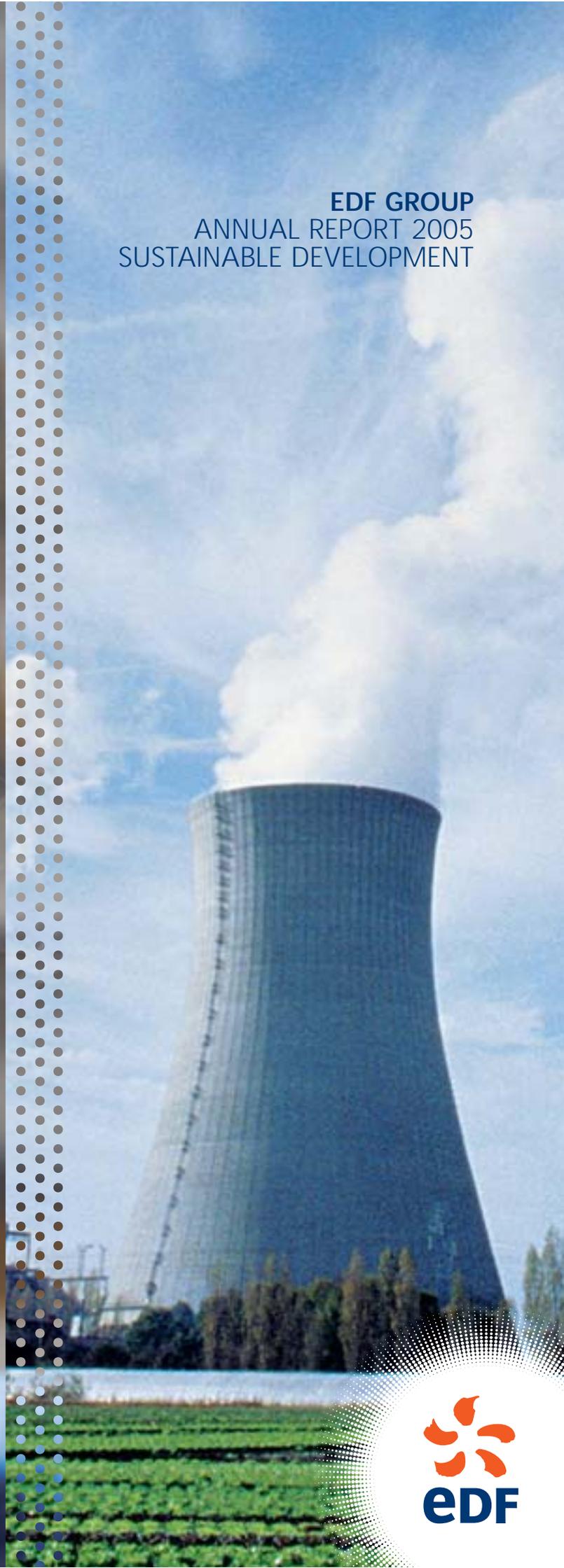




**EDF GROUP**  
ANNUAL REPORT 2005  
SUSTAINABLE DEVELOPMENT



# Contents

<b>Chairman's statement</b>	<b>4</b>
Sustainable Development Panel	6
Global Compact principles: EDF initiatives in 2005	8
Commitments and achievements 2005	10
EDF at a glance	14
<b>Renewing and sharing commitments with all stakeholders</b>	<b>16</b>
Working together to fulfill commitments	16
Partnering for results	21
Promoting social responsibility	26
<b>Managing local issues</b>	<b>32</b>
Ensuring safety	32
Minimizing our environmental footprint	34
Ensuring the comfort and safety of local populations	40
Promoting social cohesion and regional development	41
<b>Our planet: rising to long-term challenges</b>	<b>44</b>
Preparing to meet the challenges of the future	44
Fighting global warming and climate change	46
Providing access to energy	52
Taking a more systematic approach to biodiversity	54
Nam Theun: launching a project in sustainable development	56
<b>Glossary</b>	<b>58</b>

# Structure of the report

The EDF Group's *Sustainable Development Report* for 2005 is designed to report on Group commitments particularly within its Agenda 21, its ethical charter, and the Global Compact.

It has also been prepared with reference to external reference frameworks: the Global Reporting Initiative (GRI) guidelines and the French New Economic Regulations (NRE) contained in the May 15, 2001 French law.

This report covers only part of the EDF Group's activities. More information on results and references relating to the EDF Group's strategy on sustainable development are available on the website [www.edf.com](http://www.edf.com).

Some general information can also be found in the *Annual Report*.

# Chairman's statement

## Pierre Gadonneix

In reviewing 2005, I cannot stress enough just what a crucial year it has been for the EDF Group. We moved ahead in key areas - shareholding, public service, social responsibility, environmental policy, and industrial strategy - and in phase with today's energy environment.

**Never have our commitments been so clearly and powerfully expressed.**

The success of our capital increase, which mobilized over 5 million individual subscribers, of which 130,000 Group staff, and French and foreign investors, commits us to excelling at our industrial strategy and reaffirming our position as a leading competitive European energy player. It also commits us to broadening our dialogue with new stakeholders with a vested interest in our strategy and results.

At the same time, the Public Service Agreement concluded with the French government reaffirmed and reinforced our responsibility to providing best quality public service in electricity in France. The agreement covers and clarifies all our public service missions and how they are financed. It thereby enables us to reaffirm our longstanding commitment to best practices, local service and solidarity, with regard to the French public, elected officials and our customers.

In and outside France, we are advancing in the same spirit, with the same ethic. In early 2005 we concluded a Corporate Social Responsibility (CSR) Agreement with all representative unions worldwide. This major document, which clearly sets out our values and reflects our adherence to the principles of the OECD and the Global Compact, now serves as a reference in our dialogue with all our staff and our partners worldwide.

Alongside this commitment to social responsibility is our Environmental Policy, drafted and published Group-wide in 2005, prior to the renewal of our ISO 14001 certification.

**Never has our business model been so relevant.**

2005 marked a turn in raising global awareness of the importance of dealing with climate change, a key issue on the agenda of all the year's major political gatherings. After ratification by Russia, the Kyoto protocol has at last become operational, as the first measures discussed in Montreal illustrate. In Europe, a CO<sub>2</sub> emissions market has been set up. It has proved to be a key factor on the energy market, and we may hope that in the long run, this will facilitate investment in low or non-emitting generation technologies.

Meanwhile, global demand for energy is on the rise to meet the needs of economic development and the world's growing population. We have entered a new era of scarce, expensive energy.

This global context underscores the soundness of our business model and the relevance of our energy choices. In France, our hydropower and nuclear fleets, respectively the leading renewable energy and the only fossil-free thermal power technology, cover 95% of generation while producing no CO<sub>2</sub>. Wherever we are, we seek a diversified energy mix that limits the environmental impact of electricity generation. In our sales and marketing activity, we contribute to this sustainable development commitment by offering energy savings solutions and services to our customers. Our research and development, a major asset in our ability to innovate and hence our competitiveness, devotes significant resources to meeting the technological challenges of a future characterized by scarce energy resources and environmental challenges.



EDF Médiathèque – Stéphane de BOURGIES

**Energy and environmental challenges inform our decisions for the future.**

We intend to continue to meet the growing demand for energy while limiting greenhouse gas emissions. Our decisions aim to combine energy savings, the development of renewable energies (notably through our significant investment program in wind power by 2010) and, in France, to retain the nuclear option with the construction of an EPR reactor to prepare the renewal of our fleet. This last project was submitted to public debate, from which we will be able to draw conclusions. To help make our choices understood and to enrich them, we will continue to develop dialogue with customers and suppliers, with the associations and NGOs with whom we have long partnered, with the populations living near our facilities and the local authorities in areas where we are active. We will also participate in the energy debates held by national and international organizations.

**This is the spirit in which we will continue to develop throughout 2006.**

2006 will be a year of dialogue. A number of debates and discussions are planned, notably on nuclear waste in France and on the role of nuclear in the UK and no doubt elsewhere in Europe. Wherever we are active, we intend to uphold our commitments as a responsible company, aware of the impact of our industry on the environment, attentive to safety in our facilities and to the security of the surrounding populations and staff, and proud to contribute to providing the world with the energy it needs. In this respect, the construction of the Nam Theun 2 dam in Laos, carried out with utmost attention to the natural and human environment, illustrates our commitment to sustainable development and our vision of corporate responsibility.

# Sustainable Development Panel

The EDF Group invited us to combine our assorted personal expertise to help the company better integrate the issues of sustainable development into its strategy. We are now in the second year of this journey. Throughout 2005 we were able to witness the magnitude of the changes undertaken by the Group as it dealt with the liberalization of the electricity market and focused on the opening of its capital to non-state investors. New shareholders can favorably influence the demands for transparency and the debate around long-term energy options. But private shareholders are not an assurance for corporate responsibility. In this respect the worldwide agreement on Corporate Social Responsibility between EDF, trade unions and other employee representatives, as well as the Public Service Agreement with the French state represent important commitments. We could also observe how, despite the intensity of the business agenda, the employees of the company remained true to its Agenda 21 through numerous initiatives.

Yet, our reviews in 2005 of the aspects of governance and of the Group's climate and energy strategy have also led us to propose a number of ideas and challenges.

- EDF has declared its commitment to openness and dialogue with stakeholders. Our Panel is one example, amongst several, of this commitment. Thus, many stakeholders take time to prepare and to engage in dialogue with the company. Dialogue for progress is what moves most of them. Therefore the clarification of the governance process that enables stakeholders' observations and recommendations to be integrated into EDF's strategy will be vital to continuing a lively and creative relationship. EDF should also take steps that get its governance bodies to reflect the diversity of the societies it serves.
- In this and previous reports EDF displays several examples of how it helps customers to be more energy efficient and reduce their demand, how it provides access to electricity in developing countries and how it explores an array of novel electricity sources. These are all demonstrations that the issues of sustainability are understood and receive practical attention. But we observe that none of these projects match the magnitude of the problems or are allocated resources in keeping with EDF's business strength.
  - > We reviewed the climate and energy issues with EDF's experts. On the face of the facts and its current strategic options, we feel that the company should also presume that in an open energy market new networks of wind, biomass, fuel cells and solar generators could challenge the existing grid of mega-generators.
  - > We believe that EDF can make a difference and that it should evaluate how to be carbon neutral by the year 2040.
- We also recommend that it take a serious look at options to reduce its yearly greenhouse gas emissions by 2% over the next 5 years.

# Panel members

- Its attempts to influence demand should be more ambitious and aim at an average absolute reduction of electricity demand by 2% per year.

- EDF is likely to continue to generate electricity from coal. It should therefore master “clean coal” technology for commercial use - technology that emits no carbon through carbon capture and controls conventional pollutants at or below best available technologies levels.

- EDF should also step up its efforts to provide electricity in developing countries and harness international carbon credit financing to support economic development, energy efficiency and electricity access for the poor.

> We realize that these challenges require more thought. Our point is that a company of the size and power of EDF must deal with the issues of climate, energy and poverty with more than goodwill, small experiments and marginal resources. We therefore recommend ambitious aims and specific targets. They drive innovation. Despite the fact that government intentions are not always clear and timely, a business strategy that seeks absolute reductions in demand, increases renewable and low-carbon power sources and prepares for a more flexible, decentralized generation structure seems to us the safest and most cost effective.

## External members of the panel appointed on an individual basis

### **Brenda Boardman** University of Oxford, UK

Leader of Lower Carbon Futures;  
Head of the Energy Section of the Environmental Change Institute, Oxford University.

### **Frances Cairncross** Exeter College, Oxford, UK

Rector of Exeter College, Oxford, Chair of Britain's Economic and Social Research Council and former Management Editor of *The Economist*.

### **Claude Fussler** France

Sustainable Development and Innovation Strategies Advisor. Director at WBCSD. Special Advisor to UN Global Compact.

### **Peter Goldmark** United States

Climate Campaign Director at US Environmental Defense Fund. Former CEO of *International Herald Tribune*.

### **Daniel Lebègue** Transparency International, France

President of the French section of Transparency International; former CEO of Caisse des Dépôts et Consignations.

### **Philippe Levèque** Care International, France

Head of the French section of International Development and Emergency Assistance for the NGO.

### **Ezio Manzini** Politecnico Milano, Italy

Professor of Industrial Design at the Milan Polytechnic; Chair Professor of Design under the Distinguished Scholars Scheme at the Hong Kong Polytechnic University.

### **Rajendra.K. Pachauri**

TERI, India  
Director General of The Energy and Resources Institute and Chair of UN Intergovernmental Panel on Climate Change.

### **Fritz Vahrenholt** REpower, Germany

Chairman of the Board of REpower Systems AG, ex Senator for the environment of the City of Hamburg and former member of Shell-Germany Board of Directors.

### **Farid Yaker** Enda, France

Head of Enda an NGO for Investment and Development Programs for the South.

## EDF Members

### **Yann Laroche** EDF Group, Paris, France

Member of the Board of Directors and Chief Operating Officer HR and Communications.

### **Claude Nahon** EDF Group, Paris, France

Executive Vice President, Sustainable Development and Environment.

### **Vincent Denby-Wilkes** EDF Group, Paris, France

Head of Access Program.

### **Fabienne Cardot** EDF Group, Paris, France

EDF Ethics Strategy Implementation.

# Global Compact principles:

## EDF initiatives in 2005

In July 2001, EDF joined the Global Compact, an initiative launched by the United Nations Secretary General by which signatories agree to adopt, promote and implement ten universal principles in the areas of human rights, labor, environment, and the fight against corruption.

Throughout 2005, EDF actively supported the Global Compact by:

- Contributing to the creation of a Global Compact forum (the *Forum des Amis du Pacte mondial*), and sitting on its Steering Committee;
- Participating in the international June 14 conference launched by the President of France and the United Nations Secretary General with the presence of the British Prime Minister with the goal of bringing companies to contribute to the Millennium goals;
- Participating in the Global Compact Summit held in China in December, where we promoted energy efficiency and low greenhouse gas emissions technologies. For the occasion, EDF and the Veolia group sponsored a guidebook to train Chinese instructors in the implementation of Global Compact environmental principles.

The Group also worked toward concrete implementation of the Global Compact with regard to its corporate responsibility commitments. Our Corporate Social Responsibility Agreement, signed by Chairman and CEO Pierre Gadonneix on January 24, 2005 with employee representatives, refers beginning article 1, to the Group's commitment to uphold and promote the ten principles of the Global Compact. Several other articles of the agreement also concern commitments corresponding to the Global Compact's ten principles.

In the table of responsible actions undertaken by the Group, which illustrates Group implementation of Global Compact principles, we have also provided an overview of corresponding articles in our Corporate Social Responsibility Agreement, as rolled out during 2005.

Other Group actions that illustrate implementation of Global Compact principles are indicated throughout the rest of the report by the Compact logo.



## GLOBAL COMPACT

Principles	CSR Agreement 01/24/05	Initiatives and results in 2005
<b>1</b> Support and respect the protection of internationally proclaimed human rights	Article 1 Human rights	<ul style="list-style-type: none"> <li>Several of the Group's businesses and entities have launched their own ethical strategy, with the emphasis on respect for the individual; ethical texts and the creation of a Group Corporate Responsibility Strategy at EDF Energy; ethical action plans at the various Polish companies; the 10 Leitbilder at EnBW; and the 10 ethical recommendations of the Group's Asia Pacific Branch.</li> <li>EDF signed a 3-year partnership with NGO CARE to assist energy access and development projects in developing countries.</li> <li>In France, a new Charter on computers was drawn up to clarify issues of use and confidentiality.</li> <li>In Laos, we pursued our program of social and economic development aimed at the populations displaced from the site of the Nam Theun reservoir and dams, especially with the creation of a pilot village and infrastructures.</li> </ul>
<b>2</b> Ensure company is not complicit in human rights abuses	Article 1 Human rights	<ul style="list-style-type: none"> <li>The Group-wide roll out of our CSR Agreement is, in our dialogue with unions and management, the way to ensure that measures concerning human rights are upheld.</li> <li>In the divestment of Edenor shares in Argentina, a clause was introduced by which the acquirer must uphold and monitor the terms of the Group's CSR Agreement for three years.</li> </ul>
<b>3</b> Recognize the right to free association and collective bargaining	Article 1 Human rights ILO conventions  Article 20 Social dialogue	<ul style="list-style-type: none"> <li>Social dialogue allowing for Group-wide deployment of the social responsibility agreement.</li> <li>In China: the election by direct vote of Group employee representatives to the committee responsible for tracking the social responsibility agreement.</li> </ul>
<b>4</b> Eliminate all forms of forced or compulsory labor	Article 1 Human Rights ILO conventions	<ul style="list-style-type: none"> <li>Supplier policy in France: the Purchasing Division's "quality sustainable development" policy, comprising ethical and societal references, was communicated to professional organizations and suppliers.</li> <li>EDF Energy's ethical procurement policy, drawn up and implemented in 2005 within the framework of the Ethical Trading Initiative, includes a specific clause on compulsory labor.</li> <li>In Laos, ethical guidelines excluding compulsory labor as adopted by the Board of Directors of EDF affiliate NTPC were implemented by management at the Nam Theun work site.</li> </ul>
<b>5</b> Effectively abolish child labor	Article 1 Human Rights ILO conventions	<ul style="list-style-type: none"> <li>EDF SA et EDF Energy: a specific clause in procurement agreements excludes child labor.</li> <li>Nam Theun: NTPC's ethical guidelines also exclude child labor.</li> </ul>
<b>6</b> Non-discrimination	Article 5 Fighting discrimination	<ul style="list-style-type: none"> <li>EDF SA: measures were taken with regard to applying the 2004 agreement on professional gender equality aimed at reducing salary discrepancies between men and women.</li> <li>EDF SA: in keeping with a national agreement regarding the disabled, EDF took measures in favor of hiring (up by 4%) and professional insertion, as well as access to EDF services for hearing and visually impaired customers.</li> <li>EDF SA: a study on diversity issues was carried out at EDF France, leading to a project aimed at promoting diversity in social practices.</li> <li>EDF Energy launched its own Equality and Diversity Management Project.</li> </ul>
<b>7</b> Take a precautionary approach to environmental challenges	Article 11 Environmental safety for facilities, equipment and processes	<ul style="list-style-type: none"> <li>A campaign was launched to verify conformity with European Directive 2004/40/CE, not yet transposed, with regard to limiting worker exposure to electromagnetic fields.</li> </ul>
<b>8</b> Undertake initiatives to promote greater environmental responsibility	Article 12 Exemplary action by EDF Group companies and staff with regard to the environment	<ul style="list-style-type: none"> <li>Det Norske Veritas (DNV) renewed EDF Group ISO 14001 certification (July 28, 2005).</li> <li>EDF SA: through our partnership with the Fondation Nicolas Hulot and Ademe, the joint project "Challenge for the Earth" continued its public appeal to protect the environment and to save energy in concrete ways that are measurable in terms of CO<sub>2</sub> saved.</li> </ul>
<b>9</b> Encourage the development and diffusion of environmentally friendly technologies		<ul style="list-style-type: none"> <li>The share of R&amp;D spending on the environment (€122 million) represents one-third of EDF's total research budget.</li> <li>As part of the Group's environmental policy (June 2005), the activity of our affiliates Energies nouvelles (wind power) and Tenesol (solar photovoltaic) were actively developed in France and the rest of the world. EDF also committed to developing 3,300 MW in wind power in Europe and the United States by 2010.</li> </ul>
<b>10</b> Work against all forms of corruption, including extortion and bribery		<ul style="list-style-type: none"> <li>EDF SA: an "ethical alert" procedure was implemented in 2005 including the respect of the "integrity" value.</li> <li>EDF Energy: in keeping with the Ethical Trading Initiative, clauses against corruption are now included in procurement agreements.</li> <li>EDF SA: an audit was launched at end 2005 on measures for the prevention, detection and treatment of fraud within the Group.</li> </ul>

# Commitments and achievements 2005

The table summarizing 2005 sustainable development initiatives resumes the concrete commitments made in 2004 in respect of 2005. It indicates the main action taken to deliver on these commitments and initiatives planned for 2006. As the insert section on accountability indicators provides quantitative results it is thus, on a qualitative level, a tool in understanding and evaluating the information contained in the report.

Field of action	Commitments/Objectives	Actions undertaken in 2005	Outlook and actions for 2006
<b>GOVERNANCE</b>			
<b>Core values and the Ethics Strategy</b>  <b>Commitments to sustainable development</b>	<ul style="list-style-type: none"> <li>Finalize Group affiliate and entity ethical action plans</li> <li>Create ethical corporate workgroups (anti-corruption, anti-discrimination)</li> </ul>	<ul style="list-style-type: none"> <li>Group: signed Corporate Social Responsibility Agreement (January 24, 2005)</li> <li>Group: redefined environmental policy (June 2005)</li> <li>France: signed Public Service Agreement (October 24, 2005)</li> <li>Drafted and adopted ethical charters (affiliates: Poland, EnBW, Asia-Pacific including NTPC: Nam Theun; in the areas of information systems, procurement) or codes of ethics (distribution network, audit)</li> </ul>	<ul style="list-style-type: none"> <li>Pursue and track Ethical Charter action plans within Group affiliates and divisions.</li> <li>Implement and track 2005 sustainable development commitments: CSR Agreement; Environmental Policy; Public Service Agreement</li> <li>Audit ethical risks (fraud, harassment and discrimination)</li> </ul>
<b>Risk control and anticipation of future challenges</b>	<ul style="list-style-type: none"> <li>Plan and implement, by Group entities, action plans aimed at reducing or limiting identified risks</li> <li>Continue roll out of R&amp;D program and progress assessment</li> </ul>	<ul style="list-style-type: none"> <li>Half yearly risk mapping</li> <li>Drew up and implemented risk management procedures</li> <li>Secured the Group's long-term investment procedures</li> <li>Applied Extreme Weather Plan during 2005 summer drought</li> <li>EDF R&amp;D: upheld 90% of commitments (cost, quality, schedules) on 250 projects and 1,000 issues for Group operational divisions and companies</li> </ul>	<ul style="list-style-type: none"> <li>Ensure the drawing up and implementation of procedures in all Group entities designed to limit or control their specific risks</li> <li>Strengthen the Group's ability to anticipate emerging risks (weak signals)</li> <li>Draft and implement Group-wide Pandemics Plan</li> <li>R&amp;D objectives 2006: carry out, while respecting cost, time and quality constraints, 240 projects and 850 issues contracted with Group operational divisions</li> </ul>
<b>Stakeholder dialogue</b>	<ul style="list-style-type: none"> <li>Ensure feedback is provided to stakeholders on changes made in response to expectations</li> <li>Submit new sustainable development action plan to Sustainable Development Panel</li> </ul>	<ul style="list-style-type: none"> <li>Meetings held with the SD Panel, the Environmental Advisory Board, European Works Council</li> <li>Organized workgroups on various themes with consumer associations</li> <li>Partnerships with NGOs: Care France, Fondation Nicolas Hulot</li> </ul>	<ul style="list-style-type: none"> <li>Involve SD Panel in issues regarding the major actions of the Group sustainable development policy</li> <li>Organize shareholder relations and dialogue through the creation of a Shareholder Division</li> </ul>
<b>Management systems</b>	<ul style="list-style-type: none"> <li>Renew ISO 14001 certificate for the various units and the Group as a whole</li> <li>Assess, in terms of investment and product offers, our sustainable development decision-making tool. Product offers in particular to be assessed in terms of impact on sustainable development</li> </ul>	<ul style="list-style-type: none"> <li>Renewed Group-wide ISO 14001 certification (July 28, 2005)</li> <li>Implemented methodology for screening investment at Group level (Project and Investment Committee) as well as commercial product offers and generation facilities, developed consistent methodology</li> </ul>	<ul style="list-style-type: none"> <li>Environmental Management System: harmonize Group-wide action plan with the ten principles of the environmental policy and identification of corresponding objectives in the action plans specific to each Group entity</li> <li>Roll out system for screening in all EDF operational divisions</li> </ul>
<b>Commitment to Corporate Social Responsibility</b>	<ul style="list-style-type: none"> <li>Implement the CSR Agreement and carry out first review</li> <li>Conduct first review of professional gender equality agreement</li> <li>Draft and contract with public authorities an annual agreement for 2005 to hire disabled staff</li> <li>Propose a new seminar on Strategy/Finance and CSR for executive management</li> <li>Reconfigure the sustainable development training program</li> <li>Extend AIDS awareness campaigns</li> <li>Undergo State audit on application of health and safety priorities and principles and appropriation by management and social partners</li> </ul>	<ul style="list-style-type: none"> <li>Rolled out CSR agreement in affiliates, subsidiaries and divisions; drafted and adopted in keeping with action plans</li> <li>France: adopted positive measures aimed at professional gender equality with regard to remuneration and promotion</li> <li>France: drafted and implemented 6th agreement on professional insertion of workers with disabilities which set out quantitative and qualitative objectives for 2005</li> <li>Began a consultative process with a view to drafting a Group health and safety policy</li> </ul>	<ul style="list-style-type: none"> <li>Hold meeting of CSR Agreement Tracking Committee and first review of actions carried out as part of affiliate and division action plans</li> <li>Draft and conclude a new pluri-annual agreement on integration of staff with disabilities</li> <li>Make www.edf.com accessible to the visually impaired and obtain a label for the website</li> <li>France: obtain the AFAQ AFNOR "equality" label</li> <li>Development and implementation of an approach to "diversity" aimed at fighting discrimination and promoting social diversity in all forms within EDF SA as a way to leverage performance and cohesion</li> <li>Implementation of the Group health-safety policy action plan and first review</li> </ul>

Area	Commitments/Objectives	Actions undertaken in 2005	Outlook and actions for 2006
<b>MANAGEMENT AT LOCAL LEVELS</b>			
<b>Customer dialogue</b>	<ul style="list-style-type: none"> <li>• Roll out a new range of customer offers</li> <li>• Pursue and intensify measures to ensure accessibility to hearing and sight impaired customers</li> </ul>	<ul style="list-style-type: none"> <li>• Rolled out new customer offers adapted to market expectations (<i>Carbone Optimia Equilibre +</i>)</li> <li>• Extended accessibility for hearing and visually impaired customers</li> </ul>	<ul style="list-style-type: none"> <li>• Prepare market opening to residential customers in July 2007, notably by adapting customer relations and information systems</li> </ul>
<b>Supplier dialogue</b>	<ul style="list-style-type: none"> <li>• Pursue implementation of Sustainable Development Policy with suppliers and conduct first assessment</li> </ul>	<ul style="list-style-type: none"> <li>• Extended Purchasing Department's "Quality Sustainable Development Policy" to cover ethical and societal issues, notably with regard to general purchasing conditions, and communicated policy to professional organizations and to all suppliers</li> </ul>	<ul style="list-style-type: none"> <li>• Roll out the sustainable development charter between EDF and suppliers adopted in November 2005 to all suppliers in a joint commitment to upholding the ten principles of the Global Compact and the fundamental conventions of the WTO, applicable under the conditions set out in the Group Corporate Responsibility Agreement</li> </ul>
<b>Limiting environmental impact</b>	<ul style="list-style-type: none"> <li>• Begin building the largest selective catalytic reduction denitrification unit at the Le Havre plant, France</li> <li>• Establish a Group action plan on waste issues</li> </ul>	<ul style="list-style-type: none"> <li>• France and the UK: equipped plants with low NOx burners and applied SCR (Selective Catalytic Reduction) in 2005: Le Havre (with the support of the Haute-Normandie region) and Cordemais plants in France, Cottam and West Burton in the UK</li> <li>• Poland: made an agreement to purchase low-sulfur coal for Group plants</li> <li>• Created a "Soil contamination" skills cluster to manage plant shutdowns, land treatment and diagnostics, and measures for land restoration</li> <li>• Established an action plan on waste</li> </ul>	<ul style="list-style-type: none"> <li>• Specific reporting and tracking of plan to eliminate polluted PCB transformers</li> <li>• Establish plan to manage soil contamination and adaptation of soil contamination risk tracking to suit new Group responsibilities</li> <li>• Validate and roll out action plan on waste</li> </ul>
<b>Radioactive waste management</b>	<ul style="list-style-type: none"> <li>• Enhance dialogue and information on nuclear waste, notably in the context of preparing for the debates on the "Bataille" law in France</li> </ul>	<ul style="list-style-type: none"> <li>• Public debate on nuclear waste (September 2005-January 2006)</li> <li>• Approved decision to launch temporary storage and treatment site for long-lived waste from Bugey graphite-gas plant dismantling</li> </ul>	<ul style="list-style-type: none"> <li>• Follow-up by players in radioactive waste management with regard to measures taken before mid-2006 by the French Parliament regarding decisions on sustainable management of long-lived radioactive waste</li> </ul>
<b>Industrial safety (nuclear safety and hydropower safety)</b>	<ul style="list-style-type: none"> <li>• Continue improving managerial efforts and working methods to reinforce and maintain results in terms of nuclear safety</li> <li>• Test a method for assessing upstream risks linked to the effect of hydrodams and their use</li> <li>• Contribute to setting up guidelines for flood prediction alongside the French Ministry of Ecology and Sustainable Development</li> </ul>	<ul style="list-style-type: none"> <li>• Began program to make technical changes to the nuclear cooling pumps following a level 2 generic event related to non-compliance (December 2005)</li> <li>• Renewal in 2005 of ISO 9001 certification for safety in three hydro activities: dam surveillance; dam management in flood situations, flow controls</li> </ul>	<ul style="list-style-type: none"> <li>• Continue improving managerial efforts and working methods to reinforce and maintain results obtained in nuclear safety</li> </ul>
<b>Urban and rural development</b>	<ul style="list-style-type: none"> <li>• To forge sustainable development partnerships with local authorities</li> </ul>	<ul style="list-style-type: none"> <li>• Formed innovative partnerships with twenty local authorities in France in a call for sustainable local development projects to test various tools that support diagnostics and decision-making with regard to energy policy and to foster integration of sustainability issues in urban and rural land use and development</li> <li>• Continued participation in 39 urban projects for the renovation, lighting and sustainable development of low-income urban neighborhoods or areas in France</li> <li>• Provided assistance for over 50,000 renovation projects in the housing sector in France</li> </ul>	<ul style="list-style-type: none"> <li>• In France, continue partnerships with local authorities and assistance to the 39 projects for urban renovation, lighting and sustainable development</li> <li>• In France, put into place indicators to track commitments and contributions to economic and social development as stipulated in the Public Service Agreement (October 24, 2005)</li> <li>• At Group level, put into place indicators to track division and affiliate action plans aimed at contributing to economic and social development where they are active in accord with our Corporate Social Responsibility Agreement (January 24, 2005)</li> </ul>

Area	Commitments/Objectives	Actions undertaken in 2005	Outlook and actions for 2006
<b>CONTRIBUTION TO GLOBAL ISSUES</b>			
<b>Climate change</b>	<ul style="list-style-type: none"> <li>Participate in emissions trading market exchange</li> <li>Establish "white certificates"</li> <li>Expand energy savings services</li> <li>Participate in the public debate on EPR</li> <li>Establish a new policy on renewable energies</li> </ul>	<ul style="list-style-type: none"> <li>Fight against climate change: confirmed priority status in the Group environmental policy (June 2005)</li> <li>Integrated CO<sub>2</sub> cost into optimization of management of generation fleet</li> <li>EDF Trading was present on emissions trading market</li> <li>Prepared the way, through the Public Debate, for the construction of the first-of-a-kind EPR provided for in the French Energy Policy White Paper of July 13, 2005</li> <li>Prepared commercial roll out of energy savings product and service offers linked to the white certificates in 2006 (law of July 13, 2005)</li> <li>EnBW made decision to build the Rheinfelden hydropower dam on the Rhine, Germany's largest renewables project</li> <li>Program of significant investment in renewable energies, notably wind power (3,300 MW) in Europe and the United States, from now to 2010</li> </ul>	<ul style="list-style-type: none"> <li>Launch energy savings and energy efficiency product offers in keeping with the 2006 creation of white certificates market</li> <li>Pursue procedures for the construction of the first-of-a-kind EPR in Flamanville</li> <li>Implement EDF Energies Nouvelles wind power development policy in France, Europe and the United States and commitments to new renewables</li> </ul>
<b>Access to essential commodities</b>	<ul style="list-style-type: none"> <li>Work with the government to improve measures to ensure social cohesion of low-income customers</li> <li>Launch pilot energy savings programs in periurban areas (Argentina, South Africa)</li> <li>Extend programs in rural areas (Morocco, Mali, South Africa)</li> </ul>	<ul style="list-style-type: none"> <li>Established a special tariff for minimal service maintenance in France</li> <li>Signature of the Public Service Agreement with the French Prime Minister setting out all the public service commitments</li> <li>Launched the construction of the Nam Theun hydrodam, a renewable energy facility and a vector of local economic development</li> <li>Results from the Access program's ongoing projects in electrification of rural and periurban areas of emerging countries: over 220,000 people connected (up 65%)</li> </ul>	<ul style="list-style-type: none"> <li>Define policy on access to energy</li> <li>France: implement indicators for tracking commitments to solidarity with low-income customers set out in the Public Service Agreement</li> <li>Group: implement and track affiliate action plans in keeping with Corporate Social Responsibility Agreement articles 8 on access to electricity and 9 on low-income customers</li> <li>Implement programs for socioeconomic development around Nam Theun</li> </ul>
<b>Protecting biodiversity</b>	<ul style="list-style-type: none"> <li>Establish a Group biodiversity action plan</li> <li>Begin implementation of socio-environmental action plans at the Nam Theun hydrodam</li> </ul>	<ul style="list-style-type: none"> <li>Drafted a strategic action plan now being validated; structured internal organization</li> <li>Natura 2000: first agreements and impact assessment</li> <li>Studies undertaken by Nam Theun Power Company (NTPC) to inventory the wildlife of the national protected area around the Nam Theun site; the first year of operations for the agency</li> </ul>	<ul style="list-style-type: none"> <li>Validate and roll out the strategic action plan</li> <li>Draft a guide to biodiversity (release planned for 2007)</li> <li>Create a biodiversity research program</li> </ul>

# A European energy Group

## UNITED KINGDOM

EDF Energy (EDF 100%)

**Sales contribution:**  
€6,674 million

**Installed capacity and generation**

- Installed capacity: 4.8 GW
- Generation: 22.9 TWh

**Sales and marketing**

(via London Energy, Seaboard Energy, Sweb Energy and EDF Energy)

- 5.1 million customer accounts (of which 1.2 million for gas)
- Electricity sales: 52.7 TWh
- Gas sales and internal consumption: 3.3 Gm<sup>3</sup>

**Regulated activities**

- Distribution via Eastern London South East: number 1 in the country with 7.8 million sites connected and 89 TWh distributed
- Grid: 174,850 km low, medium and high voltage

**EDF Trading (EDF 100%)**

Energy trading for the Group's own account in Europe

**Sales contribution**  
€431 million

**Volumes traded:**

- Electricity: 1,200 TWh
- Natural gas: around 150 Gm<sup>3</sup>
- Coal: around 240 Mt
- Oil: 180 Mb (financial products only)

## SPAIN

Hispaelec Energia (EDF 100%)

Sale of electricity to large customers: 0.4 TWh

## SWITZERLAND

Atel Group (EDF 14.44% of capital and 21.23% voting rights)

- Installed capacity: 3,700 MWe and 647 MWth
- Number of customers: 121,000

## BELGIUM

EDF Belgium

- Electricity sales: 3,422 GWh
- Generation: drawing rights: 481 MW

## FRANCE

EDF SA (France + Corsica + French overseas departments)  
**Sales: €30,126 million (EDF + RTE)**

**Installed capacity and generation**

- Installed capacity: 98.8 GW, of which 63.1 GW nuclear, 20.4 GW hydro and 15.3 GW fossil-fired
- Generation: 493.9 TWh
- Sales and marketing
- 28 million customers
- Electricity sales to end customers: 408.2 TWh
- Sales of natural gas: 0.3 Gm<sup>3</sup> (excluding Dalkia)

**Electricity distribution / regulated activities**

Electricity distribution through EDF Network Operator and EDF Gaz de France Distribution: 1,246,000 km of medium and low voltage lines (including Corsica and overseas departments). 32.5 million sites connected

**RTE EDF-Transport SA\* (100 % EDF) / regulated activities**

Around 100,000 km of high voltage and ultra high voltage grids

**Dalkia Holding (EDF 34%, Veolia Environnement 66%)**

Energy services

## GERMANY

EnBW

(45.01% EDF held, 46.12% interest and votes)

**Sales contribution:**  
€5,005 million

**Installed capacity and generation**

- Installed capacity: 14.02 GW, of which 4.843 GW nuclear, 3.226 GW hydro, 5.919 GW fossil-fired
- Generation: 73.6 TWh

**Sales and marketing (corporate figures)**

- Around 5 million customers
- Electricity sales: 106.7 TWh
- Gas sales: 8.4 Gm<sup>3</sup>

**Regulated activities**

- Grid: 152,474 km of low, medium and high voltage lines

## ITALY

Edison (EDF 51.58% of the capital and 50% voting rights)

**Sales contribution:**  
€1,010 million

**Installed capacity and generation (corporate figures)**

- Installed capacity: 6.6 GW (excluding Edipower – 10 GW with Edipower)
- Generation: 44.7 TWh

**Sales and marketing**

- Electricity sales: 52.7 TWh (16% of the total market and 17.3% of the deregulated market)
- Gas sales (16% of the market) and internal consumption: 13.1 Gm<sup>3</sup>

**Fenice (EDF 100%)**

**Sales contribution:**  
€480 million

Electricity generation facilities, electricity transmission grids and environmental assets associated with industrial sites

## POLAND

ECK Cracovie, ECW, Kogeneracja, Rybnik, Zielona Gora

**Installed capacity and generation (electricity and heating)**

- Installed capacity: 3,169 MWe and 3,874 MWth
- Generation: 15,036 GWh of electricity and 30,650 TJ thermal

## HUNGARY

BERT (EDF 95.57%)

**Sales contribution:**  
€155 million

**Installed capacity and generation**

- Installed capacity: 392 MWe and 1,724 MWth
- Generation: 1,530 GWh of electricity; 9,136 TJ thermal

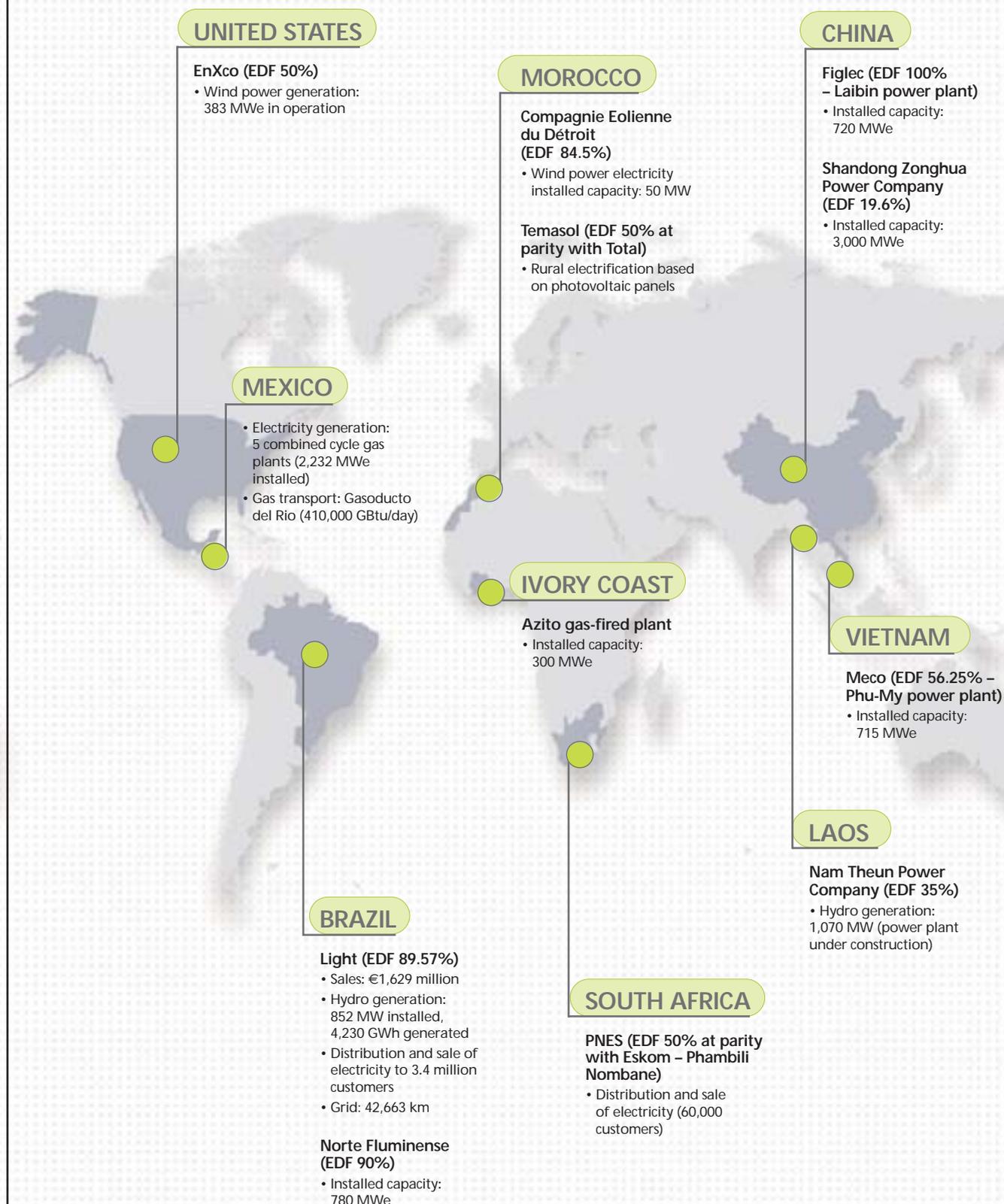
**Demasz (EDF 60.91%)**

**Sales contribution:**  
€367 million

**Distribution and sale of electricity (11.5% of the market)**

- 755,000 customers
- Electricity sales: 3.9 TWh

# Selecting opportunities worldwide



# Renewing and sharing commitments with all stakeholders

The EDF Group aims to carry out its activities in keeping with the principles of sustainable development, committing to economic development, high quality service, protection of the environment, social responsibility and openness to the world at large. In 2005 we renewed these commitments with the signing and roll out of our Group Corporate Responsibility Agreement, the signing of a Public Service Agreement in France, and a redefinition of EDF's environmental commitments. In France, EDF became a limited company and opened its capital to the public, requiring the Group to broaden the ways in which it communicates these commitments and to deepen dialogue with shareholders, customers, staff and all other stakeholders.

## Working together to fulfill commitments

A sense of the long-term and of responsibility toward the areas and communities where EDF fulfills its role as a provider of vital public services is a deep-rooted aspect of EDF's corporate culture. Now, as competition intensifies and as the company opens its capital, EDF has chosen to reaffirm its ethical commitments and to take the opportunity to give them new impetus.

### Deep-rooted commitments

#### Agenda 21, sustainable development

EDF's commitments to sustainable development were set out in our Agenda 21 signed December 21, 2001, based on the Agenda for the 21st century adopted at the 1992 United Nations Earth Summit in Rio de Janeiro. The Group thereby committed to 21 principles adapted to the issues we face specifically. They constitute the four pillars of our sustainable development policy:

- Acting transparently: governance and accountability;
- Acting responsibly: protection of the environment and ISO 14001 certification;
- Reviewing our activities systematically, investments and product offers with regard to sustainable development;



EDF Médiathèque – Philippe BRAULT

- Partnering with other sustainable development players to participate in the sustainable development of the areas where we are active and providing expertise to national and international organizations of all kinds.

These principles inform the sustainable development action plans adapted and adopted by our various divisions, units and facilities to meet the common Group commitments to contribute to the social cohesion of the communities where it is based.

#### **The Global Compact, consolidating corporate commitment**

In the same spirit, the Group adhered in July 2001 to the Global Compact, an initiative of the United

Nations Secretary General by which signatory companies agree to adopt, support and apply certain universal principles of human rights, labour, protection of the environment and, since July 2004, the fight against corruption. The Global Compact has become a shared reference to global corporations and companies worldwide, backed in France by a government that promotes its principles. The Compact recalls, in a series of ten commitments of principle, the basic ethic of sustainable development with which companies strive to conform and for which they aim to be accountable. This is why our commitments corresponding to the Global Compact are closely tracked in this report in a table of major actions undertaken in 2005. The Global Compact logo serves

# January 24, 2005 signed Corporate Social Responsibility Agreement

as an indication of actions that illustrate our commitment to the principles.



## Group Ethics Strategy

The EDF Ethics Strategy, launched in March 2003 with a Group-wide consultative process, allowed us to identify five core values – respect for the individual, respect for the environment, performance, solidarity and integrity – that bring together the values of high quality public energy service and of Sustainable Development. The Charter was rolled out Group-wide and adapted to the various businesses or cultures where we are active. Specific ethical charters or codes of conduct have been or are being adopted, notably in the areas of IT and communications systems, procurement, subcontractor relations, and audit.

In the UK, EDF Energy created a Corporate Responsibility Strategy Group (CRSG), an across-the-board workgroup that meets quarterly to boost company ethical action plans on diversity, procurement, shareholder relations, and community investment. In Poland, ethical action plans were drawn up with staff input. In China, ten ethical recommendations were established with employee representatives. In Germany, at EnBW, 800 people participated in identifying ten fundamental values that were communicated company-wide through manager/staff dialogue.

The Ethics Strategy therefore contributes to sharing common Group values and common criteria for assessment, both collective and individual, toward building Group identity. In May 2005, EDF's Board of Directors examined the conditions for appropriation of the Ethical Charter by the Group and reaffirmed its strategic significance.

## Renewed commitments

### EDF's Corporate Social Responsibility Agreement: an innovative approach

Our Corporate Social Responsibility (CSR) agreement was concluded on January 24, 2005 by the EDF Group's Chairman and CEO along with unions and employee representatives from companies in which the Group has majority shareholdings and the four international electricity sector union federations (ICEM, OIEM, PSI, FMTI).

This agreement provides the Group with a foundation on which to build shared commitments and common goals; it refers to EDF Group values, to the principles of sustainable development and the Global Compact. It applies to EDF SA and all of the companies in which it has a majority shareholding. It involves players in both areas of responsibility within the companies toward employees, and responsibility outside the companies towards stakeholders and civil society.



The agreement enables the Group to reaffirm its stance on social responsibility in all companies included within the consolidation scope while respecting the principle of subsidiarity. In effect, the agreement's 24 articles do not form a set of regulations, but set out common objectives, with implementation adapted according to country or culture. The commitments formulated in the articles are precise and concrete. They underscore the Group's intention to uphold in all its activities the principles of the International Labor Organization (ILO) conventions and the standards of social and labor rights it recommends, even in countries where they have not been ratified (though in accordance with national law).

To ensure consistent reporting is implemented Group-wide, the agreement provides for a global committee to monitor progress (*Comité de Dialogue de la Responsabilité Sociale* – CDRS). In April 2006, the committee held its first meeting with social partners to review implementation of the agreement thus far and to discuss further action plans.

Application of the agreement began in 2005 with the document's distribution to staff and its publication on most of the Group's Intranet sites and on the Group website, [www.edf.com](http://www.edf.com). The terms of the agreement were then rolled out in most of our divisions and affiliates and initiatives and actions to be undertaken were identified within each entity. Four main aspects of the agreement were highlighted in France: adaptation and career development (training, mobility); equal opportunity; subcontractor practices; integration of the disabled.



The Corporate Social Responsibility Agreement was signed in January 2005, and aims to support the setting up of a worldwide social dialogue body.

EDF Médiathèque – Samuel BOLLENDORFF

In Brazil, Light created an equal opportunity committee to oversee the agreement's application, the social responsibility forum. In Poland, EC Krakow defined a concerted list of actions to be undertaken and even created a foundation, Warm Hearts, to sponsor solidarity projects inspired by the agreement.

#### Our public service mission: clearly defined and strengthened

On October 24, 2005, the French Prime Minister and EDF's Chairman and CEO signed a new Public Service Agreement (*Contrat de service public* – CSP). More than the mere renewal of the previous contract (2002), the new agreement states for the first time in a single document all of EDF's commitments and defines the public service missions that EDF as

a power producer, transmitter and distributor must uphold. These missions contribute to the objectives laid out in the French energy policy as defined in the Energy Guidance Bill of July 13, 2005 setting out energy guidelines (*programme d'orientation pour l'énergie*): energy independence, supply security, protection of the environment, energy at reasonable cost and national and community cohesion.

The agreement confirms the terms of EDF's quality public service mission in France. It guarantees security of electricity supply, through a 6% increase in investment in distribution networks in 2006 and 2007, and €100 million/year of investment in the transmission network to 2007; systematically responding to public calls for tenders. It guarantees the French "equal pricing principle" and access to energy for low-income



# Responding to stakeholder expectations

customers. It guarantees local service and access to the network (servicing obligation) and contributes to local development by developing infrastructures. EDF also commits to a high level of safety and security at its facilities, to combating global warming, to protecting the environment and to encouraging customers to save energy, particularly through energy savings certificates.

Each mission and its financing are accounted for by source: the contribution to public service electricity (*Contribution au Service Public de l'Electricité* – CSPE); use of public networks tariff (*Tarif d'Utilisation des Réseaux Publics* – TURP); and the sale price to residential customers which will not surpass the rate of inflation over the next five years.

The significant investment in networks (distribution, transmission) provided for by the agreement is included among the overall Group investments announced at the end of 2005 as part of a five-year (2006-2010), €40 billion program of which €30 billion over 2006, 2007, 2008. The program concerns primarily fossil-fired facilities (oil and coal), nuclear (the EPR project) and our renewable energy base (wind power and biomass) in France, as well as the securing of island power systems: the Corsica-Sardinia connection and renewal of thermal in the French overseas departments.

## EDF Group Environmental Policy: rising to the challenges



In June 2005, confronted with a highly changeable context marked by the growing energy crisis and the acknowledgement of climate change, EDF's Chairman and CEO brought the Group's environmental priorities up to date. Our environmental policy now hinges on three major issues, implemented through the Environmental Management System.

The first issue focuses on effectively fighting global warming by optimizing our generation facilities, by

contributing significantly to the development of renewable energies, by offering energy efficiency services and advisory services to our customers, by our investment choices, and by research and development that prepares the way to renewing our existing generation facilities through high performance, less CO<sub>2</sub>-emitting solutions.

The second issue aims to limit our facilities' impact on the environment and health by conducting rigorous impact studies, by applying regulations, respecting natural areas and biodiversity in all our projects, contributing to emerging solutions for nuclear waste management, training staff and service providers on environmental issues.

The third issue involves stepping up stakeholder dialogue to better understand and respond to their expectations, informing the public on energy issues, communicating, training and motivating staff to set the example in terms of the environment and especially energy savings.

Implementation of our environmental policy is carried out under the Environmental Management System (*Système de Management Environnemental* – SME) which covers all Group activities across the various entities, from the six main operational activities to EDF's transverse function and our main affiliates, both French and international. Since 2002, the Environmental Management System has undergone a process of ISO 14001 certification for all operational activities and entities. Each year, the entities within the certification scope are audited. On July 28, 2005, ISO 14001 certification for the Group was renewed by Det Norske Veritas (DNV), which replaced AFAQ as certifier. This time, *EDF Energies Nouvelles*, the TIRU Group and Fenice (Italy) were included in the certification scope.

The environmental policy structures the way we review our projects, businesses and product offers in terms of their potential environmental impact or risk. One review, conducted at the highest Group level by the Project and Investment Review Committee was extended to cover product offers and to include, beyond environmental impact, broader sustainable development criteria. The Nam Theun hydrodam project in Laos, for instance, is being managed in terms of both environmental and social impacts. Using analytical frameworks developed for product offers and generation projects such as Nam Theun, a methodology and tool were developed to assist the Group screening process. In 2006 it is being rolled out in the project divisions.



## Partnering for results

EDF's activity and strategic development plan concern a broad constituency in France and across Europe, in many ways: customers, citizens and local residents, shareholders, suppliers and financial partners, political representatives, social bodies, environmental and non-governmental organizations. The commitments are towards these players and their interests but also with them, in responding to their expectations. With the opening of the share capital and the emergence of new stakeholders, shareholders, investors and rating agencies, the conditions for dialogue have changed and call for new mutual relationships.

### Information sharing

#### The governance bodies

During the 2005 financial year, EDF SA implemented within the legislative framework by which it is governed, the mode of governance, adopted at the time of its transformation into a limited company, which recognizes the full involvement of stakeholders, the French State shareholder, qualified individuals, employee representatives, forming its Board of Directors and participating in its three Committees (audit, strategy, ethics). This specified the regularity of meetings, information and training for directors and prior committee discussion of issues to be presented to the Board. Activity in the Group's governance bodies was intense and demanding due to the subjects addressed but also to the adoption by the Board and its Committees of the Group's sustainable development dimension. In order to improve transparency, a Remuneration Committee, already planned for 2005, will complete, in 2006, the governance procedures.

Within the Ethics Committee, Board directors examined the annual reports on nuclear safety, on Mediation activities and those of the Ethics and Compliance Division. It also conducted an in-depth study of the partnership policy with nuclear sub-contractors and looked at the dam project Nam Theun 2 in Southeast Asia from a sustainable development point of view. A mission to reflect on the Board's functioning was also carried out by the Ethics Committee at the request of the Board.

The company's governance bodies ensure the sharing and exchange of information required for the participation of stakeholders in the decision-making process. Thus the Board of Directors was

able to verify throughout the 2005 financial year that its decisions were consistent with the commitments in the Group's Social Responsibility agreement.

#### Information for investors and shareholders

The preparation for the opening of the share capital justified an extensive and comprehensive communication and information campaign.

- The publication in June of a registration document, updated in September, including all the information necessary for investors to analyze the company's assets, activity, financial situation, results and outlook, and filed with the French financial markets regulator (AMF).
- Management roadshow of the global stock markets; meetings with investors and financial analysts.
- Presentation to employees of the reserved share offer.
- Information for retail investors.

EDF was prepared to respond to the expectations and questions of every investor and every potential shareholder: institutional, financial, individual or employee. The drawing up and publication of the registration document, available in its entirety on the EDF website ([www.edf.com](http://www.edf.com)) was the opportunity for a transparent overview of the company, preparing the responses to be provided to financial and non-financial rating agencies that evaluate, on behalf of investors, not only the company's business and financial performance but also its governance, in terms of ethical commitments and social and environmental responsibility.

#### Sustainable development reporting

The Group's sustainable development report, published and distributed along with its annual report, reports on the Group's performance in matters of sustainable development; it is first seen by the Board of Directors and its Ethics Committee. Available on the Group's internet site ([www.edf.com](http://www.edf.com)), it presents information and results in this area to the public and to the different stakeholders and is an important tool in the dialogue engaged with them. It also serves as a reference document for analysis of environmental and social issues by the rating agencies.

In order to facilitate qualitative and quantitative comparison, it uses the categories and criteria of the Global Reporting Initiative (GRI), affiliated to the UN Environment Program, which aims to promote the development and extension of the different sustainable development reporting methods and criteria now used by most large companies globally. In 2005, having integrated the recommendations of the National Accounting Council (*Conseil National de la Comptabilité*) dated October 21, 2003 on reflecting environmental issues in Group companies' corporate and consolidated financial statements, the Group worked on improving the reliability of its indicators on environmental expenditure and undertook with the statutory auditors an exercise in certifying the reliability of information reported on environmental and social issues.

### Stakeholder dialogue

Beyond information sharing, the Group, in many different ways and places, engages with stakeholders or those who represent them in an extensive and comprehensive dialogue which stress-tests the respect of the sustainable development commitments across all areas of its activity.

#### Establishing dialogue

EDF is supported by different advisory bodies which help it to define policy: the Science Board, the Medical Board and the Environmental Board.

In order to benefit from an external view of its environmental policy, in 1999 the Group established an Environmental Advisory Board, comprised of ten representatives of broader society under the aegis of the EDF Chairman. This Board was re-established and expanded in 2005 and an individual from outside the Group was appointed Chairman in order to strengthen the impartiality of its work. Twice a year on average the Board comments to the Chairman on issues of strategic importance for the Group. This year, it contributed to EDF's Environmental policy guidelines and to the assessment of EDF's contribution to combating climate change and associated initiatives. The Board's recommendations are available on the EDF website ([www.edf.com](http://www.edf.com)).

In order to define its sustainable development commitments and assess their implementation, the Group is also supported by a panel bringing together independent individuals, well known in the field of sustainable development. The Agenda 21 Panel, which was renamed the Sustainable Development Panel in 2004, is also chaired by an individual from outside the Group. His or her role is to advise on the Group's orientation and provide a critical assessment of the manner in which the Group implements and reports on its sustainable development commitments. The Panel meets on average twice a year and the minutes of its meetings are available on the Group's web-

site. The Sustainable Development Panel also met twice in 2005 to analyze governance issues and the options for energy generation in the face of climate change. It also commented on the sustainable development reports for 2004 and 2005.

#### Listening to customers

EDF seeks to establish a long-term relationship with its customers, to respond to their expectations and embed its sustainable development commitments in the sales relationship itself.

#### Conducting satisfaction surveys

The dialogue with customers is enhanced by qualitative studies and satisfaction surveys. In 2005, satisfaction remained at a high level: more than 79% for companies and professionals and more than 84% for individual customers, even if there was a slight decline in the eligible customer segment (-3.5 points), explained in part by the changes arising from the effective separation of the distribution and marketing activities.

#### Responding to customer expectations

To maintain a high level of customer satisfaction, EDF is implementing tools to improve its responsiveness – call centers, complaints services, mediation in legal disputes - and, to enhance dialogue with consumer associations, establishing clubs such as the business club for companies or the *Cercle Energie et Collectivités* for local authorities or Internet sites. EDF also takes into account customer needs by incentivizing them to use only the quantity of energy they require.

For individuals just as with companies, the sales and marketing approach consists of offering services to promote energy efficiency: advice, diagnostic, the availability of analysis or management tools, allowing customers to better manage and reduce their consumption, with a direct impact on their bills and an indirect effect of contributing to the management of energy resource.

In the same way, EDF is present throughout the relationship with the customer, proposing specific services tailored around "key life moments", such as the creation of a company, mobility or home renovation projects and improving heating comfort in the home. Finally, on another level, which is to rule out all discrimination, product access will be improved as in 2005, for example, for hearing-impaired customers, with the opening of the daily *e-sourds* service, allowing them to communicate in sign language, via a webcam and broadband link, with a customer adviser. This service [www.esourds.com](http://www.esourds.com) is now accessible from the EDF site home page [edf.fr](http://edf.fr).



EDF is incorporating its commitments to sustainable development all the way through to its relations with customers. For every kWh purchased as part of a *kWh Equilibre* contract, EDF injects one kWh generated from renewable energy sources onto the grid. In addition, EDF pays out a portion of the amount received from the customer to support the CISEL research project, which seeks ways to reduce the cost of generation from solar cells and develop solar energy. The Transmontagne group opted for a *kWh Equilibre* contract for the ski lifts of the Chamrousse resort. Shown here are Jean Labrousse, Head of management control and purchasing at Transmontagne (left), and Jean-Christophe Rolland, his EDF interface.



# Local information commissions open to elected officials



## Working with suppliers

In France, EDF would like to maintain long-term relationships with its suppliers, with a priority on achieving quality and the respect of ethical, social and environmental principles. Analysis of requirements, prior submission of a questionnaire to the supplier, drawing up of the contract, evaluation of the "product-supplier" duo: all stages of the procurement process take this aim into account. In 2005, the policy document "Quality Sustainable Development", now integrating ethical and social aspects, was communicated to professional bodies and sent to each supplier. In 2006, a Sustainable Development Charter between EDF and its suppliers, adopted in November 2005, will be progressively deployed, integrating the ten principles of the Global Compact and the ILO's fundamental conventions.



In the United Kingdom, EDF Energy also applies the social responsibility principles in its procurement. In 2005, the company established an ethical procurement policy for all its activities, with the exception of trading, and trained its personnel in procurement ethics. It participated in an initiative managed by Achilles<sup>2</sup> to define the social responsibility criteria which could be used in calls to tender and presented the progress in its own initiatives at a conference organized by Achilles.

## Involving local residents and authorities

Permanently on the agenda, the dialogue with local residents and elected officials can take many forms. With local authorities, it takes part within the framework of distribution concessions, at the time of the annual report but also as an ongoing part of all aspects of the energy, economic and environmental impact of the distribution activity. This might involve anything from cooperating on concrete issues such as road-works through to investment planning. As to sales and marketing, the Group pays particular attention to the needs of local authority customers with the already classic, *Di@lège* product which

allows the display and control of consumption over the internet and the *Citélia* product range which adapts the contracts of these same local authorities according to their different needs in terms of lighting roads and buildings through to large-scale equipment for collectives.

The majority of the generation entities engage with the public, in the form of local information commission meetings, open to elected officials and representatives of the general public. Here too perception studies or opinions allow for the assessment of the impact of the activities or of information shared, revealing the expectations and concerns of local residents, citizens, associations or elected representatives on safety in areas around works or the shared usages of water, whether for energy needs, leisure, agriculture or environmental protection.

## Partnering with associations

A pillar of its Agenda 21, EDF's partnership with the other sustainable development players and particularly with associations which contribute their own individual competencies, was strengthened in 2005. In France, the partnership with the Nicolas Hulot Foundation continued through the EDF Foundation and the partnership with UNCPPIE (*Union nationale des centres permanents d'initiatives pour l'environnement*) was renewed for another three years for the development of practical initiatives at local level. 2005 was particularly marked by the conclusion of a first strategic partnership, made at Group level, with the Care organization, for the implementation of development initiatives across the world and the fight against poverty.

## Participating in three national public debates

In 2005 three public debates of great strategic importance for the EDF Group began. Two concerned works projects: the establishment of the EPR<sup>3</sup> pilot reactor at Flamanville (October 2005-February 2006) and the creation of the Cotentin-Maine high voltage transmission-line to insert the EPR in the network (October 2005 - February 2006). The third debate was organized within the framework of the French "Bataille" law of September 30, 1991 and addressed the management of long-lived radioactive waste (September 2005-January 2006).

1. International Labor Organization.

2. Achilles is a pooled procurement group in the UK, operating over the internet.

3. European Pressurized water Reactor.



The choice of Flamanville as the site for the EPR (European Pressurized Reactor) pilot unit was discussed at over twenty public meetings held under the aegis of the National Public Debate Commission (*Commission Nationale du Débat Public*).



Under the aegis of the French National Commission for Public Debate (*Commission Nationale du Débat public* – CNDP), the public debates are subject to precise procedures. Given the complexity of the subject matter and the regional approach being combined with national, regional and local strategic interests, these debates are characterized by their new and demanding nature. EDF endeavored to present its projects in a spirit of transparency and responsibility. The discussions covered energy issues, safety and radioprotection, electromagnetic fields, EDF's commitments to renewable energies and energy efficiency, the transparency and independence of expert opinion and evaluation. Overall, they were the opportunity for an unprecedented public exchange of some very high quality information. They contributed to the preparation for decision-making on project launches and, for nuclear waste, supplied the elements for a necessary debate prior to the debate in the French parliament scheduled for the second quarter of 2006 on the choice of method for the sustainable management of long-lived radioactive waste.

## Promoting social responsibility

While rising to the challenge of competitive markets, the Group intends to preserve internal social cohesion and promote employee buy-in to the company's values. Its human resource policy has three main aims:

- Promote social dialogue and observance of the Group's social responsibility commitments, both individual and collective, at all levels of social relations within the Group;
- Constantly steer jobs and skills while pursuing an active policy of resource optimization;
- Motivate employees by offering them attractive working conditions and professional development and involving them as shareholders.

On a Group-wide scale the dynamic of the implementation of the CSR agreement will help promote the deployment of social policy across all the companies.

### Dialogue

Aside from the Group agreement on social responsibility, the social relations dynamic was reflected in France by the conclusion of several branch or company agreements signed by the social partners. In 2005, EDF notably concluded with union bodies an agreement relating to the incorporation of disabled people into the work force (February 24, 2005), a pay deal, a profit-sharing agreement for 2005-2007, two agreements on the savings plan and an agreement on career-tracking for mandated or union representatives.



This social dynamic is also reflected in the functioning of consultation bodies across the Group. The European Works Council (*Comité d'Entreprise Européen* - CEE) has since the end of 2001, been the first level for social dialogue covering EDF's international reach, contributing to the building of a Group-wide identity. A body providing regular information on the Group's economic, financial and social strategy, the Committee met three times in 2005 and was consulted on Group social, R&D and environmental policy and initiated a special study into policy on health and safety. In January, a special meeting examined the Group's strategic development plan. At the end of 2005, the CEE proposed an examination of the execution of the Group's public service mission in its European companies.



An intra-company body for social dialogue was established for the Latin American sub-continent as well as a Consultation Committee within the Asia Pacific

branch, whose members were directly elected by EDF's Chinese, Vietnamese and Thai employees.

### Job development

Article 6 of the Corporate Social Responsibility Agreement specifies that Group companies must observe three principles when dealing with industrial restructuring projects: anticipate decisions with employee support initiatives taking into account the social consequences; engage in extensive and sustained social dialogue with unions and employee representatives, particularly on the adapting of individual and collective support initiatives; adopt a socially responsible position towards both employees and local economies.

For EDF SA, the large number of employees retiring due to the age pyramid will require the renewal of qualified personnel in both generation and engineering and distribution. To prepare for these departures, the recruitment of nearly 4,000 employees between 2004 and 2005 was focused on priority professions. In 2006 and 2007, the company is preparing for several thousand new external recruits per year and a stepping up in the apprenticeship program over the period, welcoming around 1,000 young people to on-the-job training schemes. This level of recruitment in 2006-2007 should offset at most one in three of the 9,000 departures expected over the period. EDF is thus committed to skills renewal in its "core professions", implying preparation, a priority on internal redeployment and professional training initiatives.

EDF and CNR (*Compagnie Nationale du Rhône*), which took over the operating of 19 of EDF's hydropower facilities, concluded a social agreement specifying the terms offered to EDF employees volunteering for secondment to CNR as of January 1, 2006. After consultation with employees, 300 chose to join CNR, while 120 opted to remain at EDF, most of whom will be transferred to the Generation Division. A committee to monitor the agreement was established by EDF and CNR managements. It will be responsible for regular reports on compliance with this agreement.

Our Corporate Social Responsibility Agreement involves pro-active social support in restructuring within the Group. In Argentina, the partial sale contract for Edenor requires the purchaser to respect the social and societal commitments within the framework of the CSR Agreement for a three-year period and to regularly check on its implementation. In Poland, ERSA is supporting the restructuring of its Rybnik power plant with three voluntary programs: departures, temporary leaves, and early retirement.



The European Works Council is a key forum for social dialogue at international level for EDF, helping to build the corporate identity.



## Profit-sharing agreement and sustainable development in 2005

The June 2005 profit-sharing agreement integrates, in its objectives to be taken into account for the calculation of the employee profit share, the Group's environmental performance in around one hundred initiatives undertaken within its certified perimeter. For the full 2005 bonus to be paid, the realization rate for these initiatives must be above or equal to 89%.

## Employee savings plan and sustainable development in 2005

A new Group employee savings plan (*Plan d'Epargne Salariale du Groupe* – PEG) was established in 2005 based on an agreement with all the union bodies. 20% of the funds are invested in *Egpargne Croissance*, the plan's investment fund which prioritizes investments in companies which create jobs. EDF pays 2% of the investment in this fund, some €573,000 in 2005, to the *Fondation Agir Pour l'Emploi* (FAPE), a joint body financed by donations from EDF and Gaz de France staff and sponsored by the companies to support job-creation and social integration projects.



# Environmental training for more than 1,000 staff



## Responsible sub-contracting

At the beginning of 2004, EDF signed with its nuclear sub-contractors (600 companies; 17,000 employees) a Charter for Sustainable Development and Progress which involves commitments in the following areas: selection, training, radioprotection, work conditions (ILO conventions) and monitoring. The review of its adoption, carried out in 2005 by the intra-company commissions for safety and work conditions (*Commission Inter-Entreprises sur la Sécurité et les Conditions de Travail* – CIESCT) established within this framework, is encouraging.

The work was extended within the framework of the "sub-contractor" project in the Nuclear Generation Division, which proposed areas of improvement in day to day life as well as in skills renewal.

The approach was extended to other divisions and sub-contractor companies, on issues such as the improvement in accident prevention plans and lifting procedures. These approaches aim to simplify and standardize the available tools as well as facilitate the working conditions for sub-contractor companies. The implementation of a standard form for the arrival of scaffolding is one significant, concrete example of this. This experience in the nuclear sub-contracting sector must be extended, serving as a basis for negotiations on socially responsible sub-contracting to be held in 2006 within the framework of the roll out in France of the CSR Agreement (article 10).

## Training available to all

Skills management is critical to the Group's competitiveness, especially within a context of full market opening in 2007 and a large number of employees retiring. This is why EDF dedicates significant resources (6.9% of the payroll in 2005) to employee training, offering ongoing job support and professional development.

EDF is working to make training available to everyone,

- In making, for example, training more accessible to women and in the use of on-line or delocalized training programs
- In developing personalized training programs
- In supporting the incorporation of young people into the work force

In 2005, the company more than doubled (675 contracts compared with 244 in 2004) its contribution to youth on-the-job training, with a scheme covering 350 apprenticeship contracts dedicated to new technologies for the call center professions.

## Environmental training

Professional training also aims to promote buy-in to the Group's values and numerous training schemes address the sustainable development issues of social and environmental responsibility. The professional training department has an environment and sustainable development coordinator. Managed by the Environmental Training Committee (*Comité Formation Environnement*), bringing together representatives from all the divisions and professions as well as training organizations, the training program is outlined in a guide to environmental awareness putting forward a "reference framework for environmental skills by profession" with the associated career development path. The "EDF and Agendas 21" program aims to promote the individual buy-in to the sustainable development approach. Other 2005 initiatives are more specific: "Electromagnetic Fields", "Environment and Health", "Industrial Ecology - a tool in sustainable development", "EDF's environmental regulatory framework", "EDF's activities and Biodiversity". Maintaining the professional standards of the "environmental quality" engineers is undertaken through training initiatives to ensure the operational management of the integrated environmental management system. The development of the ISO 14001 standard was the subject of information days and learning tools established to disseminate information.

In 2005, more than 1,000 agents were involved in environmental training programs.

## Managing diversity

### Professional equality

The national action plan on professional equality, drawn up in consultation with union bodies and based on the 2004 professional equality agreement, was adopted and implemented in the action plans of the divisions, who were also consulted. These plans were presented to the national monitoring commission (*Commission Nationale de Suivi* – CNS) (7 meetings).

On March 15, 2005, amongst several positive measures concerning the promotion and remuneration of women in the company, the most important was





The national action plan for equality in the workplace, drawn up in cooperation with unions, was implemented in 2005.

## Personalized training programs

The necessary job commitment required in a business where competition is growing can reduce the opportunities for participating in sometimes time-consuming group training sessions. On such occasions everyone is looking for solutions which can be rapidly applied in his or her own particular situation: personalized training is thus often appropriate. It can be done via:

- E-learning accompanied by long-distance learning support;
- Schemes to develop personal potential such as the management training scheme (*Appui au Passage Maîtrise Cadre – APMC*);
- Individual support from internal consultants in coaching schemes.

## E-learning

The *E-learning Clientèle* training program intended for the 20,000 staff in the distribution customer service platforms and developed by the Professional Training Department in association with the IT and Purchasing Divisions comprises 60 on-line training modules. Operational since October 2004, it addresses an audience of whom many are women (50% of customer service platform staff are women), personalizing training.



EDF Médiathèque – Stéphane REMAEL (top) / EDF Médiathèque – Michaël ZUMSTEIN (bottom)

the provision of an additional budget for individual salary increases reserved for female employees in 2005. 1,300 women benefited from this initiative to compensate for salary discrepancies. A survey into the way these measures have been implemented should allow for qualitative and quantitative feedback in 2006.

### Incorporating the disabled into the work force

Improved access to all customer centers for the disabled, recruitment, support for the protected sector, sponsorship of the *Fédération Française Handisport*, support for associations: EDF's commitment to the disabled is realized in many ways.



The 6th national agreement for 2005 on promoting the incorporation of disabled people into the workforce set targets for recruitment (4% of 2005 recruitment), for financial support in everyday life as well as for support of the protected sector (forecast budget of €8.5 million).

The establishment of a national cell for maintaining employment helps to find solutions if the disability arises during the course of an individual's career. Working groups were created to undertake an in-depth study of the content of the future three year agreement for the 2006-2008 period, in the light of the principles of the French law of February 11, 2005 and a 2005 review of the conditions for the integration of staff with disabilities.



On a technical level, two "visual-impairment" and "and hearing-impairment" experts were appointed to look into technical solutions for the adapting of work positions for the visually or hearing impaired. In 2005, a "professions" IT application made way for the use of Braille or voice-based aids to compensate for visual impairment. In the share offer reserved for employees, visually-impaired employees had access to information channels adapted to their needs.

### Diversity in recruitment

In France, the company confirmed its commitment to facilitating employment access and career development to young people from low-income urban areas with the right qualifications. Following on from the commitments made within the framework of the City Convention (*Convention Ville*), established in 2001, the company is aiming for 10% of total recruitment to be represented by young people from low-income urban areas. Initiatives are developed with local bodies and national and local employment agencies and focus especially on the businesses involving customer contact.



### Promoting safety in the work place

#### Health and safety: convergence across the Group

At Group level, the CSR Agreement is the shared reference framework on which the first coordinated initiatives on health and safety were based. The main companies in the Group pooled their current practice and the early findings were presented to a meeting of the European Works Council. Shared priorities were identified around three types of risk: core profession risks (electricity, falls, related risks - road accidents, equipment handling, factory floor) and emerging risks or those with a delayed effect (chemical risks, psychosocial and musculoskeletal problems).

The performance review undertaken at the end of 2005 revealed four areas of potential improvement in health and safety across the Group in 2006:

- A strengthening of social dialogue on, notably, health and safety issues;
- Extending the work with sub-contractors, based on the experience acquired in the nuclear sector through the common Charter for Sustainable Development and Progress, and the intra-company Commissions for safety and work conditions (CIESCTs);
- The exchange of best practice in personal protection Equipment;
- Aiming for and reaching compliance with the management reference frameworks on health in the work place: OSHAS 18001, SM2S, ILO guidelines, OHS 2001.

#### Health and safety at EDF SA

Within the framework of the health and safety policy implemented in 2003, the indicators for monitoring health and safety at EDF SA show a trend putting EDF amongst the leaders in the European energy sector. The audit undertaken in 2005 shows a strong commitment from managers and positive results founded on a strong internal safety culture: 40,000 employees were trained in first aid; the broad

## Professional insertion

The Cap Ampère facility in Seine Saint-Denis, headquarters of the Generation Division, partners with several local work support centers, (*Centre d'Aide par le Travail* - CAT), to promote the incorporation of disabled people into the work force. For the past eight years, 80 young slightly mentally disabled people have been working at the site every day, picking up and delivering packages and materials, receiving merchandise, carrying out secretarial tasks, looking after the gardens, sorting rubbish and working in the laundry room. This approach is reflected in the site's Agenda 21, signed in October 2005.



## Psychosocial risks: the approach taken by responsible groups

The feedback from a serious accident in one of EDF's units allowed, thanks to a local collective initiative lasting a year and a half, for an updated mechanism to be introduced for dealing with such situations. It is based on an internal group which can be trusted by employees, with no management representatives, where dialogue can be used to prevent harassment and build a better understanding of real, physical and moral conditions in the work place. Other EDF units have since adopted this approach.

Not one employee working at a nuclear plant received a dose of more than 18 millisieverts ( $\mu\text{Sv}$ ) over 12 months: the regulatory limit is 20  $\mu\text{Sv}$ .



EDF Médiathèque – Michaël ZUMSTEIN

application of risk evaluation methods supported by employee involvement.

The 2005 results put EDF France, for the fourth consecutive year, at a frequency rate of below 5 (4.7) and a gravity rate of 0.22 in 2005.

However, certain general or specific risks, notably of the psychosocial variety, were the subject of initiatives to support managers in the management of their prevention. This centralized approach was matched by local initiatives at generation and distribution unit level, based on the involvement of those dealing with these multi-factor situations.

In the nuclear plants, radioprotection continues to show a marked improvement: the average annual collective dose of EDF employees and those of exter-

nal contractors has been halved in less than ten years. In 2005, it was 0.78 SI unit sievert (Sv) per unit and per year, slightly below the 2004 level (0.80 Sv), whereas the volume of work exposed to ionizing radiation increased by around 5%. No employee was exposed to an individual dose of more than 18  $\mu\text{Sv}$  over 12 months, whereas the legal limit is set at 20  $\mu\text{Sv}$ .

# Managing local issues

EDF is in many ways a “multi-local” Group, participating in local life through generation facilities, transmission and distribution lines, distribution centers and customer service agencies. We are committed to limiting the impact of facilities and operations, and to protecting populations and the natural environment. All our business is conducted in a spirit of contribution to the community.

## Safety: the top priority

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EDF makes safety an absolute priority in operating its generation facilities, in particular its nuclear and hydro facilities, and takes every measure to guarantee the protection of its staff and people living near the power plants. Its policy focuses on systematic controls, constant upgrades to processes and equipment, and the firm commitment of all staff to the Group's safety culture.

### **Nuclear safety: constant vigilance**

Safety is and will remain an absolute priority for EDF as the very cornerstone of competitiveness. Successful power plant operation over any length of time is inconceivable without paying close attention

to daily and long-term safety considerations. Consequently, maintenance costs for facilities have increased considerably, with priority given to preventive maintenance, in line with an overall savings policy. Our very high standards of quality, design and operations are reviewed every ten years. Feedback from these reviews and integration of latest technologies further contribute to safety, and to consolidating a balance between safety and economic targets.

Reactors are automatically shut down once a certain safety threshold is reached. All deviations from procedure are noted, analyzed and reported to the Nuclear Safety Authority responsible for safety at the plants. At each nuclear plant, EDF calls in some 30 safety inspectors to conduct three-week comprehensive safety evaluations every three years. The inspector general for nuclear safety and radioprotection, who reports to the Group Chairman and CEO, performs audits, publishes an annual report



Maintenance spending is increasing at the nuclear plants. Here, a stator is being installed at the Saint-Alban plant.

EDF Médiathèque – Frédéric SAUTEREAU

and proposes measures for improvement<sup>1</sup>. In addition, the facilities are regularly the subject of reviews by the IAEA<sup>2</sup> and WANO<sup>3</sup>.

The rate of ranked safety significant events reached an all-time low in 2005 (0.76 per reactor and per year), and the number of automatic reactor shut-downs has fallen by 20% over three years (to 0.93 per reactor for 7,000 hours of criticality). EDF reported one level 2 generic event to the Nuclear Safety Authority, relating to the non-compliance of the engines of certain reactor cooling pumps used in the event of accidents; EDF is making the necessary technical modifications. This event was not related to the plants' operations, and had no impact on how they

## Nuclear safety in Eastern Europe

EDF is helping to make nuclear operations safer in Eastern Europe through industrial partnerships and international consortia, with financing from the EBRD\* and European Commission: final decommissioning of the oldest plants at Kozloduy (Bulgaria) and Bohunice (Slovakia), set-up of safety equipment at Rovno (Ukraine), fire studies at Kalinine (Russia) and consultancy services for Chernobyl (Ukraine).

\* *European Bank for Reconstruction and Development.*

1. Available on [edf.com](http://edf.com)

2. International Atomic Energy Agency.

3. World Association of Nuclear Operators.

functioned. These good results reflected new management tools implemented and the more demanding standards applied in recent years, but are also the first positive consequences of the capitalization and standardization of best practices. To further improve certain indicators that have remained stable, EDF plans to initiate new actions focusing on "human performances", with the aim of making its plants and operations even safer. Fire risk management policies are also being upgraded by improving facility design and prevention measures (training and relations with departmental and emergency services).

## Hydro facilities: 17 ten-year reviews conducted in 2005

### Hydro safety: systematic checks

The 150 large dams with a potential impact on public safety are closely monitored with ten-year reviews to verify their solidity and safety levels, plus, for the 68 largest dams, a special intervention plan overseen by the prefects. In 2005, EDF conducted 17 ten-year reviews under the aegis of the Ministry of Economy, Finance and Industry.

The ISO 9001 certifications earned in 2003 for dam monitoring, management during periods when water levels are high and flow controls – already a tribute to the steady progress made in mastering hydro safety at the time – were renewed in 2005. EDF works systematically with local partners to promote public awareness of the dangers associated with the hydro facilities and dam releases. It redoubled its efforts during the summer, distributing brochures and using water guides. Fishermen are made aware of the dangers via warning messages printed on maps and fishing permits.

The 2005 audit on hydro safety reaffirmed safety culture as characteristic of the professionalism of operations and maintenance staff at our hydro facilities. The audit also pointed to room for improvement, suggesting management could be bolstered and greater lessons drawn from feedback provided by analysis of socio-organizational and human factors.

## Minimizing our environmental footprint

Electricity generation, transmission and distribution are industrial operations that significantly impact the environment. Stakeholders rightly demand to be informed, and that we use caution in making investment decisions and managing our operations. EDF relies on an ISO 14001 certified management system to limit the environmental and health impact of its facilities and business operations.

### Air, water and land protection

#### Upgrading and modernizing fossil-fired plants

EDF is powering ahead with plans to modernize and upgrade its fossil-fired plants to make them more competitive and improve their environmental performances, taking into account new European regulations.

Desulfurization limits emissions of sulfurous anhydride (SO<sub>2</sub>). The process involves scrubbing flue gas with a mixture of water and limestone. This produces gypsum, which is then reused to make building materials. The most modern of the large plants are equipped with desulfurization systems (West Burton in the UK and Cordemais and Le Havre in France), and have reduced the SO<sub>2</sub> emissions of the reactors thus equipped by more than 85%.

The 600 MW coal-fired plants, which already have flue gas desulfurization systems, will be upgraded before 2008 to be equipped with advanced denitrification units (selective catalytic reduction, or SCR) and brought into compliance with the environmental standards to be in effect in 2015. This type of investment will be made or planned for the larger plants like Le Havre (in cooperation with the Haute-Normandie region) and Cordemais in France, as well as at Cottam and West Burton in the UK.

The same operations are being conducted on the seven diesel engines (20 MW) of the Vazzio plant in Corsica, where the EDF division in charge of non-interconnected systems is pursuing its denitrification project for the ageing oil-fired plants. Once the first set of denitrification units is installed on the plant's engines (one in 2003, two in 2005 and two more before the middle of 2007), Vazzio's nitrogen oxide emissions should be cut by more than 60%.

## R&D

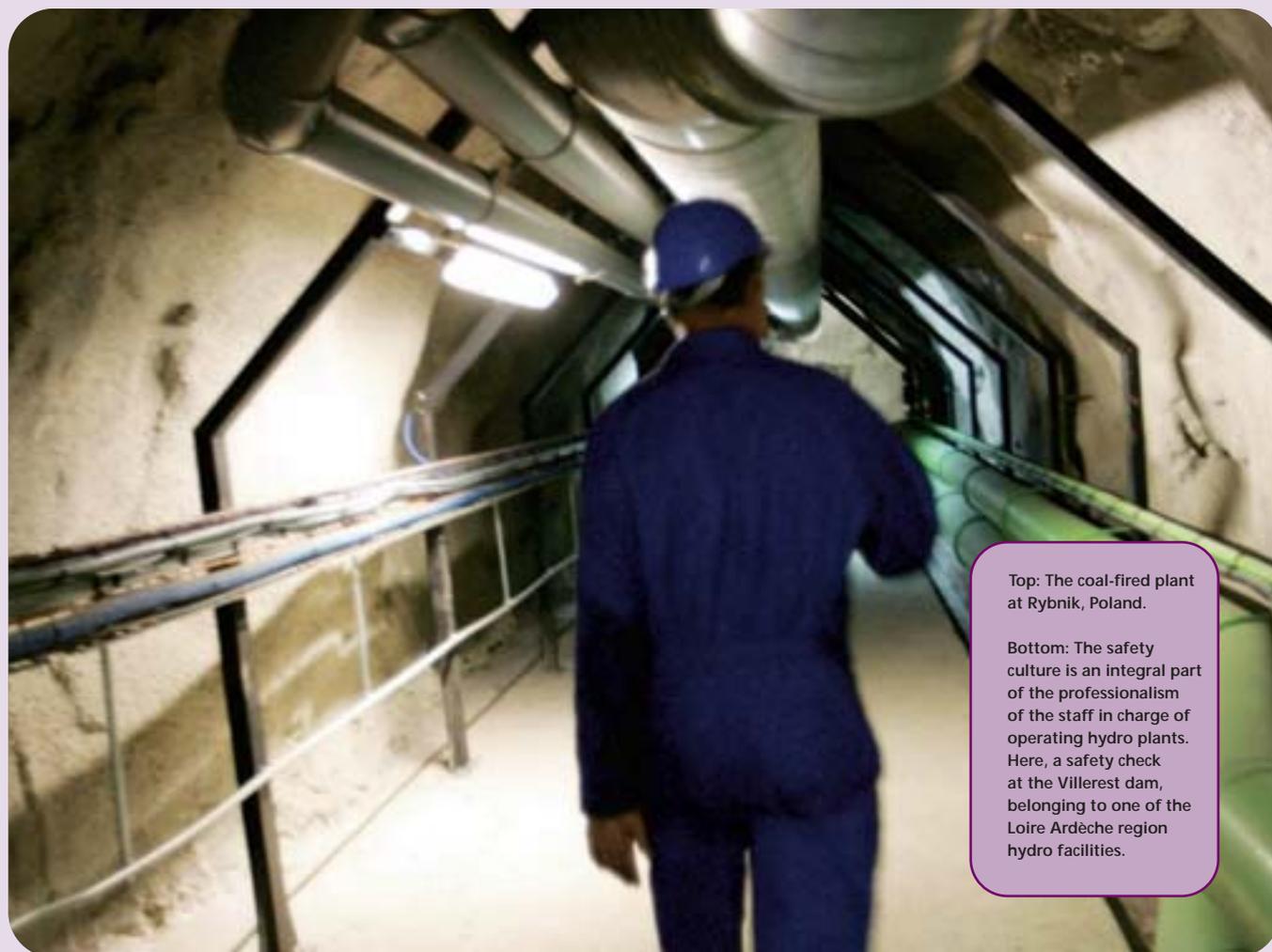
EDF's researchers have been able to elaborate operating methods that minimize the formation of these pollutants based on feedback from the fossil-fired plants, a chemical model of nitrogen oxides and 3D simulation tools. Tests conducted on these configurations at the Cordemais plant confirmed that emissions could be halved.

## Poland

The coal-fired Rybnik plant was able to reduce its water sampling and effluents, and improve productivity at the same time, by modernising two cooling towers.

## Italy

Edison's fossil-fired plants have all reduced their emissions over the past eight years: by 82% for SO<sub>2</sub>, 74% for dust, 42% for NOx and 15% for CO<sub>2</sub>.



Top: The coal-fired plant at Rybnik, Poland.

Bottom: The safety culture is an integral part of the professionalism of the staff in charge of operating hydro plants. Here, a safety check at the Villerest dam, belonging to one of the Loire Ardèche region hydro facilities.

The program was bolstered following the application of the prefectural decree of July 28, 2005 (application DL), which in theory forced EDF to step up the pace and equip all of Vazzio's engines by the end of 2006. Total investment costs for Vazzio will amount to about €10 million.

Upgrades are also being made at the Le Havre plant to improve the performances of its dust removers using a new electrostatic technology. Between 1999 and 2008, EDF will have invested more than €500 million in France to comply with new regulations.

In Poland, ERSa has launched a number of operations at Rybnik to modernize the dust removers at reactors 4, 5, 6 and 7.

EDF is also improving its performances by using low-sulfur fuel. The Group has signed a contract for the supply of "low-sulfur coal" for the EC Krakow and Kogeneracja plants, where emissions will be more than halved starting in 2008. In France, the Group is using ultra low-sulfur and low-ash diesel at the Vazzio plant.

#### Steady decreases in effluents and waste at the nuclear plants

In 2005, EDF SA's liquid and atmospheric effluents remained far below authorized levels (usually by over 10%), with the exception of tritium, the production of which is directly proportional to energy generated. Tritium effluents approach authorized limits, calling for stringent, advance management. The most recent decrees in France have increased these limits.

Public exposure to highly diluted atmospheric and liquid radioactive effluents produced by plants is very limited, representing on average, for each nuclear plant, just a few thousandths of the regulatory limit (1  $\mu$ Sv a year). By comparison, the exposure resulting from natural radioactivity in France is 2.4  $\mu$ Sv a year.

Existing measures aimed at steadily improving safety around radioactive waste at nuclear plants have been extended to all forms of waste: chemical waste linked to the products used to clean circuits and treat make-up water, and waste from water purification plants. Under the impetus of the ISO 14001 certification, a number of different measures are being implemented to reduce water consumption and chemical waste.

Likewise, thermal effluents produced when water used to cool the plant is heated during its passage through the condenser is closely and regularly monitored.

To avoid exceeding regulatory limits, EDF was forced to cut back generation during the summer of 2005, notably at the stations in the Rhone Valley, owing

to a persistent drought and periods of very warm weather. The Tricastin plant nonetheless had to be kept in operation at above the authorized limits for three days late in June in order to ensure the safety of the electrical system; the limits set out in the exceptional measures included in the decree of June 11, 2004 were nonetheless respected

### Managing radioactive waste An industrial approach

The EDF Group has been taking responsibility for the waste produced by its nuclear plants since the first one was commissioned. Its strategy is to limit the volumes of waste resulting from its regular and maintenance operations, as well as that being produced by its decommissioning program. Waste is sorted by type and according to the level of radioactivity, and the Group then finances their incineration, temporary storage or final storage. Reductions in waste volumes are also made possible by efforts to boost the performances of reactor fuel, and by the processing of spent fuel and its reuse in the form of MOX fuel. These measures are part of EDF's long-term management policy for the nuclear fuel cycle, and of its strategy to reduce the environmental impact of waste.

#### Storage of VLLW, LLW and ILW<sup>1</sup>

Volumes handled at Andra's<sup>2</sup> VLLW storage center in Morvilliers increased by 70% between 2004 and 2005 to reach 8,429 tonnes, consisting essentially of rubble (5,700 tonnes) from plant decommissioning. Short-lived LLW and ILW from operations (gloves, filters, resins, etc.) are treated in containers and sent to Andra's Soulaïnes storage center in the Aube department (8,303 m<sup>3</sup> in 2005, up from 6,000 m<sup>3</sup> in 2004). Innovative industrial cleaning solutions are also being used at the plants (cryogenics and sludge dehydration) to reduce waste volumes (rags, solvents and sludges). Smooth-running operations at the Centraco incinerator (4,184 tonnes processed in 2005) contributed to lowering the volume of waste and scrap from operations and decommissioning. The establishment of dedicated storage sites for long-lived LLW, like radiferous and graphite waste, is currently being considered. EDF R&D has proved that it is possible to store graphite waste below ground.

1. Radioactive waste is classified according to how active and long-lived it is: high-level (HLW); low-level (LLW); intermediate-level (ILW) or; very low-level (VLLW) which is comparable to the radioactivity found in nature. Active beyond 30 years, waste is considered long-lived, otherwise it is referred to as short-lived.

2. Andra – Agence Nationale pour la gestion des Dechets RAdioactifs, the French Agency for Radioactive Waste.



Left: decommissioning of the nuclear plant at Creys-Malville, verification of radioactivity levels of the bags containing rock wool. Right and below: preparation of the air locks separating contaminated areas, and decontamination of radioactive concrete during decommissioning of the Brennilis facility in Brittany.



## Public Debates on nuclear waste

The National Commission for Public Debate (CNDP) was called upon in February 2005 by the Ministry for Ecology and Sustainable Development and the Industry Ministry to organize a public debate on long-lived ILW and HLW waste. Once the relevant information was assembled, with EDF contributing, the national consultation was opened for four months, from mid-September 2005 to mid-January 2006. Some 3,000 people participated in the several rounds of debates organized in Paris and elsewhere. These debates yielded a number of recommendations with regard to radioactive waste management, and proved that information-sharing and dialogue are necessary. They also showed that radioactive waste management, as currently handled by industrials, provides a satisfactory solution for the short and medium terms, meaning a long-term decision can be taken under good conditions. The government has said that it would take the results of the debates into account in preparing its draft law.



## 6,700 m<sup>3</sup>

The volume of long-lived HLW produced by the operations of past and existing plants (over 40 years) will amount to 6,700 m<sup>3</sup>.

### Law on long-lived HLW expected soon

Spent reactor fuel is processed and recycled by Areva, which is able to recover 96% of the total. The remaining 4%, considered long-lived HLW, are vitrified and poured into stainless steel canisters. The cylinders used to hold the waste are then compacted and stored in other containers also sent to La Hague.

The long-term solution adopted for the management of this type of waste will be decided upon by the French Parliament, in accordance with the "Bataille" law of December 30, 1991. The latter stipulates that research, headed by the CEA<sup>1</sup> and Andra, will focus on three key ideas: separation/transmutation in order to shorten the lives of long-lived radioactive elements, deep geological disposal, and improvements in packaging and long-term storage processes. The Parliament is set to debate the options open to France in 2006. The CEA and Andra submitted the results of their research to public authorities in 2005, and the CNDP<sup>2</sup> initiated a debate in which EDF participated actively.

## Conventional waste management

### Boosting recycling efforts

The portion of conventional waste recycled in France has risen by 50% since 2000, to 63%. EDF is boosting its conventional waste management policy in accordance with the three-year action plan unveiled in 2004 and definitively adopted early in 2006. The policy focuses on France for now but will ultimately be extended to the entire Group.

Increased data analysis is one key to improving waste management. In addition to the efforts being conducted in France by the Generation and R&D Divisions, EDF Gaz de France Distribution (EGD) analyzed the waste management data collected from 2004 during the year. Of the 42,200 tonnes of conventional waste collected at 100 centers in Metropolitan France and the overseas territories, 60% were ordinary, 20% hazardous and 20% inert. A recycling target was set for packaging waste for 2005.

1. Commissariat à l'Énergie Atomique – *The French Atomic Energy Commission*.

2. Commission Nationale du Débat Public – *the French Public Debate Commission*.

The generation and research activities produced 84,500 tonnes of conventional waste in 2004, or 25% more than in 2003, owing to intense construction and demolition activity. The recycling rate for recyclable waste - oils, non-regulated waste, batteries and accumulators and packaging - improved further to 81.5%. This corresponds to 40% of the volumes removed.

The policy of outsourcing waste elimination has been extended to all of the French facilities; requirements are expressed homogeneously, markets have been "consolidated" by region, and services made comprehensive with the use of only one supplier per site.

### Elimination of askarel transformers

Regulations stipulate that PCB (polychlorure biphenyle) transformers at levels over 500 ppm must be phased out between now and 2010. The large and very large transformers have been identified and are given priority, and more than 57% have been eliminated already. EDF Gaz de France Distribution (EGD) also has 450,000 "closed" oil transformers (HV/LV) in service, a portion of which dates back to before the PCB ban of 1987 and could be polluted. A study conducted early in 2005 with EDF R&D, and approved in principle by the Ministry of the Environment, provided a good understanding of the machines presenting a risk as well as a list of the transformers located in sensitive areas. The latter will be given top priority in 2006. Thanks to the measures undertaken in 2005 (experiments involving sampling with no interruption of operations, further statistical analysis of the kinds of machines used, steps taken to remove pollution from priority transformers), each unit should have a specific plan of action for 2007-2010 by the end of 2006.

## From waste management to industrial ecology

### The pursuit of synergies

The waste and by-products produced by one player's operations can become resources for another. Based on this principle, industrial ecology involves looking for synergies between complementary business operations. EDF R&D has developed software, tested around three EDF facilities in the Aube, at Cordemais and at Gravelines/Dunkerque, to identify such synergies. Further testing and consolidation are underway.

### Recycling secondary products

In France, EDF recycles the ash from its coal-fired facilities; cement makers and construction companies use the ash as a raw material, among other things, for filling the trenches in which electric lines are buried. All newly produced ash (about 0.7 million tonnes a year) is recycled, as is a portion of stocks (9.5 million tonnes).

## The Tricastin nuclear plant: protecting the Rhone

EDF has been using a biodegradable grease at the Tricastin nuclear plants since early 2004 to avoid polluting the Rhone with residue from the use of non-biodegradable lubricants on the drum filters at the pumping station.



EDF Médiathèque – Mario LA PORTA

The gas-fired combined-cycle plant at Taranto, Italy. At reactor 3, Edison recovers gases from a nearby steelworks, which were previously burned, thus encouraging the recycling of secondary products produced by other industrials.

## Pooling environmental competences

The problem of potentially contaminated soils has become a major aspect of the Group's environmental management system: a specific skills cluster has been set up to manage the final shutdown of thermal plants, and specific training is provided. A Group-wide survey is underway to pinpoint contaminated soils on former sites or those still in service. The Group is also watching the external BASIAS and BASOL databases managed by public authorities via intranet to ensure that all bases are kept up to date. More than 700 sites have been included in the databases and are being monitored. Two guides, *Soil Contamination* and *Managing Industrial Waste*, have been updated and sent to managers and staff at the different divisions and units.

Ash recycling enables savings on natural resources like sand, avoids mining, reduces CO<sub>2</sub> emissions (800 kg per tonne of ash added to cement) and cuts costs for producers and users alike.

The Polish power plants are in step with this trend. At Rybnik, combustion by-products are being used to build bicycle trails and fire access roads in forests. Those produced at Kogeneracja are recycled for use in road-building by Ekotrakt, which intends to increase its usage by 25% between 2006 and 2008.

EDF is also experimenting with agricultural recycling. At the nuclear power plants in Paluel and Blayais, the Group has since 2003 been planting reeds to transform sludge from the purification plants into compost.

This solution, which was amortized in two years, avoids transporting and incinerating the sludge, thus reducing costs and greenhouse emissions. At Perly, algae is collected and resold to a company that turns it into fertilizer. The PVC recovered from the cooling towers was also processed and recycled in 2005. Studies are underway to see whether it is possible to recycle certain sludges.



## Putting other industrial groups' secondary products to use

EDF is also developing methods for using the secondary products generated by other industrial groups to produce energy.

In Poland, the Rybnik plant is now covering 3% of its fuel needs with coal recovered from an old slag heap. EC Wybrzeze has successfully tested the co-combustion of 25 tonnes of sludge from the Gdansk purification plant.

In Italy, Edison is recovering steel mill gases, which were previously flared, for Taranto 3 and Piombino 3.

The Verzuolo facility has been using a 19 MW incinerator since 2002 to recycle 58,000 tonnes of wood bark and 24,000 tonnes of sludge produced by a nearby paper mill. The 5,500 tonnes of resulting incinerator ash are recycled by a cement plant. Verzuolo received more than 640 green certificates (50 MW each) in 2004.

## Ensuring the comfort and safety of local populations

EDF is taking full responsibility for its facilities vis-à-vis local populations, and working to reduce any related visual and noise impacts. The Group is taking all the necessary measures to ensure that its operations have no health impact.

### Reducing visual and noise impacts

#### Limiting the visual impact of electric lines

Where its distribution networks are concerned, the Group is striving to reduce the visual impact of electric lines and other structures as well as related work noise. EDF has been working hard for a decade now to integrate new medium voltage network lines into the environment: in 2005, 7,144 km of the 7,568 km of MV lines put into service by EDF (94.4%) were buried, compared with a 90% target set out in the Public Service Agreement. As for the 5,066 km of new low voltage network lines, 3,682 km (72.7%) were installed using discreet technology (compared with Public Service Agreement target of 65%).

#### Taking noise into account

EDF is promoting awareness of the different components of the acoustic environment amongst its production staff by focusing on techniques, regulations and perception. On-site environmental managers can rely on special training, an intranet site and a methodology guide. The Vitry and La Maxe fossil-fired plants continued to soundproof their installations, while Rybnik in Poland reduced its noise impact by close to 10 dB. The nuclear plants conducted a noise impact assessment to verify compliance, and

for modelling of sites for compliance studies.

The assessment was approved by the Safety Authority, thus allowing us to plan for technical improvements at the end of 2007, beginning of 2008.

The Group conducted noise impact tests before setting up wind turbines in Caurel and Saint-Mayeux (Brittany) in 2005, and as a result, opted to avoid the watersheds.

In August 2005, after receiving approval from local populations and authorities, EnBW started construction of a testing field near Bodnegg to see whether an extra high voltage line could be modified to reduce crackling.

### Ongoing monitoring of health impact

#### Efficient policies and organization

EDF's sustainable development policy clearly emphasizes health issues and the prevention of health risks. The Group is constantly striving to limit the impacts of its facilities and operations, broaden its knowledge, and inform the public. Its actions are backed by pluridisciplinary scientific and environmental expertise (notably engineers, doctors and legal experts), with input regularly received from the scientific community. Those in charge of health issues at the different divisions and subsidiaries keep in contact via a Group-wide Environment and Health network that is responsible for initiative coordination and information sharing.



#### Preventing Legionnaire's disease

Because of the time water spends in cooling circuits (closed circuit systems) and cooling towers, and given the temperatures there, microorganisms, including legionella and bacteria, can easily form. These can present health risks once certain levels of concentration are reached. The health risks are small where the towers are concerned. EDF nonetheless organizes preventive cleaning of the circuits to reduce the number of legionella in the circulation water, and periodically checks concentration levels. In keeping with the new limits set out by safety authorities for the cooling towers of nuclear plants, the Chinon facility was equipped with a permanent treatment system using monochloramine in 2005. Late in 2004, the ministries of industry, health and the environment asked the French Environmental Safety and Health Agency (*Agence Française de Sécurité Sanitaire Environnementale* – AFSSE) to assess the health risks associated with the presence of legionella in the cooling tower water as well as EDF's taking into account of these risks. After several audits in 2005, the agency is expected to issue its opinion in the middle of 2006.

The Rybnik fossil-fired plant in Poland reduced its noise impact by close to 10 dB



Burial of new high-voltage cables

EDF Médiathèque – Bertrand BREDEL

### Responding to concerns about electromagnetic fields

Many are concerned about the electromagnetic fields around electric lines and their possible impact on the health of local populations. Based on the numerous assessments conducted over the past 20 years, the world's leading health authorities<sup>1</sup> consider that there is no clear danger. Addressing an issue referred to it by populations living along 225 kV and 400 kV lines, the Council of State concluded in its ruling of November 9, 2005 that "it cannot be established, based on current scientific knowledge, that the electromagnetic fields around this line create a health hazard for local populations".

As a precautionary measure, the European Commission has issued recommendations for workers exposed to electromagnetic fields. In accordance with the directive of April 29, 2004 establishing the regulatory exposure limits, the Group conducted research in 2005 to measure these electric and electromagnetic fields. It also ensured the wide-spread distribution of a brochure (which can be consulted on the edf.com website) in 2005 summarizing current knowledge, and participated actively in the public debate on the planned Maine-Cotentin line.

1. The World Health Organization, the International Agency for Research in Cancer, the American Academy of Sciences, the US Environmental Protection Agency, the British National Radiological Protection Board.

## Promoting social cohesion and regional development

EDF's goal is to reconcile its industrial and economic activities with social responsibility towards the regions in which it conducts its business. The idea is to create social bonds and strong dynamics through concrete actions taken in partnership, notably with local authorities.

### Supporting employment

#### Focus on employment skills

EDF is working to promote the creation or development of job skills through training and job assistance provided in partnership with others. Created in 2004, the Peren association (*Promotion de l'Emploi et des Ressources des Entreprises prestataires du Nucléaire*) has given rise to a number of partnerships focused on promoting nuclear resources and jobs. More than 40 companies and institutions, including the French Employment Agency (ANPE) and National Education Board, have joined.

## Handling difficult situations

EDF has 70 distribution centers in France where it works with social services and local associations to offer its staff specific prevention training for handling situations where they are faced with aggressive behavior or incivility. This helped anticipate crisis situations in low-income suburbs in 2005 and limit the risks incurred by people and equipment.

Know-how is provided by the five Val de Loire and Seine plants.

### Lending a hand to job placement specialists

EDF is cooperating with and supporting a number of job placement specialists as part of its partnerships with the *Association Nationale Chantier Ecole* and *Fondation Agir Contre l'Exclusion*. The Group is also encouraging the creation of small companies through its work with economic networks like France Active, Adie (*Association pour le Droit à l'Initiative Economique*) and *France Initiative Réseau*. One example is *Micro'Orange* (based in Marseilles), which recycles electronic and computer waste. The unit it opened in Aix-en-Provence in 2005 hired five people on long-term contracts and handled 900 tonnes of waste (up from 300 in 2003).

In the Hauts-de-Seine department, EDF helped with the creation in 2005 of the *Ecole pour l'insertion et la création d'entreprises*, which will welcome 500 state unemployment payment (RMI) recipients a year. It also lent a hand to help train people with low qualifications to become caretakers in low-income housing (HLM), in an effort organized with HLM offices in the Paris region, the Paris-based Opac and the *Territoire et Emploi* association. Ten people have been hired so far by council estates. A number of other initiatives are taking shape locally: some RMI recipients, under the supervision of the Estran association, decorated the entryway of the Penly plant with mosaics, and logistic support was provided to others at the Clamart R&D center.

## Contributing to local development

### Urban renovation



For two years, following the call for projects launched jointly with the interministerial delegation, EDF has been providing financial and technical support to 39 innovative urban renovation projects, notably via its network of lighting experts. The results produced in

2005 by the projects that received support were proof that methodological support works, and a tribute to the quality of cooperation with local authorities.

### Neighborhood communities

Working with HLM offices, EDF developed a renovation offer that has allowed more than 100,000 council homes to be renovated in nine years and reduced heating cost by an average 30%.

Sensitive urban areas (ZUS) have also been the object of sustained efforts, as called for by the agreement signed with the state in 2001. EDF is partaking in some 40 projects involving mediation services, job creation and skill acquisition for young people from ZUS. We are also working with the *Points d'information Médiation Multiservices* (PIMMS) and the network of *Points Services aux Particuliers* (PSP), which ensure local services and preventive actions on its behalf, providing billing information, explanations and mediation services, putting those in precarious situations in touch with social partners, and giving information about energy savings. Sixteen PIMMS have been opened so far, some of them in rural areas, and more than 40 are in preparation. Of the 13 PSP open to the public, some have adopted a hands-on approach to mediation with home visits.

In Poland, ECK is taking part in the Nowa Huta Forum along with some 20 partners to encourage investment in the neighborhood with the highest unemployment rate in Krakow (14%), promote a better quality of life and create a sustainable development program supporting Agenda 21. A total 52 km of bicycle trails have been built locally.

### Energy efficiency

EDF is helping local regions define and implement energy efficiency policies. We have forged a number of innovative partnerships called *Territoires durables* (sustainable regions) with some 20 local authorities in France. These involve testing decision-making tools used for strategic choices about urban and energy planning, including a regional CO<sub>2</sub> assessment tool, an energy planning study, and renovation scenarios that support the concept of "sustainable neighborhoods". The Silene software developed by EDF R&D to evaluate the environmental impact of neighborhood planning projects, based on energy, water and waste flows as well as CO<sub>2</sub> emissions, was tested with several local communities.

### Industrial innovation

Following the selection of the 67 "regional competitiveness centers" that will be promoting industrial innovation, EDF R&D has teamed up with the industrial divisions to form partnerships with a number



The EDF Foundation is working to protect the natural environment, notably through its partnership with the Conservatoire du littoral. Here, Le Rayol in the Var department.

EDF Médiathèque – Guillaume LEMARCHAL



of these regions. In 2005, one such partnership was forged with Enerdis<sup>1</sup>, in the Rhone Alps region, to which EDF is bringing its expertise in hydropower, network management and highly energy efficient buildings, in collaboration with other industrials, teachers and researchers.

### Contribution to cultural and natural environments

In France, the EDF Foundation is backing conservation initiatives and projects to light monuments and remarkable sites. It is also working to protect the natural environment through partnerships with organizations like the Conservatoire du littoral.

In Poland, the Group's subsidiaries and R&D teams have joined forces with technical universities to develop energy optimization and environmental projects. EDF has notably lighted the castle at Bielsko Biala, the

14th century military fortress that has been turned into a museum, a project for which it won an award from the Polish Ministry of Culture. Meanwhile, another Group affiliate, ERSA, is supporting development of the city of Rybnik through culture, education, sport and health, and is working with the town hall on local economic development. In Gdansk, ECW participated in the renovation of one of its former electrical power plants, which is now home to the Polish Baltic Olowianka Philharmonic, and in the revamping of a park to make it handicap accessible and safer for the young and elderly.

In China, EDF is working with the sustainable development center of Beijing's Academy of Social Sciences, notably on climate change and the Kyoto Protocol.

In Rio de Janeiro, Brazil, the Norte Fluminense plant is backing efforts to light some 12 monuments and to equip public buildings with energy efficient lamps for indoor lighting.

<sup>1</sup> Energies renouvelables en Rhône-Alpes, Drôme, Isère, Savoie - Researches and develops industrial projects in renewable energies for the following French regions: Rhone Alps, Drome, Isere and Savoie.

# Our planet: rising to long-term challenges

By the very nature of our business, we are facing three long-term global challenges: energy resource scarcity and climate change, access to energy for all, and protection of the environment and biodiversity. Whether in generation, product offers or research and development, we intend to make the choices best suited to rising to these challenges.

## Preparing to meet the challenges of the future

EDF fully intends to contribute to global awareness and respond to changing trends in our planet's energy resources and the conditions for their use or transformation.

### Boosting research and development

The Group's foremost contribution in this area can be seen in the R&D resources devoted to projects involving energy resource scarcity and protection of the environment. In 2005, one-third of EDF's R&D budget, close to €122 million, was spent on environmental research. For the period 2004-2007, EDF's R&D structured its long-term programs around 14 key "Challenges" established in keeping with risk mapping, representing 30% of R&D spending. Of these, 8 Challenges aim directly at resolving sustainable development issues:



- Challenge 3: foreseeing the performance and impact of our future generation mix
  - Challenge 8: understanding and limiting the impact of our existing facilities
  - Challenge 9: designing distribution networks capable of integrating local energy, with improved supply quality
  - Challenge 10: anticipating water quantity and quality, detecting potential technological breakthroughs in water servicing worldwide (pumping, desalination, etc.)
  - Challenges 11 and 12: developing innovative solutions to help customers save energy in buildings and housing (Challenge 11) and industrial processes (Challenge 12)
  - Challenge 13: developing technological solutions for housing, transport and energy for local authorities and sustainable urban areas
  - Challenge 14: fostering access worldwide by perfecting solutions for local electricity generation using renewable energy sources and by providing adapted solutions for basic lighting, communications, cold storage and cooking.
- Each of the Challenges is reflected in projects developed at EDF or jointly with other research laboratories



EDF Médiathèque – Richard BOUHET/AFP

(CEA, Framatome, Electric Power Research Institute – USA), universities and training institutes, or in collaboration with other Group companies like EDF Energy, Edison or, in the case of EnBW, our common research institute in Karlsruhe, Germany, the European Institute for Energy Research.

### Helping society make the right choices

Growing global awareness of resource scarcity and energy resource scarcity in particular, awareness of climate change and its consequences on human life and the economy, and the importance of reducing greenhouse gas emissions has led governments and authorities at all levels to discuss the issues and develop national, regional and international plans to deal with them.

France, with the new regulations governing CO<sub>2</sub> emissions trading (ruling of April 15, 2004) and the Energy Guidance Bill setting out energy guidelines (July 13, 2005), established a framework to which EDF contributed expertise and especially its long-standing experience as an operator whose generation base, nuclear and hydro, is of itself a step toward developing CO<sub>2</sub>-free sources of energy.

Similarly, the EDF Group is participating in the implementation or elaboration of European directives on these same issues, as well as in the conferences or summits called by organizations worldwide such as the Global Compact, the post-Kyoto conference in Montreal, and the third World Sustainable Development Forum. To inform its own choices and to give them more impact, the Group joins with international associations of companies such as the WBCSD or their national branches (EPE in France, BCSD in China, created in 2005). A number of professional associations (Eurelectric, CEEP, UIE, UFE, Medef, the International Chamber of Commerce) or public institutions (in France, the National Environmental Council) also count the Group among their members.

EDF's Chairman and CEO presided the *Group Action CO<sub>2</sub>*, created in 2005 by French industrialists to join R&D efforts in the fight against global warming.

## Fighting global warming and climate change

In the newly revised EDF Group environmental policy in May 2005, the fight against global warming takes top priority. We aim to remain the least emitting of Europe's seven leading electricity companies and to offer our customers energy efficiency services and advice integrating low CO<sub>2</sub> emissions solutions and renewable energies.

### A new regulatory framework

In accordance with the ruling of April 15, 2004, European CO<sub>2</sub> emissions trading began on January 1, 2005. After a rough start, the price per tonne of CO<sub>2</sub> averaged at over €20, making this market a major component on the European energy market.

The transposition of the European Directive of 2003 that established a CO<sub>2</sub> emissions trading scheme leads to the attribution to each country and each of the Group's European companies, of an annual quota of emissions authorized for the period 2005-2007. In France, EDF followed closely the drafting of France's National Allocation Plan (NAP), approved by the European Commission on May 18, 2005. The terms allow for an annual quota of 23.54 million tonnes of CO<sub>2</sub> allocated to our fossil-fired facilities over 20 MW for the period 2005-2007. This corresponds to the level of emissions reached by the facilities in 2005; "peak" use can vary considerably depending on circumstances. In 2005, these plants were organized to be able to track and account for the quotas they use by linking quality assurance procedures, controlled by an independent authority, to the process of quantifying CO<sub>2</sub> emissions. EDF thus arranged to ensure better overall control of CO<sub>2</sub> quota management and entrusted EDF Trading with its market exchange operations.

The Group companies affected by NAPs exchange useful information; later, the aim is to improve the emissions quotas system for the second period (2008-2012) and for the post Kyoto Protocol beyond 2012.

We are participating in work by the European Commission and member countries, and defending a framework with a view to the long-term that promotes investment in low – or non-emitting techniques worldwide.

The French Energy Guidance Bill of July 13, 2005 gives high priority to the fight against global warming. With this priority, it backs EDF's generation fleet, provides for the construction of an EPR reactor, encourages the development of wind power and recognizes the role of hydropower among the renewable energies. It also provides for an innovative energy savings scheme made up of "white certificates", aimed at reducing energy intensity by 2% per year. It sets an energy savings target of 54 TWh cumac<sup>1</sup> for all national operators combined. Energy providers are subject to energy savings targets and to penalties proportional to savings not achieved. EDF alone must carry half of the effort demanded. The Bill provides for the implementation of white certificates starting in 2006.

### EDF's contribution as an energy producer

#### Our energy mix: making the right choices

The EDF Group's electricity generation fleet, the largest in Europe, emits some 65 CO<sub>2</sub> Mt/year (consolidated scope for the Group in Europe excluding Edison). EDF is French industry's second-most emitter, with 23.5 Mt/year. Thanks to its nuclear and hydro plants, it is nevertheless one of the least emitting per kWh generated (less than 50 g CO<sub>2</sub>/kWh as compared with 100 g CO<sub>2</sub>/kWh on average for the company's major European competitors<sup>2</sup>). The low emissions produced by the generation fleet is a real asset compared with other energies and in light of environmental issues and energy choices.

#### Remaining open to the nuclear option

Nuclear today constitutes a sustainable and economically efficient response to the world's growing energy requirements. Some countries are already planning to renew investment in nuclear, particularly Finland and the United States; others, like the UK, are beginning to give it serious thought. EDF and other players in the sector are now being solicited to contribute to the development of this energy in Europe.

China is planning to build at least 40 GW of nuclear capacity by 2020. This amounts to 90% of new nuclear plants worldwide, and a full half of the French fleet. For over twenty years, EDF has contributed to this development in China, providing

Remaining the least emitting of Europe's seven major electricity companies

1. Cumac: from "cumulé actualisé", the quantity of energy saved discounted at a rate of 4% through to the end of the operation.

2. Source: CO<sub>2</sub> emissions from fuel combustion (International Energy Agency 2005).



Hydro is the EDF Group's main renewable energy. Here, the Vouglans dam in the Ain department.

EDF Médiathèque – Guillaume LEMARCHAL

services and expertise to the plants at Daya Bay and Ling Ao. We intend to continue participating in developing electricity in the country, in accordance with Group commitments to sustainable development and our objective of increasing both the amount and "cleanliness" of generation.

In France, the development of nuclear rests on two complementary objectives: planning for the renewal of our fleet with the construction of a first-of-its-kind EPR reactor as a feasible solution when renewal will have to be addressed, and extension of the lifespan of our existing plants to over 40 years to optimize their renewal with implementation over a period of twenty years.

#### Developing renewable energy

In 2005, the Group decided to bolster its position in renewable energies to become one of the sector's leading industrial players in Europe. We are once again investing in hydropower. Through EDF *Energies Nouvelles*, we are pursuing two objectives: develop a major wind power program and become a leader in decentralized renewables, chiefly solar.

#### Tapping into hydropower, the Group's foremost source of renewable power

With 38.7 TWh produced in 2005 in France (including Corsica and overseas departments), hydropower is the EDF Group's primary source of renewable

power. Hydro covers 8% generation nation-wide, despite the lasting drought which has brought potential generation down by 14.7%. Several feasibility studies are underway in France, one of which on the construction of the Gavet hydroplant (92 MW) to replace six former factories on the Romanche river and produce 560 GWh annually, and the Rizzanese hydrodam in Corsica. Several small hydro projects, 40 MW in all, may be built by 2010. In addition, by 2007, three facilities will convert energy from reservoir flows.

In Germany, 12.7% of electricity produced by EnBW is hydro in origin. EnBW is building a run-of-river plant in Rheinfelden. Outside Europe, the Group is advancing on the Nam Theun project in Laos (1,070 MW). Launched in 2005, the plant is scheduled to come on stream in 2009.

#### EDF *Energies Nouvelles*: investing in wind power

The EDF Group's commitment to wind power was made ever more concrete with the 2005 decision to invest, along with its subsidiary EDF *Energies Nouvelles*, in a program to develop 3,300 MW of facilities in Europe and the United States by 2010.

In France, the company obtained authorization to build 375 MW, bringing total authorized wind power capacity to over 570 MW. 2005 was a record year of development for EDF *Energies Nouvelles*. In France,

the company obtained three permits to build 87 MW in Aveyron, 44 MW in Aude and 78 MW in Eure et Loir. Two windfarms, Aumelas (22 MW - Hérault) and Clitourps (3.3 MW - Manche) came on stream and the construction of five other farms (45 MW) began. In 2005, EDF Energies Nouvelles was ISO 14001 certified for the development, construction and generation of wind power in France.

In the UK, EDF Energies Nouvelles built three windfarms (44 MW) in the Fenlands, and in Italy, where 70 MW went on stream in Campanie, it built another 72 MW in Apulia. In Portugal, it consolidated its position as the country's third leading player and launched the construction of 106 MW of which 70 MW are now in service. In Greece, EDF Energies Nouvelles acquired the Ktistor Group's wind power business (111 MW authorized and financed, of which 45 MW brought on stream in 2005).

In the United States, EDF Energies Nouvelles affiliate EnXco benefited from its sound position with a project for 150 MW in California, the delivery of the Wall Lake wind farm in Iowa, the construction of 10.60 MW in Hawaiï, and the acquisition of 42 MW of capacity.

EDF Energies Nouvelles is also strengthening its positions as an operator and in maintenance.

In the area of biomass, EDF Energies Nouvelles brought on stream in 2005 the Lucena factory (26 MW) in Spain, where it is also developing a project for another 20 MW. Feasibility studies are now underway for six projects (80 MW) in France.

#### Developing decentralized renewable energy

In 2005, the EDF and Total groups bought a 20% stake in the company Total Energie, a world leader in solar photovoltaic, now TENESOL, each operator holding 50%. The new factory in Toulouse, launched in 2005, will double the generation capacity of solar panels by 2007 (from 15 to 30 MWp or 150,000 m<sup>2</sup>). The EDF Group also invested in solar thermal for hot water through the company Giordano. In the French overseas departments, the 110,000 solar water heaters installed avoid generation of 150 MWh per year by oil-fired plants and 100,000 tonnes of CO<sub>2</sub> emissions. Heat pumps, which draw 3 to 4 kWh per unit from the environment with a 1 kWh electricity consumption, are being developed at a fast pace, and are often combined with solar captors. Regions like Alsace, France, where more than 12% of new houses are already equipped, show strong potential for this technology. In Beinheim, Alsace, Electricité de Strasbourg and EDF Energies Nouvelles are developing geothermal vapor heat from boreholes deep within the earth (over -1,000 m) for Roquette, a manufacturer of food and beverages.



## Environmentally sound customer offers

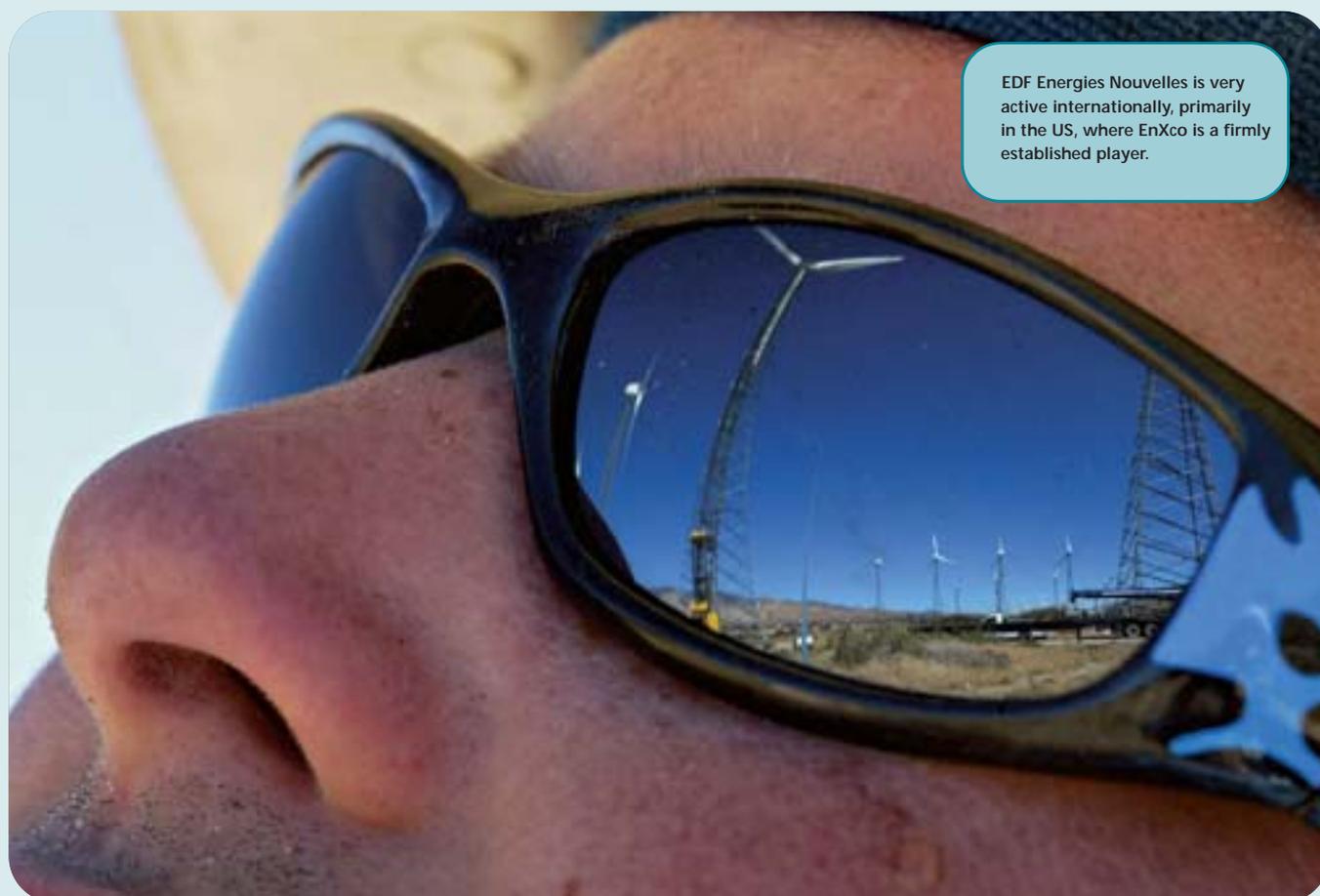
For an energy company, contributing to reducing greenhouse gas emissions and managing energy resources means anticipating customer expectations to help them reduce consumption, beginning with their energy bills. This involves working with customers toward lower and more efficient energy consumption, whether in the home or in industry. It also means providing incentive to use CO<sub>2</sub>-free energy sources like renewables and helping to reduce the CO<sub>2</sub> emissions inherent to industrial customer processes.

### Energy savings: lower consumption, better consumption

In France, we are working toward energy savings in partnership with local authorities, professional organizations and Ademe, France's agency for environment and energy management. By setting a target for EDF which represents half that for France as a whole, the French Energy Guidance Bill of July 2005 has made us a major player in terms of energy savings and efficiency. We have adapted our product offers and range of services accordingly, with energy diagnostics and implementation of solutions, and advice on high performance equipment eligible for white certificates.

Our first level of services offers customer advice which can go as far as providing tools for better management of consumption, with weekly, monthly, quarterly or semestrial reviews. These advisory services are increasingly provided through online channels (218,363 for *Vivrélec*<sup>®</sup> in 2005), advisory guidelines, and the possibility to consult a dedicated website (9.4 million visits in 2005 up 84% from 2004). Offers in our *EDF Pro*<sup>®</sup> or *EDF Entreprises*<sup>®</sup> ranges already include management services and optimization advice. For professional customers, our *Présence* offer (43,967 contracts as of December 31, 2005) includes a personalized annual review with energy savings advice and a dedicated website [edfpro.fr](http://edfpro.fr) with news, advice and solutions. Local authorities can benefit from *Di@lège*<sup>®</sup>, a service adapted to the billing requirements of multiple sites, while the *Citélia*<sup>®</sup> product range adapts their contracts to the specific needs of public lighting, the building sector and large equipment, or to environmental concerns by including energy optimization advice.

Our second level of services consists of a diagnostic, with assistance in implementing recommended solutions. EDF's technical experts visit customers to study their existing installations and to identify potential energy savings. *Vivrélec*<sup>®</sup> offers residential customers a range of heating and cooling solutions, for instance, and assistance with renovation projects and energy advice. For eligible customers, sensitive to rising energy prices, EDF has come up with diagnostic offers



EDF Energies Nouvelles is very active internationally, primarily in the US, where EnXco is a firmly established player.



## R&D strengthening renewables

A number of R&D projects (representing over €15 million in 2005) are aimed at bolstering the competitiveness of existing technologies and developing promising new areas. In addition to in-house programs such as the marine power project with EDF Energy, EDF is participating in several others within the Enerrdis competitiveness cluster and, where photovoltaic is concerned, in the Cisel research conducted on new thin film technologies (copper, indium and selenium) in a laboratory run jointly by France's Center for Scientific Research (*Centre National pour la Recherche Scientifique – CNRS*), and the Paris chemistry institute (*Ecole de Chimie*). In Alsace, *Electricité de Strasbourg* and *Pfalzwerke* are pursuing the fractured rock geothermal project (-5,000 m) at *Soultz-sous-Forêts*.



aimed to reduce energy bills through energy savings, optimization and renewables solutions adapted to specific situations and businesses. Since the end of 2005, this new service has begun to show results: 1,700 diagnostics for small and medium business customers, 149 for local authorities, and 300 for large customer sites. This second level of services can be further improved by combining diagnostics with adapted financing. *Vivrélec® renovation*, for instance, already provides residential customers with this possibility.

The housing sector is one area with major potential for energy savings. In 2005 alone, EDF worked with customers on over 50,000 renovation projects. Our target of 300,000 for the period 2006-2008 should enable us to obtain a large portion of the white certificates for this same period. These housing projects do not necessarily use electric heating; we are also promoting other, high performance CO<sub>2</sub>-free technologies. In individual houses and especially hotels, included in this sector, heat pumps are used for heating in association with solar captors for hot water. A total of 25,000 heat pumps were installed in 2005 (up from 17,300 in 2004). Offers aimed at reducing heating expenditure in public housing are part of a rehabilitation program covering 10,000 households per year, and courses on energy savings are provided to local staff and social workers.

Other efforts to promote energy efficiency focus on consumer electricity uses and behavior: putting appliances on "standby" mode, more efficient appliances such as low-energy lamps (125,000 sold in Guadeloupe in 2005). The energy savings kit *Gesteco®* (low-energy light bulbs, automatic switching of standby to idle mode, meters that display cost, discount coupons for the purchase of A+ energy class refrigerators, energy savings guidelines) was tested, winning public approval in 2005.

In 2005, as part of our renewed partnership agreement with Ademe (2004) covering several energy savings programs, new public awareness campaigns on energy saving practices and techniques were



launched: *Economies d'énergies; Faisons vite, ça chauffe* and; with the Nicolas Hulot Foundation, *Le défi pour la planète*.

#### Renewable energy offers

In Europe, the EDF Group's main companies offer "green" customer solutions that guarantee electricity generated wholly or in part from renewable energy sources. While EDF's kWh in France, generated essentially from hydro and nuclear, makes our electricity close to greenhouse-free, some customers still wish to go a step further using only renewable energies.

As of December 31, 2005, 930 companies (407 GWh) and 16,965 professional (39.8 GWh) eligible customers had chosen a green offer. Through the *kWh Equilibre®* offer EDF commits, for each kWh bought, to inject onto the electricity network a kWh produced from its renewable energy facilities. The origin and exact number of kWh effectively injected into the grid are guaranteed through green certificates established by Observ'er<sup>1</sup>. In 2005, the new *kWh Equilibre®* guarantees EDF will put aside €0.17 cent/kWh for the CISEL program on solar photovoltaic.



#### Help to optimize direct emissions of CO<sub>2</sub>

EDF's commercial approach can help customers reduce their greenhouse gas emissions. Our customer offer in this area takes several forms, such as *Carbone Optimia®*, launched in 2005, by which we propose to help customers stay within and better manage their CO<sub>2</sub> allocations and thereby avoid penalties. A number of options are available under this offer:

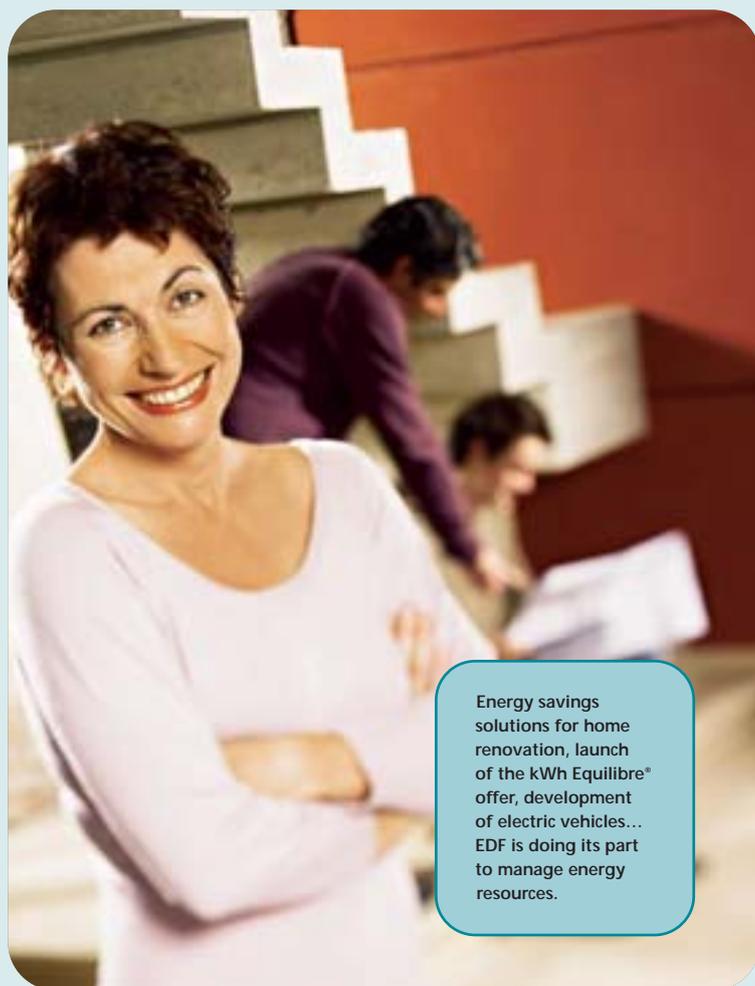
- *Trading CO<sub>2</sub>* – EDF manages the purchase or cession of CO<sub>2</sub> quotas for its customers;
- *Bilan CO<sub>2</sub>* – EDF provides an accurate assessment of customer CO<sub>2</sub> emissions.
- EDF proposes courses of action to reduce CO<sub>2</sub> emissions and information on investment costs in €/tCO<sub>2</sub> necessary to choose between making the investment to pollute less or buying quotas. At end 2005, twenty customers had entrusted EDF with their CO<sub>2</sub> issues.

#### Opting for electric transportation

Transportation is one of the heaviest consumers of energy and the most emitting in terms of greenhouse gases. As the first energy company to sign the IUPTS<sup>2</sup> Sustainable Development charter in June 2005, EDF is contributing alongside institutional and

Our "Carbone Optimia<sup>®</sup>" offer: helping customers manage their CO<sub>2</sub> quotas

1. Observatoire des Energies Renouvelables: *French representative of the independent European organization RECS – Renewable Energy Certificate System.*  
2. IUPTS: *International Union of Public Transport.*



Energy savings solutions for home renovation, launch of the kWh Equilibre® offer, development of electric vehicles... EDF is doing its part to manage energy resources.



## Dalkia: a winning example

Dalkia is the only energy services company to have participated since 2002 in the ETS, a voluntary market aimed at reducing CO<sub>2</sub> emissions in the UK. The company committed to a savings equal to 63,300 tonnes of CO<sub>2</sub> at 130 customer sites, by optimizing the running of facilities or by cogenerations. In 2005, Dalkia won first prize in the British Institutes Facilities Management awards in the environmental impact category.

EDF Médiathèque – Vincent BESNAULT (left) / EDF Médiathèque – Stéphane HERBERT (top right)

industrial partners to the development of electric transportation both public and private.

The "100 bus électriques" operation, launched jointly in 2001 with GART<sup>3</sup> and Ademe, has thus far brought 60 electric buses into service in France. The first review of the operation proved highly positive, providing quiet, clean and comfortable transport. In Lyons, five electric Europolis buses manufactured by Irisbus have been used successfully since end 2004 by Sytral. With their high-energy density batteries, they run a full day in urban areas without requiring recharge. EDF is also backing the company Gruau in the devel-

opment of an electric microbus with an autonomy of 120 km, and organized several events in 2005 to promote the trolleybus.

EDF is contributing to the development of individual clean vehicles and is experimenting in its own fleet with the Cleanova II, a hybrid electric vehicle using high energy density batteries, developed by SVE, a Dassault affiliate. We are also partner in a lithium-metal-polymer (LMP) battery project, BatScap (80% Bolloré), presented at the Geneva Motor Show in March 2005. An experimental run of vehicles equipped with these batteries began in November 2005.

3. GART: Groupement des Aménageurs de Réseaux de Transport.

## Warm Zone Newham in figures

- 68,500 households surveyed.
- 12,000 households benefiting from energy efficiency measures.
- £3.5 million toward efficiency measures and the fight against energy poverty.
- £1 million provided by EDF Energy toward energy efficiency in Newham.
- £500,000 raised to assist energy-poor households through Warm Zone; and approximately £500,000 in additional social aid, averaging £20 per week and per household, roughly twice as much direct aid for heating than the London average.
- 20 jobs created for the long-term unemployed.

EDF boasts the world's largest fleet of electric vehicles with 1,500 at present, and has taken measures to renew its entire fleet (45,000 vehicles in France) with clean vehicles. Thanks to this ambitious policy, it has thus far reduced its fleet CO<sub>2</sub> emissions by 3%.

## Providing access to energy

Energy, especially electricity, is a vital commodity. To be deprived of electricity leads to exclusion: social exclusion in the case of low-income customers, and economic exclusion for developing countries. To foster access to electricity for the energy-poor is to contribute to the social fabric in developed countries and to sustainable development in emerging countries.

### Low-income customers: fulfilling our quality public service mission

#### France: a commitment to public service

In France, EDF is contributing alongside public authorities to establishing into place the "right to electricity". As part of the Public Service Agreement signed in 2005, our mission takes many forms. It is financed partly through a public service contribution made by all network customers. Low-income customers are assured a basic electricity supply by the decree of April 8, 2004, in effect since January 1, 2005 (460,000 beneficiaries). Other customers in difficulty can benefit from a minimal supply of electricity (the *Maintien de l'Énergie Service*) while applying to government social services and the social energy fund (*Fonds Solidarité Énergie*<sup>1</sup> – FSE) cofinanced by EDF (270,000 beneficiaries in 2005). Customers with payment arrears whom we have been unable to reach continue to receive 1,000 watts of minimal supply to ensure they are not entirely cut off (250,000 beneficiaries in 2005). We also provide personalized assistance through a network of advisors, and work closely with local authorities, community social assistance centres, family allowance funds (*Caisses d'Allocations Familiales*) and associations. As of the decree of August 10, 2005, electricity providers must inform the social services of the department or commune when reducing power for payment arrears. To

1. The FSE combined with the housing fund *Fonds de solidarité pour le logement* on January 1, 2005.

maintain EDF's tie with its customers, we participate in close to 40 social mediation structures. In 2005, we reinforced our efforts to encourage customers better manage their energy budget, offering advice on consumption and use of appliances. A number of energy savings workshops and awareness campaigns have been organized for social workers.

#### UK: partnering against energy poverty

In the UK, EDF Energy gives full support to the government plan aimed at reducing energy poverty in households by 2010. When energy prices rose in January 2005, EDF Energy launched "Care More" for customers eligible for social welfare. This offer fixed tariffs at their December 2004 level until March 31, 2006. Used by 65,000 customers, this offer made it possible to identify some £250,000 in social aid hitherto not requested by 150 households. From 2001 to 2004, in the London borough of Newham, EDF Energy conducted the "Warm Zone" pilot program aimed at identifying and assisting the most impoverished households with their energy consumption. In April 2005, based on the results, EDF Energy extended the program to seven other London boroughs, representing £9.5 million over three years, to March 2008.

### Developing countries: sharing our industrial know-how

#### Access: an EDF program

In rural areas far from the grid, the Access program fosters the creation of small energy service companies to supply electricity to families and small economic activities (Morocco, Mali, South Africa). In periurban areas (Capetown, Buenos Aires), Access uses low consumption technologies and equipment. In 2005, the number of customers connected to electricity through the Access program reached 29,500 (223,000 people), up from 16,138 (133,000 people) in 2004.

#### Industrial partnerships

Through Tenesol, along with partners Total and Nuon, the Group is active in four major programs that will have brought electricity to 500,000 people in Mali, Morocco and South Africa by the end of 2008. In Morocco, the National Electricity Bureau is carrying out an intensive rural electrification program. Temasol, a Moroccan affiliate of Total and EDF, is contributing to a program to equip 60,000 families (400,000 people) in 24 provinces with solar energy. As of November 2005, over 18,000 customers were connected. Temasol also installs and manages



EDF Médiathèque – Samuel BOLLENDORFF

## “Electriciens sans Frontières”

Created in 1986 by EDF engineers, *Electriciens sans Frontières* federates 18 regional associations and some 800 volunteers who work on projects in 34 countries. Among other projects in 2005, the organization intervened to provide electricity, via solar panels, to a health dispensary, a spirulina farm and a school. Several teams joined with other NGOs to bring relief after the tsunami of December 26, 2004: electrification of dispensaries, homes, public lighting, and filtering pumps.

photovoltaic pumps for drinking water for fifteen villages on behalf of the National Electricity Bureau, a pilot program which should be extended.

### Other initiatives

As a member of the E7, which brings together the ten largest electricity companies of G8 member countries to promote sustainable development and electrification of developing countries, EDF participates in concrete projects for access to electricity such as the small hydroplant in Butan (70 kW) inaugurated in August 2005. The project's low CO<sub>2</sub> emissions qualify it for CDM (Clean Development Mechanism), a flexible mechanism provided for under the Kyoto Protocol for projects between industrialized and emerging nations. Other projects are being devel-

oped or implemented in the Galapagos islands, Madagascar, Nicaragua, Tunisia or Kenya.

The EDF Group is also increasing the number of its projects with Ademe in Senegal and Nigeria, with the Fondem in Laos, Senegal, Madagascar and Burkina Faso, and with the Nicolas Hulot Foundation in Senegal. A number of individual Group units in France have launched their own initiatives, such as the Penly plant's support of well-drilling in Burkina Faso, or Figlec's electrification of a village in China. In 2005, Edison and the NGO Save the Children launched the “Back to School” project aimed at reconstructing 93 nursery and primary schools in Banda Aceh, Indonesia, after the Tsunami. Agreements have already been concluded with 19 schools, of which two financed by Edison.

## Taking a more systematic approach to biodiversity

The EDF Group takes the impact of its business on the natural environment seriously. In 2005, our approach was given greater structure by preparing a strategic plan of action and internal organization. We also stepped up our efforts to understand and protect the environment.

### Knowing where we are: a prerequisite

In France, EDF drew up an inventory of the sensitive species concerned by facilities to be able to cross-reference with regulations, and reviewed data gathered over the years surrounding our industrial sites. Combined with an analysis of the various conventions and regulations concerning biodiversity, the results will serve as a basis on which to draw guidelines for the protection of biodiversity.

### Knowing who we are: a responsible industrial player

In order to reduce the environmental impact of hydroworks, EDF limits the amounts of water contained in locks, determines optimal flow and carefully manages spilling. In Dordogne, France, for instance, EDF established the *Défi éclusées* (sluicing challenge), a program to adapt our operations at Hauteefage and Argentat, taking on 50% of the financial burden.

EDF has joined together with public authorities in France to restore the major migration corridors of fish and is working on new designs for fish ladders with the CSP and the Cemagref. In 2005, EDF built its 75th fish ladder at Gamsheim on the Rhine. Monitored by associations, it has already shown

results. Germany's largest fish elevator was put into service in 2005 near EnBW's Wyhlen plant. In France, special measures were taken specifically for eels, with ladders and ramps on the Garonne and Dordogne rivers and transport by lorry in Brittany. The threatened Zingel asper, endemic to the Rhone river, is the focus of a LIFE program carried out with the European Union.

### Rehabilitating Europe's largest saltwater lake

Since 1994, as part of an effort to establish a sound balance in the ecosystem of the Etang de Berre, France, EDF has been reducing freshwater and silt runoff channeled from the Durance river where the Salon and Saint-Chamas hydro facilities are located. Since 1997, the positive effects on the lake's ecosystems have begun to show their worth.

The measures implemented in 1994 have led to an annual reduction in generation of 360 GWh on average for these two facilities, though represent on average half of all electricity generation for the region of Provence-Alpes-Côte d'Azur and therefore play a key role in supply security. Targeted in 2004 by a ruling from the European Community Court of Justice, France proposed to regulate the turbines at the two plants to avoid the most abrupt, irregular spill and regulate salinity. Begun in September 2005, this test is monitored by an international committee of independent experts. To ensure the solution is long-lasting, the terms and conditions of the concession must be modified by decree from the French Council of State. The public survey, a prerequisite to this kind of administrative act, was conducted in January and February 2006.

### Raising public awareness in France

Through a number of local initiatives and our partnership with the Nicolas Hulot Foundation, EDF contributes to public awareness on biodiversity and many of our employees are actively involved in associations.

At its generation sites, EDF has joined efforts with local authorities, associations and the public and government to foster biodiversity. In 2005, EDF sponsored the ETIQ program, run by associations Aquacaux and Chene in Le Havre, aimed at insertion of vulnerable individuals by involving them in the protection of fragile biotopes.

A national training program on biodiversity was set up in 2005, and EDF technicians can now learn about protecting birdlife through a training program offered by the *Ligue de Protection des Oiseaux* (Birdlife International's French representation) and *France Nature Environnement*, the French federation of environmental associations.

### Biodiversity in Latin America

The Norte Fluminense plant in Brazil made a commitment to the state government of Rio de Janeiro to finance a €3.5 million program which includes studies on hydro management at the Macae basin, a program of environmental awareness, the restoration of biodiversity and the expansion of ecological reserves.



EDF is taking into account the impact of its operations on natural environments and working to build awareness of the importance of biodiversity, notably through its partnership with the Nicolas Hulot Foundation: the school of nature and mankind, below (*Ecole pour la nature et l'homme*) is designed to allow everyone to play an active part in protecting the environment.



## Nam Theun: launching a project in sustainable development

The Nam Theun 2 hydroelectric project in Laos is being managed with an innovative approach to sustainable development. The future infrastructure will significantly leverage the economic development of the country and region, with renewable energy at its origin. The design, construction and operation of the plant factors in the well-being of the local population and finances the protection of the exceptional surrounding environment.

### Looking at local and regional development

The construction of Nam Theun, a 1,070 MW hydroelectric facility, began in 2005 and is scheduled to come on stream in 2009. 95% of electricity produced will be exported to Thailand, generating significant revenues for Laos (representing close to one-third the government's current budget), and its business community (about \$100 million in revenues). Locally, the population is already benefiting from development programs to sustainably improve its standard of living.

### Our commitments: international acknowledgement

EDF's role in the project is twofold. We are both the primary investor with a 35% share in the company Nam Theun Power Company (NTPC), the owner/operator of the dam, and lead contractor.

As with any dam project, Nam Theun will have an impact that EDF and partners are taking into account: impact on the populations living on and downstream from the site, and on biodiversity. At the end of 2004, a complaint was lodged against EDF by a group of NGOs for violation of OECD guidelines for multinational companies. After examination, the OECD National Contact Point charged with Guideline affairs pronounced "in the light of available information, EDF could not be accused of any violation of the OECD's principle guidelines and that EDF even made commitments which went beyond the guidelines"<sup>1</sup>.

It was only after analysis of social and environmental measures recommended by NTPC, that the project's international financiers (World Bank, Asian Bank of Development, French Development Agency) decided, based on stringent social and environmental criteria, to participate in the project, thereby approving NTPC's approach which proposes contractual commitments to prevent, reduce or compensate social and environmental impact.

These contractual agreements on various social and environmental considerations are a first for an industrial project of this kind. They represent a veritable challenge in terms of the finances and results they imply. Their implementation rests on a long-term collaboration between NTPC, the populations, the government of Laos and those backing the project financially. Already, these efforts are evident in the demanding environmental management of the construction site, which employs upwards of 4,100 people (80% Laotian), in the compensation and social program for villagers that are being displaced (including the construction of a pilot village and public infrastructures) or affected by the reservoir, and in the vast comprehensive program for the protection of biodiversity in the catchment area. In this respect, the partners committed to financing (US\$1 million/year) the functioning of the government agency responsible for the management and preservation of the Nam Theun National Protected Area (NPA) for 30 years beginning in 2004. During the 25-year duration of the concession, approximately \$160 million will have been spent on social and environmental measures, close to 13% of the total cost of the project.

Nearly \$160 million  
are to be invested  
in social and  
environmental  
initiatives

1. Full recommendations by the National Point of Contact available in French at: [http://www.minefi.gouv.fr/directions\\_services/dgtpe/pcn/compcn010405](http://www.minefi.gouv.fr/directions_services/dgtpe/pcn/compcn010405).



The contractual commitments entered into by EDF regarding the environmental and social aspects of the construction of the Nam Theun dam in Laos are a first: examples include the establishment of pilot villages for displaced populations, the protection of the biodiversity of the river basin, and the fact that 80% of staff working on the project is Laotian.



# GLOSSARY

**Ademe – Agence de l'Environnement et de la Maîtrise de l'Énergie:** France's Agency for Environment and Energy Management. Under the supervision of the French Ministries of Ecology and Sustainable Development, Economy and Industry, and Research, Ademe both advises and finances the environment-friendly projects of public authorities, private companies and individuals.

**Agenda 21:** Action plan for the 21st century signed by more than 150 nations at the 1992 Earth Summit held in Rio and aimed at fighting poverty and social exclusion, production of sustainable goods and services and protection of the environment. Since then, local authorities, companies and associations have been invited to adapt the principles of the Agenda 21 agreement to their specific situations by defining and implementing "local Agenda 21". The process involves implementation of sustainable development principles on a daily basis. The commitments made by EDF as part of its own local Agenda 21 are set forth in French on the company's website ([www.edf.com](http://www.edf.com)).

**Care:** This NGO was created in 1945 to improve the quality of life in developing countries. Care works in collaboration with local populations and government authorities to ensure project efficiency. Care currently works in 60 countries throughout Africa, Asia and Latin America on over 350 different programs.

**CNDP – Commission Nationale du Débat Public:** the French Public Debate Commission.

**Cumac:** from *cumulée actualisée*, this energy unit corresponds to the quantity of energy saved discounted at a rate of 4% through to the end of the operation.

**Energy savings certificates:** The French law of July 15, 2005 provided for an energy savings incentive scheme by setting a national target of 54 TWh cumacs from now to end 2008. To stay within target, energy providers like EDF, who will bear approximately half of the effort demanded, can make the required savings within their own facilities or incite their customers to do so. Also called "white certificates", the energy savings certificates are delivered against savings achieved and are exchangeable between energy providers or corporate bodies (local authorities for instance) who may also contribute to these efforts. Players who have accumulated a sufficient number of certificates between 2006 and

2008 will be able to sell them to others who were unable to reach their targets, and who would thus be subject to a €20/missing MWh penalty.

**GART – Groupement des Autorités Responsables de Transports:** This association gathers together 252 local transportation authorities to improve and develop public transportation in France.

**Global Compact:** Launched by the United Nations Secretary in July 2000 to promote dialogue between companies, UN agencies, labor and civil society on nine universal principles in the areas of human rights, labor, and the environment. A tenth principle was added in 2004: the fight against corruption.

**GRI:** The Global Reporting Initiative (GRI) was launched at the end of 1997 to develop globally applicable guidelines for reporting on the economic, environmental and social performance of companies, and later of any governmental or non-governmental organization. Compiled by the Coalition for Environmentally Responsible Economies (CERES) in association with the United Nations Environment Program (UNEP), the GRI incorporates the active participation of companies, NGOs, accounting organizations, business associations and other stakeholders worldwide.

**ILO:** The International Labor Organization promotes social justice and works to strengthen worker rights. Established in 1919 following the Treaty of Versailles, it survived the disappearance of the Society of Nations and became, in 1946, the first specialized agency with the United Nations.

**National Allocation Plans (NAP):** National legislation establishing limits to the CO<sub>2</sub> emissions of the most polluting industrial and generation sites for a given period. NAPs provide a framework for the European emissions trading scheme aimed at reducing the greenhouse gas emissions of European industries and allowing players to buy or sell emissions permits that enable them to respect their quotas.

**NGO:** Non-Governmental Organization.

**WBCSD:** World Business Council for Sustainable Development – an international association of companies.

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