEL-FIRED POWER FACILITIES

- Opening of the Port-Est power plant in Reunion Island.

SMART GRIDS

- Work continued on the *Millener* project in Reunion Island, Corsica and Guadeloupe.
- Preparations for experimental deployment in Reunion Island of the *Pégase* system for managing wind and solar power, coupled with a large-capacity (1 MW) storage battery.

€566 million

in investments

1.08 million customers **3,365** employees

In conjunction with EDF's wholly owned subsidiary EDF PEI, the SEI division operates and is involved in a full range of activities, from electricity generation to sales and marketing in territories not connected to the mainland France national grid, i.e. Corsica, overseas departments (Guadeloupe, French Guyana, Martinique, Reunion Island), overseas territories (Saint Pierre and Miquelon, Saint-Barthélemy and Saint-Martin), and four islands off France's Atlantic coast (Ouessant, Molène, Sein and Chausey).

EDF fleet installed capacity **2,049 MW**
Generation **5,484 GWh**
Renewables **22.2%**
Networks **34,827 km**



OPERATIONS

FRANCE ERDF

ELECTRICITY DISTRIBUTION (100% EDF)



€3.17 billion

in investments

High voltage (20,000 V) lines **622,000 km**

Low voltage (400 V) lines **702,000 km**

HV/LV substations **2,300**

HV/LV transformers **764,000**

Average duration of power cuts (excl. exceptional incidents) **82 minutes**

35 million delivery points⁽¹⁾ **38,667** employees

SMART GRIDS – ELECTRIC VEHICLES

- Invitation to tender launched for supply of smart meters following announcement by the French prime minister of a plan to deploy 3 million Linky meters between now and 2016.
- Experimental application of solar off-peak tariffs in Nice as part of the European Grid4EU scheme.

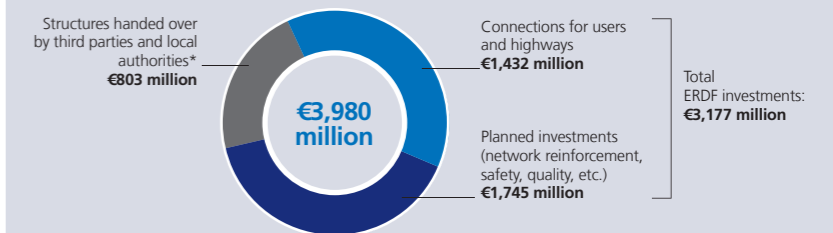
ERDF NETWORK

- Photovoltaic: 3.7 GW
- Wind: 7.4 GW
- Hydro: 1.4 GW

CONCESSIONS

- ERDF and EDF: 625 concession contracts

GROSS INVESTMENTS IN THE NETWORK IN MILLIONS OF EUROS



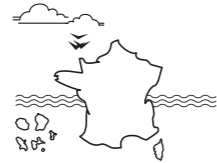
* After deduction of *Part Couverte par le Tarif* (PCT – portion covered by tariff) and article 8 of the concession-granting authorities' requirements.

(1) In mainland France.

FRANCE

RTE – RÉSEAU DE TRANSPORT D'ÉLECTRICITÉ

ELECTRICITY TRANSMISSION (100% EDF)⁽¹⁾



€494 million

in net income

Investments **€1.4 billion**, of which €1.3 billion invested in network structures

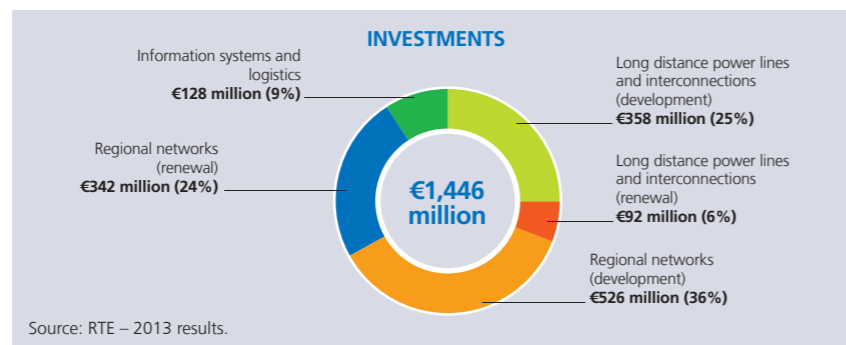
HV and VHV circuits **more than 100,000 km**

Cross-border power lines **46**

8,910

employees

RTE is keeping pace with the growth in renewables in France by building up its transmission network and interconnections, the vital ingredients needed to integrate renewables into the electricity system, for wind power especially.



NETWORKS

- Entry into service of the Maine-Cotentin line.
- Work continued on building the France-Spain buried interconnection.

HUMAN RESOURCES

- Signature of labour-management agreement on the inter-generational contract for the employment of young people and older workers.

RENEWABLES

- More than 25 TWh of power from renewables other than hydro fed into the RTE network (up 8.5% relative to 2012).
- Connection to the transmission network now in progress or planned of a further 6,270 MW of wind or photovoltaic projects.
- Formulation of plans by RTE for connecting renewables to the network to give players forward guidance as to current and future grid capacity.

(1) In 2010 EDF assigned 50% of the equity in RTE to its portfolio of assets set aside to finance the decommissioning of nuclear plants. Following this transaction, RTE remains wholly owned by EDF, but, due to the accompanying change of governance, the EDF Group no longer fully consolidates RTE. RTE has been accounted for by the equity method since 31 December 2010.

UNITED KINGDOM EDF ENERGY

(100% EDF)



€9.8 billion (up 5.1%)

in sales

Group EBITDA contribution **€2 billion (up 2%)**

Electricity sold **52.75 TWh**

Gas sold **31.47 TWh**

6 million
customers
(including gas)

15,162
employees

70.2%
generation
without CO₂

INVESTMENTS

- NNB and the Department of Energy and Climate Change (DECC) reached an agreement in principle on HPC Investment Contract heads of terms on 21 October 2013. The heads of terms of the Contract for Difference of HPC have been agreed in principle.

GENERATION

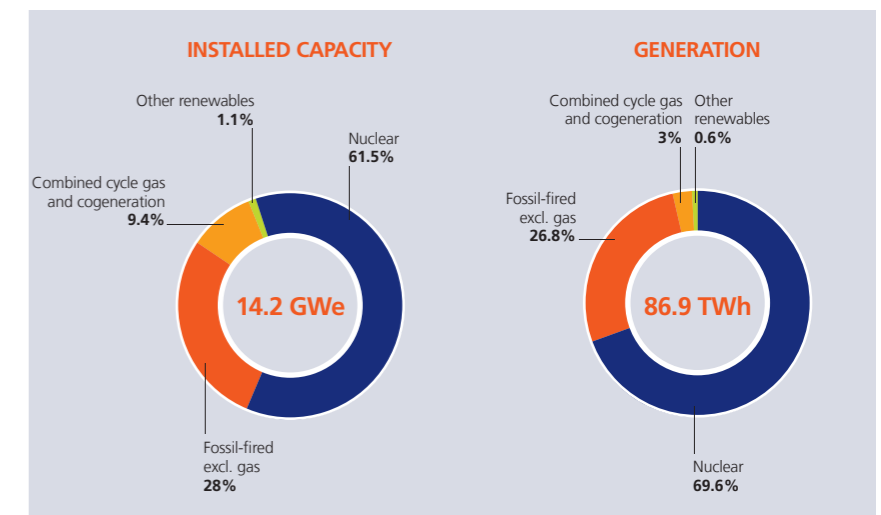
- Nuclear: best performance in eight years.
- Offshore wind power: Teesside wind farm entered service.
- Gas: industrial start-up of the three West Burton CCGTs.

SALES AND MARKETING

- Extension until 31 March 2017 of the "ECO" energy efficiency programme to reduce the impact of green levies on consumers' bills, requiring major energy suppliers to offer energy efficiency packages to residential customers, with additional support for fuel-poor customers and improvements to hard-to-insulate homes.

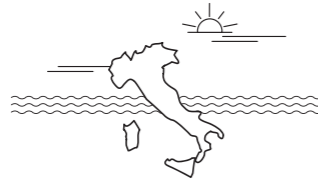
HUMAN RESOURCES

- Recruitment campaigns targeting young women engineers and apprentices.



OPERATIONS

ITALY



EDISON (EDF 97.40%)
 Sales **€12.5 billion**
 Installed capacity **7,660 MW**
 Generation **20 TWh**
 Electricity sold **56.3 TWh**
 Customers **815,000 electricity**
596,000 gas

Employees **3,240**

OIL AND GAS

- Renegotiation on favourable terms of gas supply contracts with Rasgas (Qatar) and Sonatrach (Algeria).
- Six new oil and gas exploration licences in the Barents Sea, Norway.

SALES AND MARKETING

- Winner of Consip call for tender to supply electricity to government administrations in 2014.

INTERNATIONAL

- Greece: Edison is the no. 2 electricity operator via ElpEdison (a 50% joint venture with Hellenic Petroleum), owner of the two CCGTs in Thessaloniki (389 MW) and Thisvi (410 MW).
- Brazil: operator of a CCGT (226 MW) via Ibiritermo, a 50% subsidiary of Edison.

EDF FENICE (100% EDF)

Operations in Italy, Spain, Poland and Russia
 Sales **€425 million**
 Generation sites **50**
 Installed capacity **470 MW**
 Generation **1.2 TWh**
 Customers **381**
 Employees **1,935**

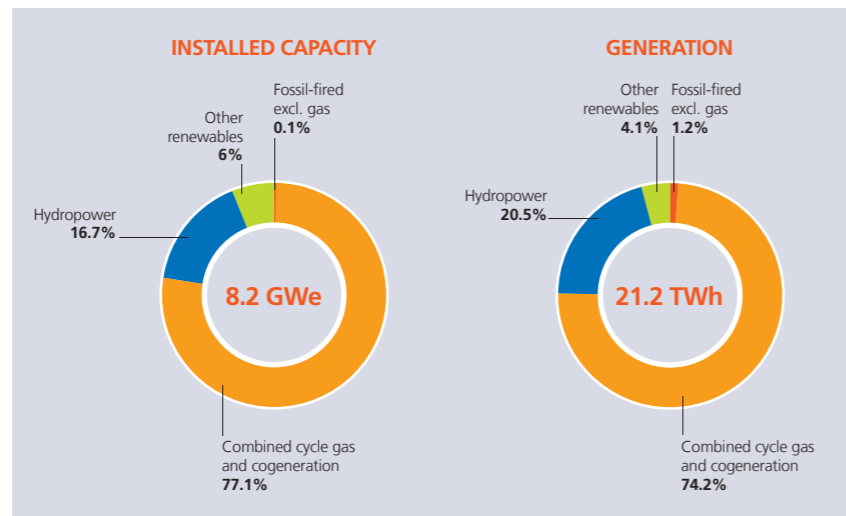
GENERATION

- Five-year renewal of contract with Fiat.
- Development of energy services in Russia (EDF Fenice Rus).

€12.9 billion (up 2.6%)
 in sales

Group EBITDA contribution **€1.1 billion** (down 5.8%)

1.4 million customers
5,175 employees
24.6% generation without CO₂



OPERATIONS

OTHER INTERNATIONAL ACTIVITIES

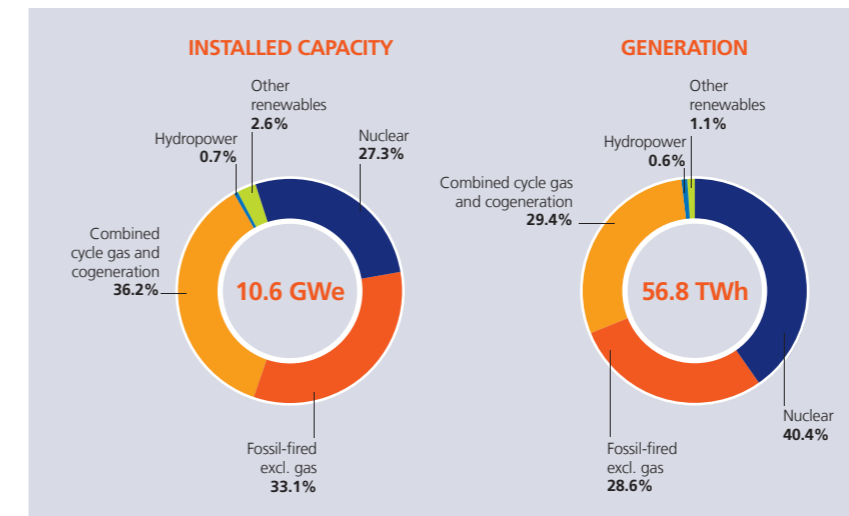


These cover the activities of EDF International and other electricity and gas entities across continental Europe, the United States, Latin America and Asia.

€7.8 billion (up 0.2%)*
 in sales

Group EBITDA contribution **€1.1 billion** (up 9.8%)*

2.6 million customers
7,610 employees
42% generation without CO₂



* Organic growth on constant consolidation scope and exchange rates.

CONTINENTAL EUROPE

POLAND

EDF Wybrzeże (99.87% EDF)
 Installed capacity **333 MW**
 Generation **1.1 TWh**
 Employees **658**

EDF Polska (96.51% EDF)
 Installed capacity **2,235 MW**
 Generation **10.4 TWh**
 Employees **1,871**

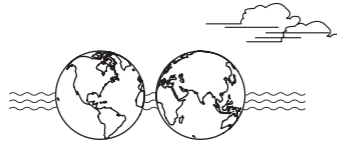
Kogeneracja (49.38% EDF)
 Installed capacity **363 MW**
 Generation **1 TWh**
 Employees **463**

EDF Zielona Góra (48.59% EDF)
 Installed capacity **198 MW**
 Generation **1.3 TWh**
 Employees **190**

HIGHLIGHTS

- **No. 1** foreign producer in the country, with **10%** of the electricity market and **15%** of the heat market.
- Creation of EDF Polska via the merger of EDF Kraków, EDF Rybnik, EDF Polska Centrala and EDF Polska CUW.
- Decision made to invest in fitting desulphurisation and denitrification systems to the main generation plants before end-2015.

OTHER INTERNATIONAL ACTIVITIES



CONTINENTAL EUROPE

HUNGARY

EDF DÉMÁSZ (100% EDF)

Electricity distribution, sales and marketing.
Sales and marketing: **3.5 TWh**, of which 1.8 TWh in the deregulated market

Customers **774,167**

Employees **1,186**

BE ZRt (95.62% EDF)

Electricity and heat generating company that provides 60% of district heating for Budapest.

Installed capacity **396 MW**

Generation **0.9 TWh**

Employees **274**

RUSSIA

EDF Fenice Rus

Sales and marketing of energy services to industrial companies, especially energy efficiency.

ERDF Vostok

Operation of distribution activities through EDF Distribution International in Russia.

- Work in cooperation with Russia's major electricity industry players: Rosatom, Inter RAO, RusHydro and Gazprom.

- Offshore oil and gas production sharing agreement in the Black Sea with ENI and two Ukrainian companies, Vody Ukrainy and Chornomornaftogaz.

BELGIUM

EDF Belgium (100% EDF)

Through a nuclear cooperation agreement with Electrabel, EDF holds 50% of the Tihange 1 nuclear facility.

Installed capacity **481 MW**

Generation **3.7 TWh**

EDF Luminus (63.53% EDF)

Electricity generation and energy sales and marketing. Second in the Belgian energy market.

Installed capacity **1,897 MW**

Generation **5.4 TWh**

Customers **1.7 million**

Employees **981**

HIGHLIGHTS

- Challenger marketing programme.
- Launch of YouBalance load shedding pricing plan.
- Customer satisfaction up from 7.1 to 7.6/10.

THE NETHERLANDS

SLOE Centrale BV (50% EDF)

Installed capacity **870 MW**

Generation **1.5 TWh**

HIGHLIGHTS

- Two tranches of the facility shut down for maintenance, May-June 2013, after more than 20,000 hours in operation and 750 start-ups.
- More than 1,100 days accident-free.

SWITZERLAND

Alpiq (25% EDF)⁽¹⁾

Generation, networks, trading, sales and marketing, services in 20 European countries.

Installed capacity **6,460 MW⁽²⁾**

Generation **17.2 TWh⁽²⁾**

HIGHLIGHTS

- Balance sheet strengthened in May 2013 via the issuance of CHF 650 million in hybrid bonds placed with the public, and CHF 366.5 million in hybrid bonds placed with main Swiss shareholders.
- Net debt reduced from CHF 4 billion to CHF 2 billion between 2012 and 2013.

⁽¹⁾ Via long-term swap contracts and stakes in the Châtelot, Émossion and Mauvoisin hydro facilities.

⁽²⁾ Figures on a 100% basis.

AUSTRIA

ESTAG (25% EDF, 75% State of Styria)

Activities in energy, waste treatment and related services.

Installed capacity **32 MW**

Customers **110,172**

Employees **434**

SPAIN

Elcogas (31.48% EDF)

Operation of an innovative "clean coal" plant in integrated gasification combined cycle (IGCC) mode.

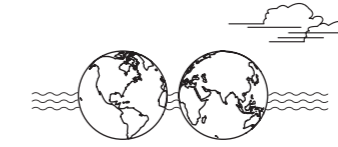
Installed capacity **320 MW***

Generation **775 GWh***

(of which 652 GWh in IGCC mode)

* Figures on a 100% basis.

OTHER INTERNATIONAL ACTIVITIES



AMERICAS

UNITED STATES

Constellation Energy Nuclear Group (49.99% EDF)

Five nuclear reactors on three sites.

Installed capacity **4,228 MW***

Generation **33.1 TWh***

Employees **2,660***

EDF Trading North America (100% EDF)

- Operates in the electricity, gas, coal, freight and environmental products markets.

- One of the main providers of energy management services to electricity companies in the United States and Canada.

See also EDF Trading, p. 25.

* Figures on a 100% basis.

BRAZIL

EDF Norte Fluminense (90% EDF)

Operation of a combined cycle gas turbine plant in Rio de Janeiro State.

Installed capacity **855 MW**

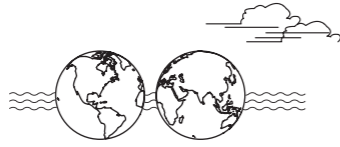
Generation **6.3 TWh**

Employees **90**

HIGHLIGHTS

- Environmental and social studies carried out as part of the technical cooperation agreement between Electrobras, Electronorte and Camargo Correa for the Tapajos hydroelectric project in Para State.
- 11 April 2014: EDF finalised acquisition of the remaining 10% held by Petrobras in Norte Fluminense.

OTHER INTERNATIONAL ACTIVITIES



ASIA

CHINA

FIGLEC Laibin (100% EDF)

Operation and maintenance of the Laibin B thermal plant under a BOT contract.

Installed capacity **658 MW**
Generation **4 TWh**

Shandong Zhonghua Power Company ZPC (19.6% EDF)

Three coal-fired power plants.

Installed capacity **3,060 MW**

DSPC-Samenxia 2 (35% EDF)

Operation and maintenance of a supercritical coal-fired power plant.

Taishan Nuclear Power Joint Venture Company (30% EDF)

Construction of two 1,750 MW EPRs in Guangdong Province.

Installed capacity **1,200 MW**

HIGHLIGHTS

- Taishan EPR: first tranche 1 systems trials; tranche 2 electromechanical assembly started.
- Agreement reached with CGN and AREVA to begin planning future nuclear reactors.
- Partnership with HuaDian Distributed Energy Engineering Technology for decentralised power generation projects.
- Contract to renovate 22,800 light fittings for the Dongfeng Peugeot Citroën Automobile plant.

VIETNAM

MECO (56.25% EDF)

Operation of the Phu My 2.2 CCGT under a 20 year BOT contract; 95% of electricity sold to Thailand.

Installed capacity **715 MW**
Generation **4.4 TWh**
Employees **74**

LAOS

NTPC (40% EDF)

Operation of the Nam Theun 2 hydroelectric facility.

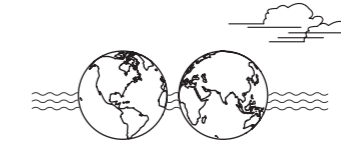
Installed capacity **1,070 MW***

HIGHLIGHTS

- Joint statement with the government of Laos in October 2013 with a view to assessing a proposal to increase the installed capacity of Nam Theun 2 by 500 MW.

* Figure on a 100% basis.

OTHER BUSINESSES



A number of specialised subsidiaries enrich the EDF Group's energy mix, with a focus on renewables.

€4.9 billion (up 4.4%)*
in sales

EBITDA **€1.8 billion** (down 6.3%)*

0.6 million
customers

19,738
employees

78.7%
generation
without CO₂

EDF Énergies Nouvelles (100% EDF)

EDF Énergies Nouvelles is a major player in electricity generation from renewables in its main geographies, i.e. North America, and western and southern Europe.

EBITDA up **23.3%** in organic growth

Net installed capacity **4,764 MW**

Net capacity under construction

1,578 MW

Employees **3,050**

HIGHLIGHTS

Wind

- Entry into service of the Bii Stinu wind farms in Mexico, Lac-Alfred II in Canada, four farms in Turkey, four in France and the Linovo wind farm in Poland.

- Acquisition of 362 MW of capacity in France from Iberdrola and Séchilienne-Sidec.

Offshore wind

- Submission of bids, with WPD Offshore and Alstom, for the Tréport and Yeu and Noirmoutier island projects.

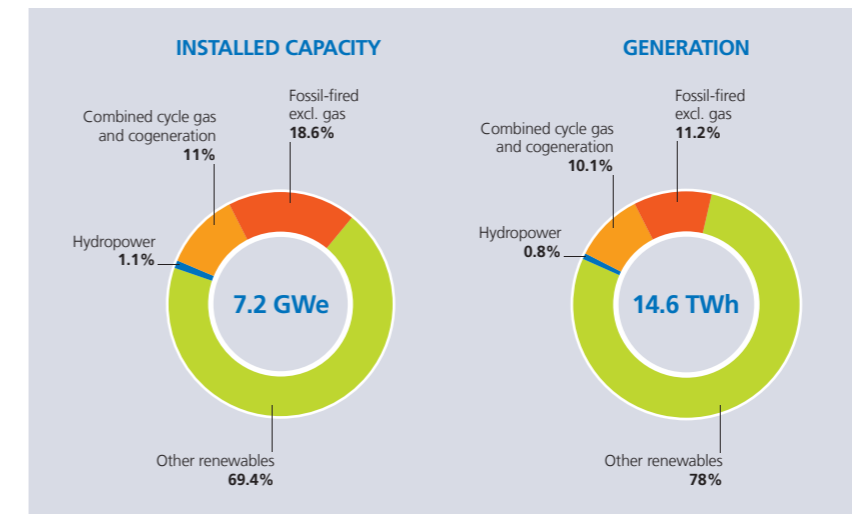
Solar

- Start-up of the 143 MWp Catalina solar plant in the United States.

- Creation with ACME Cleantech Solutions of a joint venture (25% EDF EN) for projects in India.

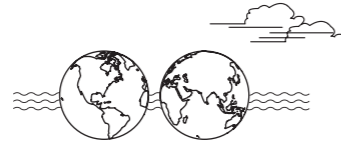
Biomass

- Entry into service of the Pinelands plant in the United States.

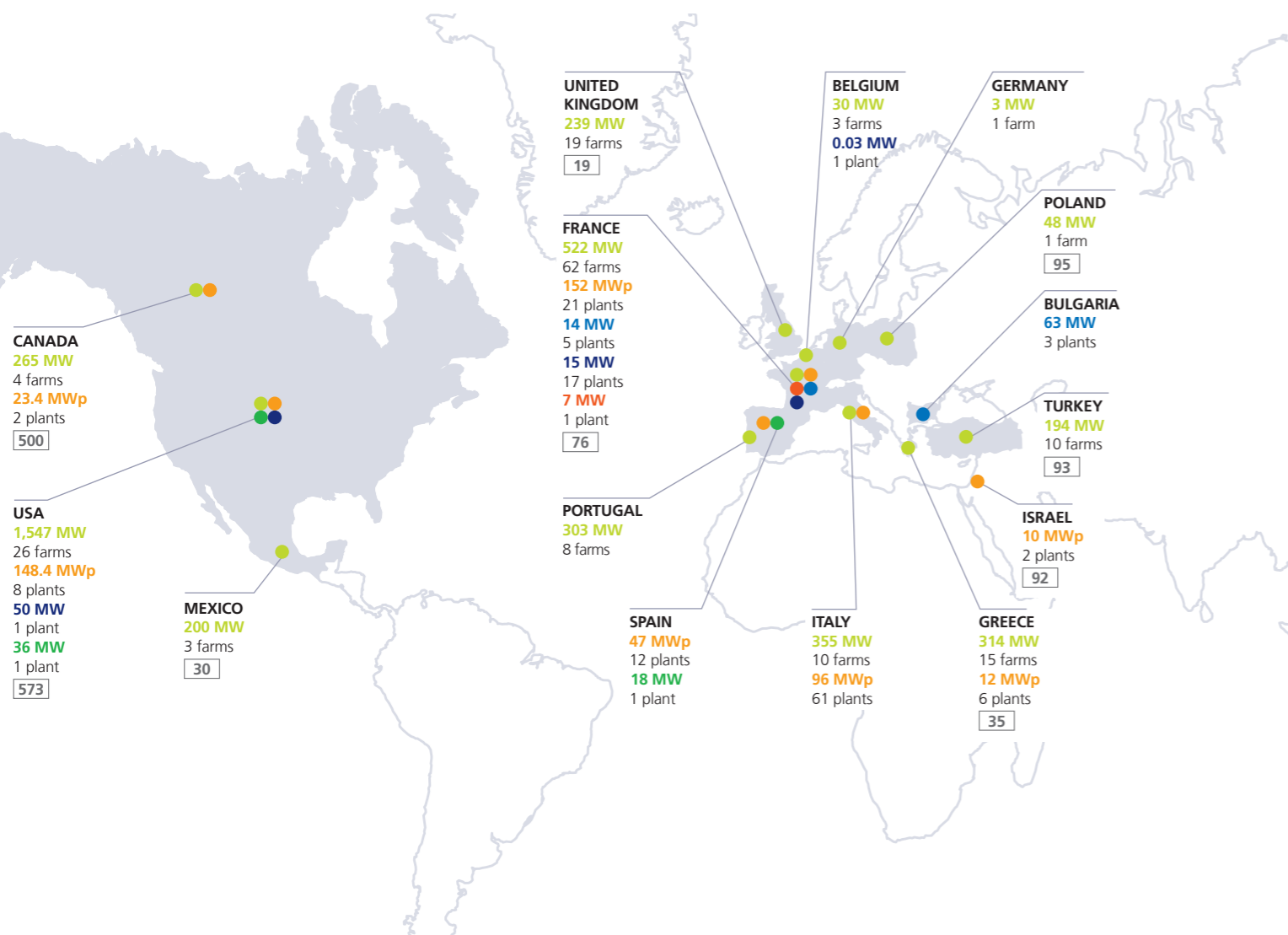


* Organic growth on a constant consolidation scope and exchange rates.

OTHER BUSINESSES



NET INSTALLED CAPACITY OF EDF ÉNERGIES NOUVELLES at 31 December 2013



 Wind and solar under construction (MW)

OTHER BUSINESSES



EDF Trading (100% EDF)

EDF Trading acts as the Group's interface with the wholesale energy markets. It provides optimisation and risk management services, playing an active role in the carbon, biomass and biofuel markets. The company is a leading player in global wholesale gas and liquefied natural gas markets, as well as a front-rank player in global coal and freight markets.

Trading data:
3,320 TWh of electricity (Europe and United States)
412 billion therms of natural gas
666 million tonnes of coal
380 million tonnes of CO₂ (in emissions certificates)
Employees 1,000

HIGHLIGHTS

- First National Balancing Point calendar spread option in Europe, enabling utilities to hedge against gas price fluctuations between winter and summer.

TIRU (51% EDF)

Operator of waste treatment plants.

Waste recovered:
3 million tonnes for more than **11 million** people in France, the United Kingdom and Canada
Sale of 2.55 TWh of electricity and steam in 2013, of which 50% green power

Dalkia (EDF owns 34% stake in Dalkia's holding company)

Local energy generation (district fossil- and biomass-fired heating and cooling systems) and onsite power generation (industry, healthcare, etc.).
 Energy optimisation (energy efficiency contracts).

Revenue from ordinary activities of €6,989 million in Dalkia's scope of consolidation.

HIGHLIGHTS

- Agreement reached with Veolia Environnement in March 2014, with EDF taking over Dalkia's activities in France, and Veolia taking over Dalkia's international operations, subject to approval by the competent competition authorities.

Électricité de Strasbourg (88.64% EDF)

Electricity and gas distribution to 409 municipalities and 80% of the population of France's Bas-Rhin region

Customers 515,000 (of which **109,000** for gas)

Sales:
6.1 TWh electricity
5.3 TWh gas
Employees 1,135

ENVIRONMENTAL AND SOCIAL INDICATORS

All indicators published by the EDF Group follow the recommendations of the Global Reporting Initiative (GRI G3), the international reference framework in this area. This summary table of environmental and social indicators cross-references the indicators used by EDF with the equivalent GRI indicators. For more information on the methodology and reporting scope, see the EDF Group's "Sustainable development indicators 2013" on the edf.com website.

Environmental indicators

ECONOMIC INDICATORS	Unit	2013	2012	2011	Scope			GRI ref.
					2013	2012	2011	
Provisions for decommissioning and last core	€ millions	22,150	20,979	19,843	2	2	2	-
Provisions for nuclear fuel end-cycle	€ millions	20,547	19,525	18,830	2	2	2	-
Compensation paid or to be paid following legal decisions on environmental matters	€ thousands	8.1	6.9	0	2	1	1	-
MANAGEMENT								
Environmental protection expenditure	€ millions	2,924	3,465	2,800	1	1	1	EN 30
- of which, net provisions		1,901	2,465	1,765				
Environmental management (% of consolidated Group revenue covered by ISO 14001 certification)	%	95 ⁽¹⁾	98 ⁽¹⁾	79	2	2	2	

ENVIRONMENTAL INDICATORS	Unit	2013	2012	2011 ⁽¹⁾	Scope			GRI ref.
					2013	2012	2011	
Fuels & raw materials consumed								
Nuclear reactor fuel	t	1,205	1,096	1,205	1	1	1	EN 1
Coal *	kt	25,314	24,277	21,024	2	2	2	EN 1
Heavy fuel oil	kt	885	1,098	1,170	2	2	2	EN 1
Domestic fuel oil	kt	329	317	402	2	2	2	EN 1
Natural gas	10 ⁶ m ³	8,842	9,290	6,859	2	2	2	EN 1
Industrial gas	10 ⁶ m ³	797	842	3,555	2	2	2	EN 1
Water ⁽²⁾ – total input of raw materials from sources outside the company								
Cooling water drawn *	10 ⁹ m ³	53.9	54.8	55.2	2	2	2	EN 8
- of which freshwater *	10 ⁹ m ³	18.3			2			EN 8
- of which brackish (or estuary) water	10 ⁹ m ³	8.4	28.0	26.8	2	2	2	
Cooling water discharged *	10 ⁹ m ³	53.4	54.2	54.6	2	2	2	EN 21
- of which freshwater *	10 ⁹ m ³	18.0			2			EN 21
- of which brackish (or estuary) water	10 ⁹ m ³	8.4	27.5	26.3	2	2	2	
Air – gas emissions								
Total CO ₂ emissions *** (including facilities not subject to quotas)	Mt	80.6	79.8	70.5	2	2	2	EN 16
SO ₂ emissions *	kt	134.3	137.8	140.6	2	2	2	EN 20
NO _x emissions *	kt	171.7	182.2	157.0	2	2	2	EN 20
Dust	t	7,246	6,968	5,407	2	2	2	EN 20
Particulate matter (PM ₁₀)	t	2,602	1,745	NC	1	1a	NC	EN21
Mercury	t	0.16	0.16	NC	1	1a	NC	EN21
CH ₄ emissions	kt CO ₂ eq	38.2	40.5	32.2	2	2	2	EN 16
N ₂ O emissions	kt CO ₂ eq	349.0	329.8	254.7	2	2	2	EN 16
SF ₆ emissions – EDF *	kt CO ₂ eq	71.6	83.8	94.3	1	1	1	EN 16
SF ₆ emissions – EDF + ERDF *	kt CO ₂ eq	78.9	93.3	102.8	1b	1b	1b	EN 16
SF ₆ emissions – Group *	kt CO ₂ eq	95.2	109.8	NC	2	2	NC	EN 16

ENVIRONMENTAL INDICATORS	Unit	2013	2012	2011	Scope			GRI ref.
					2013	2012	2011	
Conventional waste ⁽³⁾								
Hazardous waste *	t	68,443	64,598	60,956	2	2	1	EN 22
Non-hazardous waste *	t	354,554	321,789	302,251	2	2	1	EN 22
Conventional industrial waste recycled or transported for recycling *	t	294,378	253,412	251,908	2	2	1	EN 22
Ash produced	kt	3,860	3,816	3,617	2	2	2	EN 22
Energy								
Renewable energies: electricity and heat generated from renewable sources (excl. hydro) *	GWh	17,198	15,583	11,032	2	2	2	EN 6
Direct energy consumption, by primary source								
Internal consumption, pumping electricity	TWh	7.0	6.7	6.9	1	1	1	EN 3
Internal consumption, electricity	TWh	22.1	22.4	22.8	1	1	1	EN 3

Nuclear indicators

EDF	Unit	2013	2012	2011	GRI ref.
Automatic shutdowns	No./reactor/7,000 hours	0.59	0.55	0.50	
Events and incidents (level ≥ 1)	No./reactor/year	1.19	1.55	0.91	
Dosimetry					
Average collective dose	m-Sv/reactor	0.79	0.67	0.71	
Individual dose (no. of workers exposed to more than 20 mSv)	No.	0	0	0	
Individual dose (no. of workers exposed to more than 16 mSv)	No.	0	0	2	
Dose to the most exposed member of the public	mSv/year	NA	0.003	0.003	
Radioactive liquid effluents					
Tritium	TBq/reactor	18.38	20.47	18.07	EN 21
Carbon 14	GBq/reactor	12.51	13.19	13.06	EN 21
Radioactive atmospheric emissions					
Tritium	TBq/reactor	0.49	0.64	0.65	EN 20
Carbon 14	TBq/reactor	0.17	0.18	0.17	EN 20
Fuel					
Unloaded spent nuclear fuel	t	1,205	1,096	1,204	
Evacuated spent nuclear fuel	t	1,099	1,075	1,199	EN 24
Operational nuclear waste					
Solid low- and intermediate-level short-lived radioactive waste *	m ³ /TWh	18.95	20.7	15.6	EN 24
Solid intermediate- and high-level long-lived radioactive waste *	m ³ /TWh	0.86	0.88	0.87	EN 24
Decommissioning nuclear waste					
Very low-level radioactive waste from decommissioning *	t	1,110	2,528	634	EN 24
Low- and intermediate-level short-lived radioactive waste	t	568	109	477	
Waste sent to Centraco processing plant	t	187	20	278	

(1) Including companies not covered by the Group certificate.

(2) In 2011 and 2012, brackish (or estuary) water is included in freshwater

(3) Edison's oil and gas activities are excluded from the waste indicators in 2011.

* 2013 data verified by the Statutory Auditors, appointed as independent third-party bodies. This work is described under "Opinion on the fair presentation of CSR information" in the Statutory Auditors' report, published in the EDF Group's 2013 Management Report.

** 2013 data audited for reasonable assurance by the Statutory Auditors, appointed as independent third-party bodies. This work is described under "Opinion on the fair presentation of CSR information" in the Statutory Auditors' report, published in the EDF Group's 2013 Management Report.

Scope:

1: EDF – 1a: EDF mainland France – 1b: EDF + ERDF.

2: EDF Group.

GRI: Global Reporting Initiative.

NC: not communicated. NA: not available.

Nuclear indicators

EDF ENERGY	Unit	2013	2012	2011	GRI ref.
Shutdowns and events					
Automatic shutdowns	No./reactor/7,000 hours	0.45	0.64	0.74	
Events and incidents (level ≥1)	No./reactor/year	0.80	0.80	1.33	
Dosimetry					
Average collective dose – AGR ⁽¹⁾	m-Sv/reactor	0.03	0.06	0.08	
Average collective dose – PWR ⁽²⁾	m-Sv/reactor	0.39	0.04	0.54	
Individual dose (no. of workers exposed to more than 20 mSv)	No.	0	0	0	
Individual dose (no. of workers exposed to more than 15 mSv)	No.	0	0	2	
Dose to the most exposed member of the public	mSv/year	NA	0.006	0.006	
Radioactive liquid effluents					
Tritium – AGR ⁽¹⁾	TBq/reactor	150	135.7	124.5	EN 21
Tritium – PWR ⁽²⁾	TBq/reactor	41	44	46	EN 21
Radioactive atmospheric emissions					
Tritium – AGR ⁽¹⁾	TBq/reactor	0.59	0.68	0.80	EN 20
Tritium – PWR ⁽²⁾	TBq/reactor	0.80	0.80	0.70	EN 20
Carbon 14 – AGR ⁽¹⁾	TBq/reactor	0.67	0.71	0.68	EN 20
Carbon 14 – PWR ⁽²⁾	TBq/reactor	0.20	0.30	0.30	EN 20
Fuel					
Unloaded uranium	t	177	216	211	EN 24
Evacuated uranium *	t	177	216	210	EN 24
Operational nuclear waste					
Evacuated low-level radioactive waste *	m ³	655	698	608	EN 24
Intermediate-level radioactive waste generated *	m ³	178	161	161	EN 24

CONSTELLATION ENERGY NUCLEAR GROUP

	Unit	2013	2012	2011	GRI ref.
Shutdowns and events					
Automatic shutdowns	No./reactor/7,000 hours	0.34	0.70	0.70	
Events and incidents (level ≥1)	No./reactor/year	0.60	0.80	0.60	
Dosimetry					
Average collective dose – BWR	m-Sv/reactor	1.28	2.27	1.22	
Average collective dose – PWR ⁽²⁾	m-Sv/reactor	0.23	0.68	0.68	
Individual dose (no. of workers exposed to more than 20 mSv)	No.	0	0	0	
Individual dose (no. of workers exposed to more than 16 mSv)	No.	1	9	1	
Dose to the most exposed member of the public	mSv/year	NA	0.04	0.14	
Radioactive liquid effluents					
Tritium	TBq/reactor	8.34	12.91	12	EN 21
Radioactive atmospheric emissions					
Tritium	TBq/reactor	1.16	1.38	1.40	EN 20
Carbon 14	TBq/reactor	0.37	0.33	0.34	EN 20
Fuel⁽³⁾					
Delivered nuclear fuel *	t	44	46	48	EN 24
Unloaded uranium	t	33	60	43	
Evacuated uranium	t	0	0	0	
Operational nuclear waste⁽³⁾					
Evacuated solid low- and intermediate-level wastes *	m ³	1,411	2,419	1,287	EN 24

Social indicators

EDF GROUP	Unit	2013	2012	2011	GRI ref.
Workforce at 31 December 2013⁽⁴⁾					
EDF + ERDF	No.	109,754	107,333	103,954	LA 1
TOTAL EDF Group **	No.	158,467	159,740	156,168	LA 1
Employees by age					
Under 25 years **	%	8	8	NC	
From 25 to 35 years **	%	25	23	NC	
From 36 to 45 years **	%	25	25	NC	
From 46 to 55 years **	%	32	34	NC	
56 years and over **	%	10	10	NC	
Employees by geographical area (per head office location)					
France	No.	129,492	129,328	NC	
Of which Dalkia	No.	13,056	15,964	NC	
United Kingdom	No.	16,190	16,178	NC	
Italy	No.	5,175	5,210	NC	
Rest of Europe	No.	6,114	7,503	NC	
Rest of the world	No.	1,496	1,521	NC	
Gender equality					
Managers (as defined by French regulations) *	No.	42,327	40,355	37,786	LA 1
Women at managerial level *	%	25.7	25.0	23.9	LA 13
Non-management employees *	No.	116,140	119,385	118,382	LA 13
Male workforce **	No.	116,928	118,512	117,023	LA 13
Female workforce **	No.	41,539	41,228	39,145	LA 13
Male managers *	No.	31,468	30,286	28,753	LA 13
Female managers *	No.	10,859	10,069	9,033	LA 13
Hires/departures					
Hires *	No.	10,945	12,577	12,755	LA 2
Other arrivals ⁽⁴⁾ *	No.	8,027	7,499	5,849	LA 2
Retirements/inactive employees *	No.	4,321	4,185	4,200	LA 2
Resignations ⁽⁵⁾ *	No.	1,768	2,355	2,761	LA 2
Redundancies, dismissals, employees made inactive *	No.	864	1,739	1,689	LA 2
Other departures ⁽⁴⁾ *	No.	8,424	9,304	9,398	LA 2
Remuneration					
Total gross remuneration	€ millions	7,494	7,400		
Part-time employees *	No.	12,943	14,690	15,296	LA 1
Absenteeism					
Average number of days lost through illness or accident	No.	8.8	9.0		
Health and safety					
Fatal accidents ⁽⁶⁾ *	No.	4	14	13	LA 7
Accident frequency rate *		3.1	3.8	3.9	LA 7
Workplace accidents involving at least one lost day *	No.	750	921	933	LA 7
Accident severity rate		0.16	0.16	NC	

(1) Advanced gas-cooled reactor.

(2) Pressurised water reactor.

(3) Data is consolidated according to the percentage ownership in the subsidiary.

(4) Inclusions and exclusions from consolidation scope are accounted for under "Other arrivals" and "Other departures" respectively.

(5) Special contracts (including those for work-study trainees) 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 also included in "Other departures".

(6) Group employees, excluding subcontractors.

* 2013 data verified by the Statutory Auditors, appointed as independent third-party bodies. This work is described under "Opinion on the fair presentation of CSR information" in the Statutory Auditors' report, published in the EDF Group's 2013 Management Report.

** 2013 data audited for reasonable assurance by the Statutory Auditors, appointed as independent third-party bodies. This work is described under "Opinion on the fair presentation of CSR information" in the Statutory Auditors' report, published in the EDF Group's 2013 Management Report.

NC: not communicated. NA: not available.

ENVIRONMENTAL AND SOCIAL INDICATORS

EDF GROUP	Unit	2013	2012	2011	GRI ref.
Employee relations					
Employees covered by collective bargaining agreements	%	89	88	87	LA 4
Training					
Hours of training provided	No.	8,636,882	7,631,618	NC	
Employees benefiting from training ⁽¹⁾ ✨	No.	134,910	131,311	118,930	LA 10
Employment and integration of employees with disabilities					
Employees with disabilities ⁽²⁾	No.	4,645	4,519	4,601	LA 13

EDF	Unit	2013	2012	2011	GRI ref.
Workforce at 31 December 2013					
Employees covered by collective bargaining agreements	No.	66,561	64,838	63,002	LA 1
Employees under unlimited-term contracts not covered by collective bargaining agreements	No.	434	433	409	LA 1
Employees under fixed-term contracts not covered by collective bargaining agreements	No.	4,094	3,851	3,773	LA 1
Total not covered by collective bargaining agreements	No.	4,528	4,284	4,182	LA 1
Total workforce	No.	71,088	69,122	67,184	LA 1
Managers (as defined by French regulations)	No.	29,595	28,230	26,644	LA 1
Women at managerial level	%	26.8	26.0	25.1	LA 13
Non-management employees	No.	41,493	40,892	40,540	LA 13
Technicians and supervisory staff	No.	33,410	33,084	32,871	LA 13
Operatives	No.	8,084	7,808	7,669	LA 13
Gender equality					
Male workforce	No.	48,991	47,852	46,938	LA 13
Female workforce	No.	22,097	21,270	20,246	LA 13
Male managers	No.	21,650	20,884	19,944	LA 13
Female managers	No.	7,945	7,346	6,700	LA 13
Hires/departures					
Hires	No.	4,433	4,452	4,021	LA 2
Integration and rehiring	No.	249	261	251	LA 2
Other arrivals ⁽³⁾	No.	3,598	3,194	2,818	LA 2
Retirements/inactive employees	No.	2,134	2,061	1,990	LA 2
Resignations	No.	109	114	123	LA 2
Redundancies, dismissals, employees made inactive	No.	16	6	14	LA 2
Deaths	No.	81	82	89	LA 2
Other departures ⁽³⁾	No.	3,725	3,709	3,285	LA 2
Overtime					
Overtime worked	Thousands of hours	2,847	2,831	2,791	
Outside contractors					
Monthly average of temporary employees ⁽⁴⁾	No.	NA	1,837	1,187	LA 1
Organisation of working hours					
Full-time employees	No.	62,990	60,612	58,157	LA 1
Part-time employees	No.	8,098	8,510	9,027	LA 1
Employees working shifts	No.	6,917	6,882	6,808	LA 1

EDF	Unit	2013	2012	2011	GRI ref.
Absenteeism					
Absenteeism	%	3.8	3.8	3.9	LA 7
Hours of maternity or paternity leave/hours worked	%	0.8	0.7	0.7	LA 7
Health and safety					
Work-related illnesses reported		NA	13	11	
Fatal accidents	No.	0	6	8	LA 7
Accident frequency rate		2.7	3.4	3.7	LA 7
Accident severity rate		0.14	0.15	0.14	LA 7
Workplace accidents involving at least one lost day	No.	273	333	358	LA 7

EDF	Unit	2013	2012	2011	GRI ref.
Remuneration/social security payments/profit-sharing					
Main monthly remuneration					
Managers	€	4,327	4,308	4,248	
Technicians and supervisory staff	€	2,615	2,612	2,581	
Operatives	€	1,870	1,877	1,874	
Personnel costs	€ millions	6,366	6,113	5,784	
Average amount of profit-sharing per employee	€	1,820	1,820	1,583	
Employee relations					
Collective bargaining agreements signed in France	No.	8	8	11	HR 5
Employees covered by collective bargaining agreements ⁽⁵⁾	%	93	94	94	LA 4
Training					
Employees benefiting from training	No.	62,074	58,899	55,905	LA 10
Employment and integration of employees with disabilities					
Employees with disabilities	No.	1,946	1,842	1,698	LA 13
Employees with disabilities hired	No.	110	124	94	LA 13
Charitable works					
Committee budgets (fulfilling 1% requirement)	€ millions	205	196	198	

(1) Excluding Estag in 2011.

(2) Declaration by EDF Energy compulsory. Information not communicated by CENG in 2011, 2012 or 2013 due to confidentiality.

Figure reported by Edison in 2011 does not include subsidiary Abu Qir, which was consolidated in 2009.

(3) Excluding arrivals and departures on seasonal short-term contracts.

(4) The 2013 figure is not available at the time of publication.

(5) EDF employees are not covered by a collective bargaining agreement in the French legal sense but by the *Statut des Industries Électriques et Gazières* (electricity and gas sector statutes).

✨ 2013 data verified by the Statutory Auditors, appointed as independent third-party bodies. This work is described under "Opinion on the fair presentation of CSR information" in the Statutory Auditors' report, published in the EDF Group's 2013 Management Report.

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