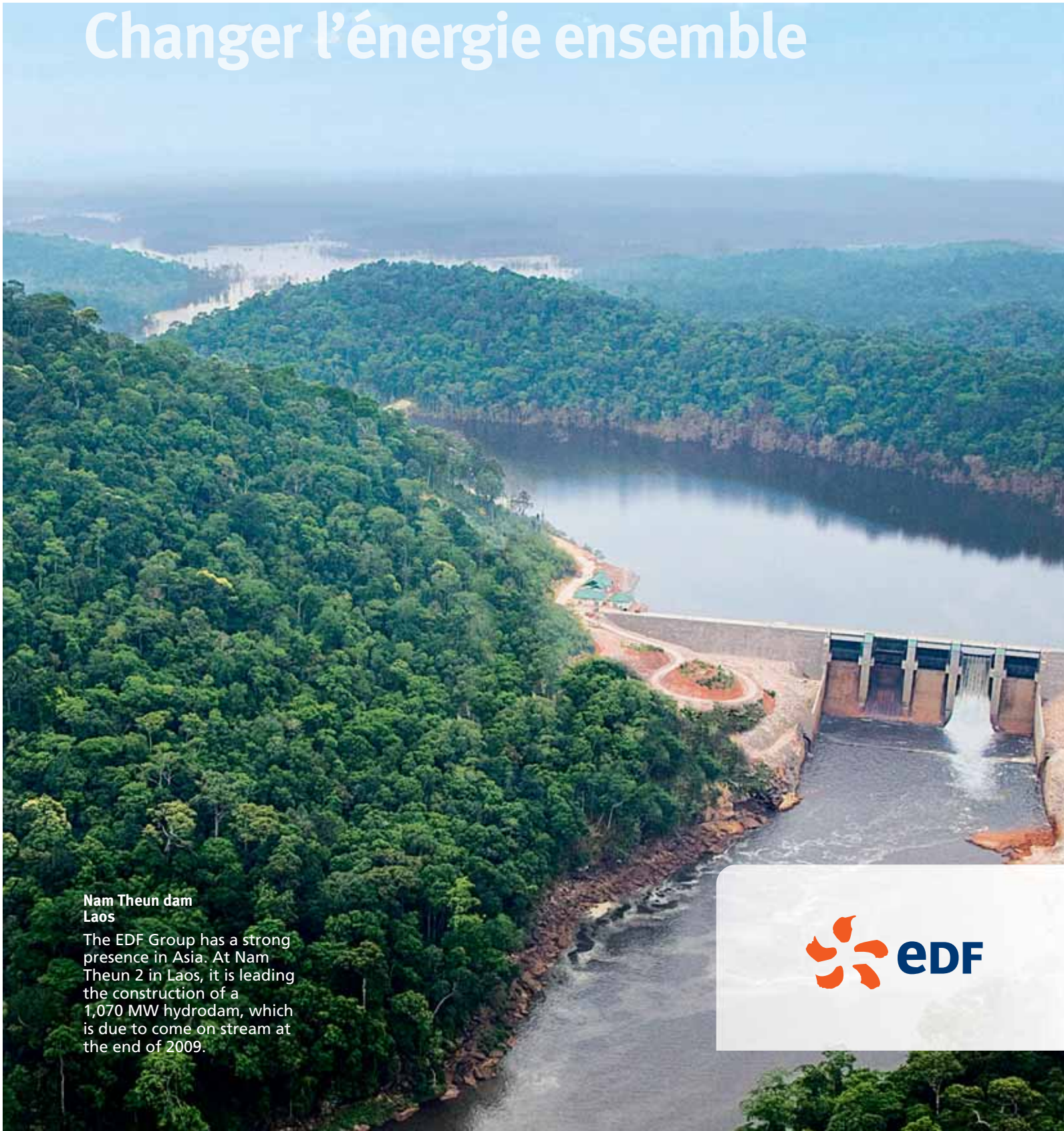
EDF GROUP
2008
SUSTAINABLE
DEVELOPMENT REPORT

Leading the energy change

Changer l'énergie ensemble



Nam Theun dam
Laos

The EDF Group has a strong presence in Asia. At Nam Theun 2 in Laos, it is leading the construction of a 1,070 MW hydrodam, which is due to come on stream at the end of 2009.

Contents

On August 22, 2001, the EDF Group joined the United Nations Global Compact, by which businesses commit themselves to upholding ten universally accepted principles in the areas of human rights labor, environment and anti-corruption. For more information about the Global Compact, go to *www.unglobalcompact.org*. The chapters that address these areas are identified in the table of contents for this report using the following symbols: ✸ human rights, ▲ labor, ● the environment and + anti-corruption.

REPORTING METHODOLOGY

The scope covered by the reporting procedure (financial, environmental and social indicators) corresponds to the EDF Group scope as defined by financial consolidation. More specifically, this scope takes in the EDF parent company and the subsidiaries and affiliates whether entirely or partially integrated. Data relating to companies accounted for by the equity method are not included, nor are those relating to financial holdings or real estate companies.

The Sustainable Development Division defines the scope covered by the reporting process based on:
- The half-year consolidation scope provided by Corporate Finance
- Criteria linked to the relevance in terms of the sustainable development of the activities of the subsidiaries and affiliates.

Indeed, certain subsidiaries and affiliates included in the financial scope may not be included in the sustainable development scope due to their activity and/or their size means they are relatively insignificant in terms of impact on environmental and social issues.

Entities included in the consolidation scope at December 31, 2008, and in the sustainable development scope:
France:
Électricité de France (excluding ERDF for 2008 data), RTE EDF Transport, ERDF, Électricité de Strasbourg, Tiru, EDF Énergies Nouvelles, Dalkia International, Dalkia Investissement and Socodei.

Europe:
EDF Energy (UK), ECK Krakow SA (Poland), Kogeneracja SA (Poland), ECW Wybrzeze (Poland), Ersa (Poland), EC Zielona Gora (Poland), Demasz (Hungary), BE ZRt (Hungary), EnBW (Germany), Edison (Italy), Fenice (Italy), SSE (Slovakia), Emosson (Switzerland).
Africa:
Azito Energy (Ivory Coast).
Americas:
Norte Fluminense (Brazil).
Asia Pacific:
Figlec (China), Synergie (China), Meco (Vietnam).

With regard to environmental data, some of the subsidiaries and affiliates included in the financial scope are not included in the sustainable development scope owing to their activities or their relative unimportance with regard to environmental issues.

Criteria for selection:
- Industrial activities (generation, distribution and transmission) with significant environmental impact
- Entities acquired more than a year ago
- Entities that were still a part of the consolidation scope at December 31,2008.

With regard to the social data, in addition to these criteria, the consolidation scope of the Group for social data comprises only companies in which the staff is significant in terms of human resources (over 50).

PIERRE GADONNEIX

Médiathèque EDF – Stéphane DE BOURGIES

"Our Group is keeping its eye on the long term and continuing to invest to change the energy landscape."

The 2008 EDF Group Sustainable Development Report is more detailed than ever, reflecting our steady focus on quality reporting. Of course this is only one aspect of the process: we are working in all areas to keep stakeholders informed about our actions to uphold our commitment to social and environmental responsibility.

For EDF, social and environmental responsibility go hand in hand. Protecting the environment is in many ways a simple act of solidarity with future generations. It is also a way to recognize humanity's place in the living world and our responsibility to preserve the diversity of nature.

Electricity is a prime example of how energy can be used to promote solidarity and protect the environment. It is a cornerstone of development, enabling access to running water, education, healthcare, information, and a basic standard of living. Consuming electricity does not create any local pollution, an important factor in a world where more than half of the population lives in cities. The EDF Group is thus seeking out new end-uses for electricity along with ways to decrease individual consumption, while implementing measures to help its most vulnerable customers.

Companies that generate electricity must on the other hand pay close attention to the environment, regardless of the technology used. Over two thirds of global generation relies on fossil fuel combustion, which is in turn responsible for 35% of global carbon emissions and a key factor in climate risk.

Another model is possible, and the EDF Group has made such a shift the core of its strategy. We are providing consumers with energy eco-efficiency solutions such as insulation, bioclimatic architecture and heat pumps, using all the low-carbon generation technologies available, including wind, solar and geothermal power, biomass, hydro and nuclear. None of these can suffice on its own: all are indispensable. Each has an impact on local environments, but we are working to minimize it. The Nam Theun dam being built in Laos is a good case in point.

We must not allow the global recession to bring our initiatives to a halt. The French national conference on the environment, the Energy and Climate Change Package voted by the European Parliament and the Obama administration's policies all show that political authorities aim to tackle the current challenges by focusing on sustainable growth. Our Group is keeping its eye on the long term and continuing to invest to change the energy landscape. This will require new behaviors on the part of industry, including EDF, as well as policy-makers and consumer citizens. Communication between all parties is more crucial today than ever before.

The sustainable development policy outlined in this report reflects a combination of action in favor of society and the environment and a dialogue with all those who have a stake in what we do.

Pierre Gadonneix
Chairman and Chief Executive Officer

EDF Group

MAPPING GROUP COMPANIES

FRANCE

EDF
Sales: €34.3 billion

> Deregulated activities
(open to competition)

26.5 million customers (excluding overseas departments and Corsica)

Electricity installed capacity:
96.6 GW in mainland France

> Regulated activities

• **RTE-EDF Transport (fully owned by EDF)**
Around 100,000 km of high-voltage and very high voltage circuits

• **ERDF (fully owned by EDF)**
1.28 million km of high-voltage and low voltage lines

> Cross-divisional activities

• **EDF Énergies Nouvelles (50% owned by EDF)**
Installed electric capacity:
2,275.3 MW (total)

UNITED KINGDOM

Sales contribution: €8.24 billion*

• **EDF Energy (fully owned by EDF)**
Around 5.6 million customer accounts (including gas)
Electric installed capacity: 4.9 GW
Gas activity: 30.3 TWh**

• **British Energy**
Electric installed capacity: 10.6 GW

• **EDF Trading (fully owned by EDF)**
Group EBITDA contribution:
€1,024 million

* Excluding EDF Trading and British Energy.

GERMANY

Sales contribution: €7.47 billion

• **EnBW (EDF 46.07% owned and voting rights)**
Around 6 million customers (including gas)
Electricity installed capacity:
15.0 GW
Gas activity: 69.8 TWh**

ITALY

Sales contribution: €6.04 billion

• **Edison (EDF 48.96% owned and 50% of voting rights)**

215,000 customers (including gas)

Electricity installed capacity:
12.1 GW

Gas activity: 13.5 Gm^3**

• **Fenice (fully owned by EDF)**

Electricity installed capacity:
533 MW

Thermal installed capacity:
3,201 MWth

OTHER COUNTRIES:

EUROPE

Austria, Belgium, Spain, Hungary, Poland, Slovakia and Switzerland

REST OF THE WORLD

The United States (Constellation Energy), China (Figlec, Shandong Zhonghua Power Company, CGNPC), Vietnam and Laos (Nam Theun Power Company)

** Gross global gas volumes handled by the Group's companies, including plant's internal consumption.

Sales

€64.3 billion

+10.6%[1]

Electricity generation worldwide

609.9 TWh

Employees

160,913

CO_2 per kWh produced

133 g[2]

Consolidated figures at 12/31/2008.
1. Constant scope, method and change.
2. EDF Group CO_2 emissions from electricity and heat generation in 2008.

GROUP PROFILE

The EDF Group is a **leading player in the energy industry,** established in all areas of the electricity value chain, from generation to trading, along with network management and the natural gas chain. The Group has a sound business model, evenly balanced between regulated and deregulated activities. It is the leader in the French and British electricity markets and also has solid positions in Germany and Italy. The Group has a portfolio of **38.1 million customers** in Europe and the world's premier nuclear generation fleet.

Given its R&D capability, its track record and expertise in nuclear generation and renewable energy, together with its energy eco-efficiency offers, EDF offers competitive solutions that **reconcile sustainable economic development and climate preservation.**

EDF's goal: deliver solutions that allow every customer to help create **a world of competitive, low-carbon energies.**

1. Raw materials and energy purchases

EDF organizes the front-end nuclear fuel cycle activities conducted by service providers and/or suppliers with an eye to consistency, most often relying on multiyear contracts. EDF buys the bulk of raw materials in the form of uranium concentrate (U_3O_8) and awards industry specialists service contracts for transformation processes (fluoridation, enrichment and manufacturing). It also builds up stocks throughout the different stages of the front-end of the fuel cycle to avoid having to go to the spot market if unexpected events occur in mines or at plants. To find out more, consult the 2008 *Document de référence*, section 6.2.1.1.3.4.

Environmental issues

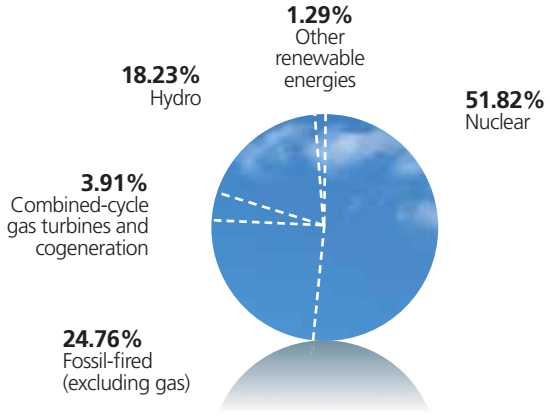
- Take action to conserve natural resources and protect biodiversity
- Optimize transportation (dust raised during coal transport by truck, security of nuclear fuel transportation)

Economic and societal issues

- Ensure that human rights are respected by suppliers (especially in mines)
- Ensure that labor rights are respected by suppliers
- Take action against corruption

2. Generation

Breakdown of EDF Group installed capacity worldwide at 31.12.2008 *(%)*



Environmental issues

- Guarantee safety of facilities*
- Reduce CO_2 emissions thanks to an adapted energy mix and the development of renewable energies*
- Limit the impact of industrial activities on the environment and health in keeping with regulations; closely control and track effluents and emissions*
- Take action to protect biodiversity*
- Ensure rational use of water and foster consensus on the sharing of this resource*

Social issues

- Skills development with an eye to creating a sound balance between generations*
- Manage restructuring and disposals in a responsible manner
- Promote diversity in all its forms
- Improve safety in the workplace*
- Respect human and labor rights

Economic and societal issues

- Work side-by-side with subcontractors and suppliers toward sustainable development
- Ensure human and labor rights are respected by subcontractors*
- Guarantee security of energy supply*
- Generate electricity at best cost*
- Invest to be able to meet rising demand*
- Guarantee safety of populations living near facilities*
- Ensure local acceptability of activities through dialogue with stakeholders*
- Inform stakeholders on industrial activity as transparently as possible*
- Contribute to regional economic and cultural life*
- Limit the social and economic impact of our worksites and facilities on populations living nearby*

3. Decommissioning and waste management

EDF takes responsibility for the removal and processing of its spent fuel and related waste. Areva handles processing and Andra (National Radioactive Waste Management Agency) oversees operations involving long-term storage of final waste.

2008 figures:
- Conventional industrial waste: **98,818 tonnes** of which 68,228 recycled or removed for recycling
Very low level waste from dismantling: **2,782 tonnes**
- Solid short-lived low and medium-level radioactive waste: 11.7m³/TWh
Solid long-lived high and medium-level radioactive waste: 0.87m³/TWh

Environmental issues

- Waste management (conventional, radioactive)*
- Dismantle factories and generation plants (soil, biodiversity)

Social issues

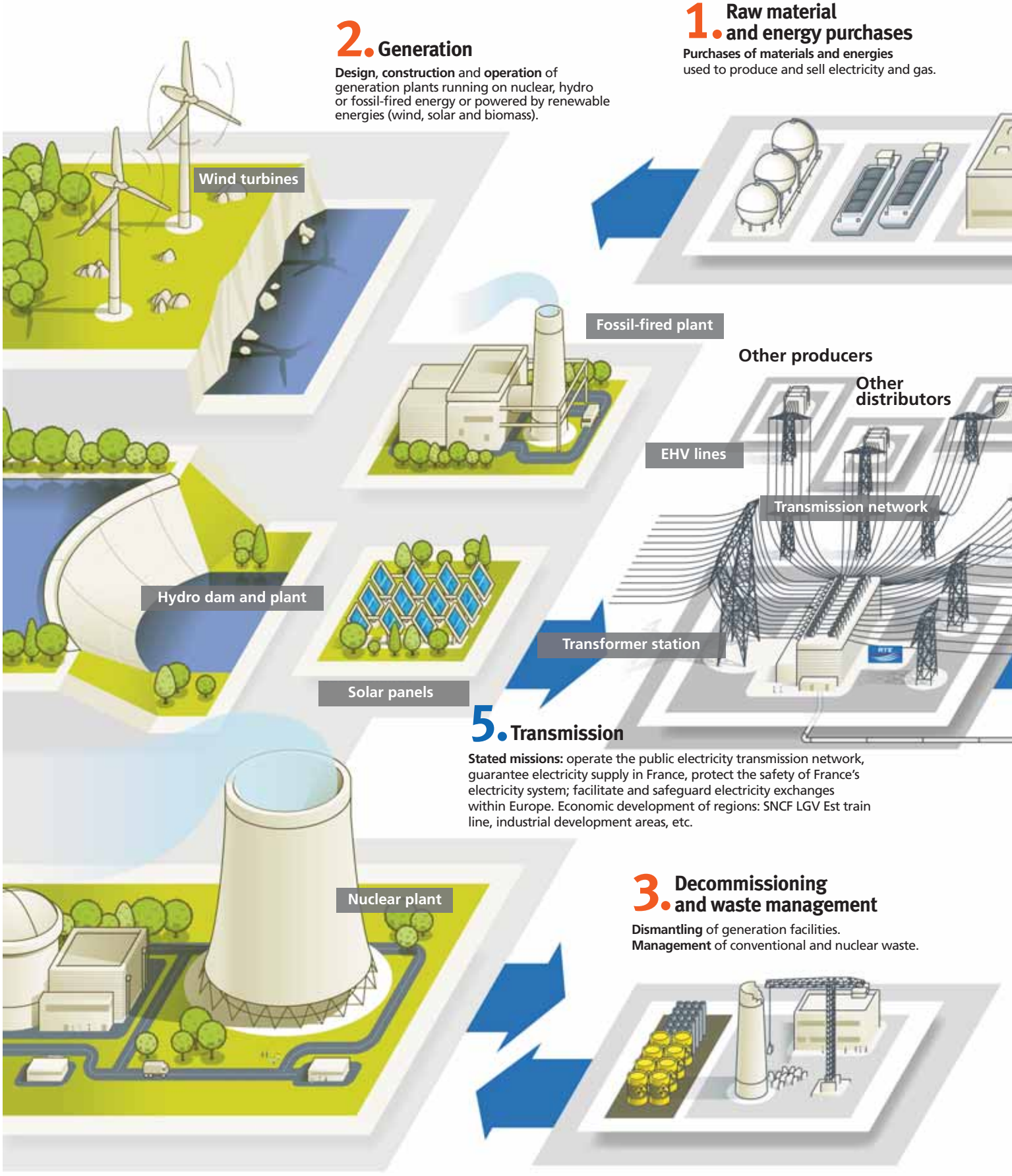
- Safety of employees involved in dismantling
- Safety of employees involved in waste management*
- Assistance to personnel losing their jobs

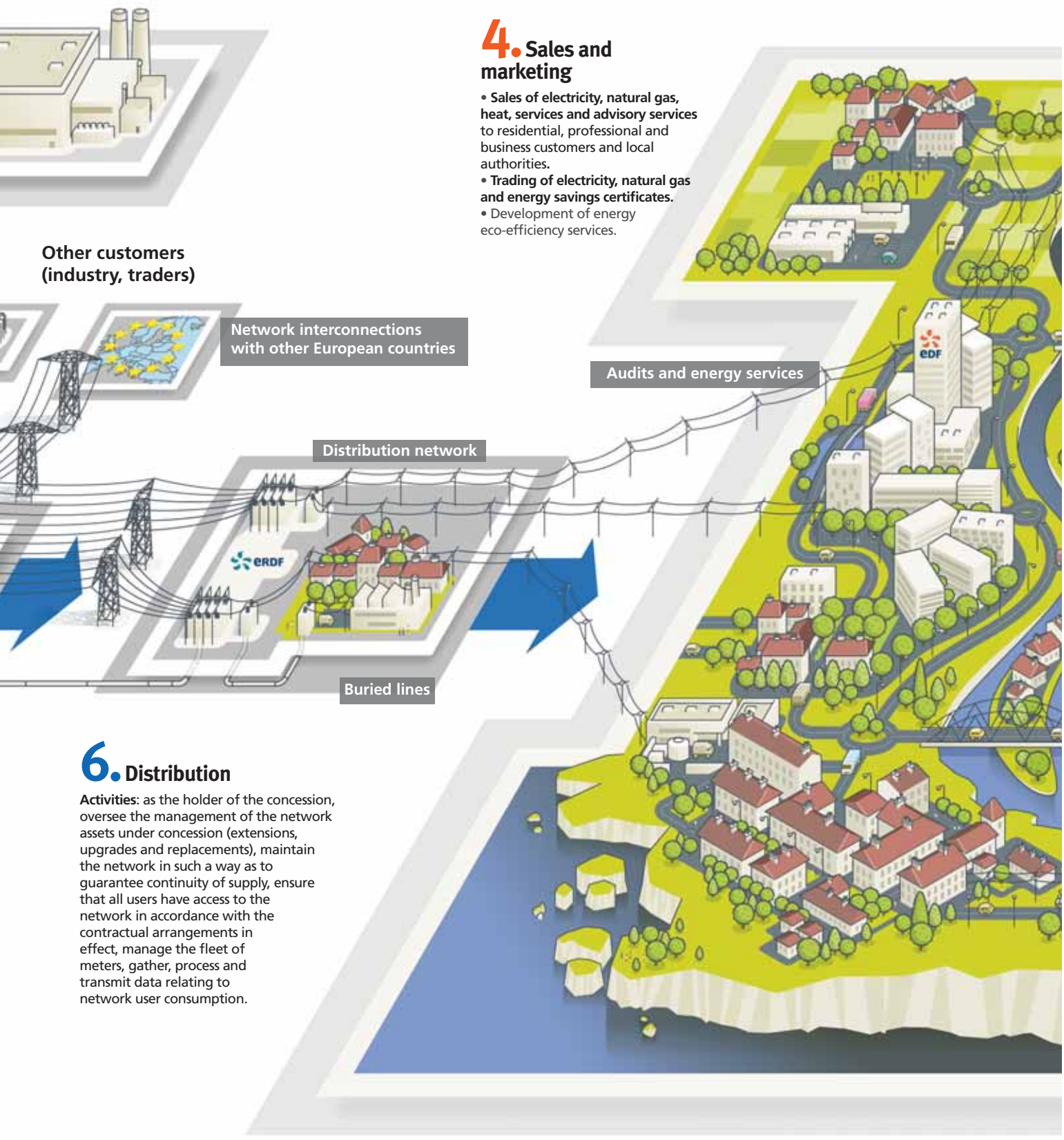
Economic and societal issues

- Impact of dismantling on local community (suppliers, subcontractors and real-estate prices)*
- Provisions related to dismantling and waste management*

* Issues raised by recommendations in GRI3 *Electric Utility Sector Supplement*.

SUSTAINABLE DEVELOPMENT ISSUES





4. Sales and marketing

- **Sales of electricity, natural gas, heat, services and advisory services** to residential, professional and business customers and local authorities.
- **Trading of electricity, natural gas and energy savings certificates.**
- Development of energy eco-efficiency services.

6. Distribution

Activities: as the holder of the concession, oversee the management of the network assets under concession (extensions, upgrades and replacements), maintain the network in such a way as to guarantee continuity of supply, ensure that all users have access to the network in accordance with the contractual arrangements in effect, manage the fleet of meters, gather, process and transmit data relating to network user consumption.

4. Supply, services and trading

Building on its long-term promotion of efficient energy use for its customers, the EDF Group has integrated regulatory requirements on energy saving into its sales and marketing strategy. In France, the Order of October 17, 2007 stipulated that between mid-2006 and mid-2009, EDF was to achieve cumulative discounted final energy savings of 29.8 TWh.

Environmental issues

- Develop offers to supply electricity from renewables
- Help customers produce renewable energy for their own usage

Social issues

- Accommodate and train numerous staff transferring from distribution
- Develop a diversity policy that reflects society as a whole

Economic and societal issues

- Develop energy saving offers and services
- Contribute to the development of eco-neighborhoods
- Guarantee access to energy for vulnerable populations*

REGULATED ACTIVITIES

5. Transmission

Created on July 1, 2000 and having become a subsidiary on September 1, 2005, RTE-EDF Transport is the operator of the French power transmission network, which it owns, operates, maintains and develops. With some 100,000 km of high and very high voltage circuits and 44 cross-border power lines, this network is the largest in Europe.

Environmental issues

- Reduce environmental footprint

Social issues

- Constantly improve the safety of people in the workplace*
- Develop staff employability and make RTE-EDF Transport more attractive*

Economic and societal issues

- Guarantee network safety, service quality and customer satisfaction
- Anticipate and keep up with trends in the electricity market
- Promote regional development*

6. Distribution

ERDF, spun off into a fully-owned EDF distribution subsidiary and operational since January 1, 2008, distributes electricity to some 34,000 of France's 36,500 towns. This is equal to 95% of the total electricity distributed in France, the other 5% being distributed by local distribution companies. In 2008, ERDF distributed electricity to more than 33 million delivery points in mainland France via a network comprising around 1,280,000 km.

Environmental issues

- Promote energy savings and tackle climate change
- Reduce pollutants
- Protect biodiversity*
- Improve sorting and recycling of waste*
- Reduce landscape impact

Social issues

- Constantly improve the safety of our employees*
- Promote diversity
- Provide career guidance and assistance

Economic and societal issues

- Ensure quality electricity supply and control costs
- Respond to local authorities and customer needs
- Contribute to regional growth and development*
- Raise awareness of electricity risks*
- Help strengthen social fabric

* Issues raised by recommendations in GRI3 *Electric Utility Sector Supplement.*

1.

STRATEGIC PRIORITIES

As a cornerstone in its effort to build a sustainable energy future, the EDF Group is implementing a low-carbon strategy, investing in **new generation technologies,** and consolidating its positioning in Europe. It is gradually implementing a robust sustainable development management system, one that consistently meets its overall economic, environmental and social responsibilities over the long term, **while taking into account the local contexts of the companies that comprise the Group.**

1.1. EDF GROUP STRATEGY

Energy utility companies must keep up with growing energy needs, especially the demand for electricity, while tackling the challenges of climate change and dwindling natural resources. The EDF Group strategy aims to provide robust and competitive solutions for generation and end-uses. In short, the Group is working to help reshape the energy landscape.

1.1.1. Three strategic investment priorities

With a constant focus on competitiveness, the key to building a sustainable future, the Group is concentrating its capital expenditure on low-carbon electricity generation technologies and customer services and solutions that protect the environment. Its objectives are threefold:

• Becoming a leader in the global revival of civilian nuclear power

Civilian nuclear power is the only means of high-power thermal generation solution that is carbon-free. With the experience acquired operating 58 reactors in France, the Group is investing to ensure its role as a key player in the global nuclear revival. Crucial progress was made with this strategy in 2008: civil engineering work was completed at the Flamanville 3 EPR site in France, and a joint venture was set up with CGNPC[1] in China to build and operate two EPR units; the Group also acquired half of Constellation's nuclear plants in the US to build and operate four EPR reactors on these sites, and, in the UK, integrated British Energy with the same objective in mind.

• Fostering the development of renewable energies and energy eco-efficiency

The EDF Group, the leading hydropower operator in Europe, is focusing its development on wind and solar power via its subsidiary EDF Energies Nouvelles, which plans to increase, alone or with its partners, its installed capacity of renewable energies to 4,000 MW by 2012 (not including hydropower). Its sales and marketing strategy focuses on energy saving services, decentralized generation solutions (heat pumps, solar water heaters and photovoltaic panels) energy management systems (technical building management, smart meters, etc.) and assistance in building insulation that give customers the means to reduce their energy consumption and greenhouse gas emissions.

• Consolidating the Group's positions in Europe

A sufficiently broad European base is necessary in order to implement a strategy, such as the one that mobilized €14.4 billion of investment in 2008. The takeover of British Energy reinforced the Group's position in Great Britain, making it the UK's leading electricity producer. At the same time, support was provided to investment efforts at EnBW in Germany and Edison in Italy and Greece, and the Group also added to its gas capacity in Europe. ●

1. China Guangdong National Power Corp.

In the present document, unless explicitly stated otherwise, EDF refers to EDF SA whereas the terms EDF Group and Group refer to EDF plus its subsidiaries, affiliates and shareholdings.

Organizational structure

The EDF Group comprises:

EDF

Regulated subsidiaries:
RTE, which operates the electricity transmission system in France, and ERDF, which manages the electricity distribution system. Both are fully-owned by the Group but, in accordance with legal and regulatory frameworks, are managed independently such that EDF's control over their activities is limited[1].

Subsidiaries
in France or abroad, in which EDF holds at least 50% of the voting rights or 50% of the capital.

Affiliates,
which are jointly owned financially and over which the Group does not have sole operating control.

Shareholdings:
minority stakes or shareholdings, direct or indirect.

Group governance

EDF Group governance[2] is conducted through three bodies.

The Board of Directors (Board), comprising 18 members of which:
- One third are employee representatives,
- Two thirds are appointed by the Shareholders' Meeting based on Board proposals, except for the government representatives, who are appointed by decree.

The TOP 4, a decision-making body comprising the Chairman and CEO and three chief officers appointed by the Board.

The Executive Committee, a strategic and consultative body that reviews all cross-divisional issues. It comprises the chief officers (members of the Top 4), the senior executive vice presidents of the branches and divisions, the Corporate Secretary and the CEOs of the main subsidiaries and affiliates (EDF Energy, EnBW and Edison). Its composition reflects EDF's resolve to address in a consistent manner all major issues facing the Group.

1. To find out more about the sustainable development policies of the regulated businesses (RTE and ERDF), please see their publications.
2. @ See 2008 *Document de référence* at www.edf.com.

"In France, in 2009, EDF will increase its capital expenditure by €2.5 billion compared with 2008, thus helping to stimulate the economy."

1.2. FOSTERING SUSTAINABLE DEVELOPMENT ACROSS THE GROUP

The sustainable development policy adopted by the Group in 2008 facilitates consistency between initiatives taken by its different companies. Environmental responsibility and social commitment are the two central pillars of the Group's approach.

1.2.1. Commitments

EDF's sustainable development policy is the result of consultation amongst the main Group companies. It focuses on nine key objectives relating to three challenges.

Climate change and biodiversity
- Continue to be the lowest carbon emitter among the large European electricity companies
- Adapt facilities and product and service offerings to factor in climate change
- Reduce impacts on the natural environment

Access to energy and proximity to users
- Promote access to energy and energy eco-efficiency
- Cultivate proximity to local users
- Support energy education efforts

Commitment to sustainable development
- Engage in dialogue with stakeholders about the Group's values and strategy
- Communicate and organize reporting about sustainable development actions
- Contribute to national and international debates

Each entity adapts this sustainable development policy to its local situation[1]. In 2009, the Group will also formalize its commitments to ethics in business, taking into account the individual practices of its entities.
The Group's environmental strategy was thus clarified in 2008. It includes a biodiversity plan and carbon strategy with four key targets:
- Reduce emissions at the industrial facilities
- Promote energy eco-efficiency on the demand side
- Reduce various CO_2 emissions
- Encourage Group employees to set standards in tackling climate change.

1. @ See sustainable development reports of individual companies on their websites.

Médiathèque EDF – Fabrice ARFARAS

Solar power plant (Narbonne, France).

Implementing Group ethics

It became clear from 2000 on, as the EDF Group was in the making, that it was essential to define the ethics and values that would govern its businesses and relations with stakeholders. A consultative approach was introduced and then stepped up in 2007 and 2008, under the aegis of the Ethics Advisor. The latter coordinates ethics-related matters within EDF and can be called upon by the employees or partners of the Group to ensure that Group values are respected.

The five core EDF values are defined in the Ethics Handbook, giving employees specific principles of action and tangible examples. Managers have distributed copies of the handbook to every EDF employee. An internal audit conducted in 2008 revealed a need to pursue efforts to ensure individual adherence, especially due to the major reorganizations underway. Including knowledge of ethical values as a criterion for calculating profit-sharing contributed to this awareness campaign.

A network of ethics coordinators spanning all Group companies was entrusted with a threefold mission: help managers promote the ethical reference framework, listen to employees who report failures to uphold EDF values and take appropriate action, and handle the reporting of the different units.

5 core values

- Respect for individuals
- Environmental responsibility
- Striving for excellence
- Commitment to the community
- Necessity of integrity

EDF Group executives put their commitment to sustainable development in writing

Leading the energy change

We must combine all our efforts to preserve the planet, through considerate growth and an awareness of our impacts on the environment. As a utility group, we must contribute to tackle climate change. This means not only securing future energy supplies but also ensuring the safety of our installations and providing affordable access to energy.

We believe that energy and the environment are strongly linked.

We believe that low carbon electricity will help solve the climate crisis.

The EDF Group has a large fleet of low-carbon facilities – hydro power plants, nuclear generation and renewable energy that includes windfarms. The Group is, and will remain, globally the lowest carbon emitter among the major European utility providers. All the companies of the EDF Group have a strong commitment towards their local communities.

As a Group:

- we contribute to combining sustainable growth with a responsible business conduct, thus fostering a common ethical approach
- we continue to reduce our own greenhouse gas emissions and to develop renewable energy, based on a range of cost-effective technologies and on-going investments
- we promote eco-efficiency through a growing range of products and services for businesses and residential consumers.

We realize that among the employees of the different Group companies there is growing awareness of sustainable development.

The CEOs of the Group companies are committed to a shared sustainable development policy with three key issues:
Environment: the fight against climate change and the preservation of biodiversity
Social: access to energy and close links with local communities
Governance and communication: contributing to the debate on sustainable development through dialogue, information sharing and communication.

Our common vision will serve our businesses wherever we operate.

We are joining our efforts to promote this commitment.

Pierre Gadonneix
Chairman and Chief Executive Officer, EDF Group

Vincent de Rivaz
Chief Executive, EDF Energy

Umberto Quadrino
Chief Executive Officer, Edison

Hans-Peter Villis
Chairman of the Board of Management, EnBW

Nicolas Katcharov
Chairman and Executive Officer, BE ZRt

Jacques Pithois
Chairman and Chief Executive Officer, DEMASZ

David Corchia
Chief Executive Officer, EDF Energies Nouvelles

Philippe Castanet
Chairman, EDF Polska

John Rittenhouse
Chief Executive, EDF Trading

Didier Guénin
Chief Executive Officer, Électricité de Strasbourg

Patrick Luccioni
Chief Executive Officer, Fenice

Jean-Yves Guignard
Chairman of the Board, FIGLEC

Jean-Christophe Philbe
Chairman of the Board, MECO

Patrick Simon
Chief Executive Officer, Norte Fluminense

Pierre Chazerain
Chairman of the Board of Directors, SSE

"Targeting energy consumption
during peak demand hours:
one of our programs to improve energy eco-efficiency."

EDF environmental targets

EDF will revise its sustainable development policy in 2009. On the environmental front, new quantified targets will be set, as shown in the table below.

EDF targets	Action plan
1. Reduce industrial emissions	
• Cut absolute CO_2 emissions (millions of tonnes) in continental France by 30% between 1990 and 2020	Adapt and upgrade the fossil-fired generation fleet
• Over the same period, cut specific emissions by 50% (grams of CO_2/kWh)	Increase generation from nuclear and renewables
• Islands (Corsica and french overseas departments): cut absolute carbon emissions by 20% between 2006 and 2020	Promote energy efficiency and renewable energies, upgrade oil-fired plants
2. Promote energy eco-efficiency at customer premises to reduce on-site CO_2 emissions by 0.5 mt a year between now and 2011	• Offers ranging from services to turnkey solutions for residential and business customers and local authorities • Install photovoltaic panels generating 12 MWp/year at customer sites by 2011
3. Achieve 8% reduction in CO_2 emissions from non-industrial sector activities between 2007 and 2012	• Implement energy savings solutions in operations and building maintenance • Replace systems involving greenhouse gas emissions (for example, air conditioning) • Streamline and increase density of occupied space • Raise occupant awareness
4. Encourage Group employees to set standards in tackling climate change	• Develop employee awareness and training programs on energy management • *Programme Action Planète* (energy savings for employees' homes)
5. Anticipate adjustments to climate change	Define adaptation strategy for each business line, each company
6. Reduce impact on biodiversity	Modification and development of the biodiversity strategy adopted in 2006
7. Reduce local environmental and health impacts	
• Reduce SO_x, NO_x and dust emissions from fossil-fired plants in continental France by 65% between 2005 and 2020	• Clean up the 600 MW fossil-fired generation plants • Replace obsolete plants with cleaner facilities
• Earn "HQE Operations" certification for 15-20 buildings by the end of 2012	Rapidly integrate the future HQE buildings standards into operations and the EMS

Médiathèque EDF – Patrick GAILLARDIN

The Sustainable Development Panel: new composition since 2008

Honorary Chairman: **Rajendra K. Pachauri** (Director General of TERI[1] and IPCC[2] Chairman)

Claude Fussler, Chairman of the SD Panel, Advisor to UN Global Compact Office, Program Director of Caring for Climate

Dominique Bourg, Chairman of EDF Societal Advisory Board

Pierre Castillon, Chairman of EDF Scientific Advisory Board

Henry Derwent, President of the International Emissions Trading Association[4]

Denny Ellerman, Senior Lecturer at Massachusetts Institute of Technology, climate and energy specialist

Peter Goldmark, Climate Campaign Director at the US Environmental Defense Fund

Will Hutton, President of EDF Energy's Stakeholder Advisory Panel

Jean Jouzel, Chairman of EDF Environmental Advisory Board

Daniel Lebègue President of the Institute for Sustainable Development and International Relations[3], President of French Section of Transparency International

Giorgio Merli, Country Leader of IBM Business Consulting Services, Italy, President of Advisory Group for the Italian Industry Federation

Laurence Tubiana, Director of IDDRI, Director of the Sustainable Development Chair at Sciences-Po Paris

Annie Wu Suk-Ching, President of the World Trade Center Association, Hong Kong, Founder and Vice President of Beijing Air Catering

Ernst-Ulrich von Weizsäcker, Co-chairman of the International Panel on Sustainable Resource Use and China Council Task Force on Economic Instruments for Energy Efficiency and the Environment

@ The résumés of Panel members can be consulted at www.edf.com

1. The Energy and Resources Institute
2. Intergovernmental Panel on Climate Change
3. Institute for Sustainable Development and International Relations *(Institut du développement durable et des relations internationales)*
4. IETA

1.2.2. Overseeing sustainable development strategy

A Group Sustainable Development Committee oversees processes and ensures that the actions undertaken by the companies are consistent. Its main missions are to:

- Help each entity implement its sustainable development strategy and suggest targets. The different entities submit action plans to the committee
- Prepare a new sustainable development strategy for the Group together with a strategy for adapting to climate change and proposed commitments, submitted to the Executive Committee
- Coordinate ISO 14001 Environmental Management Systems
- Encourage the sharing of experience and practices
- Define the messages to be communicated about sustainable development
- Supervise lobbying
- Coordinate sustainable development reporting.

The Committee focused on four issues in 2008: the carbon strategy in decision-making, adaptation to climate change, biodiversity, and the implementation of an ethics strategy across the Group.

An anti-corruption unit was set up in 2008 to reflect the increasingly international nature of the business structure. It was charged with proposing, by June 2009, a prevention and action plan to be applied across the Group.

The Sustainable Development Committee works with the Group Sustainable Development Panel to shape its action strategy. The composition of the latter was changed in 2008 to make it more internationally representative and reflective of the Group's evolution. Its members, independent experts appointed for three years and selected for their expertise or representativeness of countries where the Group is active, meet regularly with EDF senior management. The panel is playing an increasingly focused role: evaluating the Group's sustainable development strategy and reporting, and assessing how well stakeholder interests are being taken into account. Its opinions and summaries are posted on the EDF website. The present report was prepared with feedback from its chairperson and several members. Some of the Group entities also rely on expert panels. EDF consults with three dialogue bodies, the chairpersons of which are part of the Group Panel. The Environmental Advisory Board[1], set up in 2001, provides the Group with independent views and a multidisciplinary approach to its environmental strategy, actions and results. During its meeting of June 2008, it expressed satisfaction with the scope and number of actions undertaken by EDF in favor of biodiversity, but noted that these were not visible enough. The Group will thus step up its communication on this topic in 2009.

The Societal Advisory Board[1] was created in 2008. It has informed the Group that its key concern is access to energy, especially for the most frail members of society. The Scientific Advisory Board was established in 1987 to give the Group insight and advice from eminent scientific minds on choosing its research priorities.

1. @ See EDF website, www.edf.fr, for composition.

"R&D plays a key role in defining and implementing the Group's sustainable development strategy."

1.2.3. Putting the sustainable development strategy into action

One hundred or so different actions, backed by targets and indicators, are being pursued by Group entities working to meet their environmental objectives. Some of the most commonly addressed issues are transportation, waste, PCB, soil pollution, biodiversity and energy efficiency.

A Group management system ensures that the actions undertaken are consistent and that the sharing of best practices and expertise is encouraged. This comprehensive approach was validated by the second renewal of the Group's ISO 14001 certification in 2008. All individual Group businesses and entities, and those of most of its companies, also have their own certification programs.

1.2.4. Factoring sustainable development into investment decisions

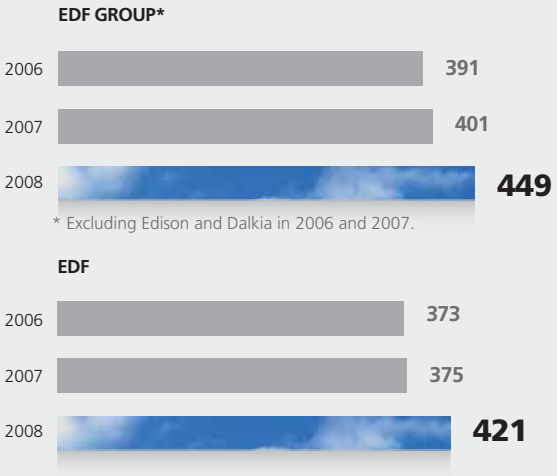
A list of 14 sustainable development criteria to be factored into industrial investment and acquisition decisions and supply contracts was drawn up in 2008. They notably include the fundamental and social rights of individuals, control of carbon emissions and contributions to local development. R&D plays a key role in defining and implementing the Group's sustainable development strategy. Its research programs are designed around three objectives.

- Develop new, eco-efficient and low-carbon technologies for the benefit of customers: smart meters, renewable energy integration in homes (particularly high-temperature heat pumps and solar technologies), electric and rechargeable hybrid vehicle systems.
- Help keep carbon emissions from the electricity generation facilities as low as possible by optimizing the useful life of nuclear and hydro plants and working toward the industrial development of renewable energies and other low-carbon technologies like Generation-IV nuclear and carbon capture and storage.
- Foster the development of smart electricity grids capable of integrating intermittent renewable energies, while developing electricity storage solutions to reduce reliance on peak-load generation, especially for island energy systems.

In addition, EDF R&D organizes its long-term research around 12 Challenges, a large portion of which relate to sustainable development: in 2008, close to €100 million of the R&D budget was allocated to environmental R&D projects. ●

PERFORMANCE INDICATORS

R&D expenditure
(in € millions)



* Excluding Edison and Dalkia in 2006 and 2007.

In 2008, EDF SA Research and Development expenditure totaled €421 million, of which more than €99 million was dedicated to environmental protection: energy eco-efficiency, research into renewable energies, local impact of climate change, other studies furthering knowledge of environmental issues (biodiversity, water quality, noise reduction, etc.).

EDF expenditure on the environment (in € millions)

Net R&D expenditure on the environment at EDF, breakdown by area

FIELD	Breakdown of 2008 expenditure
Sales and marketing	44%
Nuclear	28%
Renewable energies (excluding buildings)	9%
Fossil-fired	7%
Hydro	3%
Distribution networks	1%
Environmental production	5%
Energy management	2%
Works	1%

1.3. TAKING POSITION

As a leading player in the energy sector entrusted with public service missions, the EDF Group is actively involved in a number of public debates and decisions. In each case, the Group contributes its expertise and states its positions to French and European public authorities. It is also playing a central role in international preparations for the post-Kyoto period.

Everywhere it operates, the EDF Group focuses on tackling climate change, the importance of taking competitiveness into account when choosing technologies, the need for long-term public energy policies, and giving priority to solutions that are suited to local contexts, without excluding any type of energy.

Topic/what is at stake?	Text in question/scope	Group position	Oversight /representative body
Rendezvous Clause in European Climate Plan	**Europe**		
The "Rendezvous Clause" calls for reviews (national and European) to be conducted in 2014 on progress made toward the 20% renewable target for 2020 and possible revision of the law.	Draft Renewable Energy Sources Directive	The Group has committed to the "Rendezvous in 2014" clause.	Eurelectric, EDF office in Brussels
Inclusion of heat pumps in Europe's 20% renewable target for 2020	**Europe**		
Heat pumps that draw heat from the ground, water and air sources are powered by electricity. The draft directive only recognized ground-source heat pumps as renewable energies, and proposed an accounting method that minimized the renewable contribution of heat pumps.	Draft Renewable Energy Sources Directive	The Group fought for recognition of all types of heat pump and for the adoption of an accounting method that better reflected the contribution of heat pumps to overall renewable generation. The draft directive, voted on first reading, takes into account the Group's stance on the first point and imposes a minimum efficiency criterion for the second	Eurelectric, EDF office in Brussels
Allocation of carbon emissions allowances	**Europe**		
The system used to allocate carbon emissions allowances created distortions between electricity companies in different member states.	Energy and Climate Change Package (voted at end-December 2008 by European Parliament)	The Group is fighting for an allocation system that would be the same across Europe and possibly auction-based.	Eurelectric, EDF office in Brussels
Extension of flexibility mechanisms included in Kyoto Protocol to nuclear power	**Europe**		
The flexibility mechanisms in the Kyoto Protocol (CDM and JI1) allow companies based in industrialized countries to invest in projects that reduce greenhouse gas emissions in developing countries and earn carbon emission allowances for use in their own countries.	Energy and Climate Change Package (voted at end-December 2008 by European Parliament)	The Group wants zero-carbon electricity generation projects, in particular large hydro and nuclear, to be accepted under the flexibility mechanisms, or equivalent, which is not currently the case.	Eurelectric, EDF office in Brussels
Modification of ESC[2] system	**France**		
As of today, only equipment acquisitions qualify for ESC.	Grenelle draft law	The Group wants energy services (advisory services, audits, etc.) to be eligible as well.	MEEDAT[3] ATEE[4]
Stakes of new "thermal regulation 2012"	**France**		
The consumption thresholds set for new construction in the future (50 kWh/m2/year vs 130 currently) may lead to the elimination of electric heating, or even in some cases the use of electric water heaters.	Grenelle draft law	The Group wants the threshold to be based on the characteristics of usable energies and heating systems, especially those that can help reduce greenhouse gas emissions.	Grenelle COMOP[5] Administration
Reintroducing sustainable hydro	**France**		
23% renewable energy source target for the Group's final energy consumption in France in 2020.	Grenelle draft law	The Group is backing the French government's effort to reintroduce "sustainable hydro" via three measures: refurbishment and optimization of existing fleet applying sustainable development approach; construction of new high environmental quality facilities; creation of a sustainable hydro label with stakeholders.	Renewables COMOP for French national conference on the environment, MEDEF, UFE[6]

1. Clear Development Mechanism and joint implementation. 2. Energy Savings Certificate. 3. Ministry of Environment, Ecology, Sustainable Development and Rural and Urban Planning *(Ministère de l'Ecologie, de l'Energie, du Développement durable et de l'Aménagement du territoire)*. 4. Energy Environment Technical Association *(Association Technique Energie Environnement)*. 5. Operating committee *(comité opérationnel)*. 6. The French Business Confederation *(Mouvement des Entreprises de France);* the French Electricity Industry Association *(Union française de l'électricité)*.

2.

INDUSTRY, SALES AND MARKETING: SOUND CHOICES

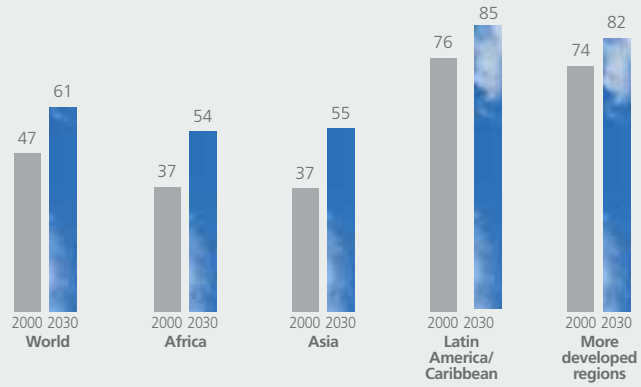
The EDF Group is making the investments needed to meet the large increase in demand for electricity, while mitigating risks related to the climate and the depletion of resources. **The industrial and sales and marketing decisions** it takes vary depending on national context but **are primarily driven by a low-carbon strategy.** With the desire to play a key role in the changing energy landscape, the Group is developing sales of eco-efficient solutions, developing nuclear where acceptable, and promoting renewable energies, including hydropower. It is also improving the carbon output of its fossil-fired fleet.

Médiathèque EDF – Laurent VAUTRIN

2.1. ENERGY DEMAND AND CLIMATE: MAJOR ISSUES

Energy consumption is on the rise, in line with the growth of the planet's population and economic and human development. This requires fossil resources, which are limited and the primary source of greenhouse gas emissions. Energy companies are therefore confronted with the need to change the way they operate.

Trends in urban population by major geographic region (in %)



Source: United Nations, World Population Prospects, 2004.

45%

extra energy will be necessary to respond to human needs in 2030

Source: World Energy Outlook 2007 (AIE).

This explains why the EDF Group prioritizes low-carbon electricity generation (nuclear and renewables) and promotes energy eco-efficiency, and why it formulated its "Carbon Strategy" in 2008.

2.1.1. Energy requirements and security of supply

By 2030, global population increase (1.3 billion people) is likely to lead to a yearly 1.6% increase in demand for energy[1]. The consumption of electricity, the preferred energy in cities and for advanced technologies, is likely to grow twice as fast as energy consumption in general.

The need for new electricity generation capacity was estimated by the European Commission at 600 GW for the period 2004-2030 (300 GW to meet new demand and 300 GW to replace the most polluting plants). Within the same time frame, requirements will reach 850 GW for the United States and Canada and 800 GW for China, which for the past several years has built 90 to 100 GW of capacity every year, the equivalent of EDF's fleet in France. These growing needs put pressure on prices, especially since most capacity draws on fossil energies. Indeed fossil energies account for 64% of global electricity generation and their share has actually increased since 1990.

To ensure security of supply, the European Union is drafting its third Energy and Climate Change Package. Indeed, Europe is increasingly dependent on gas and oil imports. In some regions, the situation of electricity systems during peak consumption is becoming increasingly critical. At the same time, Europe must keep an eye on the competitiveness of its industries and satisfying European energy needs at an acceptable cost.

2.1.2. Climate change: proven risks

The increase in CO_2 emissions linked to human activities has a direct impact on climate change. At the current rate, the earth's average temperature may rise by 6°C by the end of the century, three times higher than the IPCC[2] deems tolerable. The energy sector is the major emitter of CO_2, and responsibility for it is incumbent on energy companies like the EDF Group.

2.1.3. Alternative solutions are available

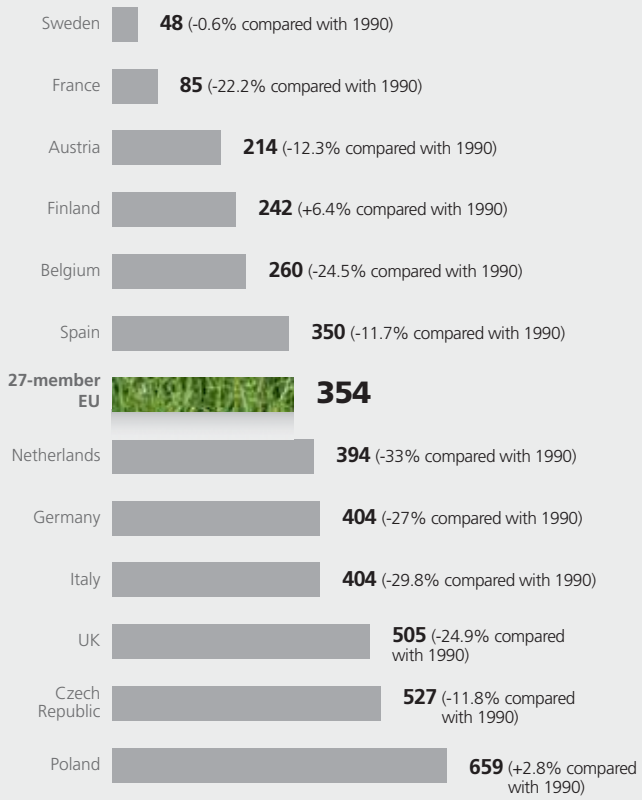
Technologies capable of reconciling climate control and security of supply while maintaining competitiveness already exist. So do a number of energy efficient solutions that can help satisfy demand, notably bioclimatic architecture, better home insulation, and heat pumps. In terms of generation, nuclear and hydropower are indispensable alternatives to burning fossil fuels for electricity, as are wind power and biomass. R&D priorities in this area have also been identified: capture and storage of CO_2, solar photovoltaic, generation IV nuclear, marine energies, and electric and rechargeable hybrid vehicles.

In order to mitigate climate change, governments are working toward a new world energy order along the lines of the Kyoto protocol (1997). At the end of 2008, the European Union adopted its Climate and Energy Package, which aimed at: reducing greenhouse gas emissions by 20%; improving energy efficiency by 20%; and lifting the share of renewables in energy consumption to 20% (compared with 7% in 2005). These measures should serve as a reference when determining the orientation of the Kyoto follow-up in Copenhagen at the end of 2009. France's second National Allocation Plan, more stringent than the first, aims at reducing the allocation of certificates for all sectors combined by 24% (-29% for electricity).

2.1.4. EDF Group: a strategy based on investment and low-carbon energies

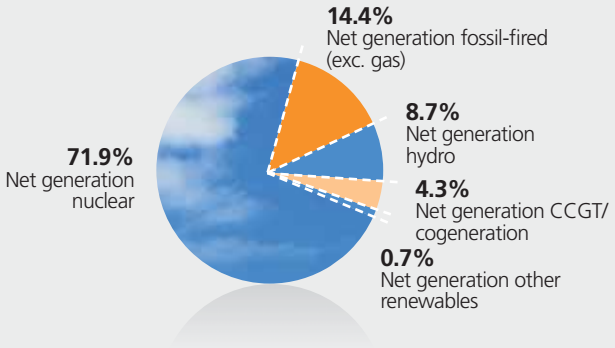
To meet demand while tackling climate change, the EDF Group is acting at every level of the electricity chain by investing in generation and networks and by promoting energy eco-efficiency among its customers. In generation it gives preference to low-carbon solutions: nuclear, hydro or other renewables depending on local circumstances. Indeed, its energy mix varies country to country: nuclear and hydropower in France (95.8% of EDF generation in 2008); fossil-fired generation in Poland and other Eastern European countries as well as Italy; and fossil-fired and nuclear power (since the acquisition of British Energy) in the UK. In Germany, EnBW's fleet consists of fossil-fired (43.9%), nuclear (32.3%) and hydro (23.1%) facilities. The Group fully intends to maintain its position as the European energy company that emits the least CO_2 per kWh generated.

CO_2 emissions per kWh for the EU electricity and heating sector, 2006

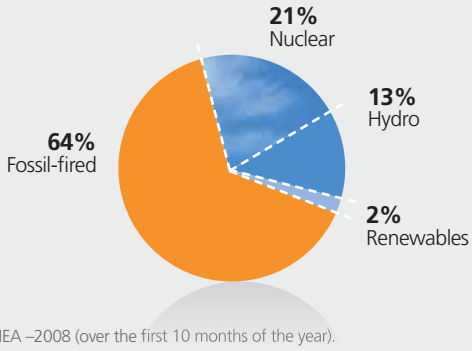


Source: AIE – 2008.

EDF Group generation mix in 2008



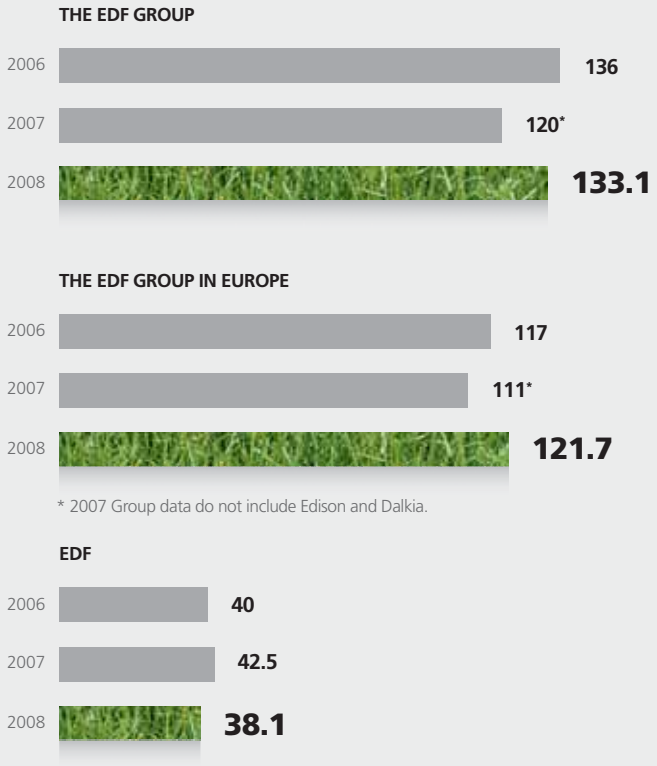
Generation mix in OECD countries



Source: IEA –2008 (over the first 10 months of the year).

PERFORMANCE INDICATOR

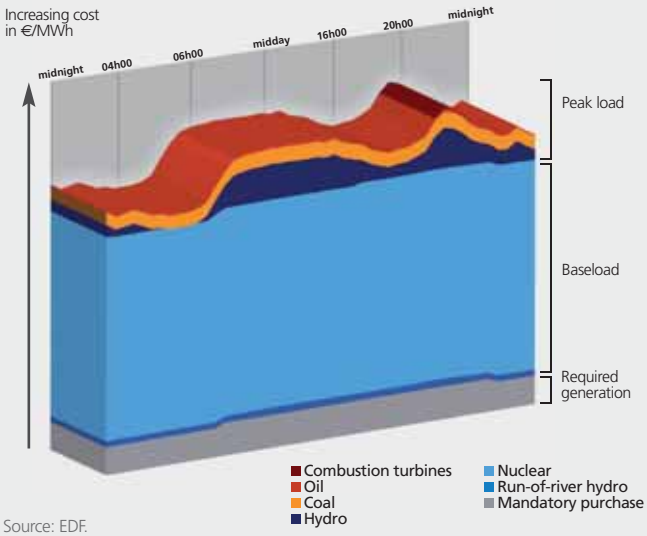
CO_2 emissions from electricity and heat generation
(in g/kWh)



* 2007 Group data do not include Edison and Dalkia.

EDF generation facilities on a winter day

Supply and demand must always balance out. In France, EDF relies on nuclear and run-of-river hydro to meet baseload demand, and fires up fossil-fired plants or calls on hydrodams to cover peak consumption or compensate for unexpected incidents at the other plants. Semi-baseload demand is covered by nuclear and fossil-fired. Plants are called up in the order of least to highest generation cost (factoring in the price of a tonne of CO_2 emitted).



Source: EDF.

By generating 95% of its electricity using nuclear or hydropower, EDF emits 10 times less CO_2 than the average among European electricity companies.

In France, EDF has brought 3,043 MW of peak and semi-baseload capacity on stream since 2005 and is planning for another 1,175 MW. It is increasing its yearly investments in networks by 10%. It is building an EPR nuclear reactor at Flamanville, modernizing and developing its hydro facilities, boosting generation capacity based on renewables with help from EDF Energies Nouvelles (50% EDF) and improving performance at its fossil-fired plants. EDF has committed to reducing absolute emissions of CO_2 by 30% in continental France for the period 1990 to 2020, and by 20% in Corsica and the overseas departments for the period between 2006 and 2020.

In the United Kingdom, to reduce its CO_2 emissions (252.7 g/kWh), EDF Energy is modernizing its fossil-fired plants, building improved-output CCGT plants and investing in wind power. The company is part of the ETI[3], which brings together State representatives and industrial players in an effort to reduce greenhouse gas emissions by 80% from now to 2050. The acquisition of British Energy, at the end of 2008, the UK's leading producer of low-carbon electricity with a nuclear fleet of 8.7 GWe, profoundly alters the Group's profile in the UK, where EDF is planning to build four EPRs.

In Germany, because of the country's decision to eliminate nuclear power by 2021, EnBW is investing in an RDK8 supercritical coal-fired plant (900 MW) as well as in hydro and wind power. Despite the shutdown of the Obrigheim nuclear plant, the company is also maintaining its intention to keep its CO_2 emissions (229.2 g/kWh) below the German average (404 g/kWh).

In Italy, Edison has just finished construction on over 7,000 MW of CCGT capacity with Edipower, is about to bring on stream the country's largest regasification terminal, and is increasing investment in renewables.

The Carbon Fund[4] run by EDF Trading was created in 2006 to help EDF Group companies consolidate their strategies for CO_2 coverage. This fund has a purchase capacity of approximately €300 million and is one of the major players on the Clean Development Mechanism market. ●

1. Source: IEA 2008.
2. Intergovernmental Panel on Climate Change.
3. European Technologies Institute.
4. The aim of this fund is to support greenhouse gas emissions projects in emerging countries in accordance with the Clean Development Mechanism (CDM) as defined by the Kyoto protocol, and qualifies for CO_2 emissions permits.

2.2. PROMOTING ENERGY ECO-EFFICIENCY

The EDF Group aims to be a key leader in the transformation of the energy sector by championing low-carbon electricity with its customers as well as in its generation mix. Many Group companies have taken significant strides in this direction. Within their respective markets, they are increasingly steering sales and marketing to bring their their customers offers that save energy, emit less CO_2, and incorporate decentralized renewable energies.

2.2.1. Responding to customer and social expectations

In Europe, the time has come to save energy and limit CO_2 emissions. The French national conference on the environment *(Grenelle de l'environnement),* the policies of the British government and the Climate and Energy Package voted by the European Parliament all target the development of ecologically sound, efficient offers. In France, the energy certificate system requires EDF to help its customers save 29.8 TWh of total accumulated energy use between mid-2006 and mid-2009, that is 55% of the overall target for France.

Customers, confronted with prices that tend to increase, also expect energy eco-efficient solutions. The ability to meet such expectations can provide a competitive edge. The EDF Group is committed to eco-efficiency, which aims at finding the most effective and economically competitive solutions for managing energy consumption and limiting greenhouse gas emissions.

2.2.2. Customer offers in France: from services to turnkey solutions

In France, EDF helps its customers launch energy eco-efficient projects and works with them to develop projects in three main areas: insulation of housing and office and commercial buildings; installation of energy-efficient equipment or use of renewables; and improvement of industrial procedures.

Offers range from advisory services to the works themselves, for both residential and business customers. To deliver these offers EDF works with its affiliates and subsidiaries as well as 5,300 partner installers. EDF markets solutions focused on photovoltaic and heat pumps, which are installed and serviced by EDF Energies Réparties, a joint EDF and EDF Energie Nouvelles subsidiary. For business customers and local development markets, EDF Optimal Solutions operates as a service integrator, offering a dedicated advisor, low-energy, low-carbon equipment with on-site installation, maintenance and operating contracts, adapted financing, guaranteed results and remote services.

To develop professional skills in these new fields, EDF is participating alongside the French Agency for Environment and Energy Management (Agence de l'environnement et de la maîtrise de l'énergie – Ademe) and professional federations in a training program for construction professionals and employees in the construction sector.

2.2.3. Sales and marketing offers across Europe

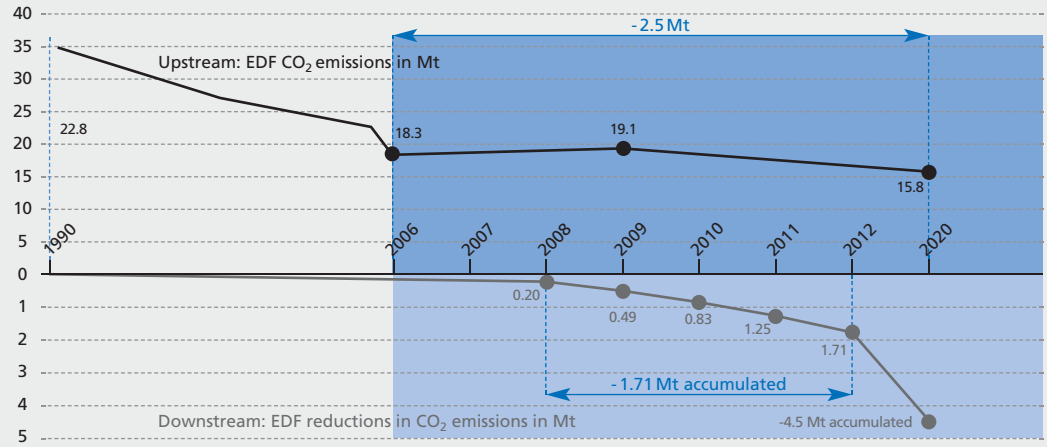
EDF Group companies throughout Europe are developing energy eco-efficiency offers adapted to the regulatory framework of the country in which they are active. In the United Kingdom, EDF Energy launched the Climate Balance for Business scheme, which allows business customers to help reduce CO_2 by financing renewable energy projects by making a contribution of 0.4 pence per kWh consumed. The Green Energy Fund, which channels these contributions, has already invested £2.7 million in renewable energy programs.

In Germany, EnBW has launched its Meregio project (minimal emissions regions) with Karlsruhe University and other industrial partners. As part of the Federal Economy Ministry's E-Energy aid program, this project aims by 2013 to create a model region endowed with an intelligent electrical supply network that links decentralized producers, communicating terminals and both fixed and mobile energy storage devices. In line with the project, EnBW is marketing its smart meter, to be installed for 1,000 end customers in the pilot region beginning in 2009. This meter serves as the basis for new energy-efficient products and remote services. Residential customers will be able to monitor their consumption, record it for the future, receive advice adapted to their specific needs, and overall better manage their consumption.

2.2.4. The car of the future

EDF is promoting the development of electric vehicles and rechargeable hybrids that save on energy and produce no more CO_2 than the generation fleet that powers them. The partnership concluded with Toyota in 2007 for the trial of the rechargeable hybrid car Prius is ongoing and has even been extended to the UK, where EDF Energy is testing a vehicle. In 2008, EDF established two new partnerships, one with Renault-Nissan and the other with PSA Peugeot-Citroën, to develop electric and rechargeable hybrid vehicles. ●

Outlook for EDF CO_2 emissions reduction upstream* and downstream**, from now to 2020 (in Mt)



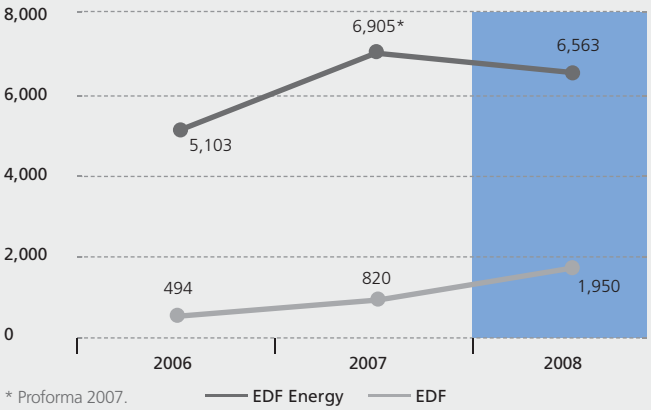
* Excluding gas from steel production.
** Only industry and buildings.
Source: EDF.

€33 billion

In 2007, markets relating to **renewable energies and energy eco-efficiency** in France

Sales of green electricity to end customers (in GWh)

This refers to sales of electricity that have been certified (REC certificate) by an independent regulator to be of renewable origin, excluding pumping energy for electricity from hydro facilities.



* Proforma 2007.

Scenario 2050

For residential and commercial and office building construction, EDF R&D is working on a scenario in which energy consumption could be fossil-free by 2050 using technologies that already exist: thermal insulation of existing buildings, heat pumps and biomass furnaces, solar thermal and electricity generation using photovoltaic and biomass cogeneration. In the final analysis, and despite an increase in the population and in service activities, demand for electricity would only rise by 15%, with added recourse to biomass in the lower range of available estimations. This scenario confirms the major role of thermal insulation and heat pumps in reaching CO_2 emissions reduction targets.

28,000
sales of solar energy advisory services

400,000
EDF renovations in the industrial, service and residential sectors (of which over 100,000 for subsidized housing) by the end of 2008

High-performance heat pump

A high-performance heat pump, developed by EDF and German industrial partner Stiebel Eltron, was marketed by EDF ENR. Sleek and compact, the heat pump is easy to connect to existing installations. EDF offers remote monitoring and maintenance. This heat pump is the perfect alternative to replace a residential customer's oil furnace. The potential market has been evaluated at three million customers.

Fuel cells

EnBW is bolstering its fuel cell test program for residential customers: 222 new devices are expected to be installed in Bade-Wurtemberg by 2012 as part of the federal government's flagship project Callux. EnBW is investing €10.5 million in the program. Since 2001, the company has installed 30 fuel cells for its customers and partners.

Médiathèque EDF – Jean-Lionel DJAS

2.3. DEVELOPING NUCLEAR: LARGE-SCALE CO_2-FREE GENERATION

As part of the response to fast-growing demand for electricity and the need to stay on top of climate-related risks and the depletion of fossil resources, nuclear energy has a major role to play alongside renewable energies and energy efficiency as a low-carbon solution. The EDF Group is firmly committed to its development.

2.3.1. An asset for low-carbon energy

Nuclear energy is proving to be a sustainable solution to global energy and environmental issues: CO_2-free generation; stable, foreseeable costs; independence from the unpredictable fossil fuel markets (most experts agree prices will continue to rise over the long term). EDF considers nuclear to be economically competitive as long as the barrel of oil is over $60. It is all the more competitive in countries like those in the European Union, in which strict and ambitious mechanisms to reign in CO_2 emissions are being rolled out. Moreover, in Europe, nuclear is competitive at $50 per barrel and up to a CO_2 price of €20 per tonne over the long term.

Several countries are launching construction of new nuclear plants. This gives EDF an opportunity to use its expertise to best advantage. Through strategic partnerships, the Group is planning to invest as constructor and operator in ten more EPR[1] reactors worldwide by 2020. These projects must meet several criteria: acceptability, profitability, and a mature technical and institutional environment. While an EPR generates the same amount of energy, it actually cuts back on fuel consumption by 17%. This reactor is designed to be operational for 60 years with an availability of 91%.

2.3.2. Construction of the Flamanville 3 EPR

In France, where it operates 58 nuclear reactors, EDF is building its first EPR[1] nuclear unit at Flamanville (Manche). Led by EDF Engineering, civil engineering continued at the construction site throughout 2008. Surveying of the works was reinforced through third level control by an outside team.

EPR competitiveness was demonstrated in 2008 when the investment cost was reassessed at €4 billion and €54/MWh for full generation cost compared with €68/MWh for a combined-cycle gas plant (2008 euros).

Overseen by the French Nuclear Safety Authority (*Autorité de sureté nucléaire* – ASN), Flamanville 3 testifies to EDF's ability to conduct a major construction project that boosts local and regional life thanks to the creation of jobs, roads, schools, etc. At the end of 2008, 1,500 people were working on the site. In 2008, industry representatives from the US and Chinese delegations as well as the Italian energy minister and senior executive management from Enel and Edison all visited the site.

2.3.3. EDF: taking part in the global nuclear revival

In 2008, EDF projects made significant headway in three different countries.

In the United Kingdom, which has chosen to revive civil nuclear, EDF made a friendly acquisition of British Energy on 5 January 2009, for sale by public offer. The electricity company is Britain's largest, and already runs eight nuclear power plants. EDF experts visited the plants to verify their safety and performance before the acquisition, and the Group signed agreements with the British authorities to the effect that four EPRs can be built on British Energy sites. To ensure fair competition, EDF agreed to the sale of property belonging to British Energy. The licensing procedure with the British safety authority has already begun for the EPRs.

In the United States, EDF and Constellation Energy created the joint venture UNE[2] in 2007 to build, hold and operate EPR units. At the end of 2008, EDF acquired half (49.99%) of Constellation Energy's nuclear power plants. UNE, which will retain exclusivity for the first four EPRs and already has the property and agreements with the authorities as customers, signed an agreement in 2008 with Areva and Bechtel for the engineering of the American EPRs. The licensing application for construction of a unit at Calver Cliffs was registered with the NRC[3].

In China, where the government hopes to expand the share of nuclear in its energy mix to 4% or 5% by 2020 (0.8% in 2005), EDF signed an agreement for the creation of the TNPC[4] with CGNPC[5], a longtime partner through the six Daya Bay reactors and Ling Ao. TNPC will build two EPR units at Taishan in Guangdong, which it will operate for a period of 50 years. EDF's participation in TNPC is 30%, and the contract includes rules of governance regarding the share of risks which provide for EDF to remain in key positions to ensure the safety and performance of the installations. The earthworks began in 2008, with 30 EDF engineers on site. The units will be brought on line beginning in 2013. ●

1. European pressurized water reactor.
2. UniStar Nuclear Energy.
3. Nuclear Regulatory Commission.
4. Taishan nuclear power joint venture company.
5. China Guangdong Nuclear Power Corp.

22%

Proportion of nuclear in generation mix in OECD countries[1]

1. Source: OECD Observer 2008.

Bolstering investment in the existing fleet

In France, with investments increased to €1,200 million in 2008 (doubled from €600 million in 2005), EDF is reinforcing its maintenance program to improve safety and performance in its nuclear fleet. As part of an ongoing dialogue with the French Nuclear Safety Authority, this investment program, which includes R&D projects, contributes to the goal of extending the average operational life of the fleet beyond 40 years, following the example of many American nuclear plants, whose lifespan has been extended from 40 to 60 years. Of the 58 reactors in operation in France, 18 will reach 40 years of age between 2015 and 2020.

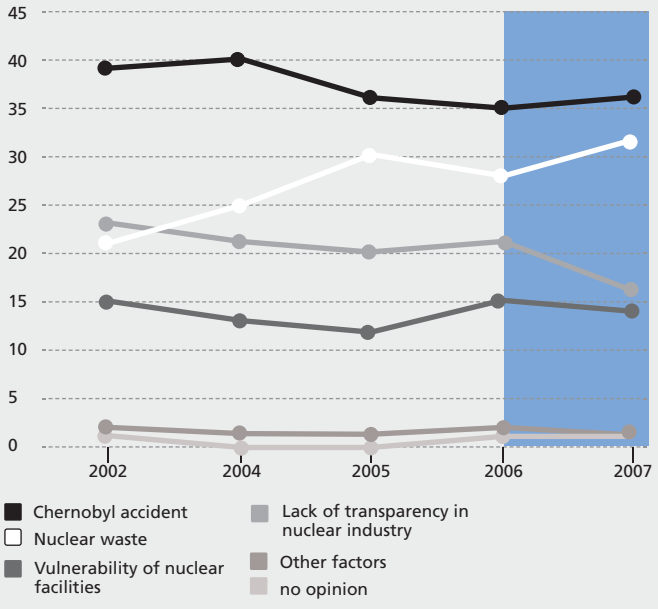
Médiathèque EDF – Bruno CONTY

EPR construction site at Flamanville 3 (February 2009).

Nuclear power: public opinion in France

Over the past five years, the French perception of nuclear power has changed significantly. The public is more confident in the transparency of the nuclear industry but expresses more concern (up 11 points) about nuclear waste management. It is interesting to note that no single concern predominates.

Trends in French public opinion with regard to nuclear energy



Source: INRS (National Research and Safety Institute) Survey, 2008.

France-Italy cooperation agreement

In 2008, the Italian government announced its intention to launch a nuclear program. Eight to ten plants will eventually be built in Italy. In early 2009, France and Italy signed an agreement to cooperate on an energy program[1]. Given the context, EDF and ENEL signed two agreements. The first plans for the creation of a 50/50 consortium to carry out feasibility studies for at least four EPR type reactors in Italy. The second provides for the extension of ENEL's participation in the new French nuclear program and for its association in the construction and operation of the Penly EPR up to 12.5% as is already the case with the Flamanville EPR. 50 ENEL engineers are working alongside the French engineering teams, most at Flamanville.

1. The completion of this program is dependent on changes that need to be made to Italy's legislative and regulatory framework to accommodate it.

65.84

GWe

EDF Group generation capacity

EDF GROUP NUCLEAR GENERATION

438.75

TWh generated (71.9% of Group electricity generation)

EDF NUCLEAR GENERATION

417.6

TWh generated in France (86.3% of EDF generation)

The Group has identified risk factors linked to nuclear technology and is taking action to reduce and control them. For more detailed information, please refer to the 2008 *Document de référence,* section 4.1.2. and 4.2.3.

Risk factors identified by the Group	Measures	Results
Securing fuel supply	Diversification of supplier portfolio	• Areva: 78% of Group requirements in 2006, 70% in 2007 • Long-term contracts providing visibility on fuel costs up to 2018/2020 • Diversification of supply geographically
Acceptance of plants	Proactive approach through local information commissions (*Commissions locales d'information* – CLI) and compliance with the law on nuclear safety and transparency (*Transparence et sureté nucléaire* – TSN)	A dedicated local information commission for each nuclear site.
Group image in the event of an incident/accident	• Information for the general public on the management of the nuclear power fleet. • Transparency with regard to the French Nuclear Safety Authority	• Information on Internet about each nuclear power plant • Public visits of plants
Operational safety	• Nuclear safety management • Internal auditing (Nuclear Safety and Radioprotection) • External auditing: ASN (about 400 per year) and WANO inspections	• A corporate safety culture • Corrective measures: work on resolving issues monitored by the French Nuclear Safety Authority. • Improved safety indicators
Management of Group nuclear skills	Special committee reporting to the Chairman and CEO	• A professions academy • A control simulator for each nuclear reactor • Hiring of 500 engineers per year over a five-year period
Waste management	• Internal action plan for reduction • Committee for Monitoring Nuclear Commitments reporting to Board of Directors • Monitoring by the French Nuclear Safety Authority	• Adjustment of Group provisions for upstream/downstream management of the nuclear cycle • Stepped use of MOX fuel (22 reactors authorized to use it)
Dismantling	• Committee for Monitoring Nuclear Commitments reporting to Board of Directors • Monitoring by the French Nuclear Safety Authority	• Adjustment of Group provisions for the management of decommissioning • Dedicated engineering center (*Centre d'Ingénierie spécifique* – CIDEN), created in 2001 and a staff of 560
Natural catastrophe/terrorism	• Factored in from design stages • Ten-year inspections • "Vigipirate" security plan • Consulting with public authorities	• Reassessment of safety in the event of an earthquake • Collective action schemes (specific plans for intervention, emergency drills)
Radioactive waste	Measuring and monitoring by the Institute for Radioprotection and Nuclear Safety (*Institut de radioprotection et de sureté nucléaire* – IRSN) and by EDF.	Waste below 90% of regulatory limits (excluding tritium and carbon-14)
Transportation of spent fuel	Optimization of processes	In 2008, 25% reduction in number of trips (-550)
Operational lifespan of plants and safety and security	Investments	Doubling of maintenance investment (€600 million in 2005, €1,200 million in 2008)

2.4. INVESTING IN RENEWABLE ENERGY

Renewable energies preserve resources and contribute to a low-carbon energy mix. The EDF Group has made their development a top strategic priority.

2.4.1. The European context

The European Union's Climate and Energy Package aims to lift the share of renewables in its energy mix (hydroelectricity, solar power, wind power, biomass, geothermal sources) to 20% by 2020.

The EDF Group is contributing to this target and investing vast sums in hydropower as well as wind and solar power, largely through EDF Energies Nouvelles (EDF EN, 50% EDF) and its major affiliates and subsidiaries. It benefits in this regard from the expertise of its R&D and engineering teams.

2.4.2. Hydro: the power of a renewable

Like the European Union, EDF includes hydroelectricity among the renewable energies.

Europe's leading hydroelectricity producer, the Group operates a 23.16 GW hydro fleet, of which 20.4 GW is in France and 3.47 GW in Germany. These facilities supply 52.98 TWh (8.7% of overall generation) of which 45.9 TWh is in France (4.8 TWh more than 2007).

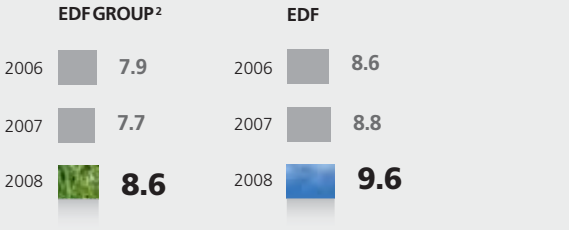
In France, EDF's SuPerHydro program for hydro safety and performance, invested €560 million on routine maintenance costs between 2007 and 2011. Regular testing and thorough ten-year inspections (15 in 2008) also contribute to ensuring the safety of the large dams. EDF is preparing for market opening of 11% of French hydro generation by 2015, with facilities generally being operated in the form of concessions.

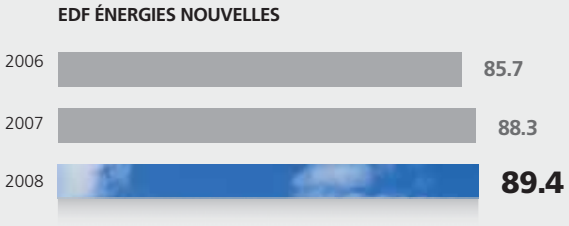
The Group is bolstering its hydro assets in France thanks to the Gavet project (90 MW), which will replace six aging units with a complex at Romanche, and by modernizing the Rhineland stations of Kembs, Gambsheim and Iffezheim. It is also investing in small hydro plants such as those found at Brisach on the Rhine. In Corsica, it is building the Rizzanese plant (55 MW). In Germany, EnBW is taking the capacity at its Rheinfelden plant from 26 to 100 MW and adding another 68 MW to its existing generation capacity. In Turkey, Edison and the Sanko Group created a joint venture to invest in hydro projects.

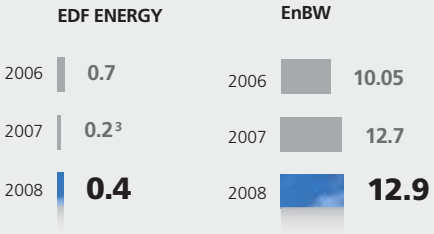
In Laos, EDF is the main shareholder (35%) in Nam Theun 2 Power Company, for the construction and operation of a 1,070 MW hydro dam, fully filled in 2008 and to be brought on stream for commercial operations by the end of 2009.

PERFORMANCE INDICATOR

Share of heat and electricity generated from renewable energy sources by EDF and the EDF Group and its main affiliates and subsidiaries (2006/2008)[1] (en %)







1. Hydropower generation integrates energy produced by energy transfer by pumping.
2. Not including Edison and Dalkia in 2006 and 2007.
3. The new calculation method in 2007 accounts for this decrease.

FRANCE

447

hydroelectric plants, total capacity of 20.4 GWe, of which 14,000 MW available within 20 minutes

"EDF Énergies Nouvelles has made solar its second focus of development."

2.4.3. Wind power, EDF EN's development driver

In Europe, EDF Energies Nouvelles brought several major windfarms on stream: 352 MW in Portugal (Ventominho and Arada); 200 MW in France, notably in Villesèque (51 MW), Chemin d'Ablis (52 MW) and Salles-Curan (87 MW); 70 MW in Italy (Campidano); 40 MW in the UK (Bicker and Walkway); 38 MW in Greece. In Belgium, the company has a share in the offshore project C-Power (300 MW), the first 30 MW unit of which has already been completed.

In the United States, the company built the Waspi North windfarm (100.5 MW) for its own account, and signed with American electricity companies for the delivery of 250 MW of farms for the period 2009-2011. Four contracts for the operation and maintenance of 2,100 MW were also signed. EDF EN made headway in two countries with great potential: Canada, where Hydro Québec retained the consortium St. Laurent Energies (60% EDF EN) for the construction of five wind farms with a total capacity of 954 MW; and Turkey, where EDF EN now holds 50% of Polat Enerji's capital, one of the leading Turkish windfarm developers.

Other Group companies also invested in wind power. In Germany, EnBW is developing four windfarms on the North and Baltic seas (1,200 MW). In Italy, Edison will add 800 MW of wind capacity to its existing 300 MW by 2014. In the UK, EDF Energy, which operates wind turbines in the north-east, is going to build 90 MW of capacity offshore in Teesside. In order to bring its renewable energy capacity up to 1,000 MW within the decade, EDF Energy also joined forces with EDF EN to create, in June 2008, a 50/50 joint venture: EDF Energy Renewables.

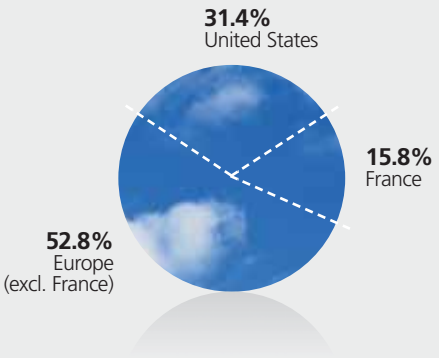
2.4.4. Solar shining bright

The Group is bolstering solar power. EDF EN has made solar its second focus of development and is planning to invest €335 million of its €500 million capital increase in high output solar plants. In 2008, the company connected 20 MWp to networks in the United States, Italy, Spain and in France, where the Narbonne unit, the country's largest (7 MWp), has already been inaugurated. Moreover, 29 MWp of additional projects are under construction and over 2,000 MWp are under development. In January 2009, EDF EN began construction in Reunion Island of the largest French solar complex (15 MWp), which should eliminate 13,000 tonnes of CO_2 per year. EnBW and Edison are also firmly committed to solar; Edison in particular is heading a project for a concentrating solar power plant in Italy.

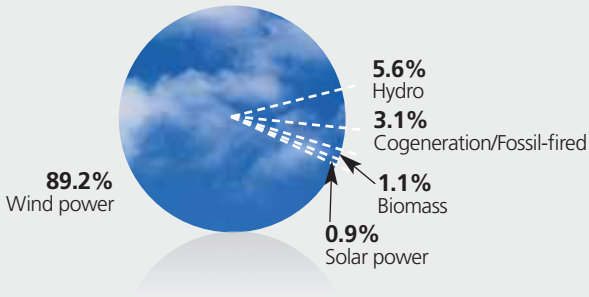
As a highly decentralized energy suitable for self-reliant production, solar power is among the energy eco-efficiency solutions EDF offers in France, through EDF Energies Nouvelles Réparties[1].

EDF ENERGIES NOUVELLES ENERGY MIX

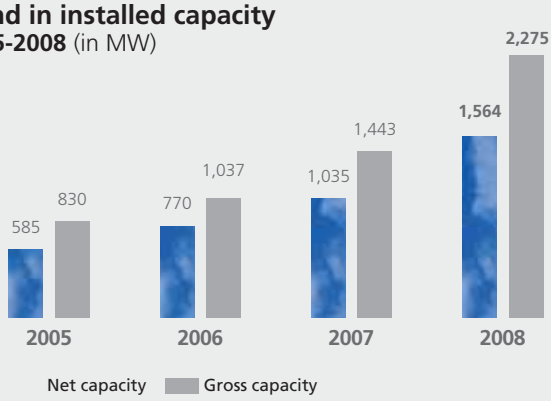
Installed capacity at end-2008 (in %)



Gross installed capacity by technology at end-2008 (in %)



Trend in installed capacity 2005-2008 (in MW)



Source: EDF EN.

EDF Énergies Nouvelles

EDF EN succeeded in increasing its capital by the end of 2008 in order to finance the development of solar power and raised its target for installed capacity to 4,000 MW net by 2012, of which 500 MWp is to be solar photovoltaic. Wind power (89.2% of gross installed capacity at the end of 2008) remains the company's primary growth driver, ahead of solar photovoltaic ground and roof systems. EDF EN is also active in other sectors: biomass, biofuels and biogas, small hydro projects and marine energy.

Trends in global renewable energy generation (in TWh)

	1997	2004	2005	2006	2007
Geothermal	42.4	56.1	58.3	59.6	62.6
Wind	12.6	83.6	103.3	130.8	169.3
Biomass	114.3	172.9	188.5	200.9	217.9
Solar	0.87	3.314	4.577	6.142	8.517

Source: *Observ'ER* report 2008

Solar photovoltaic

At the end of 2007, 9.2 GWp were installed worldwide, equal to about 7.9 TWh of generation. Several countries encourage the industrial development of solar through price regulation and tax incentives to compensate for its costs, which are still high. At the end of 2007, Germany (3,830 MWp installed)[1], where prices are among the highest in Europe, was the leader both in terms of capacity and manufacture of modules. In France, where 54 MW were connected to the grid[2] at the end of 2008, the government announced a national target of 5,400 MWp by 2020, while keeping prices at current levels to provide operators with greater visibility.

1. Source: Worldwatch Institute.
2. Source: ERDF and EDF SEI.

Wind turbines

Wind turbines generated 169 TWh[1] in over 70 countries in 2007 (1% of global electricity generation) according to the Global Wind Energy Council. This represents an annual 29.6% increase over the past ten years. Worldwide, installed capacity was over 120 GW in 2008.

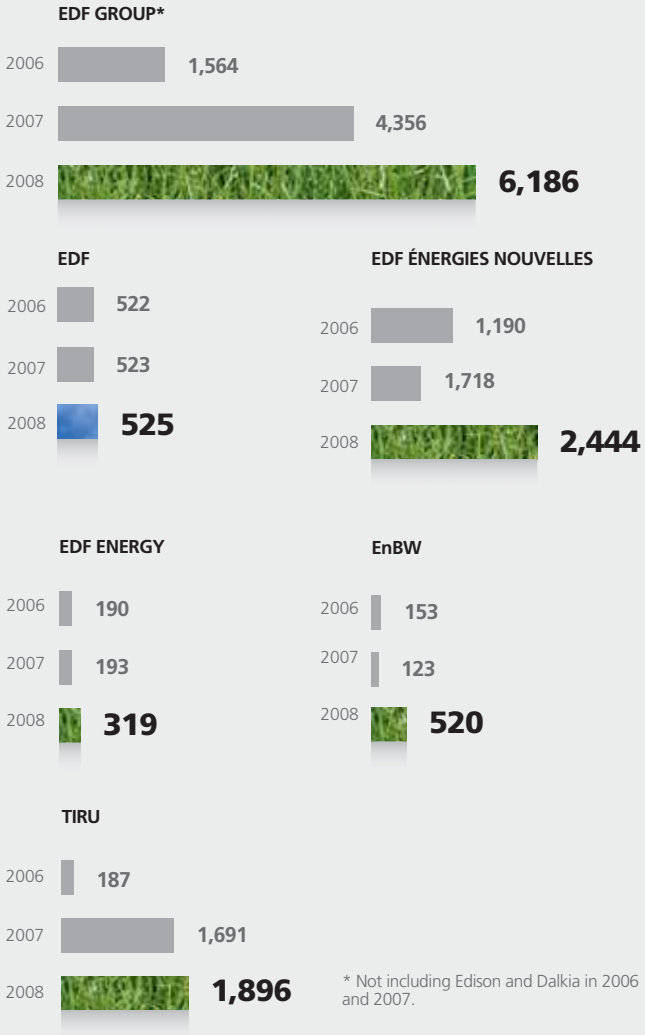
The European Union, with Germany and Spain in the lead, is the leading market (65.9 GW), ahead of the United States (25.1 GW), China (12.2 GW) and India (9.5 GW).

France, where the development of wind power has been stepped up since 2005, has an installed capacity of 3.3 GW[2]. The national plan for the development of renewables presented at the end of 2008 proposes a target of 20 GW of wind capacity by 2020. Generation in 2008 was 5.6 TWh[2].

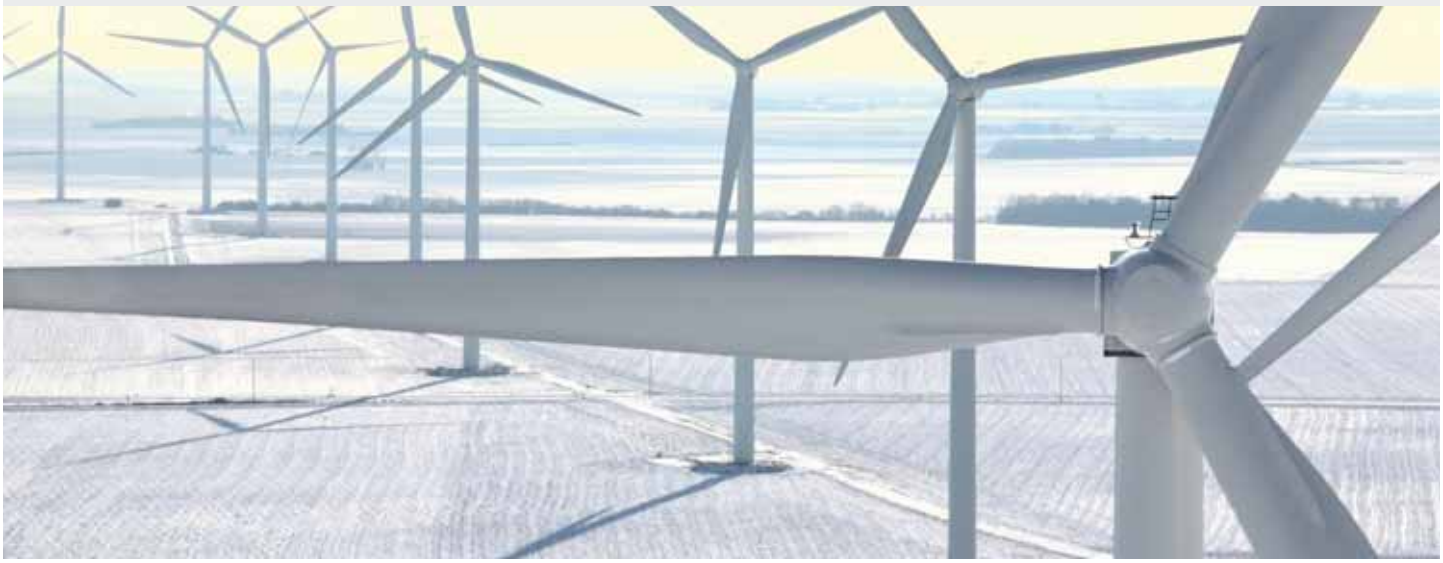
1. Source: *Observ'ER* 2008.
2. Source: RTE 2008

PERFORMANCE INDICATOR

Heat and electricity generated from renewable energy sources (2006-2008) (in GWh)



* Not including Edison and Dalkia in 2006 and 2007.



Médiathèque EDF – Marc DIDIER

"Generation from marine current turbines is entirely predictable, a major asset in terms of security of supply."

Médiathèque EDF – Laurent VAUTRIN

In Italy, Edison has also committed to solar power and is leading a solar concentrator power plant project.

2.4.5. Biomass, a vital resource

Biomass is, with hydro, one of the world's two major sources of renewable energy.

In France, biomass was prominent at the French national conference on the environment. EDF, through EDF Energies Nouvelles, Dalkia (held jointly with Veolia Environnement), and TIRU[2], are developing the use of biomass (wood and waste) to supply fuel boilers. In 2008, TIRU's 21 units generated 248 GWh of electricity and 11,077 terajoules from 4.1 million tonnes of waste. In France, in terms of production volume, green energy from waste is second only to hydropower as a form of renewable energy. TIRU inaugurated Isseane, a waste recovery complex which includes a sorting center and an energy unit that heats the homes of 182,000 urban residents in the Paris area.

In Germany, at Burgrieden in 2008, biogas was integrated for the first time onto the network run by Erdgas Südwest, an EnBW affiliate. This pilot project aims to secure electricity supply at foreseeable cost and to broaden prospects for agriculture.

In Poland, following ERSA, Kogeneracja and ECK, EC Wybrzeze introduced two coal-biomass co-combustion facilities that are expected to reduce CO_2 emissions by 155,000 tonnes per year. In 2008, the Group's Polish plants generated 416 GWh from biomass (up from 176 GWh in 2007).

2.4.6. R&D: driving performance

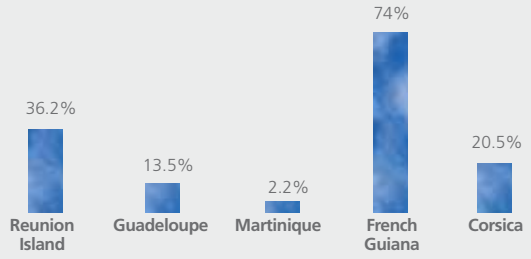
R&D projects, conducted for the most part with major partners throughout Europe and the rest of the world, focus primarily on improving the efficiency of available technologies, particularly hydro and wind power, and on developing new solar techniques that are more efficient in terms of both cost and output. R&D teams are developing wind power modeling tools to determine the potential of a given site and better assess the output of its future installations. The teams are working with EDF engineers to install four to ten marine current turbines (for a total of 2 to 4 MW) off the coast of Bréhat in Brittany, and connect them to the grid. Generation by these turbines, which draw on tidal power, is entirely predictable, a major asset in terms of security of supply.

In Soultz-sous-Forêt, R&D is working on a deep geothermal project as part of a partnership with several Group entities (EDF, EnBW, Electricité de Strasbourg) and other European players. In Germany, EnBW's geothermal plant at Bruchsal is about to come on stream. ●

1. See page 16.
2. EDF 51%, GDF Suez 25% and Veolia Environnement 24%.

Island Energy Systems

In Island Energy Systems, the share of renewables in the energy mix is far higher than the Group average.



R&D partnerships

R&D teams are part of the CISEL project on thin-film photovoltaic, which is looking for ways to lower PV module production costs. Alongside other partners they are fine-tuning the Güssing biomass gasification unit in Austria with its high conversion rate. With the French Center for Scientific Research (*Centre national de la recherché scientifique* – CNRS) and its Agency for Environment and Energy Management, R&D is developing a project to build and test a hybrid solar/gas system (1.6 MW) using solar rays to heat air as it enters a gas turbine in order to improve output. This project makes full use of experience gained in Almeria, Spain.

Rural electrification

In Morocco, South Africa and Mali, EDF is present as part of rural electrification companies with a target to equip more than 250,000 households with photovoltaic kits.

2.5. DEVELOPING LOW-CARBON FOSSIL-FIRED ENERGY

Powerful and flexible, fossil-fired power plants (oil and especially coal and gas) generate two-thirds of the world's electricity. However, they emit pollutants (SO_2, NO_x, dust) and CO_2. The Group is investing to reduce these emissions.

Environmental profile of kWh produced by EDF

The figures shown are taken from EDF R&D life cycle analysis studies (ISO 14040 standard). They take into account direct emissions during plant operation and those generated during other stages of the life cycle: construction and dismantlement of industrial facilities, manufacturing and transport of fuel, waste removal, etc. The overall procedure used to create this indicator has been approved by PricewaterhouseCoopers/Ecobilan.

Business	Total (g of CO_2 equivalent/kWh)
Combustion turbines	1,339
Gas blast furnaces	1,319
Oil	1,067
Coal, 250 MW	1,051
Coal, 600 MW	1,010
Diesel	918
Pumped storage hydro	123
Wind turbines*	14
Dam hydro	7
Run-of-the-river hydro	6
Nuclear	4

* Values as published by EcoInvent Centre for 2004.
Source: EDF – 2009 coefficients calculated from 2007 data.

2.5.1. The major share of the global energy mix

Most of the world's electricity will continue to be generated in fossil-fired plants for many years to come. Since 1990, their share has actually increased, going from 63% to 66.4%. With an increase of 4,100 TWh between 1990 and 2005, fossil-fired plants accounted for 72% of the increase in global electricity generation (5,677 TWh, up 48% for this period). Yet these plants, along with the transportation sector and heating for buildings, are the main sources of CO_2 emissions. Policies are now being developed to encourage investment in other types of generation.

In Europe, environmental regulations are increasingly stringent with, first, the coming into force in 2008 of the directive on major combustion facilities, which encouraged operators to invest in remediation technologies and second, greenhouse gas emissions schemes[1].

2.5.2. The EDF Group: diversified country to country

Because of the structure of its French fleet, the Group's fossil-fired plants (excluding gas) account for only 14.4% of its generation (88 TWh for fossil-fired generation, 25.9 TWh for CCGT and cogeneration). In France, EDF uses its fossil-fired plants during peak consumption or unexpected events at its other plants. In 2008 they supplied 19.8 TWh[2] (4.1% of EDF's generation in France) and emitted 18.4 million tonnes of CO_2, making the company France's number two carbon emitter. Fossil-fired plants supplied 89% of Edison's generation in Italy.

2.5.3. Investing in economical and ecological performance

To grow its generation capacity, the EDF Group is turning to the least polluting technologies. It is modernizing its existing plants to improve output and reduce pollutants (see 3.3.2).

In France, following Cordemais 3 in 2007 and Porcheville B2 in 2006, the Aramon 1 and Porcheville B1 plants (1,300 MW in total) were coupled back to the grid in 2008 with improved environmental and technical performances. Target: bolster peak and semi-base capacity to meet peak consumption, which is occurring more frequently and with greater amplitude. Two heating oil combustion turbines[3] (374 MW in total) were also inaugurated in 2008 in Vaires-sur-Marnes. Heating oil has the advantage of being easy to store and quick to fire up.

The Group is also banking on combined-cycle gas turbines (CCGTs) which, owing to their very high output and fuel, emit one third of the NO_x and half the CO_2 of traditional fossil-fired plants. To respond to the growing energy requirements of island electricity systems[4] (which are only partially connected, if at all, to the grid) while limiting environmental impact, EDF is modernizing its fossil-fired fleet, the base of electricity supply, developing renewables, and promoting energy savings. Through its subsidiary Island Energy Generation (*Production Électrique Insulaire* – PEI), EDF is investing €1.3 billion to modernize six diesel plants to bring them up to the highest industrial and environmental standards and lower CO_2 emissions by 15%.

In Great Britain, EDF Energy began construction in 2008 on the first of the three West Burton CCGTs (437 MW each). In France, construction began on the Blenod CCGT and the two Martigues CCGTs (1,370 MW in total) to replace three oil-fired plants. In the Netherlands, the SLOE[5] plant (870 MW) will come on stream in 2009. Edison, which launched eight CCGTs (7,000 MW in total, with Edipower) in Italy from 2001 to 2007, is developing a CCGT and a coal plant (400 MW) in Greece with its partner Hellenic Petroleum.

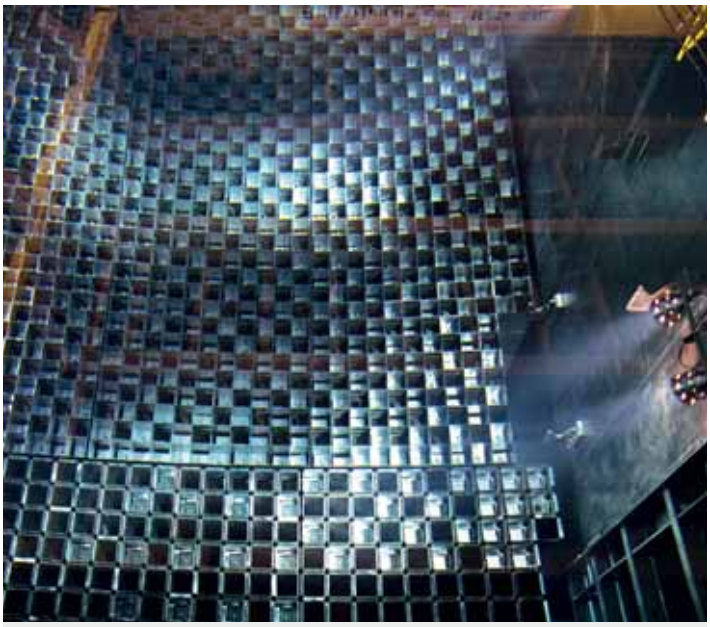
In Germany, EnBW is building an RDK8 supercritical coal-fired plant with an energy output of over 45% (instead of 38%) and is working with the University of Stuttgart to optimize output in its fossil-fired plants. The EDF Group will use this experience with the RDK8 to develop a standard design that can be used in Poland and elsewhere in Europe.

R&D work on CO_2 capture and storage, conducted with partners from industry and research, aims to be ready with the best technologies when the time comes. ●

1. For quotas in France see: http://www.ecologie.gouv.fr/Plan-National-d-Affectation-des-quotas.
2. Including 4 TWh in Corsica and the overseas departments.
3. CTs.
4. Corsica, French Guiana, Guadeloupe, Martinique, Reunion Island, Saint-Barthélemy, Saint-Martin, Saint-Pierre and Miquelon.
5. Company jointly owned with Delta NV.

3.
LIMITING OUR FOOTPRINT

EDF Group activities constitute a fundamental prerequisite to human development and are based on choices that take into account the future of the planet. Nevertheless, its industrial activities in particular **have an impact on the environment.** The Group is mobilizing its teams of operators, engineers, researchers and technicians to **better understand, assess, manage and reduce** the impact of its activities on health and the environment.

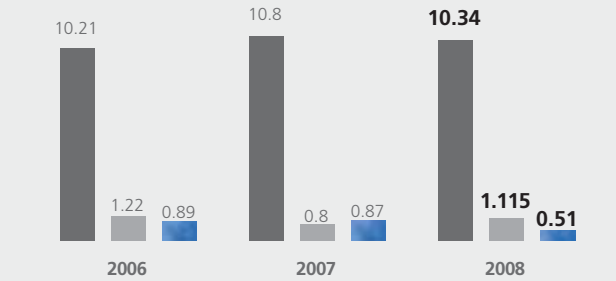


Médiathèque EDF – Laurent Vautrin

3.1. CONTROLLING THE FULL CIVIL NUCLEAR CYCLE

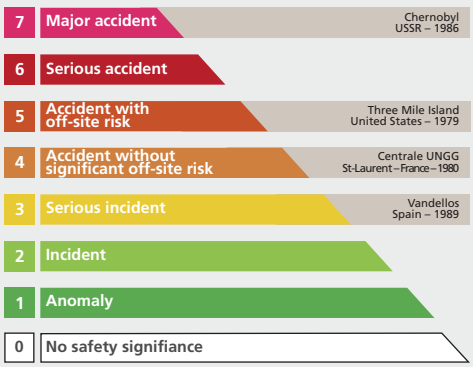
EDF Group nuclear activities are overseen by EDF, which operates 58 reactors in France, and EnBW, which has four reactors in service in Germany. The following is a report on EDF's plants[1].

Nuclear safety performance indicators



The IAEA's "INES" scale

In use since 1991 by sixty different countries, INES (International Nuclear Event Scale) provides a common scale for assessing the seriousness of an incident or accident and an easy – to – understand point of reference for the public. It also applies to the transportation of radioactive materials. Events are rated on a scale of zero to seven, from mere anomaly to major accident. A level one event corresponds to a breach of operating rules, for instance exceeding a threshold.



3.1.1. An activity subject to numerous controls

Safety and its ongoing improvement are the EDF priority when it comes to running its fleet, which is permanently under review by internal and external auditors. The French Nuclear Safety Authority ensures the control of nuclear safety and radioprotection in France. It determines targets and rules and conducts 400 plant inspections per year, both pre-planned and unannounced. It may, at the end of these reviews, demand the shutdown of a reactor. The ASN calls on the technical expertise of the IRSN[2]. It also applies to the IAEA[3] for Osarts[4], inspections that lead to operational recommendations. In 2008 an Osart was conducted at the Cruas plant and a post-Osart at the Saint-Laurent plant.

Reporting directly to EDF's Chairman and CEO, the Senior Vice President, Nuclear Safety and Radioprotection, conducts audits and overall assessments and publishes a yearly report on the Group's website. EDF also solicits WANO[5] peer reviews, which are an opportunity to share best practice among operators. In 2008, the Belleville, Chooz, Nogent and Gravelines plants received these reviews.

Local information commissions were expanded and given fresh impetus by the 2006 law on nuclear transparency and safety[6]. In addition, the High Commission on Transparency and Information on Nuclear Safety (*le Haut comité pour la transparence et l'information sur la sécurité nucléaire* – HCTISN), an independent authority comprising representatives from the nuclear industry and civil society, was created to strengthen information and consultation.

3.1.2. Nuclear safety: positive results

Significant progress was made on safety indicators: with 31 automatic shutdowns in 2008 (down from 53 in 2007) EDF ranks among the top operators worldwide. Thirty-four out of 58 reactors did not experience automatic shutdowns at all in 2008. Functioning in project mode, a multiyear action plan improved control of both material and human causes: mobilization bore fruit. The 69 level-1 significant events on the INES scales, while higher than the 2007 record low of 50, is nevertheless in line with the average recorded since the beginning of the century.

Two-thirds of investment in ten-year inspections are devoted to improving safety. The outcome of these inspections determines whether the ASN authorizes operations to continue for another ten years. At the end of 2008, two

1. @ See enbw.com.
2. *Institut de radioprotection et de sûreté nucléaire* – Institute for Radioprotection and Nuclear Safety.
3. International Atomic Energy Agency (Vienna).
4. Operational Safety Assessment Review Team.
5. World Association of Nuclear Operators.
6. *Transparence et sureté nucléaire* – TSN.

"Radioprotection: the collective dose rose, owing to the campaign to step up maintenance."

such inspections were carried out on 32 of the 34 in the 900 MW series and on 10 of the 20 in the 1,300 MW series. The safety assessments taken out as part of the third ten-year inspections of the 900 MW series and the N4 series continued, deepening the dialogue with the ASN. Work will begin in the first half of 2009.

3.1.3. Radioprotection: ongoing progress

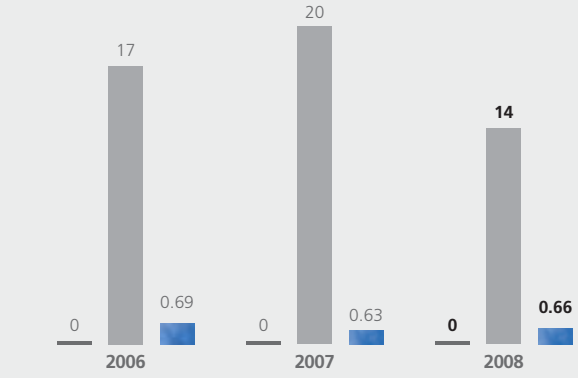
The long-term drop in exposure to radiation observed is the result of optimizing worksites according to their radiological level (length of exposure, biological shielding, etc.) and improved management of radioactivity at its source.
In 2008, individual doses continued to fall: over the twelve-month period, no one received a cumulative dose of over 18 millisieverts (mSv) for a regulated limit of 20 mSv, and only 14 people (down from 20 in 2007) were recorded with doses over 16 mSv. Improvements to the jobs with the most exposure continued and met with success, particularly for thermal insulators and welders, none of whom had a dose over 16 mSv. The collective dose rose (0.66 man-sieverts/reactor in 2008, 0.63 in 2007), however, owing to the campaign to step up maintenance.

3.1.4. Radioactive fuel and waste management

EDF assumes the technical, industrial and financial responsibility for its nuclear waste and integrates into the kWh price all costs linked to the management and decommissioning of the plants.
Fuel and waste management follows four rules: limitation at the source; sorting according to type and level of radioactivity; encapsulation to isolate it from humans and the environment; processing of spent fuel to recover plutonium for use in reactors in the form of MOX (22 authorized reactors). Of the 1,200 tonnes of fuel burned each year, 850 tonnes are reprocessed and reused in this way.
Increasing energy output preserves uranium resources and reduces waste volumes: over a span of 25 years, the average rate of combustion of uranium rose from 33 GWj/t to 45 GWj/t. The new methods in management recently elaborated with the IRSN have improved the 900 MW and 1,450 MW reactors to 52 GWj/t. After 2009, output from 1,300 MW reactors should reach 62 GWj/t.

Radioprotection at EDF

EDF reports all operating incidents to the French Nuclear Safety Authority which are then classified according the International Nuclear Event Scale (INES).



Number of workers presenting a cumulative dose of over 18 millisieverts for a 12-month period.
Number of workers presenting a cumulative dose of over 16 millisieverts for a 12-month period.
Average collective dose (man-sievert/reactor).

Protecting employees

The Institute for Radioprotection and Nuclear Safety (*Institut de radioprotection et de sureté nucléaire* – IRSN) in its last report (2006) on radioprotection concerning 278,150 workers exposed to radiation in France, indicates that with a collective dose of 5.86 man-sieverts (man-sv) for the 19,939 staff concerned, EDF is ranked fourth, behind medical radiology (7.26 man-sv), non-nuclear industry (17.52 man-sv), and operator subcontractors (9.23 man-sv). The strongest doses were found in the radiology sector (13 doses from 20 to 50 millisieverts and two over 50 millisieverts), and in non-nuclear industry (six doses from 20 to 50 millisieverts and two over 50 millisieverts).

Service providers: a key role

Service providers account for 80% of maintenance work on the fleet. Much progress has been achieved in EDF/service provider relations, especially over the past seven years with regard to reception and working conditions, by applying the principles laid down in the Progress and Sustainable Development Charter.

The smooth running of nuclear power plants

Like any nuclear operator, EDF pays the closest attention to the state of its equipment and the cleanliness and order of its premises, a mark of its technical excellence.
EDF's 19 nuclear sites rank at mid-level of the international reference (seven levels) established according to IAEA and WANO assessments.
In 2006, EDF launched a €600 million program to bring its sites up to "Reference" level by 2011 and to keep them there.

Source: EDF CSP report.

LIQUID AND GASEOUS DISCHARGE FROM NUCLEAR POWER PLANTS

Like any industrial activity, operating nuclear power plants results in the production of solid waste and liquid and gaseous effluents, the management of which is strictly regulated. EDF's nuclear activities are subjected to between 15,000 and 20,000 tests per year and per site to assure that discharge management complies with regulations. The oversight plan, defined in conjunction with relevant authorities, is the responsibility of EDF and conducted in accordance with the principle of self-monitoring. Results are communicated on a monthly basis to the administration, which in turn examines both the waste in question and the monitoring procedures implemented.

1. Liquid radioactive effluents

These are divided into two categories, depending on their origin.

- Those from the primary system, containing dissolved fission gases (xenon, iodine, etc.), fission products (cesium, etc.) and activation products (cobalt, manganese, tritium, carbon-14, etc.), but also chemical substances such as boric acid and lithium. Some of them can be recycled.
- Discharges from the primary system, which are categorized as:
  - Effluents that are radioactive and free of chemical pollution
  - Effluents that are radioactive and chemically charged
  - Effluents with a low level of radioactivity collected by the floor drains and "waste water".

This waste is systematically collected, treated to retain most of its radioactivity, and then channeled to storage tanks where it is tested, both for radioactivity and chemical content, before being released. Radioactivity is also measured during release, in the discharge tunnel. The process is automatically stopped if the alert threshold is exceeded.

Excluding tritium and carbon-14, radioactive liquid discharges have been reduced 100-fold since 1984. Doses are very low, around a few µSv/year, compared with a legal public exposure limit 1,000 µSv/year.

2. Gaseous radioactive emissions are:

- Radioactive gas produced during degassing of the fluids of the primary system
- Air from tanks that contain radioactive fluids or from the ventilation of different parts of a nuclear plant, and which can be contaminated by radioactive gases.

There are two solutions, depending on the origin of the gases. They can be stored in tanks for at least 30 days, toward the end of the process of radioactive decay (in the case of gas emitted during the degassing of the fluids of the primary system), analyzed for radioactivity, filtered, and then released into the atmosphere, following an agreed procedure, via discharge stacks. They can also be filtered and then released into the atmosphere via the discharge stacks (in the case of other gaseous emissions, essentially those from the ventilation systems).

Radioactivity levels are constantly monitored and logged at discharge stacks, and releases are stopped if alert thresholds are exceeded.

3. Liquid chemical effluents

The operation of generation units also involves liquid chemical discharges, divided into two categories:

- Chemical substances associated with liquid radioactive waste and with water from the turbine room (secondary system)
- Chemical effluents from other conventional systems (demineralization and purification plants, scale treatment system, biocide, etc.).

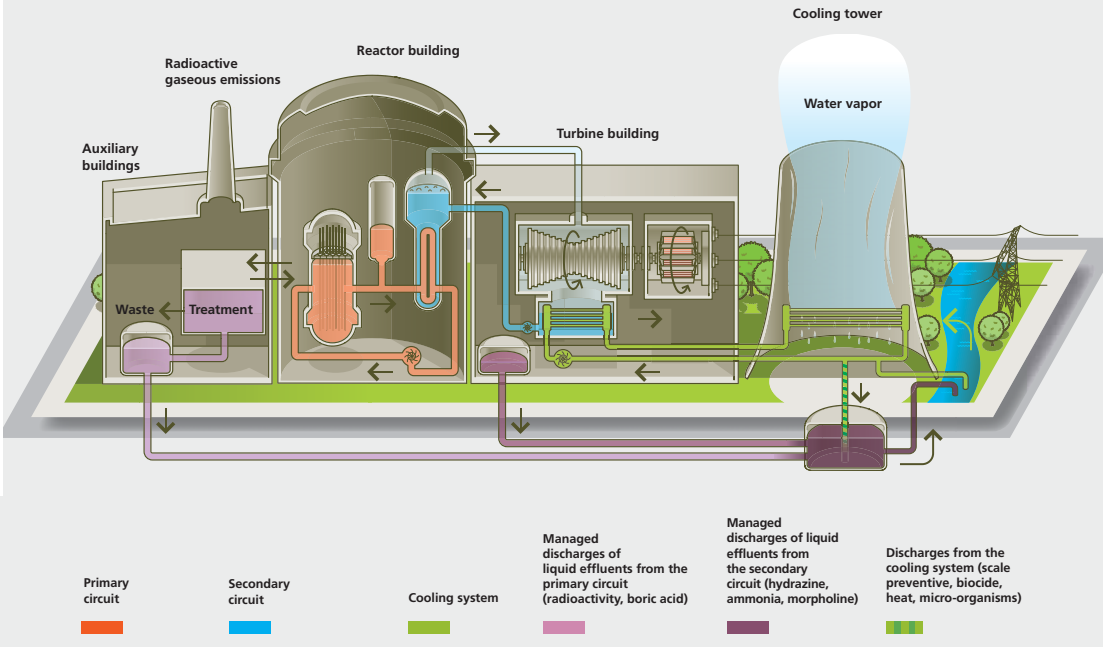
In the first category, discharges comprise substances used in the conditioning of the primary and secondary circuits (boric acid, lithium hydroxide, hydrazine, morpholine, ammonia, phosphates, etc.). The second category includes substances used for the treatment of the circuits (which may be sulfates from anti-tartar treatment, nitrogenous products from biocide treatment, chlorides, sodium, etc.).
These discharges are also covered by regulations. In ten years, EDF has halved its boron discharges and reduced its hydrazine discharges by a factor of three.

Tritium emissions

In pressurized water reactor units, tritium is produced in the primary system mainly due to the action of neutrons on the boron enriched with isotope 10 used to control the nuclear reaction. Levels are directly proportionate to the energy produced: the more the unit operates, the more tritium is produced.
Tritium emissions were stable up until 1996 but have since increased due to new fuel management methods introduced for the 1,300 and 1,450 MW reactors. These new methods, based on extended cycles and a more efficient use of fuel, have resulted in a decrease in the dosimetric impact during generation unit shutdowns as well as a reduction of discharges and effluents produced. Unlike for other radionuclides, there is no industrial process for capturing and eliminating tritium in effluents. With its low level of radiotoxicity, tritium is thus released in full via effluents.

Carbon-14

Produced by the activation of the oxygen-17 contained in the water of the primary system, carbon-14 is largely released into the air in the form of methane or CO_2. Emissions levels of carbon-14 are directly proportionate to the energy produced by the reactor (about 200 GBq/GW/year).



"By 2035 EDF will dismantle nine decommissioned plants."

Médiathèque EDF – Cédric HELSLY

Chooz A nuclear power plant: decommissioning operation.

Short-lived low and medium-level radioactive waste result from maintenance and operations. They are stored at the Andra[1] center at Soulaines (Aube). Their volume (5,807 m^3) is now one third of what it was in 1985. The very low level waste (6,184 tonnes) from operating and dismantling of plants is stored at Andra's Morvilliers center (Aube). Three thousand tonnes of short-lived low and very low level waste (oil, plastic, textiles, etc.) were sent to the Centraco processing plant for incineration.
Long-lived middle and high-level radioactive waste from the processing of spent fuel are kept at Areva's storage area in La Hague (Manche). In 2008, waste of this kind totalled 0.87 m^3/TWh, the equivalent of 360 m^3 of packages.
Steps to optimize transportation through improved management of empty containers made it possible to cut out 550 trips in 2008, or one out of four.

3.1.5. Decommissioning: a normal phase in the life of every plant

EDF will dismantle by 2035 – the date at which Andra's graphite storage area will be operational – nine decommissioned plants: Brennilis, Bugey 1, Chinon A (1, 2 and 3), Chooz A, Creys-Malville et Saint-Laurent A (1 and 2)[2]. The property of EDF, these sites will remain under its responsibility and surveillance. Their dismantling will generate 800,000 tonnes of conventional waste and 165,000 tonnes of radioactive waste.
EDF assumes full responsibility, both technical and financial, for the dismantling of its plants and to this end provisioned for €14.142 billion (at 31/12/2008) in France. Future costs relating to spent fuel processing and storage of fuel from reactor last cores were also provided for (€15.538 billion at 31/12/2008). This funding is guaranteed and the state observed no irregularity in its attribution. (For further information, see the *Document de référence,* sections 4.2.3 and 6.2.1.1.3.6.)

1. *Agence nationale pour la gestion des déchets radioactifs* – National radioactive waste management agency.
2. See *Document de référence* (6.2.1.1.3.6).

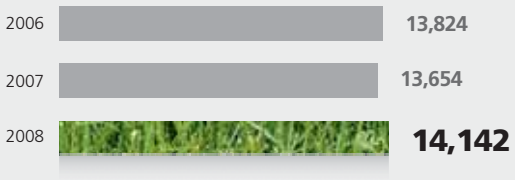
Brennilis: new application for authorization to dismantle

Shut down since 1985, the Brennilis nuclear power plant in Mont d'Arrée National Park in Brittany, has France's only heavy water reactor. Dismantling, already well underway, was suspended in June 2007 by the French Council of State*, which annulled the decree on decommissioning and full dismantling due to insufficient communication beforehand. In July 2008, EDF again applied for authorization to fully dismantle it. The public survey is due to begin in 2009.

* See Sustainable Development Report 2007.

PERFORMANCE INDICATORS

EDF Group provisions for decommissioning and last core[1] (in € millions)



1. Last core: a reactor's nuclear fuel load.

EDF Group downstream provisions for the nuclear fuel cycle (in € millions)

These provisions concern the entire back end of the nuclear fuel cycle including the reprocessing of nuclear fuel and old waste as well as the dismantling of the Marcoule and La Hague reprocessing facilities.

3.2. LIMITING THE IMPACT OF HYDRO WORKS AND OTHER RENEWABLES

Even when they rely on renewable resources, electricity generation facilities affect the environment at every stage of their life cycle. The Nam Theun 2 hydro projects (1,070 MW) in Laos, whose reservoir was almost filled by the end of 2008, is an illustration of EDF's overall approach to limiting the impact of its installations, in France and worldwide.

3.2.1. Nam Theun 2, a closely monitored project

Nam Theun 2 is the culmination of five years of construction work and the mobilization of 8,000 people at 21 different sites spread over an area of 200 km². In all, two dams plus 13 control dikes were built, and 6 km of tunnels and wells and 35 km of canals were dug.

Monitoring of this major operation occurs at several levels. Nam Theun 2 Power Company (NTPC) publishes a monthly report for its shareholders and financial partners including environmental and social measures. Also involved is the Lao government, the financial backers (the Asian Development Bank and the French Development Agency in particular) who set down a number of loan conditions, and internationally recognized independent experts who verify on-site that NTPC's commitments are kept. Fifty such missions have been carried out over the last 50 months. The last public meeting with the stakeholder panel took place on site in October 2008[1]. NTPC replied to questions by the NGO International Rivers[2], which posted the reply on its website. In addition, EDF's Hydro Generation and Engineering Division monitored on a constant basis the filling of the reservoir in 2008, this being one of the most critical stages in the life cycle of hydro works of this kind.

A framework for controlling the effects of the project on downstream areas got the go-ahead from the Lao government in 2008 and the action plan associated with it was approved by both local authorities and independent organizations.

3.2.2. Complying with contractual agreements

The relocation of the populations from the Nakai plateau, a major human issue, was completed in June 2008. With 1,327 new houses, around a hundred community buildings (schools, health care centers, markets, rice silos, centers for the production of fertilizer and seed, housing for teachers and medical personnel), the living conditions of 1,250 families (6,500 people) were improved.

In order to double the population's income in five years, socio-economic development programs were put in place, covering agriculture, livestock and micro-credit. In 2008, with the filling of the reservoir, fishing took off thanks to the 600 boats and 1,300 sets of equipment provided by NTPC. The first year's harvest of new crops is encouraging but confirms that on this poor soil, agriculture alone cannot suffice to feed the plateau's families.

The rehabilitation of production sites began in 2008 and, of the 150 sites the builders have already completed, a hundred have been cleaned and rehabilitated. Environmental measures are continuing in the areas where production sites are still active.

Water quality in the reservoir and rivers was closely monitored throughout the filling period. Fish mortality tied to the deterioration of water quality a few meters below the surface was limited to a few dozen kilos downstream of the reservoir, and fishing in the reservoir provided the relocated families with more than 270 tonnes of fish from the rainy season on. EDF financed a laboratory to monitor the reservoir's water quality and hydrobiology. This laboratory will serve as the basis for a new research project on greenhouse gases from hydro works that brings together EDF, the French research center CNRS and the Indian research center TERI.

Protection of biodiversity is a key consideration (see chapter 3.4).

3.2.3. Solar and wind power: their footprint

The main impact of these installations consists of the surface area they require, particularly for solar farms. Windfarms must also be placed outside the migratory corridors of birds and should not disturb the transmission of electromagnetic waves or cause noise or eyesores. Moreover, these energies are intermittent and can disrupt the smooth operating of electricity networks.

EDF R&D has developed software tools to predict electromagnetic wave disturbance (including television reception) caused by wind turbines. It is now possible to estimate the number and distribution of homes affected within a matter of days. Corrective measures can then be implemented to make the site more acceptable.

In Reunion Island, EDF is partnering with a manufacturer in experiments with a high-power (1 MW) sodium-sulfur battery (NaS) that will reduce dependence on high-carbon peak generation facilities. Studies will assess the effectiveness of this form of electricity storage as a way of attenuating the effects of the intermittent nature of wind and solar power and thereby regulate impact on the equilibrium of the electricity system. The EDF Group, notably through EnBW, is also participating in developments on smart grids, which better integrate remote generation. ●

1. @ Presentations can be uploaded at http://www.namtheun2.com.
2. @ http://internationalrivers.org.

NTPC – Thierry RENAVAND

Nam Theun 2 hydro dam: water quality in the reservoir was closely monitored throughout the filling period.

Operating dams: advantages and disadvantages

• **Managing reservoirs.** Operating dams can help regulate flow in rivers and handle drought. In France, 75% of surface water is contained in hydro dams (7.5 billion m³).

• **Effects on biodiversity** (see 3.4). EDF has mobilized its teams to better understand and limit the impact of some 500 hydroelectric facilities. It has also forged partnerships with other users of the reservoir water, local authorities, farming and associations for the protection of nature. In 2008, for instance, a framework agreement with France's national fishing federation *(Fédération Nationale de la Pêche)* was renewed for two years. It provides for joint studies and actions to better control impact of power plants on aquatic environments.

Safety of the hydro fleet in France

Hydro safety aims at reducing risk of dam failure, risks related to operating facilities during high water and to changing water levels during operations. In 2008, safety continued to improve in all three areas. Significant events (for the most part detection of early signs) were fewer in number (1,703 compared with 1,900 in 2007), less serious (33 hydro safety indicators in 2008 down from 38 in 2007). For the first time, the report by the Head of Hydro Safety was made public and posted on EDF's website[1]. Fifteen dams underwent their ten-year inspections. This led to repairs on the sealing element of the upstream face at the Migouelou dam. Numerous operations were also carried out as part of the SuPerHydro program (€560 million for 2007-2011 which targets, in addition to routine maintenance, the long-term reinforcement of safety and performance.
As in previous summers, EDF sponsored a campaign to raise awareness on safety near dams. One hundred and fifty-seven young hydro-guides informed users on safe use.

1. @ Head of Hydro Safety's report downloadable at edf.com.

EDF Energies Nouvelles: managing impact every step of the way

EDF EN integrates sustainable development into its installations from the planning stages, beginning with impact studies (noise and visual) prior to obtaining building licenses. Studies on co-visibility and photo montages help to optimize the integration of wind and solar power projects into the landscape. Such was the case for the Chemin d'Ablis project, which stretches along the freeway. This phase of development involves consultation with an educational focus for elected officials and residents, including a "Discovery day" and invitations to meetings at the start of a worksite to present the works timetable and which measures have been adopted (marking of protected areas, and on-site routing management). EDF EN mobilizes local information sources (official local websites, local newspapers, regional environmental forums, etc.) and publishes newsletters for residents.

NAM THEUN DAM

5 to 10
times lower CO_2 emissions than a fossil-fired plant of the same power

200,000
Since 2005, 200,000 hours have been devoted to safety for (on average) 6,000 employees, representing approximately
35
hours of training per worker

3.3. REDUCING WASTE, AIR POLLUTION AND WATER CONSUMPTION

To reduce its environmental impact, the EDF Group is cutting down on the volume of waste and recycling as much as possible. It is modernizing its fossil-fired plants to reduce atmospheric emissions, and reducing the quantity of water it draws. Beyond these industrial programs, it is mobilizing its employees as a whole to develop a corporate culture of eco-responsibility.

3.3.1. Reducing waste

In France, EDF activities generated 98,818 tonnes of conventional waste in 2008 and 82,606 tonnes of non-hazardous waste. Conventional waste is 69% recycled. All ash is recycled. The share of gypsum recycled is stable. For further improvement, EDF is rolling out a surveillance system and a series of indicators.
A number of initiatives were launched throughout the Group. EDF Energy made a public commitment to halve the volume of materials sent to landfills by 2012 and for no office or warehouse waste whatsoever to be sent to landfills until 2020. In Poland, EC Wybrzeze, which now recycles all of its ash and clinkers, will close the Letnica and Rewa landfills by 2012. In Hungary, Demasz has collected 5.7 tonnes of electronic or toxic waste from its employees and Budapest Power Plant Hongry collected 29 kg of plastic bottles, six tonnes of paper and 116 kg of light bulbs.

3.3.2. Curbing air pollution

Modernizing fossil-fired plants, indispensable to the equilibrium of the electricity system, and improving their environmental performance are EDF Group priorities.
In France, the plants that were brought back on stream (Porcheville, Aramon and Cordemais) use extremely low sulfur oil, and the catalytic denitrification units at Le Havre and Cordemais are operational. Installing the BOOS system at oil-fired plants in 2008 reduced nitrogen oxide (NO_x) emissions by 30% compared with 2007. For the same output, the fossil-fired fleet in mainland France is continuing to reduce its emissions significantly, including by more than a third for NO_x. For its coal-fired plants, EDF is investing in electrostatic dust separators.
In China, SZPC equipped its coal-fired plants in Liaocheng and Heze with a desulfurization system which has been a success at Shiheng, lowering SO_2 emissions by 99%. In Poland, ERSA has reduced its dust emissions to less than 30% of the regulatory threshold.
Equipment containing PCBs[1] with a concentration above 500 ppm must be eliminated by 2010 in the European Union. This obligation mainly concerns substations and ERDF is taking action to this end[2].

3.3.3. Cutting back on water

Producers of electricity account for 57% of the water drawn in France, but this is surface water, 97.5% of which is returned to rivers. The water that evaporates from power plant cooling towers represents 10% of all freshwater consumed.
Group entities are mobilizing to reduce or improve their consumption of water. In China, for instance, the ban on pumping groundwater has led the Laibin and SZPC plants to opt for pumping rivers. In Hungary, Budapest Power Plant Hongry reduced its pumping by 45%, taking it from 1.977 million m^3 in 2004 to 1.1 million m^3 in 2008.

1. PolyChloroBiphenyls – chlorinated chemical derivatives used in the industry since the 1930s, valued for electrical insulation, non-flammability and lubrication. It was established that PCBs posed problems of toxicity, and they have not been used in equipment in Europe for 20 years.

2. @ See ERDF Annual Report, erdfdistribution.fr.

Trend in by-products from EDF's fossil-fired power plants

Products	UNIT	2006	2007	2008
Coal ash produced	t	609,267	696,330	581,694
Coal ash recycled	t	916,762	852,886	918,655
Gypsum produced (fully recycled)	t	66,581	66,370	62,083
Sulfurization sludge	t	2,220	2,734	3,625

Source: EDF.

EDF cooling water: 2008 indicators

Water[1]	UNIT	2006	2007	2008
Cooling water drawn	10^9 m³	19.5	41.2	40.6
Cooling water returned	10^9 m³	19.0	40.7	40.1
Cooling water evaporated	10^9 m³	0.5	0.5	0.5

1. In 2008 and 2007, cooling water indicators included water drawn from and returned to rivers, the sea, or the water table and may also include water drawn from distribution networks and released in wastewater systems. In 2006, only water drawn from or returned to rivers was taken into account.

Changes in the levels of recyclable waste recycled from generation and EDF R&D (in %)

Defined in 2003, this comprises four categories of waste: packaging, oil, batteries and storage cells (regulated waste), as well as 24 categories of unregulated waste (metal, floating waste, assorted waste). Source: EDF.

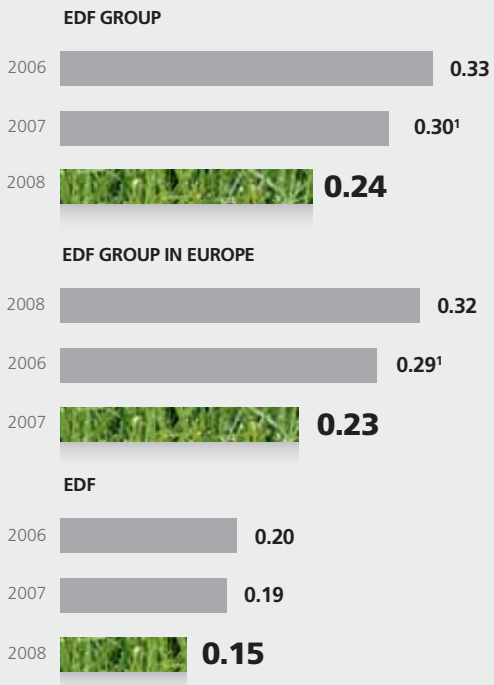
	2003	2004	2005	2006	2007
Rates					
	77.4	81.5	83.8	84.5	85.4

SO_2 emissions

SO_2 emissions from the generation of electricity and heat (in g/kWh)

NO_x emissions

NO_x emissions from the generation of electricity and heat (in g/kWh)



1. Group data for 2007 does not include Edison and Dalkia.

The dismantling of fossil-fired power plants

The dismantling of EDF's fossil-fired power plants is conducted by a team of specialists and involves several phases: dismantling and removal of large equipment, clean-up and demolition of buildings, recycling of waste, possible reclamation of site for new projects. The former site at Gennevilliers, restored in 2006, is now devoted to port activities for the city of Paris. At Vaires-sur-Marne, EDF is dismantling former coal units while building three new combustion turbines, two of which were inaugurated in 2008.

NTPC – Didier GOETZINGER

3.4. PROTECTING BIODIVERSITY

To mitigate the impact of its activity on ecosystems, the EDF Group has established its biodiversity strategy as an integral part of its sustainable development strategy.

The Group's biodiversity strategy

Three targets drive Group biodiversity strategy:
- Enhance understanding of the natural environment to better assess potential impact on ecosystems
- Preserve and protect plant and animal life
- Inform and train employees and residents and foster dialogue with experts, particularly NGOs.

Recommendations by the EDF Environmental Advisory Board, consulted in June 2008 about the approach, led to the further elaboration of the biodiversity strategy, particularly with respect to differentiating between EDF action linked directly to its impact and those of a more pro-active nature. This should lead to better communication and improve the visibility of Group action on biodiversity.

EDF EN managing its impact on biodiversity

EDF EN takes the impact of its wind turbines on winged species (birds and bats) and plant life into account during construction, and also once operations are underway.
To this end, projects are optimized from the study phase: EDF EN sometimes changes its original sites in order to protect a natural area of particular ecological interest.

During construction works, sometimes organized outside the nesting season of certain birds, if an impact study has shown the presence of fragile species, protective systems and markers are installed.
Once operations have begun, animal and/or plant life is monitored to ensure there is no major impact.

EDF Diversiterre's partnerships

Nature and biodiversity are one of the main focuses of the EDF Diversiterre Foundation. In 2008, the Foundation renewed its multiyear agreements with four partners committed to the protection of nature: the Nicolas Hulot Foundation on programs of eco-citizenship and environmental education; the French Coastal Protection Agency *(le Conservatoire du littoral)* on coastal planning and accessibility for all publics; the Nature Reserves of France *(Réserves Naturelles de France)* on protecting rare and threatened species; and the French League for the Protection of Birds *(la Ligue pour la Protection des Oiseaux)*.

3.4.1. Actions and results

With the International Union for the Conservation of Nature (IUCN), EDF has established an in-depth partnership, signing an agreement in 2008 to last until 2010. This was completed with a protocol signed by the EDF Chairman and CEO and the IUCN France Chairman to specify areas for cooperation as well as respective commitments. EDF is supporting the update and publication of a red book of listed species for France, *Livre rouge des espèces menacées.* A biodiversity guide drawn up in collaboration with the IUCN will illustrate Group actions and contribute to the new impetus called for by executive management in this area. EDF also partnered the IUCN on the European conference organized in Reunion Island on climate change and its effects on biodiversity in France's overseas departments.

EDF is contributing to the national effort to restore migratory fish species and is investing in research on, design of and reporting on fish passes. Close to 80 fishways have been built over the past 20 years with proven results, monitored by associations (Logrami, Migado and MigrAdour). Also for 20 years, every nuclear power plant has had its own significant program for monitoring plant and animal life. In response to 2007 European regulation that states that at least 40% of eels must be able to get past dams, EDF has initiated a program to allow them to pass hydro works. Each year at Golfech, between 30,000 and 100,000 eels use the fish passes.

In Hungary, Demasz has joined the Unhindered Sky partnership launched by the Ministry of Environment and Water and an ornithological society. Demasz has invested 73 million HUF to map the areas where the network is most dangerous for birds and design a system that would save 97% of birdlife in these areas, to be rolled out by 2020.

In Laos, NTPC's wildlife and habitat programs continued their work. In the protected zone, 30 wetlands were recreated where 15,000 plants, collected on the reservoir site before flooding, will be planted. The seeds of 3,000 Chinese swamp cypresses *(Glyptostrobus pensilis),* a threatened species, were collected and some were germinated. At the same time, and with help from the local residents, invasive plant species are being weeded out from around the reservoir. Ten teams patrol the area to capture and evacuate wild animals trapped by flooding. Two hundred and twelve individuals of 45 species were saved this way in 2008, sometimes after receiving veterinary care. Another 424 turtles and tortoises from seven different species were captured, marked and released in the protected zone. Eight salt-licks were put in place for wild elephants, with encouraging results thus far. ●

4.

SOCIAL RESPONSIBILITY

The EDF Group is committed to acting responsibly toward its fellow citizens, suppliers and local stakeholders. It is mobilizing to foster a culture of eco-responsibility and to ensure that everyone has access to energy. It places great value on providing local services, playing an active role in the development of the regions and communities where it is active.

Médiathèque EDF – Christian BELLAVIA

4.1. PROMOTING ACCESS TO ENERGY FOR ALL

Electricity is an essential commodity. The EDF Group assists vulnerable customers, urges citizens to manage their consumption wisely, and intervenes in developing countries. The global crisis compels it to be particularly vigilant when it comes to helping vulnerable customers avoid default.

The UK

• For the third year straight, EDF Energy won the Customer Service Reward Scheme organized by Ofgem, the sector's UK regulator. EDF Energy is the only British operator to have ever won this prize.
• The London Warm Zone was an EDF Energy experiment launched in 2001 in London's Newham neighborhood. The goal was to help disavantaged residents pay their heating bills by making direct contact with them door-to-door.
It was an opportunity to better understand their specific needs and to provide them with energy saving advice. The experiment was a definite success, and now EDF Energy is extending the system east of London and is investigating a potential extension to the west of the city.

EDF promotion of energy eco-efficiency in France through advertising

Advertising investment on the acquisition of energy savings certificates
• EDF *Bleu Ciel* brand: **60%**
• EDF *Bleu Ciel* customer offers: **70%**
• Low-energy light bulbs: **100%**
• Electricity (with partners): **100%**
• Regional advertising: **90%**
• Listing: **50%**

B2B advertising investments
• For business customers: advertising campaigns on energy eco-efficiency: **81%**
• For the local development market: advertising campaigns on energy eco-efficiency: **61%**
• For professionals: an advertising campaign on kWh *Equilibre+*: **0.01%**

Energy audits for towns and cities

EDF R&D is working toward a precise land registry audit of energy losses, by which the estimated consumption of housing appears on an interactive map of the city. Each building is attributed a color on a scale from A to G similar to the energy certificates on appliances. It thereby becomes easier to plan measures for limiting consumption: roof insulation, changing windows or insulation of walls, with the simultaneous effect simulated on dynamic maps that the city makes available to its residents on a website.

4.1.1. Helping vulnerable customers

The Group's priority in terms of social responsibility is access to energy for vulnerable populations.
In France, when in 2007 EDF separated its distribution and sales and marketing activities, management of vulnerable customers was entrusted to sales and marketing teams who could make them personalized offers. Since 2005, EDF's committed initiatives for these customers are in keeping with the Public Service Agreement it signed with the government. When customers experience difficulty paying, EDF continues to supply an agreed amount to enable them to make the necessary arrangements. In addition to a "basic necessity" tariff and its financial contribution to departmental housing solidarity funds *(Fonds de solidarité logement),* EDF is reinforcing other such schemes in the face of the gloomy economic and social outlook for 2009. This includes preventive measures against default: special attention to arrears, installment plans for payments, personalized and confidential advice, a toll-free number (0800 65 03 09), training for social workers and customers on energy management. More than 350 collaborators have been specially trained to work with social services.
In the United Kingdom, where the government intends to eradicate fuel poverty in households that spend more than 10% of their revenues on energy by 2010 for the most frail and 2016 for everyone, EDF Energy published its Social Commitments in 2008, which covers all of its initiatives in this area. EDF Energy agreed to extend its Energy Assist Tariff, which reduces by 15% the bills of 100,000 households, until March 2009. After that, a social tariff will be introduced, based on the same principle, until 2012. For its over-indebted customers, EDF Energy also contributes to the Energy Trust, which has already provided aid to 8,000 households while offering advice on budget management, particularly energy budgets. The Energy Trust is targeting the provision of assistance for 23,000 customers by 2012.

4.1.2. Consumer information and awareness

Managing energy consumption is to some extent a question of behavior. It contributes to preventing arrears by lowering bills. It alleviates consumption peaks, which are costly in terms of firing up peak facilities. The EDF Group is waging a determined consumer awareness campaign.
In France, EDF in its Public Service Agreement committed to devoting a share of its budget to communication and information on energy eco-efficiency. For island systems, EDF is promoting energy eco-efficiency and renewables alongside the French Agency for Environment and Energy Management.

"In Morocco, South Africa and Mali, EDF has a stake in rural electrification companies that are aiming to equip 120,000 households with photovoltaic kits."

In three years' time, several hundred thousand low-energy lightbulbs were distributed and in 2008, 14,000 solar water heaters were installed, bringing the number of households equipped to 170,000. These initiatives cut back on 50 GWh of consumption and 360,000 tonnes of CO_2 per year.

In the United Kingdom, EDF Energy, as a sustainable partner of London's 2012 Olympic and Paralympic games, launched Carbon Challenge 2012, which encourages British households to reduce their energy footprint and their bill with the slogan "Save Today, Save Tomorrow". Already, 320,000 people have adhered to Carbon Challenges 2012, of which 5,500 are EDF Energy employees.

In Germany, EnBW's Energy Efficiency Forum informs residential customers on ways to save energy in the home and on alternative technologies. Since 2008, EnBW has been developing an audit system for household consumption that points out the major sources of expenditure and helps to change habits.

Children are a receptive public: in France, EDF began a partnership with Corsica's school board *(Académie de Corse)* to raise awareness on sustainable development issues among school children. In the UK, EDF Energy's program "Greener School" is already helping 2,300 schools to change the way they use energy. The goal is to raise awareness in 2.5 million school children by 2012, and the website "The Pod" offers instructors educational materials on energy management.

EDF employees are invited to set standards in tackling climate change. By optimizing its real estate, transportation, etc., EDF hopes to eliminate 4.5 million tonnes of CO_2 emissions over and above the 15 million tonnes targeted through optimization of its generation mix.

FOCUS: PUBLIC SERVICE AGREEMENT

Signed by the government and EDF in 2005 for a three-year period, this agreement specifies EDF's public service missions for its network and distribution subsidiaries, respectively RTE (transmission) and ERDF (distribution). It provides for public financing mechanisms for these missions through integrated rates, a contribution to the public service charges for electricity (*Contribution au service public de l'électricité* – CSPE) and tariffs for using public transmission and distribution networks (*Tarif d'utilisation des réseaux publics* – TURP). After changes to regulations, these commitments are as follows.

EDF's commitment

- Application of a basic necessity electricity rate *(Tarif de première nécessité)* for households with incomes under €620 per person per month. In 2008, over 715,829 households – and more than two million people in all – benefited from the special rate.
- Application of a special gas rate *(Tarif spécial de solidarité gaz)* created in 2008.
- Contribution of €20 million to departmental housing solidarity funds *(Fonds départementaux de solidarité pour le logement),* which enabled 220,400 customers to pay their bill in 2008.
- A toll-free number, 0800 65 03 09, for customers in difficulty, with 350 advisors in contact with social workers available to offer personalized solutions.
- Development of alternatives to suspending supply with a minimal subscribed power service *(service de maintien d'énergie à la puissance souscrite)* in case of non-payment to leave the customer time to make necessary arrangements.
- Continued creation of partnership structures for social mediation (87 structures in 2008).
- Promotion of energy saving and energy savings certificates (54 TWh).
- Participation in drafting multiyear programming of investment in generation.
- Continued generation of electricity that is safe and respectful of the environment.

Main commitments of RTE and ERDF

- Non-discriminatory access to the network for operators and consumers.
- Application of fair, transparent tariffs (TURP).
- Quality of electric current and reliability of supply.

Tackling social exclusion

EDF Diversiterre Foundation has made addressing physical and social exclusion a major focus of its programs. Among its partners: *Restos du Cœur, Paris Tout P'tits,* the Pasteur Institutes, and the French association against myopathies (which organizes the French Telethon).

Partnership: Habitat for Humanity

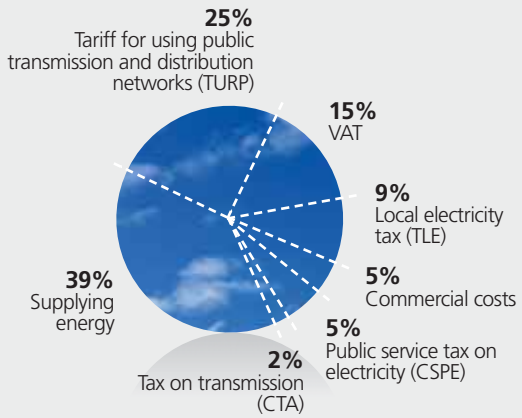
In October 2008, thirty volunteers gathered from several EDF Group companies to build three houses for the vulnerable in Liverpool. This was the first application of the EDF Group's partnership with the NGO Habitat for Humanity, which helps people acquire decent, well-insulated homes at low cost. Similar action will be taken in 2009.

Focus: electricity prices and tariffs

Electricity cannot be stored and voltage and frequency must be kept permanently in balance, with the risk of blackouts.
This lack of elasticity can lead to significant fluctuations in the price of the MWh on wholesale markets, depending on another balance: that of supply and demand.
In the 1990s, the European system tended toward overcapacity, at a time of low fossil fuel prices. Electricity prices were correspondingly low (less than €30/MWh), and did not provide incentives to invest in new generation capacity, even though consumption continued to grow.
Since the beginning of the century, continued growth in consumption and the rising price of fossil fuels has led to a reversal of the trend, with prices fluctuating between €80 and €100/MWh in 2008. Today we are experiencing a new phase of extensive investment.
In 2008, the wholesale market price fluctuated strongly, affected by the cost of fossil energies, which peaked during the summer before collapsing at the end of the year. This situation naturally had an impact on sales prices for EDF Energy in the UK, which depends essentially on coal and gas-fired generation, as do EnBW in Germany and Edison in Italy.
In France, the large majority of customers have contracts featuring regulated tariffs: regulated tariff and the right to return to a former tariff for residential customers and TaRTAM[1] for industrial customers, renewed until July 2010. In 2008 the government created the Champsaur Commission to review – in light of TaRTAM coming to term in 2010 – "measures that will allow for consumers to benefit from an electricity sector that protects their interests, provide incentive to investment, and are in line with the European electricity market".

1. TaRTAM: transitional regulated tariff for market adjustment, allowing business customers to leave the market to return to a tariff schedule with a floor price 20 to 23% higher than the ordinary tariff.

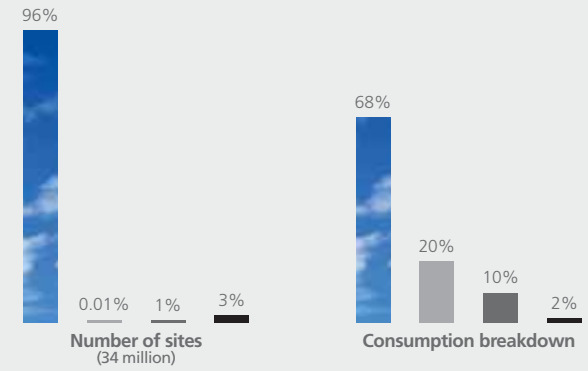
Breakdown of the cost of 1 MWh in France



Contribution to the public service charges for electricity

In France, all consumers pay a tax of 0.45 cents per kWh, which is included in the billed price.
This tax, the CSPE *(Contribution au service public de l'électricité)*, finances the public service missions entrusted to EDF: extra cost of generating electricity in the island systems, support for renewable energies and cogeneration, the basic necessity tariff, and TaRTAM (in part).

Breakdown of sites by tariffs/prices applied
at September 30, 2008



Source: Energy Regulation Commission (*Commission de régulation de l'énergie* – CRE), December 2008

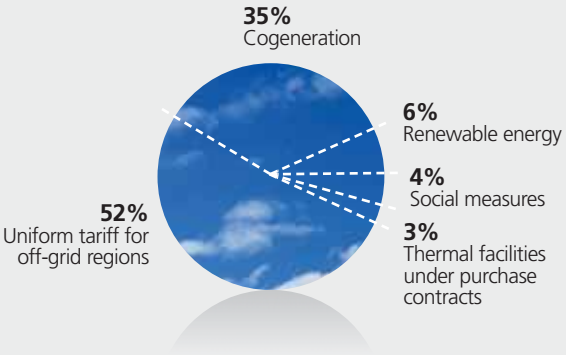
Regulated tariffs continue to account for the bulk of electricity supply: as of September 30,2008, 96.01% of sites (all categories taken together) were subject to regulated electricity tariffs, corresponding to 88% of consumption.

Close to €2 billion: cost of EDF compensation to competing electricity providers as part of the TaRTAM scheme between 2006 and 2010.

Increase in EDF prices and tariffs
in 2008

Residential and professional customers	+2%
SME-SMI	+6%
Industrial users	+8%

Estimated public service charges
2008 (€1,640 million)



Source: Energy Regulation Commission (*Commission de régulation de l'énergie* – CRE).

4.2. REGIONAL PARTNERSHIPS

The EDF Group is responsive to local contexts in the regions and countries where it is active, providing jobs and training and contributing to improved quality of life: a real commitment to local development.

4.2.1. Contribution to France's recovery plan

Despite the economic crisis, EDF is continuing to increase investment, with long-term energy and environmental challenges in mind. It is the number one investor in any sector in France, and the top investor in energy in Europe. In 2009, EDF will invest €7.5 billion. This increase reflects an increased focus on the maintenance of generation installations, and on the networks and infrastructure in Corsica and the overseas departments. This program of investment in operations, along with the development of renewables in France and the development of facilities to meet demand for development internationally, will make a significant contribution to France's national recovery plan launched at the end of 2008. It is an asset for both business and employment: every billion euros invested corresponding to 7,500 jobs on average.

4.2.2. Working closely with local authorities

Involvement in community life is one of the Group's trademarks. In Poland, Cergia is partnering with the city of Torun, where it is located, on education, sports and culture projects. In 2008, the company launched "Carbon-free Torun Old Town" to eliminate CO_2 and CO (carbon monoxide) emissions from old coal-burning stoves. Similarly, the EC Wybrzeze plant supported more than 120 local initiatives (meetings, cultural and sports events, etc.) in 2008. In China, the Laibin plant split the cost of rebuilding a school with the city council. Du Nü primary school will cater to 260 children in six modern classrooms.

The Grand Chantier label (major worksite) awarded by the government to the EPR construction site at Flamanville, recognizes its driving role in development for the surrounding communities. The program is threefold.

First, the mobilization of human resources (HR) for the rollout of a training and recruitment policy on local labor. An HR training department was created in conjunction with Cotentin's employment and training center. By the end of 2008, 50% of the staff employed at the construction site were local or regional.

The second aspect provides financial facilities for the construction of the infrastructures required by the construction work (access roads, traffic signs or lights at crossroads) or for worksite staff and their families. This infrastructure can be financed in anticipation of future tax revenues, with EDF contributing to the interest on loans taken by local authorities. Throughout its implementation, this approach is the subject of ongoing dialogue with the local communities. First projects include roadwork near the construction site, and the renovation and extension of staff housing (bungalows) in several communes (472 have already been constructed).

The third aspect consists in providing for the post-construction period by encouraging the creation of lasting companies in the regional economy.

Supporting catastrophe relief, EDF made a donation of 5 million RMB (560,000 euros) through the Chinese Red Cross to the victims of the earthquake that hit Sichuan. Employees of the Asia-Pacific Division working with China became personally involved, raising another €115,000. In Vietnam, Meco, which operates a fossil-fired plant, provided financial support for areas hit by natural catastrophe (typhoons, flooding) and to NGOs like Handicap International and associations for poor children in Ho Chi Minh City.

4.2.3. Supplier chain

The 2005 global Corporate Social Responsibility Agreement established the Group's commitment with respect to its subcontractors and provided a framework for consistent relations with these companies and their service providers, with a view to social and environmental responsibility. Priorities: respect for the principles of the United Nations Global Compact[1], of which the EDF Group is a member; employee health and safety; subcontractors relations with their own suppliers; and environmental protection.

In France, EDF is implementing an agreement on socially responsible outsourcing under the watchful eye of a dedicated committee which meets twice yearly. In 2008, the company mapped supplier-related risks in terms of sustainable development standards and impact for the Group.

EDF launched a program of 40 audits of suppliers in various countries of Europe, Asia and North Africa, using a reference framework based on the SA 800 and ISO 14001.

In future, the goal will be able to certify responsible purchases and measure their share in overall procurement. To this end, in 2009 EDF will be stepping up its audit program and experimenting with a self-assessment survey as well as a responsible purchasing guide for certain critical purchasing segments. The purpose: to be able to assess how sustainable development and social responsibility criteria are being taken into account in the supplier chain.

In the UK, EDF Energy is developing an assessment framework based on the ten principles of the United Nations Global Compact. Each new supplier will be required to complete a self-assessment against the framework, on which it will be noted in terms of risk. When suppliers do not meet expected standards, EDF Energy will work with them to help improve their systems. ●

1. The Global Compact lists ten socially responsible corporate commitments and has been integrated into EDF's supplier charter.

Support for people with disabilities

As part of its national agreement on the integration of people with disabilities, EDF set a target for procurement from adapted companies or those specialized in insertion, and organzations hiring a majority of disabled employees: €25.5 million over the period of the agreement 2006-2008. The target was surpassed, with €26.55 million invested. The 2009-2011 agreement is under negotiation. In 2009 EDF will continue to explore new purchasing segments for the employment of people with disabilities.

Purchases from the protected sector in € millions
(almost entirely operating expenses)

2004	2005	2006	2007	2008
8.410	8.223	8.225	8.984	9.340

50%
of staff employed
at the construction site of Flamanville 3 are local

120
local initiatives
supported by the Polish fossil-fired plant ECW

EDF Corporate Social Responsibility policy

As with its environmental policy, EDF is going the extra distance to help tackle three social challenges that have taken on great importance in today's world:

- Providing access to energy and energy eco-efficiency solutions to the most vulnerable members of society
- Contributing to the economic and social development of regions where the Group operates
- Participating in the sustainable development debate by fostering local dialogue and awareness of energy issues.

EDF began setting out new quantified objectives for its Corporate Social Responsibility policy in the first quarter of 2009. The main highlights are below:

- Offer one million vulnerable customers appropriate advice on saving energy
- Factor social measures into all projects relating to regions where the Group operates
- Offer 700 jobless young people and adults opportunities to work, obtain qualifications through vocational training alternating with work, and validate work experience in a growing industry
- Conduct a review of purchases made from work integration and temporary work integration companies and set quantified annual purchase targets for them
- Allow 12% of EDF employees to participate in local public interest ventures outside the Group
- In 2009, increase by 35% the number of "sustainable development and social responsibility" audits conducted on suppliers and subcontractors and adjust the target each year based on feedback received
- Contribute each year to structured educational programs devoted to energy and sustainable development issues, reaching 100,000 young people, i.e. one eighth of an age group.

Le Creusot (Burgundy) experienced economic problems due to changes in the industrial base. EDF was a partner in the establishment of competitiveness clusters, the engagement of subcontractors and the recruitment of young people.

Médiathèque EDF – Sophie BRANDSTRÖM

5.
HUMAN RESOURCES

As it moves rapidly to adapt to liberalized energy markets, a global nuclear revival, and the increasingly European scope of its business, **the EDF Group knows that human resource management is essential to its efficiency and ability to attract new talent,** especially young engineers. In this spirit, the Group is working to become one of the best employer brands.

Médiathèque EDF – Cédric HELSY

5.1. DEVELOPING AND UPDATING SKILLS

Given the number of people approaching retirement and its projects in the pipeline, the Group will have to attract new employees with real qualifications in several core businesses, this at a time when there is huge demand for young engineers on the European job market.

Tomorrow's energies

The Group teamed up with engineering schools and universities to create the European Foundation for the Energies of Tomorrow. Under the aegis of the Institut de France, it aims to promote higher education in France and elsewhere for a low-carbon energy future focusing on nuclear, hydro, solar, wind, clean coal and energy efficiency technologies.

Poland

In Gdansk, ECW has introduced a new program, "Get to know us by becoming an intern", for students of the local electro-technical school. The objective is to attract the best students in order to bolster the skills base and rejuvenate engineering staff. In 2008, three people were hired and three interns taken on.

Rankings

EDF was third in the Universum ranking of employers most appreciated by young executives from engineering, natural sciences or information technology schools.
Engineering school students deemed EDF the most attractive employer (+3 places from 2007: SOFRES survey, 2008).

More than **12,000** **people** hired by the EDF Group in 2008

5.1.1. Major changes underway

The surge in industrial investment across the different businesses, combined with the development of the nuclear engineering activities, are increasing the need for manpower at a time when a large number of employees are approaching retirement, especially in France. More than 65% of EDF employees are over 40, and half of all maintenance and operations staff in generation, engineering and distribution are scheduled to retire by 2015; the reform of the Electricity and Gas Industries[1] extends the retirement age, and this can facilitate experience-sharing. In a word, EDF must simultaneously keep payroll costs in check while developing and updating skills and taking into account the Group's development plans.

5.1.2. Calculating needs and recruiting

To attract qualified personnel in a timely manner, EDF is relying on calculations of the skills it will need in the future. Substantial recruitment will be required in some businesses. EDF and ERDF will hire more than 15,000 employees over five years, chiefly for carbon-free generation activities (nuclear and renewable).
Efforts to recruit new talent involve stepping up communication on EDF as an employer brand and updating recruitment methods. The Group has enhanced its websites, which now include special offers. The www.edfrecrute.com website sends a clear message: "Joining EDF means making a decision to help tackle the main challenge of the future: E = less CO_2". It is also now using "speed dating". Close ties are being forged with graduate schools, and the Group is participating in forums at key universities and on-campus conferences and organizing tours of its generation sites. Through the Campus Energies network, 250 EDF employees are reaching out to share their career experience with schools and universities.
The second annual Energy Day gave more than 1,200 recent graduates of engineering schools and universities the opportunity to meet with Group managers and find out about 550 internships and pre-recruitment placements that were available. Three hundred Group experts were on-site to man stands representing the core businesses of EDF and its main subsidiaries and affiliates (EDF Energy, EnBW, Edison and ERDF). This recruitment policy also has an international dimension, as witnessed by the "co-hiring" system under which potential executives are offered two high-responsibility positions within

1. The Global Compact lists ten socially responsible corporate commitments and has been integrated into EDF's supplier charter.

"Two out of three Group employees benefited from training in 2008."

the Group, one in France and one in another country. EDF, EnBW, EDF Energy and Edison are using this system for their fossil-fired, nuclear and finance business lines.
Results: a total of 3,500 people were hired in France in 2008. The nuclear activities alone took on 1,000 new employees, of which 500 were engineers.

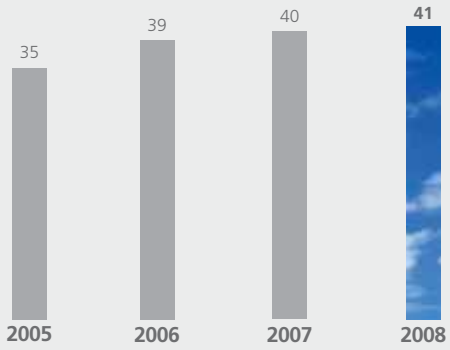
5.1.3. Encouraging mobility

Mobility is, together with recruitment, a way to bolster growing businesses by transferring employees from slower growing areas (for example, services and centralized services). In sum, it is a key tool for boosting performance. But it also gives employees an opportunity to enhance their personal and professional experiences while contributing new skills and ideas to the teams they join.
In-house mobility is being facilitated by the "Employment Mobility" information system, which provides employees with information about job openings. On the international front, the GEO (Group Employment Opportunity) platform is an electronic exchange, posting opportunities for employment and exchanges or cooperation between Group companies. The EDF intranet site features more than 120 descriptions of day-to-day operations in the different businesses, requirements for working in each, the opportunities afforded, and trends in each area. All of this helps employees build their own career paths.

5.1.4. Stepping up training

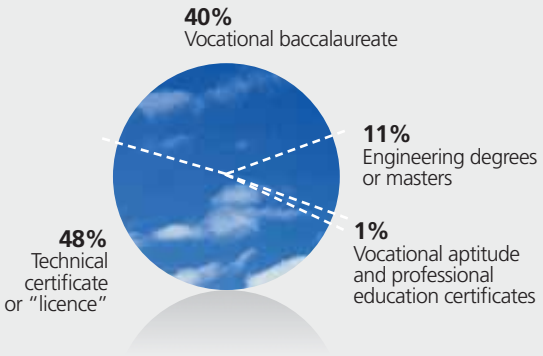
Employee training has always been a significant expense insofar as the Group operates in high-technology areas. The budget has been further increased to reflect the recruitment and in-house mobility efforts underway, and now amounts to 6.9% of the total payroll. More than four employees out of five at EDF and two out of three in the Group benefited from training in 2008. Specific programs were also introduced to train employees working in other areas for jobs in the nuclear business: 125 people received such training during the year.
Apprenticeships are essential to EDF's strategy since they give young people an opportunity to enter the job market with degrees and professional experience. Apprenticeships can be organized in all the Group's activities and for every level of qualification in both general and technical sectors, including higher-education levels. In three years, EDF has doubled the number of work-study programs, and exceeded its target for 2008 with more than 3,400 contracts in effect, of which 12.5% are for long-term study programs. ●

Hours of training per employee



Scope includes EDF, ERDF and RTE-EDF Transport.

Breakdown of apprenticeships by level of qualification



3,400
work-study program contacts in 2008

Training

Lao employees have proved highly receptive to training procedures, leading to a marked improvement in skills and constituting a springboard for other major infrastructure projects around the country. Today, one of the difficulties encountered by EDF HC is to retain sufficient personnel to complete construction work, given the other opportunities offered to employees who are now well-positioned in the job market thanks to the qualifications earned at Nam Theun 2.

5.2. STIMULATING WORKPLACE DIALOGUE

The constructive and fruitful workplace dialogue achieved in France, within EDF and in the Electricity and Gas Industries, is being pursued across the entire Group via the Corporate Social Responsibility (CSR) Agreement and European Works Council.

5.2.1. France: discussions at industry and company levels

Workplace dialogue is conducted in France at the level of the Electricity and Gas Industries and within EDF, via employee representation bodies (works council and employee representatives) brought into compliance with general law in 2007. The rate of participation in representative elections (75%) and the number of collective agreements signed (20 in 2008) are a tribute to the depth of this dialogue.

The third EDF workplace dialogue agenda was adopted – unanimously for the first time – in 2008. It outlines the topics of negotiation for the 2008-2010 period. The objectives of the signatories are to give employees a real say in workplace dialogue, and to make EDF a more attractive employer brand. Some 15 sets of negotiations will be organized around three key themes: new opportunities for career advancement, overall compensation and social protection, and health, safety and quality of life in the workplace.

The reform of the special pension scheme for the Electricity and Gas Industries came into effect on July 1, 2008, as per the decree of June 29. It calls for a gradual extension of the number of years of contribution required to benefit from a full pension, with ways to calculate reduced or higher benefits according to the total combined length of contribution to all pension schemes. The new scheme also abolishes the requirement to cease working, and institutes pension increases based on inflation rather than wage growth. The extension of the required contribution period notably involves interviewing employees halfway through their careers (at 45) to get a better idea of their plans. As a result of the negotiations organized within the Electricity and Gas Industries and EDF to prepare for the reform, a supplementary pension scheme, contingency system and additional retirement savings scheme will be introduced in 2009. Talks are still underway about factoring in the specific characteristics of each business. Additional decrees also modified the status of industry workers, lifting hiring restrictions linked to nationality and age. This gradual shift toward a standard pension scheme is an opportunity to create a new social model.

5.2.2. Group level: European Works Council and CSR Agreement

The European Works Council set up in 2001 is a venue for discussing the Group's economic, financial and social strategy. It was involved in defining a number of health and safety principles applicable across the Group, and has been consulted on the sustainable development strategy.

The EDF Group Corporate Social Responsibility (CSR) Agreement, in effect since January 2005, is the foundation of all workplace dialogue within the Group. All companies have initiated discussions to determine how it is to be applied locally. A status report is presented each year to the committee for dialogue on CSR. Based on the positive results of the first three years of implementation, the different parties have decided to initiate negotiations for a new agreement in the same spirit as the original one. Three rounds of talks were held at global level (seven countries) in March, July and October of 2008, and the final draft should be signed in 2009. The new agreement is likely to factor in new Corporate Social Responsibility objectives, especially tackling climate change and protecting biodiversity. ●

Conclusions of the third meeting of the Global Committee for Dialogue on Corporate Social Responsibility (May 2008)

Significant progress made in terms of:

- Fighting discrimination (especially equal opportunity between men and women and re-integration of the disabled in the workplace)
- Anticipation of and social support during industrial restructuring [2007]
- Wider availability of employee profit-sharing schemes
- Sharing at Group level of 275 best practices identified by subsidiaries, affiliates and entities.

For 2008 and 2009, the Committee selected six priorities to underpin the Group's Corporate Social Responsibility policy:

- Career paths and support during industrial restructuring
- The fight against discrimination
- Relations with subcontractors
- Energy efficiency
- Local social and economic development
- Workplace dialogue.

5.3. ENSURING QUALITY OF LIFE IN THE WORKPLACE

The EDF Group shows its respect for employees by guaranteeing their health, safety and quality of life in a workplace characterized by diversity and equal opportunity. These are the foundations of the Group's performance over the long term.

5.3.1. Health and safety: a top priority

Group health and safety policy revolves around three types of risk: those relating to business operations (for instance electrocution or radiation exposure), other related risks (such as driving accidents, lifting or ground-level accidents), and emerging or delayed risks (chemical, psychosocial troubles or musculoskeletal disorders).

Further progress was made in 2008 with the creation of a Group Health and Safety Commission charged with proposing workplace health and safety policies and assuring the implementation thereof while taking part in workplace discussions on these issues. A multidisciplinary body was also introduced, the National Advisory Board for Health and Safety, wherein representatives of the businesses, unions, occupational doctors and the French hygiene, safety and working conditions committees (comités hygiene, sécurité, conditions du travail – CHST) engage in workplace dialogue. A workplace health plan and multi-year action plan have been drawn up. In addition, EDF is working even more closely with occupational doctors and reorganizing its health services to reflect changes taking place within the Group. This new approach is bearing fruit: EDF counts among the leading French companies and European power utilities when it comes to health and safety, with an injury frequency rate of 3.4 in France (down from 3.8 in 2007).

At Group level, workplace dialogue with the European Works Council yielded a set of core shared values at the end of 2008. The indicators that will be used to track their application by each company are currently being validated. The Health and Safety Community, which brings together health and safety representatives from each Group company, also met several times during the year to exchange best practices and compare indicators.

Emerging and delayed risks, about which little is known today, are a core concern. At EDF, unit managers can consult experts on preventive measures. In 2008, much emphasis was placed on preventing psychosocial problems, and a special psychological health unit was created. It is ready to go into action if traumatic events occur.

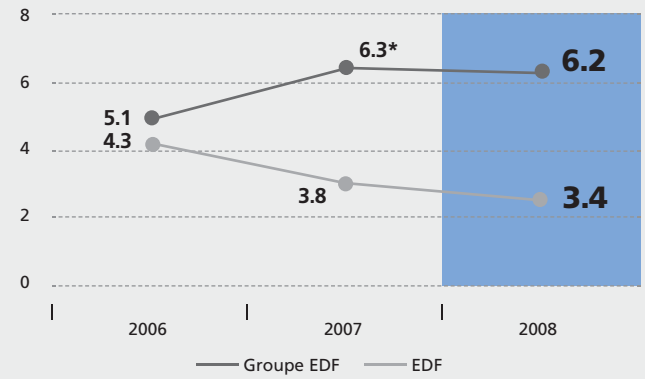
For risks relating to health crises, EDF will consolidate the indispensable progress achieved so far and further limit employee exposure to risks. A medical expertise unit was set up and, at Group level, crisis management exercises for a major flu epidemic were organized in November 2008.

5.3.2. Improving quality of life in the workplace

In France, the Monitoring Center for Quality of Life in the Workplace (Observatoire de la qualité de vie au travail), a forum for exchanging best practices, selected five priority areas for tracking trends in the workplace: worksite

PERFORMANCE INDICATORS

Frequency rate of workplace accidents



1. In 2007, excluding EDF Trading and Synergy.

Number of accidents in the workplace involving at least one day off work

	2006	2007	2008
EDF	NA	516	296
EDF Group	1,062	1,495	1,504

Number of fatal accidents

	2006	2007	2008
EDF	NA	8	6
EDF Group	11	15	13

Best practice: exemplary radioprotection at the Dampierre plant

The collective dose on the site where the steam generators of a 900 MW reactor at Dampierre are being replaced showed the lowest reading[1] in history, at 0.190 man-Sieverts[1].

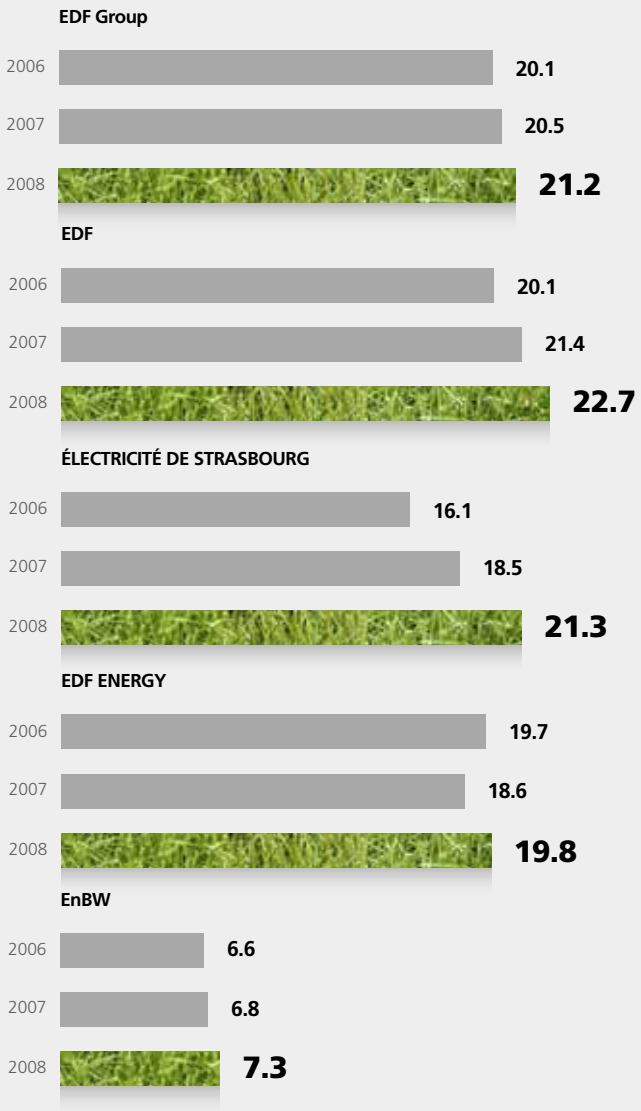
1. All data is gathered and compared internationally by the Nuclear Energy Agency's ISOE (Information System on Occupational Exposure) network.

Meco: maximum safety

Meco, which operates a natural gas-fired plant in Vietnam, has not reported a single accident among its employees or subcontractors since 2005, even though more than 400 people were involved in more than 180 days of shutdowns for 24-hour maintenance in 2008. Executive and operational management, as well as the QHSE committee, all worked toward this result, setting a zero-tolerance rule for safety breaches. All those working at the plant (Meco and subcontractors) have to go through training to be awarded an access badge. Safety reviews are conducted every fortnight. On maintenance days, meetings are held with subcontractors' safety managers. Logging is conducted in accordance with strict procedures and verified through non-compliance processes, while operations are subjected to safety and environmental risk analyses.

PERFORMANCE INDICATOR

Percentage of women in at managerial level



Positive steps toward diversity

Equal opportunities for men and women. An agreement in effect at EDF focuses on changing mindsets, equal pay, gender equality in employment and recruitment, improving gender equality in career advancement, access to professional training for women, working conditions and the balance between work and private life. Women continue to make up an increasing percentage of management.
Since 2004, EDF has allocated €2.3 million a year to eliminating abnormal gender pay gaps. The average gap between the salaries of men and women has been reduced from 4.9% in 2002 to 1.3% in 2007, factoring in a seniority gap of 3.8 years.

Professional training

"Operation Trait d'Union" organized by the Customer Branch helped 92 young people with little education or no degree obtain professional training contracts for customer relations services in the Ile-de-France region.

health and occupational hazards, workplace organization and environment, management, relations and communication, and inter-generational relations and work-personal life balance. A toll-free "Life in the Workplace" number was tested for more than one year with employees in the Rhône-Alpes region and Nuclear Operations Division. The service proved helpful – an average 0.7% of employees took advantage of it (180 requests) – both in terms of discussing personal difficulties and those that employees wanted the company to handle (15% of requests). In 2009, the service will be made available to all EDF employees as well as those of some subsidiaries and affiliates in France, including ERDF.
Using social barometers, EDF regularly monitors its employees' contentment at work. The latter are proud of the company they work for and satisfied with their situation. Following significant reorganization and the reform of their social entitlements in 2007 and 2008, the climate improved considerably in 2008: organizational structures are stabilizing, objectives and frameworks are clear, and the benefits of the changes made are becoming visible. It emerged that overall adhesion to Group strategy is increasing, giving more meaning to day-to-day work. The question of its implementation in the field will be the next major focus, with management playing a key role in the process.

5.3.3. Making progress on diversity and equal opportunity

A key point of Article 5 on discrimination in the Global CSR Agreement, the Chairman and CEO signed specific commitments to diversity in 2006. Annual action plans are drawn up for each business to ensure that these are implemented. The plans are subject to approval by a management review chaired by the Chief HR and Communications Officer. EDF has set up a comprehensive system for preventing discriminatory practices, including: regulatory notes for management; efforts to build awareness among managers, HR managers and employees; business-specific action plans focusing on those at risk of discrimination (women and disabled persons); studies on specific topics, tests including on hiring processes (in 2008: visible minorities); handling of claims submitted internally or to the French Anti-discrimination and Equal Opportunities Authority (*Haute Autorité de Lutte contre les Discriminations et pour l'Égalité* – HALDE) with a designated and known HR Division correspondent; and the annual organization of a Diversity Day event.
Apprenticeship is a key channel for encouraging diversity, allowing the Group to take on people with different backgrounds. It can also be a gateway for women into technical professions: 33% of apprentices are women (29% of company employees). EDF's goal is to ensure that 10% of apprentices are from low-income neighborhoods; in 2008, it took on 13 young people with few

formal qualifications. The dedication of 2,500 tutors is essential to the system's success, and training programs, special events and experience-sharing meetings have been organized for them.

5.3.4. Building awareness of sustainable development issues

EDF wants its employees to support its position as the champion of low-carbon energy and set standards in tackling climate change. The EDF R&D barometer measuring employee perception of environmental issues against that of the general population in France shows that awareness is growing: 82% of employees believe that climate change will affect their daily lives, whereas 49% of the broader population surveyed had no opinion. In addition, 84% see a link between environmental concerns and their professional lives. This awareness is visible at all levels of the Group, from the rate of participation of EDF Energy employees in the World Environment Day (one year after the company launched its Climate Commitments) to Edison's internal communication about eco-friendly habits (recycle, respect, save) at work and at home.

5.3.5. Linking profit-sharing to sustainable development targets

Article 7 of the CSR Agreement lays the foundations for employee profit-sharing programs. All Group companies have been applying it since 2008 in different ways, including through employee savings schemes, profit-sharing and individual bonuses.

At EDF, profit-sharing is calculated in part based on six performance criteria linked to sustainable development and one or more related objectives.

- Three environmental criteria: reducing electricity consumption by 14 GWh vs 2007 at 110 sites managed by EDF; Launching mobility plans at 11 sites where more than 100 employees work; Recycling 80% of recyclable waste (including batteries, oils and packaging), especially by sorting waste and keeping waste volumes in check.
- Ethical criterion: awareness of the company's ethical values: more than 80% of EDF employees will have to be informed about the Group's five ethical values, and more than 40% should be able to cite at least one.
- Two social criteria: participation in at least one training program by more than 82% of employees, and number of Quality of Life in the Workplace actions for which consultation or negociations were organized locally and which were presented to the Works Council.
- Societal criterion: This is based on the number of Quality of Life in the Workplace actions for which consultation or negotiations were organized locally and which were presented to the Works Council. These actions may relate to health and safety in the workplace, the transmission of job knowledge between generations, working conditions, the adaptation of organizational structures, or the balance between work and personal life. They are assessed locally. With the exception of the criterion relating to energy consumption, all the targets have been met.

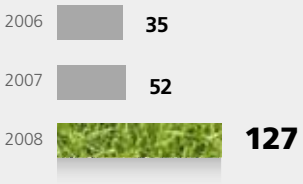
Integrating disabled people

Articles 5 and 14 of the Corporate Social Responsibility Agreement translate the Group's determination to offer jobs to the disabled, notably through a proactive recruitment policy, and to allow those employees who have become disabled to keep their jobs.

In France, the 2006/2008 works agreement on the professional integration of disabled persons calls for the disabled to account for 4% of new hiring over the period. In 2008, EDF hired 127 employees with disabilities, such that 4.6% of those hired over the three years in question were disabled. Negotiations began for an eighth works agreement late in the year. The company also provides assistance to the disabled on an individual basis for matters such as specially adapting vehicles or residences.

In Poland, Cergia has begun audits to evaluate the accessibility of its facilities and is building employee awareness of the daily challenges faced by their disabled colleagues.

Number of disabled people hired by EDF during the year

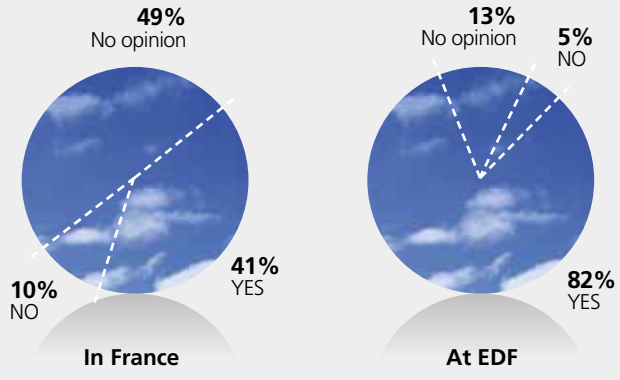


The EDF 2008 social barometer

- Confident of the future of EDF: 62% (53% in 2007)
- Employee confidence in their own future within the Group: 53% (49% in 2007)
- Confident of the future with regard to the business: 39% (stable)
- Concerned about corporate reorganizations: 33% (42% in 2007)
- Concerned about reform of pension schemes: 14% (34% in 2007)
- Responsibilities more clearly established within teams: 77% (72% in 2007)
- Unit organization more clearly established: 67% (60% in 2007)
- Cooperation within unit improving: 69% (63% in 2007)

Climate change perception in 2008

Responses to the question: "Do you believe that in the years ahead, climate change will affect our everyday lives?"



Source: Icame/Grets EDF GROUP – 2008 barometer.

Statutory Auditors' Report on a selection of environmental and social indicators published in EDF Group's Sustainable Development Report for 2008

As requested and in our capacity as Statutory Auditors of EDF group, we have performed a review to enable us to provide a moderate level of assurance on certain environmental and social performance indicators for 2008 ('the Data') selected by the EDF Group and indicated by the symbol ✹ in the tables presented on pages 50 to 52 in the performance indicators section of the Sustainable Development Report for fiscal year 2008. The conclusions given below only concern the Data, and not all the indicators presented.

The Data was prepared under the responsibility of the Sustainable Development Division in conjunction with the Human resources Division, in accordance with the internal performance reporting procedure, hereinafter referred to as the "the Protocol" which is available for viewing at the Sustainable Development and HR Control Divisions. The summary of the reporting methodology provided on page 53 of the Sustainable Development Report, and available for viewing on edf.com, specifies the data collection or calculation methods used for the performance indicators disclosed. It is our responsibility, based on the work performed, to express a conclusion on the selected data.

Nature and scope of our work

We performed our work in accordance with the applicable professional doctrine.
We performed a review to provide moderate assurance that the selected Data, for the entities listed hereafter, does not contain any material misstatements. A higher level of assurance or an assurance on the Group's Data would have required a more extensive review.
For the selected Data, we:

- assessed the Protocol with regard to its relevance, reliability, neutrality, understandability and completeness;
- conducted interviews with the persons responsible for implementing the Protocol in the following departments: Sustainable Development department, Control department, Human resources department, Generation-Engineering department, Research & Development department, International and Gas department and in a selection of Divisions[1];
- conducted interviews and carried out surveys on the implementation of the Protocol in the following entities: some EDF S.A. sites[2], some affiliates[3] for social Data and, for those affiliates, some sites for environmental Data ("the Entities") and conducted consistency tests on the Data consolidation.

The contribution of the selected Entities to the Group's Data represents on average 34% of the environmental Data and 23% of the social Data.

- We were assisted in our work by our firms' environment and sustainable development experts.

Comments on procedures

We would like to draw your attention to the following developments:

- Some environmental and social indicators have been defined more clearly in order to make them easier to understand by the persons in charge of the reporting, in particular in foreign affiliates.
- A new tool has been deployed at EDF SA level, to collect data on conventional waste, in order to enable the publication of conventional waste indicators for the current fiscal year.

In addition, we identified the following areas for improvement, which should be taken into account as part of an ongoing progress policy:

- The performance indicators relating to "Cooling water drawn/returned" and "Number of disabled employees" should be clarified, to ensure more homogeneous reporting practices;
- The control of the collection process of the data enabling the calculation of the frequency and severity of work-related accidents, should be improved by the implementation of a reconciliation of the data monitored by the persons in charge of Health and Safety with the data monitored by the payroll administrators;
- The monitoring of headcount variations should take into account changes in the reporting scope and mobility within the Group.

Conclusion

We found that the conventional waste indicators, relating in particular to the distribution activities of EDF group in France affiliated in 2008, were underestimated. The data did not include all types of conventional waste, for instance concrete electricity poles and transformers were excluded.

Based on our review and taking into account the above-mentioned comments, we did not find any material misstatements that could to call into question the fact that the Data examined in the selected entities was prepared, in all material respects, in accordance with the above-mentioned Protocol.

Paris La Défense and Neuilly-sur-Seine, April 3, 2009

The Statutory Auditors

KPMG Audit
Department of KPMG S.A.

Michel Piette

Jean-Louis Caulier

Deloitte & Associés

Tristan Guerlain

Patrick Suissa

1. Nuclear Generation, Nuclear Fuel, Fossil-fired Generation and Engineering, Nuclear Engineering (CIDEN), SMaRT, Operational Technical Unit.
2. Fossil-fired power plant at Porcheville (F), Fossil-fired power plant at Havre (F), Fossil-fired power plant at Vazzio (F), Nuclear power plant at Gravelines (F), Nuclear power plant at Chinon B (F), Nuclear power plant in deconstruction at Chinon A (F), East service unit (F), North-west service unit (F), Research field: thermal power (F), Research field: New jobs and local authorities (F). Works performed on these sites concern the selected social and environmental Data.
3. EDF Energy (UK), EnBW (D), TIRU (F), ERDF (F), Électricité de Strasbourg (F), Demasz (H) and EDF Polska (PL). For EDF Polska, works performed have only concerned two sites: Fossil-fired power plant ECW (PL), Fossil-fired power plant Zielona Gora (PL).
4. Electrical network unit Paris Nord (F), Electrical network unit Poitou-Charente (F), Fossil-fired power plant ECW (PL), Fossil-fired power plant Zielona Gora (PL), Electrical network unit EnBW Regional AG (D), Power plant at Sutton Bridge (UK), Incinerator of Ivry (F) as well as EDF EN (F). Works on EDF EN have been performed at central office level and have only concerned the indicator related to the renewable energies.

Performance indicators

Peformance indicators	UNIT	2008	2007	2006	Scope 2008	Scope 2007-2006	GRI ref
FINANCE							
Provisions for decommissioning and last core	€ millions	14,142	13,654	13,824	2	2	
Provisions for nuclear fuel end-cycle	€ millions	15,538	17,455	15,381	2	2	
Compensation paid or to be paid following legal decisions on environmental matters	€ millions	84.5	NA	NA	1	NA	
ENVIRONMENT [1]							
CONSUMABLES AND RAW MATERIALS							
Total fuel input							
Nuclear reactor fuel	t	1,282	1,151	1,227	1	1	EN 1
✸ Coal [2]	kt	25,300	5,970,970	5,179,480	2	1	EN 1
Heavy fuel oil [2]	kt	1,950	1,457,050	1,646,212	2	1	EN 1
Domestic fuel [2]	kt	306	259,659	264,173	2	1	EN 1
Non-industrial gas [2]	10^6m^3	9,259	23,718	15,075	2	1	EN 1
Industrial gas [2]	10^6m^3	5,716	1,292,403	1,585,350	2	1	EN 1
Total input of raw material from sources outside the company							
WATER [3]							
✸ Cooling water drawn	10^9m^3	45.9	41.2	19.5	2	1	EN 8
✸ Cooling water returned	10^9m^3	45.7	40.7	19.0	2	1	EN 21
Radioactive effluents to water							
Tritium	TBq/unit	17.4	16.9	17.9	1	1	EN 21
Carbon-14	GBq/unit	13.0	13.0	13.3	1	1	EN 21
AIR							
Gas emissions							
✸ Total CO_2 emissions (includes facilities not subject to quotas) [4]	Mt	91.6	78.3	84,330	2	2	EN 16
✸ SO_2 emissions [5]	kt	192.4	209.7	224,555	2	2	EN 20
NO_X emissions [5]	kt	168.2	194.5	202,067	2	2	EN 20
Dust	t	7,644	5,071	5,340	2	1	EN 20
Methane	kt eq. CO_2	5.3	4.8	4.8	1	NA	EN 16
Radioactive emissions to air							
Carbon-14	TBq/unit	0.17	0.17	0.18	1	1	EN 20
Tritium	TBq/unit	0.42	0.47	0.52	1	1	EN 20
WASTE							
Nuclear waste							
✸ Very low level radioactive waste from dismantling	t	2,782	1,703	4,275	1	1	EN 24
✸ Solid low and medium-level short-lived radioactive waste	m^3/TWh	11.7	10.8	12.8	1	1	EN 24
✸ Solid medium and high-level long-lived waste	m^3/TWh	0.87	0.88	0.87	1	1	EN 24
Transported spent nuclear fuel	t	1,179	1,202	1,199	1	1	EN 24
Conventional waste (EDF SA + ERDF)							
✸ Hazardous waste	t	20,090	18,087	23,209	1	1	EN 22
✸ Non-hazardous waste	t	114,899	124,621	114,497	1	1	EN 22
✸ Conventional industrial waste recycled or transported for recycling	t	98,399	112,203	97,243	1	1	EN 22
Ash produced	t	581,694	NA	NA	1	1	EN 22
ENERGY							
✸ Renewable energy: electricity generated by renewable sources (excluding hydro) [6]	GWh	6,186	4,356	1,564	2	2	EN 6
Energy consumption by primary source							
Internal consumption, pumping electricity	TWh	6.5	7.7	7.5	1	1	EN 3
Internal consumption, electricity	TWh	23.3	23.1	23.4	1	1	EN 3
ENVIRONMENTAL MANAGEMENT							
✸ Ependiture on environmental protection [7] of which provisions	€ millions	2,496 1,175	2,733 1,478	2,951 1,908	1	2	EN 30
ISO 14001 certification			Group-wide environmental management system		2	2	

1. Group figures for 2008 including Edison and Dalkia
2. Units are in: kt for 2008; t for 2007 and 2006; 10^6m^3 for 2008 and 10^3m^3 for 2007 and 2006
3. In 2008 and 2007, the indicators relating to cooling water include water drawn from and returned to the sea, rivers and the water table, and may also include water drawn from the distribution network and returned to wastewater systems. In 2006, only the water drawn from and returned to rivers was taken into account.
4. Units are in: Mt for 2008 and 2007; kt for 2006.
5. Units are in: kt for 2008 and 2007; tonnes for 2006.
6. For 2008 and 2007 the indicator also covers heat produced.
7. For 2008, the scope of spending is limited to EDF SA.

GRI: Global Reporting Initiative
GC: Global Compact
Scope 1: EDF SA (distribution activities affiliated in 2008: ERDF)
Scope 2: EDF Group

Performance indicators

Peformance indicators	UNIT	2008	2007	2006	Scope 2008-2006	GRI ref
SOCIAL						
STAFF BREAKDOWN (as at 31/12)[1]						
EDF SA + ERDF + RTE	no.	104,929	105,322	106,565	1	LA 1
✹ Total EDF Group	no.	160,913	158,640	156,524	2	LA 1
✹ Total executives	no.	33,543	31,770	29,096	2	LA 1
✹ Women at managerial level	%	21.2	20.5	20.1	2	LA 13
Staff who are not executives	no.	127,370	126,870	127,428	2	LA1
Gender equality						
- Men staff	no.	122,762	121,730	106.838	2	LA 13
- Women staff	no.	38,151	36,910	32,525	2	LA 13
- Men executives	no.	26,436	25,254	23,258	2	LA 13
- Women executives	no.	7,108	6,516	5.838	2	LA 13
HIRING / DEPARTURES / MOBILITY						
✹ Recruitment	no.	12,533	11,294	3,849	2	LA 2
Other hiring	no.	2,092	2,682	NA	2	LA 2
✹ Retirement or inactivity	no.	4,578	4,320	3,561	2	LA 2
✹ Resignation	no.	3,760	3,486	1,313	2	LA 2
✹ Redundancies, dismissals, termination of post	no.	1,901	1,642	348	2	LA 2
✹ Other departures	no.	3,083	4,572	2,122	2	LA 2
WORKING HOURS						
Part-time staff	no.	21,971	23,964	26,306	2	LA 1
HEALTH AND SAFETY						
✹ Fatal injuries	no.	13	15	11	2	LA 7
✹ Injury frequency rate[2]		6.2	6.3	5.1	2	LA 7
✹ Number of work or road injuries (with 24 hour leave or more)	no.	1,504	1,495	1,062	2	LA 7
MANAGEMENT / EMPLOYEE RELATIONS						
Staff covered by collective bargaining agreements[3]	%	95	95	96	2	LA 4
TRAINING						
✹ Staff benefiting from training[4]	no.	102,629	104,393	95,739	2	LA 10
EMPLOYMENT AND INSERTION OF EMPLOYEES WITH DISABILITIES						
Staff with disabilities[5]	no.	3,364	3,260	3,077	2	LA 13

1. In 2006, the indicators (excluding total Group employees) did not take into account Dalkia, Fenice, ECW, SSE and EDF Trading. These entities have been consolidated since the 2007 indicators.
2. In 2007, excluding EDF Trading and Synergie.
3. In 2008, excluding Dalkia International. In 2007, excluding EDF Trading, Dalkia International and Synergie.
4. In 2007, excluding EDF Energy, EDF Trading, Dalkia International and Synergie. In 2008, excluding EDF Energy, EDF Trading, and Dalkia International.
5. In 2007, excluding EDF Energy and EDF Trading.

Scope 1: EDF SA + ERDF + RTE
Scope 2: EDF Group

Performance indicators

Performance indicators EDF SA (excluding distributor)	UNIT	2008	GRI ref
SOCIAL			
STAFF BREAKDOWN (as at 31/12)			
Total EDF SA staff covered by collective bargaining agreements	no.	60,360	LA 1
Permanent EDF SA staff not covered by collective bargaining agreements	no.	454	LA 1
Temporary EDF SA staff not covered by collective bargaining agreements	no.	177	LA 1
Total EDF SA staff not covered by collective bargaining agreements	no.	631	LA 1
TOTAL EDF SA	no.	60,991	LA 1
Total executives (as defined by French regulation)	no.	21,970	LA 1
Women in managerial college	%	22.7	LA 13
Employees who are not executivess	no.	39,021	LA 13
Technicians and supervisory staff	no.	32,468	LA 13
Operatives	no.	6,553	LA 13
Gender equality			
- Men (staff)	no.	43,133	LA 13
- Women (staff)	no.	17,858	LA 13
- Men (executives)	no.	16,972	LA 13
- Women (executives)	no.	4,998	LA 13
HIRING / DEPARTURES			
Recruitment	no.	2,279	LA 2
Integration and rehire	no.	272	LA 2
Other hiring[1]	no.	171	LA 2
Retirement	no.	2,058	LA 2
Resignation	no.	111	LA 2
Redundancies and dismissal	no.	15	LA 2
Death	no.	84	LA 2
Other departures[1]	no.	691	LA 2
OVERTIME			
Hours worked overtime	thousands	2,468	
OUTSIDE CONTRACTORS			
Average number of outside sub-contactors employed monthly[2]	no.	(2008) NA (2007) 948	LA 1
WORKING HOURS			
Full-time staff	no.	49,310	LA 1
Part-time staff	no.	11,681	LA 1
Staff on overtime which admit overtime	no.	7,399	LA 1
ABSENTEEISM			
✸ Absenteeism	%	3.8	LA 7
Hours of maternity or paternity leave / hours worked	%	0.8	LA 7
HEALTH AND SAFETY			
Fatal injuries	no.	6	LA 7
Injury frequency rate		3.4	LA 7
✸ Degree of seriousness		0.17	LA 7
Work injuries (with 24 hour leave or more)	no.	296	LA 7
COMPENSATION / SOCIAL SECURITY CONRIBUTIONS / PROFIT SHARING			
Trends in main salary categories: average per month			
- Executives	€	4,099	EC 1
- Technicians and supervisory staff	€	2,457	EC 1
- Operatives	€	1,820	EC 1
Personnel costs	€ millions	4,917	EC 1
Average profit sharing earning per staff[3]	euros	1,307	EC 1
MANAGEMENT – EMPLOYEE RELATIONS			
Collective bargaining agreements signed, France	no.	20	HR 5
Staff covered by collective bargaining agreements[4]	%	99.0	LA 4
TRAINING			
Staff benefiting from training	no.	51,551	LA 10
EMPLOYMENT AND INSERTION OF STAFF WITH DISABILITIES			
Staff with disabilities	no.	1,492	LA 13
✸ Staff with disabilities hired	no.	127	LA 13
CHARITABLE WORKS			
Committee budgets (fulfilling 1% requirement)	€ millions	193	

1. Excluding arrivals and departures on seasonal short-term contracts.
2. The 2008 figure was not available on the reporting date.
3. Of which €280 of additional profit-sharing.
4. EDF SA employees are not covered by a collective agreement in the legal sense but by the Electricity and Gas Industries (*Industries électriques et gazières* – IEG) statute.

Details on the methodology chosen for the environmental data

The environmental data included in this report are established on the basis of the descriptions and methodologies outlined in the Group and EDF SA reference guidelines in force in 2008.

- Accounting data relating to provisions for decommissioning and last core, as well as those for the end of the nuclear fuel cycle are Group consolidated data derived from Group accounting.

- Cooling water indicators include water drawn from and released into rivers, the sea or the water table, and may also include water drawn from the distribution network and released into wastewater networks. For coastal nuclear plants and for fossil-fired plants, the quantities of cooling water drawn and released are calculated based on operating time and the pumps' nominal discharge. The variety of practices for reporting on these indicators constitute a target for improvement for the financial year 2009.

- Conventional waste data concerning quantities removed and disposal channels were obtained based on the information available at closing date.

- SO_2 emissions from EDF SA fossil-fired plants now include all phases of electricity generation, from startup to unit shutdown. With the exception of three units (Cordemais units 4 and 5 and Le Havre unit 4) for which chimney measurements are used, the SO_2 emissions from EDF SA plants are calculated based on fuel analyses.

- The indicator for "solid low to medium-level short-lived radioactive waste" produced by reactors in operation does not take into account exceptional maintenance (vessel heads, steam generators). The volume of waste calculated corresponds to the volume of waste stored at the Aube center (after compacting of the drums, incineration and fusion).

- The indicator for "solid high to medium-level long-lived nuclear waste" includes a degree of uncertainty linked to the conditioning ratio (number of packages effectively realized following the processing of a tonne of fuel) which can only be established definitively in retrospect, this ratio essentially being dependent on the mix effected to optimize the operations. The indicator is an estimate assuming the long-term nature of current practices of conditioning long-lived waste, and forecasts for the short term the same ratio of conditioning.

- Expenditure on environmental protection corresponds to spending declared by the various EDF SA entities.

Details on the methodology relating to the social data

The establishment of the social data is based on a glossary of definitions specified in 2008.

EDF SA and ERDF

- 2008 data for EDF SA no longer include the Distributor.

- Employee figures reported include a percentage of those shared by EDF and Gaz de France-Suez.

- 2008 employees do not include, as in 2007, occupational doctors and individuals employed within the framework of various social initiatives and apprentices, i.e. 2,510 people for EDF SA and 1,342 people for ERDF as at December 31, 2008. Employees absent for long periods (> 90 days) are excluded.

- Data on the number of days absent due to work-related injuries at EDF SA were drawn from the HR IS tool Sprint or, failing that, from the security IS, Ariane Web. In case of a discrepancy between the number of days of absent calculated by Sprint and by Ariane Web, the Group rule is to opt for the most penalizing figure proposed by the two systems.

For the Group

Certain aspects of current reporting methods lead to discrepancies between the number of employees reported for 2008 and the restated number of employees based on 2007 employees and those joining and leaving the Group.

  – Mix of EDF SA and ERDF employees (percentage of EDF and Gaz de France Suez shared employees not taken into account in the event of transfer).

  – Internal movements within the Group.

  – Changes in the scope of consolidated entities where Group subsidiaries or affiliates have not systematically taken into account the number of employees that have joined or left.

- The number of fatal injuries does not include fatal injuries among subcontractors.

- For Dalkia International, the number of hours worked taking into account that the frequency rate calculation was estimated based on the full-time employees of Dalkia International multiplied by 1,700 hours. For EDF Energy, the number of hours worked includes certain causes of absence.

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The environmental data included in this report are established on the basis of the descriptions and methodologies outlined in the Group and EDF SA reference guidelines in force in 2008.

- Accounting data relating to provisions for decommissioning and last core, as well as those for the end of the nuclear fuel cycle are Group consolidated data derived from Group accounting.

- Cooling water indicators include water drawn from and released into rivers, the sea or the water table, and may also include water drawn from the distribution network and released into wastewater networks. For coastal nuclear plants and for fossil-fired plants, the quantities of cooling water drawn and released are calculated based on operating time and the pumps' nominal discharge. The variety of practices for reporting on these indicators constitute a target for improvement for the financial year 2009.

- Conventional waste data concerning quantities removed and disposal channels were obtained based on the information available at closing date.

- SO_2 emissions from EDF SA fossil-fired plants now include all phases of electricity generation, from startup to unit shutdown. With the exception of three units (Cordemais units 4 and 5 and Le Havre unit 4) for which chimney measurements are used, the SO_2 emissions from EDF SA plants are calculated based on fuel analyses.

- The indicator for "solid low to medium-level short-lived radioactive waste" produced by reactors in operation does not take into account exceptional maintenance (vessel heads, steam generators). The volume of waste calculated corresponds to the volume of waste stored at the Aube center (after compacting of the drums, incineration and fusion).

- The indicator for "solid high to medium-level long-lived nuclear waste" includes a degree of uncertainty linked to the conditioning ratio (number of packages effectively realized following the processing of a tonne of fuel) which can only be established definitively in retrospect, this ratio essentially being dependent on the mix effected to optimize the operations. The indicator is an estimate assuming the long-term nature of current practices of conditioning long-lived waste, and forecasts for the short term the same ratio of conditioning.

- Expenditure on environmental protection corresponds to spending declared by the various EDF SA entities.

Details on the methodology relating to the social data

The establishment of the social data is based on a glossary of definitions specified in 2008.

EDF SA and ERDF

- 2008 data for EDF SA no longer include the Distributor.

- Employee figures reported include a percentage of those shared by EDF and Gaz de France-Suez.

- 2008 employees do not include, as in 2007, occupational doctors and individuals employed within the framework of various social initiatives and apprentices, i.e. 2,510 people for EDF SA and 1,342 people for ERDF as at December 31, 2008. Employees absent for long periods (> 90 days) are excluded.

- Data on the number of days absent due to work-related injuries at EDF SA were drawn from the HR IS tool Sprint or, failing that, from the security IS, Ariane Web. In case of a discrepancy between the number of days of absent calculated by Sprint and by Ariane Web, the Group rule is to opt for the most penalizing figure proposed by the two systems.

For the Group

Certain aspects of current reporting methods lead to discrepancies between the number of employees reported for 2008 and the restated number of employees based on 2007 employees and those joining and leaving the Group.

  - Mix of EDF SA and ERDF employees (percentage of EDF and Gaz de France Suez shared employees not taken into account in the event of transfer).
  - Internal movements within the Group.
  - Changes in the scope of consolidated entities where Group subsidiaries or affiliates have not systematically taken into account the number of employees that have joined or left.

- The number of fatal injuries does not include fatal injuries among subcontractors.

- For Dalkia International, the number of hours worked taking into account that the frequency rate calculation was estimated based on the full-time employees of Dalkia International multiplied by 1,700 hours. For EDF Energy, the number of hours worked includes certain causes of absence.

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EDF Group
Sustainable Development Panel

THE CHAIRMAN'S PERSPECTIVE

"Our role is to provide differing perspectives to shake the mindsets of EDF executives, spurring their capacity for innovation and change."

EDF's commitment to sustainable development is indisputable. Taken together, its Public Service Agreement signed with the French state, its Corporate Social Responsibility agreement (common to all subsidiaries and affiliates), and its Ethics Charter (which applies to all employees), form an exemplary framework for mobilization throughout the Group, in all its activities.

EDF's dialogue with outside stakeholders rounds out this commitment. 2008 was a transitional year for the organization of its dialogue structure. A new Societal Advisory Board was set up. The Environmental and Scientific Advisory Boards and the Sustainable Development Panel were overhauled. Thus the overall framework will now allow for deeper and more connected dialogues in all these areas.

Four key issues will be particularly addressed: climate change, energy choices, biodiversity and access to electricity. Our role as outside advisors is to provide differing perspectives to shake the mindsets of EDF executives, spurring their capacity for innovation and change.

We have often called on EDF to back its declarations on climate risk with a bold reduction target for carbon emissions. In keeping with the European Union's Climate and Energy Package, EDF plans to reduce its emissions in France by 30% for the period 1990 to 2020. This is a major step. Still, the targets of the subsidiaries and affiliates, which are much more dependent on fossil fuels, must be clarified. And most importantly, EDF must produce the ambitious results it has now targeted by breaking from its recent emissions trends.

EDF is banking on the growth of its nuclear fleet, especially now that public opinion seems to show a preference for a nuclear revival over climate risks. But such a revival poses its own well-known challenges and raises new questions.

Winning approval for nuclear *in general* does not mean that the public's attitude toward any specific project will follow suit. New standards of transparency and dialogue are needed in order to build trust. The kind of dialogue that EDF was able to generate on issues relating to the Nam Theun Dam in Laos would help ensure that its arguments for nuclear revival be met with open minds and thus be more likely to gain support.

Nuclear energy has demonstrated its reliability over several decades, despite one exceptional accident. It boasts a low rate of long-lived radioactive waste per reactor load. Nevertheless, even vitrified in glass and encased in several protective layers, it continues to jam temporary storage facilities. Stable solutions for an acceptable final disposal are still being investigated.

The cost of nuclear power already includes waste processing and provisions for dismantling of facilities. It will beat the cost of fossil-fired plants once they are at last held accountable for their climate impact. But should we not also look into nuclear's thermal inefficiency? This appears to be of concern only during heat waves, whereas in fact there is an ongoing loss of heat to the environment. And will nuclear remain competitive given how much capital is tied up, and for how long, before the first kWh is sold?

Nuclear costs cannot outcompete energy efficiency projects. We should therefore regret that EDF is not investing more to reduce demand. True, the Group has shown significant capacity for initiatives of this kind, but they only mobilise a minimal fraction of EDF's customers, with little overall effect as a result.

Some photovoltaic experts foresee a roll-out of integrated systems in buildings that will achieve parity with network tariffs, beginning in southern Europe by about 2010 and working up to less sunny northern countries by about 2020. Breakthroughs in photon-to-electron output and in production costs will boost the number of installations connected. As their numbers increase, their input will become more stable and predictable. Will investors still value nuclear at this point?

Energy companies, while growing their share of renewables, warn that the fluctuations they entail require recourse to peak fossil-fired back-up facilities, thereby increasing CO_2 emissions. Let's turn the argument on its head: if all coal-fired plants were shut down and only combined-cycle gas plants (with some biogas) left in operation, how much additional wind power and photovoltaic capacity could they back up?

EDF must cut its CO_2 emissions to a fifth of their current rate by 2050. This is plausible if demand is curbed and non-fossil energy sources are maximised. Our role as advisors is to anticipate, insist on and assist in developing these energy options.

Claude Fussler
Chairman, EDF Group Sustainable Development Panel

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