Environmental Report 2009

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CEO's message

Strategic lines

With its presence in 23 countries, from Russia to Chile, Enel intends to play a role of leading global player in policies of environmental sustainability and fight against climate change. This is key to ensuring eco-friendly, reasonably-priced, continuous and secure energy supplies to our customers. For this purpose, we resort to the best available technologies and we are committed to continuously improving them. In 2009, together with 59 other CEOs of power companies from 27 of Eurelectric's countries, I signed a declaration, where we pledged to become carbon-neutral by 2050, by relying on renewables, nuclear energy and carbon capture & storage for fossil fuels, which we cannot do without in the near future.

Our commitment is also testified by our contribution to the achievement of European and national targets by 2020 under the EU's Climate and Energy Package. In this regard, in 2009, we entered into a voluntary agreement with the Italian Environment Ministry, with a view to: increasing generating capacity from renewables; replacing oil-fired power plants with new, high-efficiency, low-emission, coal-fired ones; making greater reliance on biomass and refuse-derived fuel; and implementing end-use energy efficiency projects.
In 2009, we officially presented Enel Green Power to the international financial community. The company was set up to manage and develop the Group's renewable portfolio in the world. The company, which was born as a leader in the sector, increased its generating capacity in 2009, thanks to new wind farms in Europe and Canada, geothermal fields in the US and Italy and many new initiatives in the solar sector.

As regards nuclear energy, another zero-emission source, we created Sviluppo Nucleare Italia in joint venture with EDF in 2009. The company has the task of exploring the feasibility of building advanced third-generation, nuclear power plants in Italy. The Italian program will add to the power plants already acquired or being built in other European countries and further improve our source mix for electricity generation, making it more balanced, more competitive, more eco-friendly and more stable with respect to changes in commodity prices.

In 2009, renewable and nuclear sources accounted for more than 40% of our generation and displaced roughly 100 million tonnes of CO_2 emissions into the atmosphere, equal to the emissions from about 60 million cars.

Enel actively contributes to the struggle against global climate change, which was discussed, among others, in the recent Copenhagen Conference. In 2009, we slashed CO_2 emissions per kWh generated by over 5% on 2008 and we confirmed our leadership in the Clean Development Mechanism, introduced by the Kyoto Protocol.

Thanks to our portfolio of projects in emerging and developing countries, we succeeded in avoiding 26 million tonnes of CO_2 emissions into the atmosphere in 2009.

Our commitment to technological innovation is expressed by almost € 1 billion of planned investments in the 2009-2013 period. We believe that we will further improve our environmental performance thanks to leading-edge research activities being conducted by Enel and Endesa, e.g. carbon capture & storage demonstration facilities in the sites of Porto Tolle (Italy) and Compostilla (Spain) and projects of electricity generation from hydrogen. Furthermore, we are working on innovative renewable-energy technologies, such as low-enthalpy geothermal energy, concentrating solar photovoltaic power generation, the Archimedes solar thermodynamic plant and multi-generation systems. In the area of energy efficiency, Enel is project leader of a European smart-grid project, which will tap the large potential of smart meters: we were the first in the world to roll out this technology on a large-scale basis, making it available to all of our Italian customers. Making grids increasingly responsive and smart is a key driver for the deployment of distributed renewable-power generation. We are also working to disseminate power-driven mobility and the LED technology for public lighting.

Excellence in environmental management

We are relentlessly working to identify the best skills, the most innovative experiences and the most advanced technologies among our international operations. Our capability of extending the most evolved practices to the overall Group is a fundamental lever for growth and improvement.

We are phasing in environmental management systems certified under international standards, in line with the Group's environmental policy. In 2009, our generating capacity certified under the ISO 14001 international standard was up by over 4%.

We achieved outstanding results in 2009, which confirmed the upward trend of our environmental performance. In particular, with respect to 2005, we curbed specific emissions of SO_2 and particulates from thermal power generation by 71% and 46%, respectively.

Participation in the global debate over environmental policies

Although the outcome of the Copenhagen Conference has been below expectations, the debate over climate policies remains keen.

Enel feels that large industrial groups can play a crucial role in this area, since no significant results in terms of environmental sustainability and struggle against climate change may be reached without the involvement of companies. This is why it is imperative to put in place mechanisms and rules enabling the creation of a global CO_2 market and favoring technology-transfer processes.

In this context, we are continuing to actively participate in the political debate at global, European and national level, capitalizing on our international scale, know-how and broad portfolio of technologies.

As we are sector leaders in numerous countries, we can provide support to international organizations and governments, in order to facilitate political and regulatory choices which are effective and consistent with economic and industrial realities.

I believe that the global vision that Enel has acquired can nourish a responsible and constructive dialogue with institutions and with all of our stakeholders. We are committed to continuing on this path.

The Chief Executive Officer
and General Manager
Fulvio Conti

Parameters of the Environmental Report 2009

Methodological note

This Report deals with the environmental implications of the activities that Enel carries out in the world through all the companies included in its scope of consolidation: electricity generation, electricity and natural-gas distribution and marketing, fuel storage & handling, mining and management of real-estate & services.
After a short presentation of the Enel Group, the Report describes the environmental governance tools: policy and targets, organization, management systems, reporting process, risks & opportunities and commitment (financial resources, climate strategy, nuclear energy, renewables, research & innovation, biodiversity conservation, as well as awareness, training & education, etc.). Then, the Report reviews performance data and energy-environment highlights, commenting on their trends in the 2005-2009 period for the overall Group and in each country and distinguishing them by technology.
Enel voluntarily requested KPMG S.p.A. to review its Environmental Report.

The qualitative and quantitative environmental performance data are reported in accordance with the "Sustainability Reporting Guidelines & Electric Utility Sector Supplement" issued in 2009 by the Global Reporting Initiative (GRI), as summarized in the following "GRI Content Index". However, the Report has a deeper level of detail than required by the GRI, since it is the result of a reporting process that Enel has carried out progressively in fourteen editions, including the present one.
The Report presents the Enel Group's environmental performance vs. targets. In particular, the preparation of the Report involved the identification of stakeholders and of significant aspects to be reported, as well as the adoption and maintenance of adequate processes of internal management and control of the reported data.

The data contained in the Report refer to Enel SpA and to the companies included in its Consolidated Financial Statements 2005, 2006, 2007, 2008 and 2009 (to which the reader is referred for details about the companies).
In particular, the data of the fully and proportionally consolidated companies (if they produce significant environmental impacts with reference to the specific indicator being commented on) are reported proportionally to their percentage of consolidation. Limitations of the reporting perimeter (data of insufficient quality or inefficiently collected), if any, are explicitly indicated and commented on.
Affiliates (assessed under the net-worth criterion in the Consolidated Financial Statements) and other entities (on which Enel exerts significant influence,

including joint ventures) are included in the computation of the data (where available) proportionally to Enel's holdings. If the same affiliates or entities produce significant impacts, they are also included in the qualitative reporting sections.

The status data (number of installations, net maximum capacity, length of grids, etc.) reflect the situation of the companies as of December 31 of 2009 or each of the reported years. The flow data (resources, electricity and heat generation, emissions, liquid releases, waste, etc.) are only considered to the extent of their period of relevance to the Group.
For the numerical values shown in the tables - excluding those which can be expressed only as integers (e.g. number of installations, number of personnel members) - the following approximation criterion has been followed: without decimals for values greater than or equal to 100; with one decimal for values lower than 100 and greater than or equal to 10; with two decimals for values lower than 10 and greater than or equal to 1; with three decimals for values lower than 1. This criterion corresponds to the one adopted in data collection. However, if the last decimal digit is zero, it is omitted.

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Contact persons for the various activities are specified from time to time.

The technical definitions of an energy nature of the electricity sector are based on the "Statistical Terminology Employed in the Electricity Supply Industry", published by UNIPEDE (International Union of Producers and Distributors of Electrical Energy, merged with Eurelectric in June 2001).
The formats for presenting both process and governance data are continuously updated to accommodate changes in Enel's organizational configuration, developments in legislation and technologies, as well as experience feedbacks.

The following table enables the reader to identify the individual GRI performance indicators in the text.

GRI Content Index (1)

	EN1	EN2	EN3	EN4	EN5	EN6	EN7	EN8	EN9	EN10	EN11	EN12	EU13	EN13
OVERALL GROUP	77, 78, 79, 80, 81, 82, 84, 86, 87	27	77, 78, 79, 81, 82, 86, 87	79, 83, 86, 87, 90, 92	-	94	-	79, 83, 86, 87, 88	63	79, 86, 88	63	63, 64, 65	64, 65, 66	64, 65, 66
EUROPE														
BULGARIA	126, 129, 130	-	126, 129, 130	131	131	-	-	126, 129, 131	-	129	-	-	-	-
FRANCE	134, 136	136	134, 136	134, 136	136	-	136	-	-	-	-	-	-	-
GREECE	139	141	-	139, 141	-	-	-	-	-	-	-	-	-	-
IRELAND	144, 146	-	144, 146	-	-	-	-	144, 146	-	-	-	-	-	-
ITALY	157, 158, 166, 171	171	157, 166, 171	157, 166, 172	172	169, 173, 174	175	157, 166, 175	-	166, 175	-	-	175	-
PORTUGAL	185, 188, 190	-	185, 188	-	-	-	-	185, 188	-	-	-	-	-	-
ROMANIA	193, 197	-	193, 197	193, 196, 197	197	196, 198	-	-	-	-	-	-	-	-
RUSSIA	201, 204, 206	206	201, 204, 206	-	206	206	-	201, 204, 207	-	204, 207	-	-	-	-
SLOVAKIA	216, 221, 223, 224	224	216, 221, 224	216, 224	224	224	224	216, 221	-	221	-	-	-	-
SPAIN	238, 239, 246, 251	251	238, 246, 251	238, 246, 251	251	251	-	238, 239, 246	-	246	-	-	-	-
NORTH AMERICA														
CANADA	261, 264, 265	-	261, 264, 265	-	-	-	-	261, 264	-	-	-	-	-	-
USA	268, 270	-	268, 270	-	272	-	-	268, 270	-	-	-	-	-	-
LATIN AMERICA														
ARGENTINA	281, 282, 285, 287	-	281, 285, 287	282, 285, 287	-	-	-	281, 285	-	-	-	-	-	-
BRAZIL	295, 298, 300	-	295, 298, 300	298, 300	-	-	-	295, 298, 300	-	-	-	-	-	-
CHILE	308, 309, 313, 316	-	308, 313, 316	313, 316	-	-	-	308, 313, 316	-	-	-	-	-	-
COLOMBIA	324, 325, 329, 331	-	324, 329, 331	331	-	-	-	324, 329	-	-	-	-	-	-
COSTA RICA	335	-	-	-	-	-	-	-	-	-	-	-	-	-
GUATEMALA	340	-	340	-	-	-	-	-	-	-	-	-	342	-
MEXICO	344	-	-	-	-	-	-	-	-	-	-	-	-	-
PANAMA	348	-	348	-	349	349	-	-	-	-	-	-	-	-
PERU	355, 356, 359, 361	-	355, 359, 361	359, 361	-	-	-	355, 359	-	-	-	-	-	-

☐ MATERIALS

EN1 Materials used by weight or volume. This indicator includes the sector-specific commentary required by the EUSS (Electric Utilities Sector Supplement).

EN2 Percentage of materials used that are recycled input materials.

☐ ENERGY

EN3 Direct energy consumption by primary energy source.

EN4 Indirect energy consumption by primary source.

EN5 Energy saved due to conservation and efficiency improvements.

EN6 Initiatives to provide energy-efficient or renewable-energy-based products and services, and reductions in energy requirements as a result of these initiatives.

EN7 Initiatives to reduce indirect energy consumption and reductions achieved.

☐ WATER

EN8 Total water withdrawal by source. This indicator includes the sector-specific commentary required by the EUSS (Electric Utilities Sector Supplement).

EN9 Water sources significantly affected by withdrawal of water.

EN10 Percentage and total volume of water recycled and reused.

☐ BIODIVERSITY

EN11 Location and size of land owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas.

EN12 Description of significant impacts of activities, products, and services on biodiversity inprotected areas and areas of high biodiversity value outside protected areas.
This indicator includes the sector-specific commentary required by the EUSS (Electric Utilities Sector Supplement).

EU13 Biodiversity of offset habitats compared to the biodiversity of the affected areas.

EN13 Habitats protected or restored.

EN14 Strategies, current actions, and future plans for managing impacts on biodiversity.
This indicator includes the sector-specific commentary required by the EUSS (Electric Utilities Sector Supplement).

EN15 Number of IUCN (International Union for Conservation of Nature and Natural Resources) Red List species and national conservation list species with habitats in areas affected by operations, by level of extinction risk.

☐ EMISSIONS, EFFLUENTS, AND WASTE

EN16 Total direct and indirect greenhouse gas emissions by weight. This indicator includes the sector-specific commentary required by the EUSS (Electric Utilities Sector Supplement).

EN17 Other relevant indirect greenhouse gas emissions by weight.

EN14	EN15	EN16	EN17	EN18	EN19	EN20	EN21	EN22	EN23	EN24	EN25	EN26	EN27	EN28	EN29	EN30
64, 65, 66	65, 66	95, 97, 98, 99, 102, 103, 104	-	96, 99		95, 96, 97, 99, 100, 102, 103, 104	79, 105, 106, 107, 108	109, 110, 111, 112, 115, 116, 117		117	63		117	35, 39	75, 76	42
-	-	127, 129, 131	-	127, 131	-	127, 129, 131	127, 131	128, 129, 132	132	-	-	-	-	-	125	-
-	-	135	-	135, 136	-	-	-	-	-	-	-	136	-	-	-	-
-	-	-	-	140, 141	-	-	-	140	-	-	-	-	-	-	139	-
-	-	145, 146	-	-	-	145, 146	144, 145	145, 146	-	-	-	147	-	-	-	-
176	-	161, 167, 177	-	162, 177	177	161, 167, 178	157, 162	163, 164, 165, 167, 168, 178	178	-	-	179	-	-	156, 169, 181	-
-	-	186, 188, 190	-	186, 190	-	186, 188, 190	186	187, 189, 190	-	-	-	-	-	-	-	-
-	-	195, 196	-	198	-	-	-	195, 196, 198	-	-	-	198	-	-	193, 196	-
-	-	203, 204	-	207	-	203, 204, 207	201, 203	203, 204, 205	-	-	-	207	-	-	-	-
-	-	218, 221, 225	-	218, 225	225	218, 221, 225	216, 219, 221, 222, 226	219, 220, 222, 226	226	-	-	226	-	-	215	-
-	-	241, 247, 251	-	241, 251	252	241, 242, 247, 253	239, 242, 247, 253	243, 244, 245, 247, 248, 253	-	-	-	253	-	-	237, 248	-
-	-	262, 264	-	262, 265	-	262, 264, 265	262	263, 264	-	-	-	-	-	-	-	-
-	-	269, 270, 272	-	269, 272	-	-	-	269, 270	-	-	-	272	-	-	-	-
-	-	283, 286, 287	-	283, 287	287	283, 286, 287	281, 283	283, 284, 286	-	-	-	287	-	-	286	-
-	-	296, 298	-	296, 300	-	296, 298	296	297, 299	300	-	-	300	-	-	299	-
-	-	310, 313, 316	-	310, 316	-	310, 313, 316	308, 310, 311	311, 312, 313, 314, 316	316	-	-	317	-	-	314	-
-	-	326, 329, 331	-	326, 331	-	326, 329, 331	324, 326	327, 328, 329, 330, 331	332	-	-	332	-	-	330	-
-	-	336	-	336, 337	-	-	-	336, 337	337	-	-	337	-	-	-	-
-	-	341	-	341, 342	-	-	-	341, 342	-	-	-	-	-	-	-	-
-	-	345	-	345, 346	-	-	-	345, 346	-	-	-	-	-	-	-	-
-	-	348	-	348, 349	-	-	-	348, 349	-	-	-	349	-	-	-	-
-	-	357, 359, 361	-	357, 361	-	357, 359, 361	355, 357	357, 358, 360, 361	-	-	-	362	-	-	360	-

EN18 Initiatives to reduce greenhouse gas emissions and reductions achieved. This indicator includes the sector-specific commentary required by the EUSS (Electric Utilities Sector Supplement). settore (EUSS - Electric Utilities Sector Supplement).

EN19 Emissions of ozone-depleting substances by weight.

EN20 NO_X, SO_X, and other significant air emissions by type and weight. This indicator includes the sector-specific commentary required by the EUSS (Electric Utilities Sector Supplement).

EN21 Total water discharge by quality and destination. This indicator includes the sector-specific commentary required by the EUSS (Electric Utilities Sector Supplement).

EN22 Total weight of waste by type and disposal method. This indicator includes the sector-specific commentary required by the EUSS (Electric Utilities Sector Supplement).

EN23 Total number and volume of significant spills.

EN24 Weight of transported, imported, exported, or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III, and VIII, and percentage of transported waste shipped internationally.

EN25 Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the reporting organization's discharges of water and runoff.

☐ PRODUCTS AND SERVICES

EN26 Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation.

EN27 Percentage of products sold and their packaging materials that are reclaimed by category.

☐ COMPLIANCE

EN28 Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations.

☐ TRANSPORT

EN29 Significant environmental impacts of transporting products and other goods and materials used for the organization's operations, and transporting members of the workforce.

☐ OVERALL

EN30 Total environmental protection expenditures and investments by type.

(1) For each indicator, the table shows the commentary page numbers.

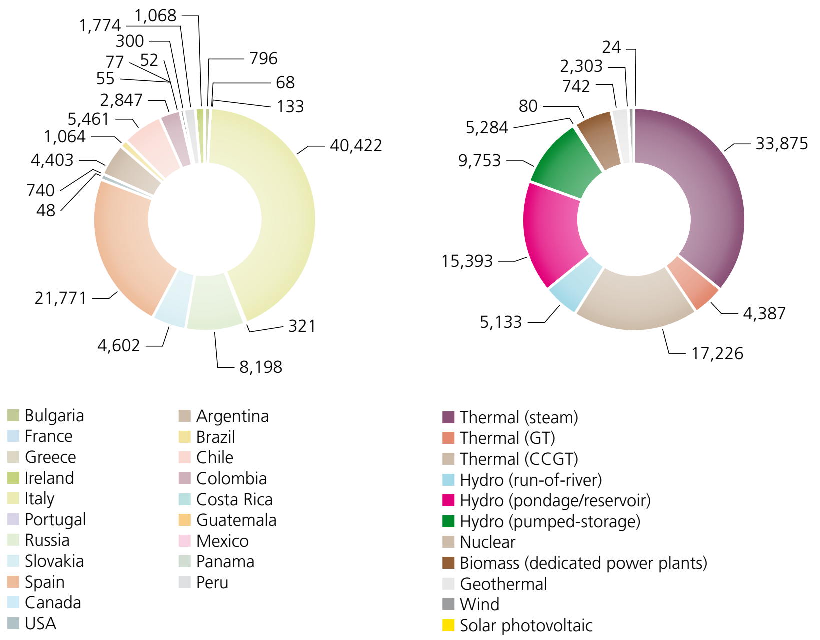
The Enel Group

Enel is the largest power company in Italy and the second listed utility in Europe in terms of net maximum capacity. Enel is an integrated operator, active in electricity generation, distribution and sale, as well as in gas extraction, distribution and sale. With acquisition of the Spanish power company Endesa, Enel is now present in 23 countries, with a net maximum capacity of over 94,000 MW and more than 61 million customers in the electricity and gas sectors.

Enel, listed on the Milan Stock Exchange since 1999, is the Italian company with the highest number of shareholders: about 1.3 million, including retail and institutional shareholders.
Enel's mission is to create and distribute value in the international energy market, responding to customers' and shareholders' requirements, enhancing competitiveness in the countries where it operates, meeting employees' expectations, serving communities while safeguarding the environment, health and safety, with the commitment of ensuring a better world to coming generations.
Enel employs about 82,500 people.

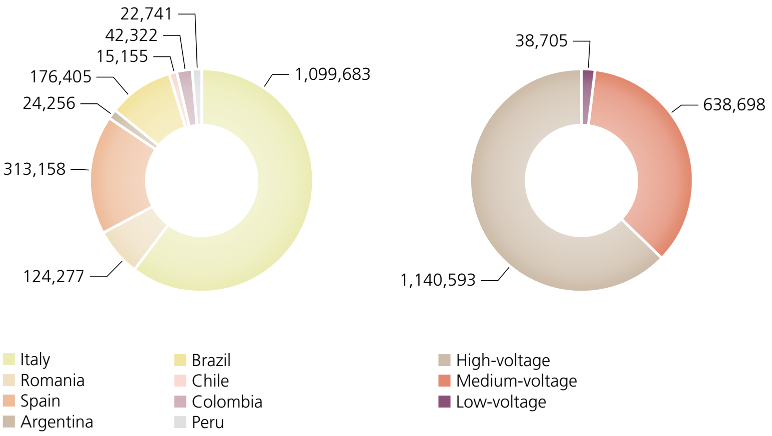
Electricity is generated with different technologies, which exploit both conventional and renewable sources.
As of December 31, 2009, the total net maximum capacity amounted to 94,199 MW, while the total net electricity generation in 2009 was equal to over 286 TWh.

Enel's generating mix as of Dec. 31, 2009
Total: **94,199** MW



With regard to distribution, the total electricity wheeled on Enel's grid in 2009 was 417.8 TWh and the total length of power lines as of Dec. 31, 2009 was equal to 1,817,997 km. The gas distribution grid (only in Spain) has a total length of about 3,400 km.

Electricity distribution grid as of Dec. 31, 2009
Total: **1,817,997** km



As to sales, Enel sold a total of 287.7 TWh to 29.7 million customers in 2009. Gas sales in 2009 amounted to 8.6 billion m^3 (2.8 million end users).

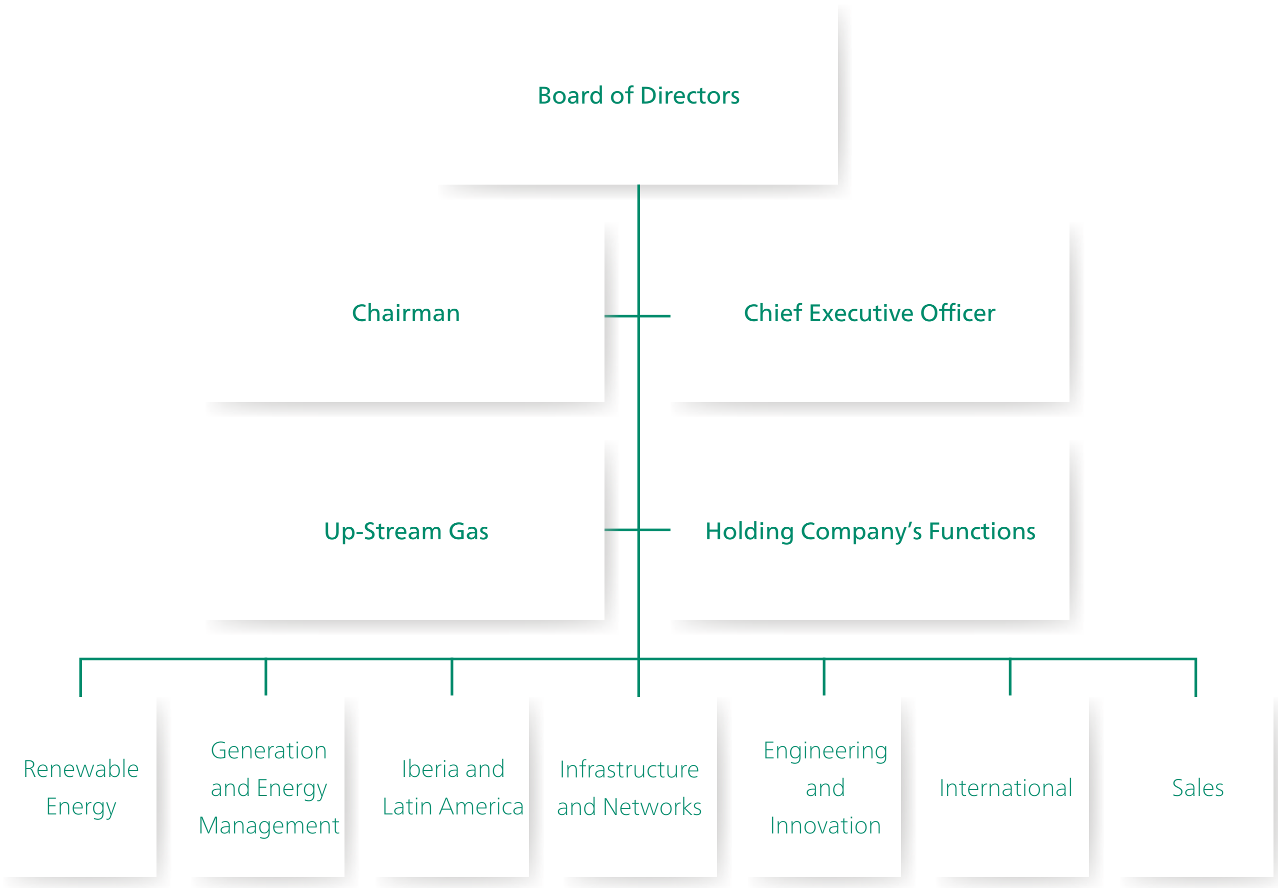
Competitiveness, security and flexibility of supplies are strategic priorities. To cover the demand of local markets in Spain and Portugal, Enel extracts coal in the mines owned by Endesa. Enel also participates in gas extraction activities in Russia and Indonesia.

To manage the above-described activities, Enel relies on an organizational structure which consists of:

> the Holding Company (the so-called "Corporate"), which - through its central staff functions - plays a role of guidance, coordination and control, so as to leverage the Group's synergies and optimize the management of services in support of the core business;

> the Up-Stream Gas function, which has the mission of developing and managing the Group's upstream gas segment;

> seven divisions, which ensure the achievement of technical and financial performance targets by the operating companies and the integration of their activities within the Group in accordance with its policies and codes of conduct.



The **Renewable Energy** Division is in charge of all the renewable power generation assets of the Group, excluding the renewable portfolios of Endesa (Iberia and Latin America Division), Enel Produzione (Generation and Energy Management Division) and Slovenské elektrárne (International Division). The division gathers all of Enel's wind, solar, geothermal and run-of-river hydro generation assets in Italy and in 13 other countries, totaling about 4,808 MW of capacity.

The **Generation and Energy Management** Division manages all the assets of generation, import and wholesale supply of electricity in Italy, optimizing generation and procurement costs, in compliance with environmental and safety legislation and regulations.
At regional level, power plants are grouped under 32 Business Units (23 thermal and 9 hydro), in addition to the Trento Unit, which is a self-standing legal entity (Hydro Dolomiti Enel).

The **Iberia and Latin America** Division gathers all the assets of production and distribution of electricity and gas in Spain, Portugal and Latin America, excluding those falling under the responsibility of the Renewable Energy Division.

The **Infrastructure and Networks** Division manages all of Enel's electricity distribution grid and public lighting assets in Italy and provides support to the management of the gas distribution grid [1]. The division is focused on the achievement of operating excellence and continuous improvement of its technical-service quality standards.
At regional level, grids and installations are grouped under 4 regional macro-areas of electricity distribution and 8 regional areas, 4 of public lighting and 4 of gas.

(1) Gas distribution no longer falls within the Group's scope of consolidation after the sale of 80% of Enel Rete Gas (September 30, 2009).

The **Engineering and Innovation** Division has the task of managing the Group's engineering processes of development and construction of power plants, as well as research activities, by scouting for, capturing and developing opportunities of innovation, with particular emphasis on initiatives of high environmental value.
The division consists of 3 technical areas (Innovation & Environment, Research, Nuclear Energy) and of the Power Plant Development & Construction Business Area.

The **International** Division manages all the power generation and distribution business operations abroad, excluding those falling under the responsibility of the Renewable Energy Division and of the Iberia and Latin America Division.
The division is organized into 6 regions (each of which is called "Country"): France and Belgium, Bulgaria, Greece, Central-Eastern Europe, Romania, Russia and Commonwealth of Independent States (CIS).

The **Sales** Division has the mission of managing the end-use power and gas markets in Italy, developing integrated offerings of products and services for the various customer segments, while meeting commercial-service quality standards.

The Enel Group also includes **Enel Servizi Srl**, a company which has the task of providing services (personnel administration, procurement, administration-accounting, ICT, management of vehicles and real estate) to the Italian companies of the Group. Enel Servizi gives guidance to the foreign companies of the Group on procurement, ICT and real-estate/facility management.

The divisional organization is based on a complex structure of companies.



Environmental governance

Environmental policy and targets

Environmental policy

Enel regards the environment, the fight against climate change and sustainable development as strategic factors in carrying out and expanding its activities and as key drivers for strengthening its leadership in energy markets.

The Group's environmental policy is based on 3 fundamental principles and pursues 10 strategic targets.

Principles

> Safeguarding the environment.
> Improving and promoting the environmental features of products and services.
> Creating corporate value.

Strategic targets

> Application of internationally-recognized environmental management systems to its entire organization.
> Optimized integration of installations and buildings into the landscape, while conserving biodiversity.
> Mitigation of environmental impacts by applying the best available technologies and the best practices in building, operating and decommissioning its installations.
> Leadership in renewables and low-emission electricity generation.
> Efficient use of energy, water and raw materials.
> Optimized management of waste and liquid releases.
> Development of innovative technologies for the environment.
> Communication of Enel's environmental management efforts to the public at large and to institutions.
> Environmental awareness, training & education of employees.
> Promotion of environmentally-sustainable practices among suppliers and contractors.

The Chief Executive Officer
and General Manager
Fulvio Conti

Strategic targets

Enel translates the principles enshrined in its environmental policy into a number of initiatives, which are aimed at achieving its strategic targets.

Strategic target	Ongoing initiatives/programs
Application of internationally-recognized environmental management systems to its entire organization	> Extension of certification to sites that are not yet certified > Yearly maintenance of already obtained ISO 14001 certifications and EMAS registrations > Group's certification
Optimized integration of installations and buildings into the landscape, while conserving biodiversity	> Biodiversity conservation projects (conservation of protected species habitats, reintroduction of particular species, research centers and sighting points, replanting of indigenous flora) > Biomonitoring (land-, sea- and river-based) > Use of overhead or underground cables (in lieu of bare conductors) in power distribution lines > Mitigation of visual impacts due to presence and operation of installations
Mitigation of environmental impacts by applying the best available technologies and the best practices in building, operating and decommissioning its installations	> Assessment of environmental impact due to construction or major retrofits of installations > Study and sustainable use of the Best Available Techniques (BATs) in pollutant abatement systems > Monitoring of surface water quality, soil and subsoil in the areas surrounding installations
Leadership in renewables and low-emission electricity generation	> Enlargement of renewable power plant portfolio by building or acquiring new power plants and by entering into construction agreements > Development of nuclear technology > Construction of new combined-cycle power plants (Belgium, Russia and Spain)
Efficient use of energy, water and raw materials	> Improvement of power plant efficiency (use of more efficient components and/or processes, reduction of consumption by auxiliaries) > Reduction of grid losses in electricity distribution (optimized grid design, use of conductors with larger cross-section and of electrical components with lower losses) > Internal recycling of water for industrial uses > Promotion of end-use energy efficiency (distribution of more energy-efficient products for lighting and space heating, use of more energy-efficient lamps in public lighting) > Dissemination of systems (e.g. smart meters) and of rate plans promoting efficient electricity usage
Optimized management of waste and liquid releases	> Decrease of waste production > Increase of waste recovery (also by better sorting) > Qualification of suppliers of waste disposal services > Use of information systems for waste traceability
Development of innovative technologies for the environment	> Research on and construction of pilot installations: - carbon capture & storage (CCS) - smart grids - use of hydrogen as a fuel - solar thermodynamic power - concentrating solar photovoltaic power - multi-generation systems - power-driven mobility - green ports (electrified piers in ports)
Communication of Enel's environmental management efforts to the public at large and to institutions	> Preparation of the Environmental Report and of the Sustainability Report > Preparation of Environmental Declarations for EMAS-registered sites > Initiatives of opening of installations to the public > Internet site posting environmental initiatives
Environmental awareness, training & education of employees	> Periodical courses of environmental awareness, training & education (also as part of certified or registered environmental management systems) > Intranet site with thematic insights
Promotion of environmentally-sustainable practices among suppliers and contractors	> Use of supplier qualification criteria based on environmental performance > Monitoring of contractors' performance during and at the end of works or of tests > Awareness, training & education meetings on significant environmental aspects

Environmental organization

Environmental management is a process which cuts across the various divisions, which operate autonomously under the coordination of the Regulatory, Environment and Carbon Strategy function.

Regulatory, Environment and Carbon Strategy function

Among the Holding Company's functions, the Regulatory, Environment and Carbon Strategy one (which relies in particular on the Environmental Policies & Climate Change unit) has the mission of formulating environmental policies and strategic targets and ensuring their consistency with the divisions' programs and initiatives. It has also the task of organizing the environmental reporting process, with a view to preparing the Group's Eco-Balance and monitoring the environmental performance of all of Enel's activities.
A headquarters-level Committee on Climate Change Policies was set up to coordinate the activities of Enel and Endesa nationally and internationally and to align their positions and operational plans. The Committee is chaired by the Head of Regulatory, Environment and Carbon Strategy.

Divisions and Enel Servizi

Depending on the specific issues to be covered, each division relies, as the case may be, on staff structures, operational structures and professional figures in charge of conducting environmental activities.

In the **Renewable Energy** Division, the Safety & Environment function coordinates the management of the division's environmental activities, providing specialist support in line with the Holding Company's guidelines. Within the Italian Operations Area, the Hydro and Wind Generation Business Units have Operations, Environment & Safety Units, which are in charge of site-specific environmental aspects, whereas the Geothermal Generation unit is supported by the Operation/Operations & Environment unit. Abroad, the Europe, North America, Central and South America and EUFER areas have Safety & Environment units in place, which coordinate the environmental activities falling under their responsibility. Environmental teams are also present in the various companies and/or regional units.

In the **Generation and Energy Management** Division, the Safety & Environment staff function coordinates the management of the division's environmental activities, providing specialist support in line with the Holding Company's guidelines. In the Generation Business Area, the various regional Business Units rely on Operations, Environment & Safety units, which deal with site-specific environmental matters. The Power Plant Development & Support technical area (line function) relies on a unit which prepares the documents required to obtain authorizations for construction and/or retrofit of power plants and which handles environmental aspects connected with the new projects of the division.

In the **Iberia and Latin America** Division, the Operations and Integration unit has the mission of ensuring the transfer of environmental policies and procedures and of monitoring their implementation in cooperation with the Holding Company. Endesa has the central-level Environment and Sustainable Development Department (Dirección de Medio Ambiente y Desarrollo Sostenible), which provides guidance for and coordinates all of the division's activities, in accordance with the five-year sustainability plan (whose fundamental pillar is commitment to the environment). In particular, the department coordinates the activities of the environmental units belonging to the different companies of the Endesa Group. The members of the personnel who are in charge of environmental matters within the various regional units report to the above-mentioned environmental units.

In the **Infrastructure and Networks** Division, the headquarters-level Quality, Safety & Environment technical function coordinates the management of the division's environmental activities and provides specialist support in line with the Holding Company's guidelines. Within the regional macro-areas (line functions), the various regional areas (grids) rely on Safety & Environment units, which are responsible for site-specific environmental aspects.
Within the headquarters-level Gas Grid Operations Coordination technical function, the various regional areas are supported by Quality, Safety & Environment units in charge of site-specific environmental matters. In the Public Lighting Business Area (line function), the Engineering unit deals, among others, with environmental issues.

In the **Engineering and Innovation** division, the Innovation & Environment technical area (line function) has the task of formulating the strategic innovation & environment plan (jointly with the other divisions), coordinating the implementation of actions, monitoring and promoting initiatives of high environmental value. Also the other line functions (Research technical area, Power Plant Development & Support Business Area and Nuclear Energy technical area) have important environmental implications.

In the **International** Division, the headquarters-level Integration, Safety and Operations Support function is responsible for transferring and monitoring the implementation of environmental guidelines, policies and procedures to the various Countries of the division. The France and Belgium/Technical Department has the task of ensuring consistency with environmental obligations and standards. The Bulgaria/Operations and Maintenance unit (through its Environment unit) oversees the management of environmental aspects. The Central-Eastern Europe/Operations Support/Environment team coordinates the

management of environmental aspects, whereas the various plants falling under the responsibility of the Conventional Power Plant Operation unit rely on Safety and Environment, in charge of site-specific environmental matters. Likewise, the MO 34 Business Unit (nuclear power plant being built in Slovakia) is supported by a Health and Safety and Environment unit.
In the Romania/Distribution Business Unit, the headquarters-level Quality, Safety & Environment technical unit supervises the management of environmental activities, coordinating the Safety & Environment teams of the Grid units.
The Russia and CIS/Safety & Environment function is in charge of the environmental reporting process. However, within OGK-5, environmental issues are managed directly by the Operation and Maintenance unit and by the individual power plants.

In the **Sales** Division, the Safety & Environment function coordinates the management of the division's environmental aspects, providing specialist support in line with the Holding Company's guidelines.

In **Enel Servizi**, the operational department in charge of the management of real-estate and services is supported by a Safety, Environment & Customer Care unit. This unit (through the Building Safety & Environment unit) coordinates the management of environmental aspects and provides specialist support in line with the Holding Company's guidelines.

Human resources dedicated to the environment

In the overall Group, the human resources dedicated to the environment amount to roughly 439 full-time equivalents (FTEs). They include support personnel, i.e. the divisional and regional personnel members providing environmental services to multiple operational units.

Organizational structure	FTEs
Regulatory, Environment and Carbon Strategy function	11
Renewable Energy Division	44
Generation and Energy Management Division	90
Iberia and Latin America Division	149
Infrastructure and Networks Division	80
Engineering and Innovation Division	10
International Division	49
Sales Division	1
Enel Servizi	5
Total	**439**

Environmental management systems

Targets

The progressive deployment of internationally-recognized environmental management systems in all the activities of the Group (industrial, planning, coordination, service and other activities) and the achievement of the ISO 14001 certification by the overall Group represent a strategic target of Enel's environmental policy.
By issuing guidelines and conducting monitoring and coordination activities, the Holding Company ensures the consistency of the Group's environmental management systems.

Certified or registered sites

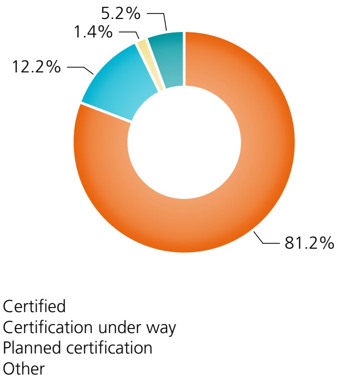
Country	Technology/business activity	ISO 14001-certified installations/sites	EMAS-registered installations/sites	MW of net maximum electrical capacity ISO 14001	km of grid ISO 14001
EUROPE					
Bulgaria	Thermal power plants	Maritza East III (all)		775	
Ireland	Thermal power plants	Great Island, Tarbert		860	
Italy	Thermal power plants	Bastardo, Brindisi Sud, Fusina, Genova, La Casella, La Spezia, Leri Cavour, Montalto di Castro, Pietrafitta, Porto Corsini, Porto Marghera, Porto Tolle, Priolo Gargallo, Rossano Calabro, Santa Barbara, Sulcis, Termini Imerese, Torrevaldaliga Nord	Bastardo, Fusina, Genova, La Casella, La Spezia, Leri Cavour, Montalto di Castro, Porto Corsini, Porto Marghera, Priolo Gargallo, Sulcis, Torrevaldaliga Nord	20,867	
	Hydro power plants	Business Units: Bologna, Bolzano, Cuneo, Montorio, Sardegna, Sicilia, Sondrio, Vittorio Veneto	Business Units: Bologna, Bolzano, Cuneo, Montorio, Sardegna, Vittorio Veneto	11,594	
		Business Units: Bergamo, Domodossola, Napoli		1,078	
		Hydro Dolomiti Enel	Hydro Dolomiti Enel	1,285	
	Wind power plants	Business Units: Napoli		615	
	Geothermal power plants	All		695	
	Power grid	All			1,099,684
	Real estate, car fleet and services	Enel Servizi operational department: procurement; ICT; management of real estate and services for the buildings of Cagliari, Naples, Palermo, Rome, Turin, Venice			
Portugal	Thermal power plants	All	All	239	
Romania	Power grid	All (Enel Distributie Muntenia gained the certification on March 21, 2010)			124,277
Slovakia	Thermal power plants	All		1,250	
	Nuclear power plants	All		1,762	
	Hydro power plants	All		1,590	

Country	Technology/business activity	ISO 14001-certified installations/sites	EMAS-registered installations/sites	MW of net maximum electrical capacity ISO 14001	km of grid ISO 14001
Spain	Thermal power plants	Endesa: Barranco de Tirajana, Besos, Candelaria, Ceuta, Cristóbal Colón, El Palmar, Garraf, Granadilla, Ibiza, Llanos Blancos, Jinamar, Las Salinas, Litoral, Los Guinchos, Mahón, Melilla, As Pontes, Punta Grande, San Roque, Teruel	Endesa: Barranco de Tirajana, Cristóbal Colón, Garraf, Granadilla, Litoral, As Pontes, Teruel	9,245	
		EUFER: Eneralco		5	
	Nuclear power plants	All		3,522	
	Hydro power plants	Endesa's hydro generation groups: Ebro Pirineos, Noroeste, Sur		4,896	
		EUFER: Arroibar, Anllo, Avia, Brandariz, Los Batanes, Rosarito		26	
	Wind power plants	EUFER: Aldeavieja, Belmonte, Cabo Vilano, Caldereros, Careón, Casa, Castelo, Coriscada, Corzán, Coto de Codesas I, Do Vilán, Enerbierzo, La Losilla, Malagón I, Malagón II, Pemalsa, Peña Forcada, Peña Armada, San Andrés, San Sebastián, Sierra de la Oliva, Silvarredonda, Valdepero, Viravento		287	
	Power grid	All			313,158
	Port terminals	Carboneras, Ferrol, Los Barrios	Ferrol		
	Mining	Andorra			
	Real estate	EUFER's offices: Andalucía, Castilla, Extremadura, Galicia, León, Madrid			
LATIN AMERICA					
Argentina	Thermal power plants	All		3,075	
	Hydro power plants	All		1,328	
	Power grid	All			24,256
Brazil	Thermal power plants	All		313	
	Hydro power plants	Cachoeira Dourada		665	
	Power grid	All			176,404
Chile	Thermal power plants	Atacama, Bocamina, San Isidro, San Isidro II, Taltal, Tarapacá TG, Tarapacá Vapor		2,067	
	Hydro power plants	Abanico, Antuco, Cipreses, Curillinque, El Toro, Isla, Loma Alta, Los Molles, Ojos de Agua, Palmucho, Pangue, Pehuenche, Ralco, Rapel, Sauzal, Sauzalito		3,461	
	Wind power plants	Canela I		18	
	Power grid	All			15,155
Colombia	Thermal power plants	Cartagena, Termozipa (all)		411	
	Hydro power plants	All		2,436	
	Power grid	All			42,322
Costa Rica	Hydro power plants	All		33	
	Wind power plants	All		24	
Panama	Hydro power plants	All		300	
Peru	Thermal power plants	All		1,037	
	Hydro power plants	All		736	
	Power grid	All			22,741
Total				**76,495**	**1,817,997**
Coverage				***81.2%***	***100%***

Green procurement

ISO 14001 in power plants
as of Dec. 31, 2009

% of overall net maximum electrical capacity: **94,199** MW



Enel's constant commitment to the environment has been further strengthened by the green procurement project of the procurement operational department, which is included in Enel Servizi's environmental management system (ISO 14001-certified in 2009). The project places particular emphasis on the environmental requirements of suppliers and supplies of goods, works and services. Green procurement is a system of supplies of environmentally-sustainable products and services, i.e. products and services having a lower impact on human health and on the environment than other products and services which may be used for the same purpose.
Green procurement means purchasing a good or a service taking into account its environmental footprint, from the procurement of the raw material to the disposal of the related waste. The project began with the identification of a sample of green goods or services and then introduced sustainability requirements among those listed for qualification of companies and in the technical specifications of tenders. Additionally, in view of continuous improvement, Enel administers a number of questionnaires to its suppliers, testing their knowledge of green procurement and collecting data on their environmental management initiatives, if any.
In 2009, Enel awarded green procurement contracts for € 508 million (about 24% of the yearly total) and formalized green procurement contracts for € 546 million (about 21% of the yearly total, as against 19% in 2008). The results show a positive trend and Enel's growing commitment to procurement of eco-friendly goods, works and services.

EN2 Green procurement is also reflected by the progressively rising percentage of recycled materials.

EN17 With a view to calling attention on greenhouse gas (GHG) emissions from supply of goods and services, Enel also joined the Carbon Disclosure Project (CDP). With this initiative, Enel will extend the monitoring of emissions to an increasingly large number of suppliers. In particular, Enel intends to survey GHG emissions upstream and downstream of its activities, compare the collected data with the typical performance of each activity and thus trigger a process of gradual mitigation of the related impacts. It is a pioneering project, which involves a narrow number of worldwide leading companies in all productive sectors. The survey, focused on 8 suppliers in 2009, will be extended to about 400 in 2010. The results are posted on the www.cdproject.net website.

'RECYCLING' OF MATERIALS (%)

	2007	2008	**2009**
Limestone for flue-gas desulfurization (1)	0	0	1.1
Printing paper (2)	45.0	50.0	52.2
Fuel (3)	0.5	0.4	0.5
Lubricating oil (4)	0	0	1.1
Dielectric oil (4)	6.8	17.8	11.5

(1) Obtained from softening of water for industrial uses.
(2) Purchased in the market.
(3) Fossil fuel replaced by RDF and/or biomass.
(4) Oil reused (dielectric oil is first PCB-decontaminated) and not delivered to recovery operators.

Environmental management of buildings

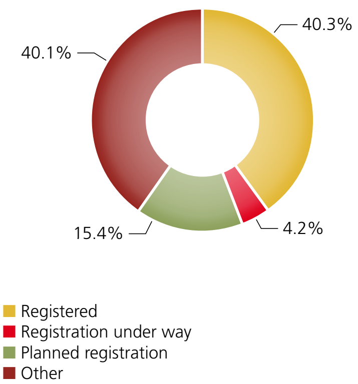
In 2009, Enel Servizi gained the ISO 14001 certification for its information technology and procurement services for the overall Group and for the management of the Italian car fleet and of 6 large buildings located in Cagliari, Naples, Palermo, Rome, Turin and Venice. In 2010, the certification will be extended to all of the real-estate assets. Endesa carried out a similar activity in its office buildings. The environmental management system of buildings will place particular emphasis on reduction of energy consumption (electricity, fuels for canteens and heating). Both in Italy and Spain, improvement activities are planned in various sectors, with the following goals:

- awareness, training & education of all the members of the personnel;
- reduction of consumption of water;
- reduction of consumption of electricity and other materials;
- separate collection of waste.

Environmental management policies also include mobility management (public-transport, car- and bike-sharing subscriptions, car pooling service in Rome) and optimized use of the car fleet (efficient management of the fleet and delivery of environmentally-sustainable and safe-driving courses).

EMAS in power plants
as of Dec. 31, 2009

% of overall net maximum electrical capacity in the EU: **64,577** MW



Environmental reporting

The reporting system and the resulting Environmental Report make it possible to identify, monitor and disclose Enel's interactions with the environment year by year.
The reporting process, based on a homogeneous data collection methodology, is an integral part of Enel's environmental management system. The reporting system allows Enel not only to check performance vs. targets, but also to prepare environmental publications, such as the EMAS declarations for sites having EMAS-registered environmental management systems in place.
The formats used for collection of both process and governance data are continuously updated to accommodate changes in Enel's organizational configuration, legislative and technological developments, as well as experience feedbacks.
In addition to forms for data collection and aggregation by organizational level (business unit, group of power plants, business activity, company, country, division, Group, etc.), the Environmental Policies & Climate Change unit makes available a broad range of reporting datasheets (status data, process data, resources, emissions, liquid releases, waste) and indicators (ratios between homogeneous or heterogeneous quantities). These indicators permit to compare the results of different units, to track the evolution of the performance of a single unit over time (regardless of the volume of its activities), pinpoint deviations from average or target values and assess the reliability and consistency of the reported data.
In 2009, the reporting process was featured by:

- broader collection of Endesa's data;
- data on fuel-oil storage & handling activities carried out by Endesa;
- data on new assets acquired or commissioned during the year (thermal power plants in Ireland and renewable power plants in many countries where the Group operates, such as Bulgaria, Italy, Spain and United States);
- PCB and asbestos surveys at Group level;
- monitoring of office activities at Group level.

Risks & opportunities

Relations with institutions

Enel plays an active role in the dialogue with its stakeholders. In particular, it interacts with international, European, national and local institutions in order to contribute to the decision-making process, both as a party expressing specific interests and as an experienced energy operator. The dialogue with institutions is aimed at building awareness of productive-sector requirements, providing technical insights to law- and policy-makers in the countries where Enel operates and creating stable and cooperative relations on issues of interest to Enel. This interaction occurs at different levels.

> At local level, in the areas where it operates, Enel communicates with regional, provincial and municipal authorities, in order to reconcile the requirements of industrial development with those concerning protection of land and landscape and respect for local communities. The interaction is continuous in environmental protection activities and intensified upon emergencies, if any, or critical stages in the planning processes (granting of authorizations, commencement of works, etc.).

> At national level, Enel has established a fruitful dialogue on environmental matters with ministries or competent bodies, namely with the environment and economy ministries on such issues as energy planning, energy efficiency, support for renewables, climate change strategies and environmental protection.

> At supranational level, Enel actively participates in EU debates and provides its contribution to the decision-making processes of the European Commission and the European Parliament; in the other geographic areas, Enel interacts with non-governmental organizations or with multilateral development banks.

> At global level, Enel actively participates in the main associations of the sector and in various international energy fora. The analyses emerging from such fora (including Eurelectric, e8, International Emissions Trading Association, UNFCCC, IEA) provide decision-makers with important reference frameworks and key data on current trends and future developments of the energy sector.

Main legislative and regulatory developments

European Commission's Climate and Energy Package

On June 25, 2009, the Directives making part of the European Commission's Climate and Energy Package went into force. The Package defines the new European energy policy for the struggle against climate change. Under the Package, the European Union shall reach the following targets by 2020:

> cutting greenhouse gas emissions by 20% of their 1990 levels;

> increasing the use of renewables to at least 20% of final energy consumption.

Additionally, each Member State shall achieve a minimum binding target of 10% for the share of biofuels in transport gasoline and diesel-oil consumption by 2020. These targets are challenging and burdensome for operators, although they represent unquestionable opportunities.

Besides setting the energy policy targets to be attained by 2020, the Climate and Energy Package: i) introduces a revision of the European Emission Trading Scheme (EU-ETS, Directive 2009/29/EC); ii) empowers Member States to set sector-specific targets of deployment of renewables, introducing the option of using cooperation instruments to achieve the national targets (Directive 2009/28/EC); and, finally, iii) defines common rules for geological storage of carbon dioxide (Directive 2009/31/EC).

It is worth noting that the target of cutting 20% of the EU's energy consumption compared to projections for 2020 was not included in the Package. Therefore, for the time being, this is an indicative and non-binding target, although it was included in the energy policy that the Commission outlined in one of its communications in January 2007.

Greenhouse gas emission reduction

In the European Union, 2009 was the second year of the first commitment period (2008-2012) of the European Emission Trading Scheme (Directive 2003/87/EC).

The following are the key data of the 2008-2012 National Allocation Plans (NAPs) adopted by the Member States where Enel has installations that are covered by the Directive (combustion installations with a thermal capacity of over 20 MW).

> **Bulgaria** – After being rejected by the Brussels authorities twice, the 2008-2012 NAP was reformulated and approved by the Bulgarian Government at the end of December 2008. The new NAP is being evaluated by the European Commission.

> **Italy** – In 2009, CO_2 emissions from Enel's installations in Italy were equal to 37.2 Mt vs. NAP allocations of 38.1 Mt. The issue connected with the exhaustion of the new entrants' reserve was of particular interest in 2009 (and is likely to continue to be so, well into 2010). Enel obtained allocations for the new-entrant Sulcis 2 plant, for the doubling of the Termini Imerese plant and for the start-up of the first unit of the Torrevaldaliga Nord plant, totaling 1.9 $MtCO_2$/yr, and is awaiting allocations for the gas-turbine units of Termini Imerese and the remaining allocations for Torrevaldaliga Nord. The national ETS committee indicated the premature exhaustion of the new entrants' reserve, predicting an overall deficit of about 56 Mt for the entire period; consequently, legislative provisions to redress the situation are expected.

- **Slovakia** – The Slovak Environment Ministry allocated an average of 5.4 $MtCO_2$/yr to Slovenské elektrárne for the 2008-2012 period. In 2009, Slovenské elektrárne's estimated emissions were equal to about 3.4 Mt.
- **Spain** – Endesa's estimated emissions in 2009 were about 29.9 Mt. As the NAP allocations were equal to roughly 25.6 Mt, the resulting deficit of about 4.3 Mt was covered with i) CERs accrued from projects implemented under the Clean Development Mechanism (CDM), one of the Kyoto Protocol flexible mechanisms, and ii) EUAs (allowances allocated to other operators), in compliance with national and EU legislation (the cap on the use of CERs by electricity operators accounts for 42% of their allocations). EUFER's estimated emissions in 2009 were approximately equal to 0.49 Mt vs. 0.53 Mt of allocations.

Use of renewables

The promotion of the use of renewables (RES) for electricity generation is a topic of major relevance to Enel, given its involvement in the sector.
The following paragraphs give a picture of the legislation in force in the various countries where Enel generates power from renewables.

- **Bulgaria** – The Renewable and Alternative Energy Sources and Biofuels Act (June 19, 2007) introduced a support scheme based on guaranteed feed-in tariffs. In November 2008, some amendments were made to the Bulgarian legislation on RES support. In particular:
  - the duration of the feed-in tariff scheme was extended from 12 to 15 years for wind facilities and to 25 years for solar facilities;
  - the limit-year for commissioning of installations eligible for the feed-in tariff was postponed from 2010 to 2015.
- **France** - Electricity generation by hydro, on-shore and off-shore wind, biomass, biogas, solar photovoltaic (PV) and geothermal power plants is supported by feed-in tariffs, differentiated by source (Law 108/2000). Additionally, the full cost of the plant may be depreciated in the first financial year and tax deductions of up to 33% are granted for investments in the French overseas departments. Finally, household customers benefit from a tax credit on 50% of the cost incurred for the installation of PV facilities. As part of the feed-in scheme for RES promotion, the Decree of July 10, 2006 was replaced with the implementing Decree of November 17, 2008. The new decree sets forth the terms and conditions for the sale of electricity generated by wind facilities and confirms the feed-in tariffs and their indexing mechanism.
- **Greece** – The Greek system of RES support (Law 2368/2006, revising the previous Law 2773/1999) provides for a feed-in scheme at guaranteed tariffs, differentiated by source and interconnection capacity and yearly updated. The electricity is sold under a contract between the generator and the HTSO (Hellenic Transmission System Operator). The contract has a 12-year duration and may be extended up to 20 years. In addition to the feed-in scheme, some investments in power generation from RES may receive one of the forms of public support listed below:
  - subsidies covering 20-40% of the capital expenditure (including connection costs);
  - total tax exemption of revenues;
  - subsidies covering labor costs for two years.
- **Italy** - The main mechanism supporting generation from RES in Italy is the Green Certificates scheme, introduced by Legislative Decree 79/99 (the

so-called Bersani Decree). The scheme requires producers and importers of conventional electricity to surrender Green Certificates (GCs), which give evidence of renewable power generation. The amount of GCs to be surrendered is calculated by applying the mandatory quotas (4.55% and 5.30% for 2009 and 2010, respectively) to the conventional electricity generated and imported in the previous year. GCs may be traded bilaterally or in the market managed by Gestore dei Mercati Energetici. The trades are based on a reference price, i.e. the sale price of the GCs owned by Gestore dei Servizi Energetici (GSE). This price was equal to € 88.66/MWh (net of VAT) for 2009. Additionally, for the 2009-2011 period, GSE may - at the request of the producer - buy back the GCs pertaining to the 2006-2008 period at a price equal to the weighted average price of the GCs traded in the market in the same period (this price was equal to € 98/MWh for 2009). For installations of less than 1 MW, the Ministerial Decree of December 17, 2008 introduced an all-inclusive feed-in tariff as an alternative to GCs. Finally, the so-called Development Law (99/2009) transferred the quota obligation to sellers (defined as parties holding a contract of dispatching in withdrawal mode with Terna). This transfer will be operational from 2012 (date already defined by a subsequent amendment to Law 166/2009) under a procedure to be established by a ministerial decree.
The previous rules do not apply to solar PV and solar thermodynamic installations. The PV support scheme is the feed-in scheme ("conto energia" - Ministerial Decree of February 19, 2007), which was not modified in 2009. However, its extension beyond 2010 is expected to be confirmed by another ministerial decree. Conversely, for solar thermodynamic power plants, the feed-in tariff is established by the Ministerial Decree of April 11, 2008. The hybrid plant that Enel built at Priolo (Syracuse) under its Archimedes project may fall under this scheme.

> **Romania** – Law 220/08 of support for electricity generation from renewables confirmed the GC scheme introduced by the 2005 law. Under the new legislation, eligible renewable power installations receive GCs over a period of 15 years. In particular, each MWh generated by wind facilities until 2015 receives 2 GCs. The minimum and maximum values of each certificate are equal to € 27/MWh and € 55/MWh, respectively. With its Decision 1479/09, the Ministry of Economy established that Law 220/08 should be verified for compliance with EU's legislation.

> **Spain** – Renewable power producers may choose one of two feed-in tariff schemes:
 - all-inclusive tariff, including the electricity price (inflation-adjusted and technology-specific);
 - premium on top of the electricity market price (with minimum and maximum limits for the sum of the two components); this premium, too, is inflation-adjusted.

 As applications for new PV installations grew well beyond the Spanish Government's expectations, the Ministry of Industry issued Royal Decree 1578/08, laying down new rules on PV support in place of those of the previous Decree 661/07. In particular, the new decree distinguishes two types of solar installations (integrated and ground-mounted) and establishes a special registry into which installations must be entered in order to receive the support. The decree specifies four time-windows per year, during which applications for registration ("convocatorias") shall be submitted. The applications are accepted until reaching a predetermined capacity ceiling. The support is an all-inclusive feed-in tariff (i.e. including the price of electricity), which varies depending on the ratio of the registered capacity to the capacity ceiling pertaining to the previous "convocatoria". In 2009, the registered installations had a total capacity of 502 MW (161 MW of integrated installations and 341 MW of ground-mounted ones). The new scheme had the effect of keeping the value of the tariff for integrated installations constant and of down-adjusting the one for ground-based installations.

The Royal Law Decree 6/2009 created a new administrative registry, with which the new installations falling under the special scheme (except PV ones) must be registered in order to receive the support established by Royal Decree 661/2007. Under this legislation:

- the registry shall remain open until reaching 100% of the installed capacity targets specified by the legislation;
- the installations shall be registered upon the date of submission of the application and until reaching the capacity target specified for each technology;
- when the registered capacity exceeds the target, the support scheme of Royal Decree 661/2007 shall terminate and a new one shall be instituted.

In its Resolution of November 19, 2009, the Ministry of Industry published the Council of Ministers' agreement of November 13, 2009, setting yearly capacity ceilings for the entry into operation of the registered installations. The resolution was adopted taking into account the high number of applications received for entry of wind and solar thermodynamic installations into the special scheme registry and the technical and financial limits of the scheme.

> **USA** – The US has no tariff-based RES support scheme at federal level. So far, 30 States have adopted mandatory quotas for electricity suppliers (Renewable Portfolio Standard - RPS). The quotas are associated with transferable certificates, which give evidence of compliance with the obligation. To meet their obligation, suppliers hold auctions for entering into long-term (10-15 years) contracts of purchase of certified electricity. The Recovery Plan, ratified by President Obama on February 17, 2009, provides, among others, for specific RES support schemes, including support for investments (known as Investment Tax Credits - ITCs) and the extension of the applicability of the Production Tax Credit (PTC) to 2012 for wind facilities and to 2013 for geothermal and biomass facilities as well as for upgrades of hydro power installations. In parallel, the Congress is examining draft legislation involving an RPS-based RES support scheme to be compulsorily applied at federal level.

> **Brazil** – A program of support for wind, mini-hydro and biomass installations (Proinfa) was introduced in 2002 and revised in 2003. The program had set a target of 3,300 MW of new installed capacity from RES to be reached by December 2008. The target was achieved and a new program was expected (Proinfa 2).
Failing the new program, the Government introduced a federal system of wind capacity auctions. The first auction, held at the end of 2009, assigned 1,800 MW of wind capacity to be installed, under a 20-year contract of sale of the generated electricity.
In parallel with this support system, open-market consumers and generators who enter into renewable power supply contracts benefit from a 50% reduction on grid tariffs.

- **Chile** – On April 1, 2008, Law 20257 on RES promotion was finally approved. The law defines a mandatory quota and introduces a mechanism of transferable certificates. From January 1, 2010 to December 31, 2014, operators are held to certify that 5% of the electricity to be sold to distributors or final customers has been generated from non-conventional renewable energy sources; penalties will be applied in case of non-fulfillment of the obligation. The quota will grow by 0.5 percentage points per year, beginning in 2015, and reach 10% in 2024.
- **Mexico** – A new frame-law (October 2008) revised the feed-in tariff support scheme. The law established a dedicated fund and introduced a new feed-in scheme. At present, the secondary legislation implementing the frame-law is being approved, while SENER (Secretaría de Energía) and CRE (Comisión Reguladora de Energía) are defining the related technical rules. On June 22, 2009, CRE made known the draft regulation of the law on promotion of RES. The regulation was finally published in the Diario Oficial de la Federación on September 2, 2009.

Energy efficiency

The Community's Action Plan for Energy Efficiency, published in 2006, intends to realize the European energy-saving potential and to maintain Europe's position as one of the most energy-efficient regions in the world. The policies and measures in the plan are aimed at energy and economic efficiency. The new European Commission will adopt a new action plan for energy efficiency, involving operational measures to achieve a likely binding target by 2020.
The following paragraphs outline the legislation on energy efficiency published in 2009 in some of the countries where Enel operates.

- **Italy** – support for end-use energy efficiency is based on the energy efficiency certificates scheme (introduced by the Ministerial Decrees of July 24, 2004). Under the scheme, electricity and gas distributors are required to achieve end-use energy savings, which are certified by energy efficiency certificates (TEE or white certificates). The certificates may be traded bilaterally or in the regulated market. Each certificate entitles to a tariff contribution whose value is established by Autorità per l'energia elettrica e il gas (AEEG - the Italian electricity and gas regulator).
  With its Decision EEN 25/09 of December 21, 2009, AEEG determined the specific primary energy saving targets for the year 2010. Enel (Enel Distribuzione and Deval, as Rete Gas is no longer part of Enel's scope of consolidation) has an overall saving target of about 2 Mtoe.
  With its Decision EEN 21/09 of November 24, 2009, AEEG updated the tariff contribution for the energy efficiency certificates for 2010, setting a value of € 92.22/toe (+ 4% on 2009). This value is based on the yearly trends of the average electricity and gas rates for household customers and of the prices of gas-oil for transport.
- **Russia** – The Federal Law (261-FZ) on energy efficiency was officially adopted on November 23, 2009. This law creates a legislative, economic and organizational framework which stimulates energy savings and energy efficiency.

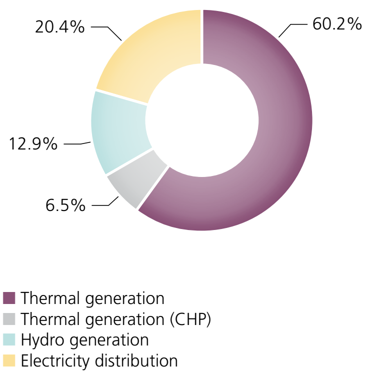
Other environmental legislation

At EU level, debate continued on a proposal for a directive "on industrial emissions (integrated pollution prevention and control)". The proposed directive gathers the provisions of seven existing directives, including Directive 2008/1/

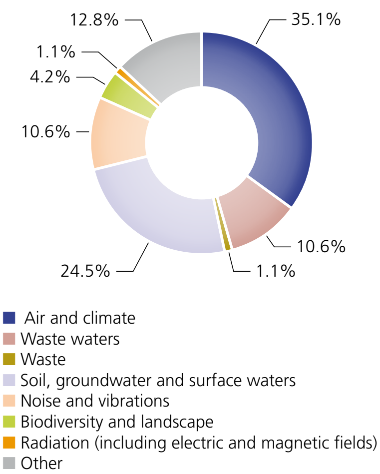
EC (codified version of Directive 96/61/EC, the so-called "IPPC" Directive), the one on "limitation of emissions of certain pollutants into the air from large combustion plants" and the one on "incineration of waste". The proposed directive intends, among others, to adopt binding emission limit values that do not exceed emission levels associated with the best available techniques (as described in the so-called BREFs, i.e. Best Available Techniques Reference Documents). This measure significantly limits the flexibility of Member States in taking into account the technology used, the geographic location of installations and the actual local environmental conditions.
In 2009, the European Parliament and the Council examined the text in first reading and, on November 16, 2009, the European Parliament adopted a common position. The second-reading debate will be focused on the text adopted by the Council and will begin at the European Parliament in March 2010.

EN28 Environmental criticalities

Environmental criticalities as of Dec. 31, 2009
(by business activity)
Total: **94**



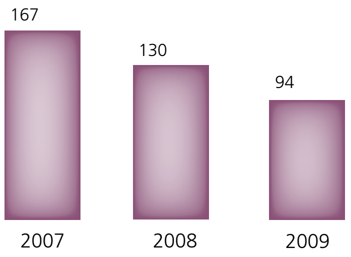
Environmental criticalities as of Dec. 31, 2009
(by environmental domain)
Total: **94**



The use of the most rigorous and advanced organization and management measures cannot avoid the occurrence of environmental criticalities, which originate from various factors, including the excessive emphasis that the media place on some issues, thus inducing particular expectations among communities.
Environmental criticality means the rejection of, opposition to or complaint about the impact deriving from the operation of installations (power plants, grids, substations, buildings, etc.). This position is expressed – obviously for environmental reasons – by a third party feeling disturbed, damaged or threatened by present or future installations. Environmental opposition translates into public or private initiatives, which may involve significant costs owing to denied authorizations, suspensions of works, modifications of installations, etc. Examples are administrative measures, letters before action, written protests (direct or through the press), actions by mass media, as well as verbal complaints (when local complaint desks or offices are available). Each protest concerning the same installation corresponds to a different criticality. The criticality ends with the end of the circumstances generating it. In any case, environmental litigations are excluded from environmental criticalities.

Most of the soil, groundwater and surface water criticalities are related to thermal generation, whereas those involving electric & magnetic fields only arise in connection with the power grid in Italy (unlike in other parts of the world, Italian communities are particularly concerned about this aspect).
In this respect, Enel Distribuzione issued guidelines for public use (Italian version only, downloadable from http://www.enel.it/it-IT/doc/reti/enel_distribuzione/LineaGuidaDPAaiSensiDM290508.pdf) with a view to simplifying and harmonizing the method for determining the clearance of its installations on first approximation (simplified procedure to compute the buffer zone). These guidelines may be used both by private parties upon development of new settlements and by supervisory bodies for verification purposes. The guidelines come with graphs and tables of the First-Approximation Clearance (computed under the CEI 211-4 standard) for the standard types of HV and MV lines and substations owned by Enel Distribuzione. Moreover, Enel, other power line and substation operators and the ISPRA-ARPA system jointly issued national

Number of environmental criticalities



guidelines to be used by public administrations and private parties. These guidelines implement the Decrees of May 29, 2008 on approval of procedures to assess and measure magnetic induction and approval of the methodology of computation of buffer zones for power lines.
Thanks to these regulatory measures, the risk of occurrence of criticalities connected with electric & magnetic fields and the time of response thereto were reduced. Nevertheless, the decrease in the number of criticalities in electricity distribution in Italy with respect to 2008 is also due to the sale of an additional portion of high-voltage lines (the type of installation with the highest number of criticalities) to Terna SpA.

In the past few years, environmental criticalities have been declining, in spite of the growth of Enel's assets. This demonstrates that Enel cares for the environmental sustainability of its activities and that it pursues responsible management practices.
In the following table, criticalities are classified by country, business activity and environmental domain.

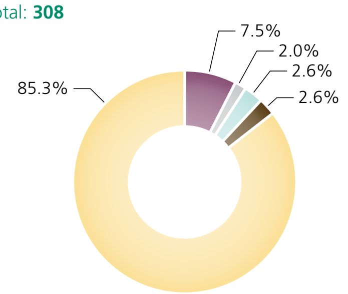
Country	Business activity	Environmental domain and description of the criticality
EUROPE		
Bulgaria	Electricity generation (Maritza Est III power plant)	Waste waters - One of the plant employees reported the presence of oily substances in the rainwater sewage system, causing concerns about possible leaks. The oil was removed. However, the sewage system is provided with trap tanks, which separate and collect the oil.
		Air and climate - A citizens' committee, worried about the effects of pollution, asked for air quality monitoring surveys. Enel is willing to carry out the surveys.
		Air and climate - The regional environment and water inspectorate of Stara Zagora: i) issued recommendations to lower the high concentration (or expected excess) of SO_2 emissions and to prevent pollution due to particulates from the ash storage area; and ii) asked Enel to document each event of shut-down and start-up of the plant. Measures to respond to these requirements have already been taken.
		Soil, groundwater and surface waters – Reports by the mayor of Obruchishte about the presence of ash in the Sokolitza river and by one of the plant employees about color changes of the river water created concerns (subsequent inspection showed that Enel was not responsible for the events).
		Soil, groundwater and surface waters – A protest arose over the spill of water and ash into the Sokolitza river owing to leakage from the ash handling system (see EN23 Bulgaria). Fines of € 13,386 were imposed. The Regional Governor issued an ordinance requiring the Kumlia river bed to be checked (the river bed deposits proved not to be related to the activity of the plant).
France	Electricity generation	Noise and vibrations - Proximity of a wind generator to a housing unit caused protests over noise and vibrations. Monitoring surveys and controls are under way.
Italy	Electricity generation	Air and climate (Piombino plant – province of Leghorn) - Protests by operators of beach resorts and tourists over black plumes of smoke from the plant (press article of May 5, 2009).
		Soil, groundwater and surface waters (Lombardy) – Appeal by the Adamello Park against the Region's approval of minimum in-stream flow projects.
		Soil, groundwater and surface waters (Sicilia Business Unit) – On July 24, 2009, the Sgroi-Politi-Ricca law office sent a letter before action to the Business Unit, threatening legal action for damages caused to fruit trees resulting from an alleged leak from the penstock.
		Noise and vibrations (Avio plant – province of Trento) – As a result of protests, the environmental protection agency of the Trento province required Hydro Dolomiti Enel (on September 25, 2009) to reduce the emission of noise into the external environment by April 4, 2010, in compliance with municipal zoning rules. Enel will carry out the required activities.
		Noise and vibrations (Porto Corsini plant – province of Ravenna) - Protests by private parties over high noise emissions upon start-up of the plant. The regional environmental agency verified Enel's compliance with the commitment to replacing start-up noise abatement systems.
		Other environmental domains (Brindisi Sud plant – province of Brindisi) – In 2009, the plant was the focus of repeated opposition campaigns by the local press. Additionally, in July, the plant was symbolically occupied for about two days by representatives of Greenpeace.
		Other environmental domains (Piombino plant – province of Leghorn) – Press article of December 27, 2009 ("Forty years of opposition but the plant is still there"); press article of April 30, 2009, reporting a statement by Piombino's mayor ("We must work together to overcome the issue of the Torre del Sale plant"). About fifteen dissenting press articles were published in response to the statement.
		Other environmental domains (Livorno plant - Leghorn) – Press article (Il Tirreno, November 13, 2009) reporting a statement by Leghorn's mayor: "Enel does not meet agreements" concerning the plant and "costs and benefits of the presence of these 250,000 m^2 in the port must be assessed".
		Other environmental domains (Mercure plant – province of Cosenza) - Generalized opposition to the operation of the biomass plant.
		Other environmental domains (Torrevaldaliga Nord plant – province of Rome) - Generalized opposition to the operation of the coal-fired plant.
	Electricity distribution	Many reports about the electric & magnetic fields emitted by the power grid.
Romania	Electricity distribution	Waste waters – Local governments complained that the water supply and discharge system for the Militari substation had not yet been built. The work will be carried out within a short time.
		Soil, groundwater and surface waters – The gravel contaminated by dielectric oil from transformers was removed. Local governments complained that the following works had not yet been carried out: two soil analyses and possible rehabilitation of the Dutesti area; creation of green areas, concrete alleys and parking lots near four substations.

Country	Business activity	Environmental domain and description of the criticality
Russia	Electricity generation	Air and climate (Reftinskaya plant) - Opposition by authorities, which required Enel to put in place strategies to prevent the exceedance of emission limits.
		Air and climate (Reftinskaya plant) - Opposition by authorities, which imposed administrative penalties (€ 2,980) on the following grounds: i) the plant was not licensed to release freon and failed to keep records thereof; ii) the plant was not authorized to operate eight air-treatment suction systems along the fuel conveyor belts. Air, soil and groundwater quality monitoring in the area near the ash storage site and the basin for collection of waste water from boiler clean-up are not adequate; the required activities are in progress.
		Waste waters (Reftinskaya plant) – Opposition by authorities, which required Enel to put in place plans to reduce pollutants in waste waters. The required plans are being formulated.
		Waste waters (Sredneuralaskaya plant) – Authorities required Enel to prepare the waste water release authorization application. The required activities are under way.
		Waste waters and waste (Reftinskaya plant) - Opposition by authorities, which issued the following prescriptions: i) estimating the level of risk connected with hazardous waste disposal; ii) checking the integrity of the asphalt-lined bottom and walls of the tanks collecting waters from boiler clean-up; and iii) including the beams contaminated by bituminous substances and the sand contaminated by mazut (fuel oil) in waste management. The prescribed activities were initiated.
		Soil, groundwater and surface waters (Reftinskaya plant) - Opposition by authorities, which issued the following prescriptions: i) indicating the size of the ash storage site no. 1 in order to explore the possibility of revegetating it; and ii) developing a project of revegetation of the contaminated soil in the area of the ash storage site no. 2. The prescribed activities were initiated.
LATIN AMERICA		
Argentina	Electricity distribution	Air and climate - Local communities expressed concern about the explosion of an SF_6-insulated circuit-breaker. 20 kg of particulates deposited on the transformer floor area were collected, analyzed and disposed of. Subsequent air monitoring demonstrated the return to normal levels.
		Air and climate - Local communities expressed concern about the fire of the Falcón substation transformer, caused by inflow of water during a storm; no other consequences arose.
Chile	Electricity generation	Waste waters - Opposition to the Taltal thermal plant owing to inadequate operation of the waste water treatment system; an administrative penalty of € 5,200 was imposed. Inspections were made and the required measures were taken.
		Other environmental domains - Opposition to the Bocamina thermal plant owing to emissions of suspended particulates and non-compliance with maximum night-time noise levels; an administrative penalty of € 5,200 was imposed. The necessary measures were taken.
		Other environmental domains - Public opposition to the construction of some hydro power plants owing to the expected flooding of many thousands of hectares.
	Electricity distribution	Noise and vibrations - Opposition to the Chilectra company owing to excessive noise in one of its substations; an administrative penalty of € 1,000 was imposed. Measures to overcome the problem were instituted.
Colombia	Electricity generation	Other environmental domains - Local communities' opposition to the project of the Quimbo dam on the Magdalena river (territory of the town of La Jagua).
Guatemala	Electricity generation	Other environmental domains – Local communities' opposition to a hydroelectric project with dams on the Jute, San Vicente and Copón rivers (municipality of Chajul, in the Xeputul area).
Peru	Electricity distribution	Other environmental domains - Opposition to one section of the 220-kV line no. 2005, because one of its towers disturbed a place of historical and cultural value in the area called "La Huaca". The fact gave rise to a sanctioning proceeding. Verifications are in progress.
		Other environmental domains - Opposition owing to failure to submit the environmental impact study for the enlargement of a substation from 14 to 50 MVA. The fact gave rise to a sanctioning proceeding. Verifications are in progress.

EN28 Environmental litigations

Environmental litigations pending as of Dec. 31, 2009
(by business activity)

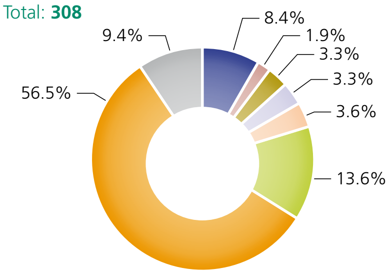
Total: **308**



- Thermal generation
- Thermal generation (CHP)
- Hydro generation
- Geothermal generation
- Electricity distribution

Environmental litigations pending as of Dec. 31, 2009
(by environmental domain)

Total: **308**



- Air and climate
- Waste waters
- Waste
- Soil, groundwater and surface waters
- Noise and vibrations
- Biodiversity and landscape
- Radiation (including electric and magnetic fields)
- Other

The proceedings described below are only those which arose from third parties' appeals seeking the quashing of administrative judgments in favor of Enel and the civil and criminal ones where Enel was involved ("passive litigations").
As of December 31, 2009, Enel had 308 pending judicial proceedings, most of which (about 85%) related to its electricity distribution grid. The percentage of these proceedings in each environmental domain shows that electric & magnetic fields are largely dominant (56.5%) and that all of them pertain to the power grid: the population, especially in Italy, is particularly concerned about this aspect. These problems arise in connection not only with installations and grids, but also with medium- and low-voltage substations inside buildings, in spite of compliance with the emission limits mandated by the national legislation.
Biodiversity and landscape (13.6%), air and climate (8.4%) and, finally, waste (3.3%) - all pertaining to thermal generation - and soil (3.3%) have much smaller shares.
As regards electricity generation in general, the main pending litigations concern environmental issues in the broad sense connected with construction, conversion and operation of power plants.

In 2009, 35 new proceedings were opened and 41 were closed. In the past few years, environmental litigations have been declining, in spite of the growth of Enel's assets. This demonstrates that Enel cares for the environmental sustainability of its activities and that it pursues responsible management practices.

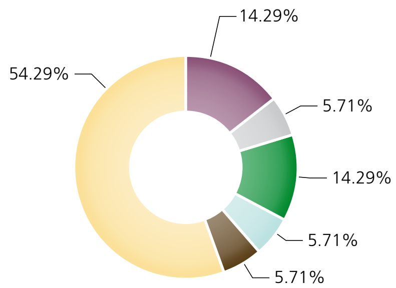
Some of the pending litigations concerning both electricity generation and distribution might have adverse outcomes or negative effects of unpredictable extent. Therefore, they are not included in Enel's "Provision for litigations, risks and charges". The possible consequences might range from compensation for damages to costs to be incurred for modifying installations or due to their temporary unavailability.
The examination of most of the litigations connected with construction and operation of some power plants and distribution lines suggests that the possibility of adverse rulings is remote, but cannot be completely excluded.

The following table shows the main litigations – pending as of December 31, 2009 and opened or closed in 2009 – for each country and each business activity, together with the amount of the possible penalty.

Environmental litigations pending as of Dec. 31

Environmental litigations initiated in 2009 (by business activity)

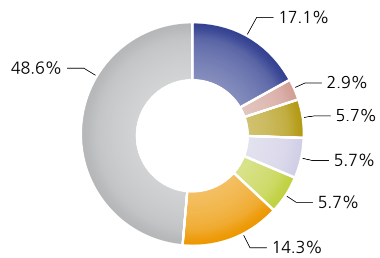
Total: **35**



- Thermal generation
- Thermal generation (CHP)
- Nuclear generation
- Hydro generation
- Geothermal generation
- Electricity distribution

Environmental litigations initiated in 2009 (by environmental domain)

Total: **35**



- Air and climate
- Waste waters
- Waste
- Soil, groundwater and surface waters
- Biodiversity and landscape
- Radiation (including electric and magnetic fields)
- Other

Country	Business activity	Description
		EUROPE
Italy	Electricity generation	Former Bergamo Business Unit - Carona Dam - Alleged damage to aquatic flora and fauna owing to outflow of silt upon emptying operations. So far, only a request to identify the person to be investigated was made.
		Fusina plant (province of Venice) – Notification of wrongdoing due to transport of flyash to a landfill without the prescribed authorization.
		Livorno plant (Leghorn) - Refund of damages to cars parked in the plant area owing to depositions from the plant.
		Lucca Business Unit - Verdiana Dam - Fire and consequent detection of Eternit plates. Notification of violation of articles 256 and 257 of Legislative Decree 152/06.
		Mercure plant (province of Cosenza) - Investigations on alleged crimes of illegal waste disposal, air pollution and unintentional disaster. Investigations on alleged participation in abuse of power (failure to conduct the impact assessment in protected areas). Appeal against the impact assessment for the biomass conversion project.
		Panarea plant (province of Messina) - Proceeding for charges of emissions and immissions of noise and gaseous pollutants into the environment.
		Piancastagnaio 2, 3, 4 and 5 power plants (province of Grosseto) - Claims for damages to health due to alleged emissions of harmful substances into the atmosphere (6 lawsuits).
		Geothermal well of the Piancastagnaio 4 plant (province of Grosseto) - Claim for damages due to the blow-out of the well in September 2000. Criminal proceeding for unintentional disaster. The defendants were acquitted in first instance because the facts did not represent a crime.
		Porto Marghera plant (province of Venice) - Notification of alleged violation of rules on waste water releases.
		Porto Tolle plant (province of Rovigo) - Air pollution due to emissions from the plant. On June 9, 2009, the Court of Appeal of Venice partially revised the first-instance judgment rendered by the Court of Adria on March 31, 2006. The Court of Venice acquitted the former members of Enel Produzione's Board of Directors because they did not commit the fact and excluded environmental damage. Consequently, the Court revoked the provisional award of damages to public authorities, convicting Enel's employees to moderate penalties for occasional misconduct and halving the damages to be paid to non-public parties. Both the Public Prosecutor and the aggrieved parties acting to recover damages filed an appeal with the Court of Cassation against the above judgment.
		Porto Tolle plant (province of Rovigo) - Criminal proceeding for air pollution and damage due to emissions from the plant. Investigations (subsequently dismissed) over alleged participation in manslaughter due to pollutant emissions. Claim for environmental damages due to waste water releases.
		Sondrio Business Unit - Notification of wrongdoing due to waste water releases.
		Termini Imerese plant (province of Palermo) – Proceeding arising from investigations conducted by the provincial health unit of Palermo on the outflow of asbestos particulates from a steam header.
		Torrevaldaliga Nord plant (province of Rome) - Criminal proceeding for air pollution.
		Vittorio Veneto Business Unit (Treviso) - Forno di Zoldo plant - Notification of wrongdoing due to soil and gravel dumping into surface waters: the end of the preliminary investigations was notified, but no preliminary hearing was set.
		Vittorio Veneto Business Unit (Treviso) – Alleghe, Ansiei-Santa Caterina, Arsiè, La Stanga, Malga Ciapela, Mis-Agordo, Pelos, Pontesei, Soverzene power plants - criminal proceeding for damage to flora and fauna owing to failure to release the minimum in-stream flow into the Piave river.
	Electricity distribution	Enel Distribuzione was involved in various civil and administrative proceedings. In these proceedings, persons living near portions of the power grid often ask judges to take urgent and precautionary measures, requiring Enel to relocate or change the way in which it operates its installations. Plaintiffs allege that these installations represent a hazard, despite the fact that they have been built in compliance with the applicable legislation. In some instances, plaintiffs claimed for damages to their health allegedly caused by exposure to electric & magnetic fields. The rulings are usually in favor of Enel.
		In its ruling of February 2, 2010, the Council of State quashed the measure taken by the mayor of Lacco Ameno concerning a substation, on the following grounds: i) the substation did not represent a hazard; ii) the limits to be complied with were those established by the State (Decree of the President of the Council of Ministers of July 8, 2003); iii) the regional laws (in this case, Law 13/2001 of the Campania region) could not derogate from the above national legislation.

Country	Business activity	Description
Slovakia	Electricity generation	Two new proceedings (five dismissed and six pending) arising from actions filed by parties working in the farming and forestry sectors for damage to their production due to emissions from the Nováky and Vojany power plants.
Spain	Electricity generation	With its ordinance of May 11, 2009, the Ministry of Industry, Tourism and Trade imposed four penalties on Endesa Generación (€ 15 million) for release of radioactive particles from the Ascó I plant in December 2007. An appeal against the ordinance was lodged before the Audiencia Nacional. At the same time, the Director-General of Energy Policy and Mines imposed two penalties (€ 90,000) for violations connected with the same incident. An administrative appeal was filed and hearing on the case is pending.
	Electricity distribution	The Generalitat de Catalunya imposed a penalty (€ 10 million, currently suspended) for damage during supply of electricity to the city of Barcelona on July 23, 2007. An appeal for suspension of the penalty was lodged. On April 8, 2009, the Tribunal Superior de Justicia of Catalonia upheld the appeal
		Three judicial proceedings pending for damage due to forest fires in Catalonia. The proceedings might lead to a conviction to pay € 44 million in damages.
	LATIN AMERICA	
Argentina	Electricity generation	Claim for damages due to contamination of the river which supplies cooling water to the Dock Sud plant.
	Electricity distribution	Seven pending litigations over electric & magnetic fields emitted by the high-voltage line of the Dock Sud plant.
Brazil	Electricity generation	Administrative proceeding concerning groundwater and surface waters. The Braço Norte plant is involved in an administrative proceeding for an oil spill from its water/oil separator. The action was filed by Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais.
		Administrative proceeding concerning biodiversity and landscape. In 2003, the environmental regulatory agency SEMA (Secretaria Especial do Meio Ambiente) instituted an administrative proceeding concerning the sediments created by the Culuene plant basin. Defensive pleadings were submitted and the proceeding is still under way.
	Electricity distribution	Failure to send the data required by specific legislation to the State's environmental bodies (possible penalty: € 800).
		Administrative proceeding under way for unauthorized cutting of trees along a public road in the town of Niterói (possible penalty: € 98,400).
		Second administrative proceeding under way for unauthorized cutting of trees along a public road in the town of Niterói (possible penalty: € 24,600).
		Third administrative proceeding under way for unauthorized cutting of trees along a public road in the town of Niterói (possible penalty: € 12,300).
		The Federal Public Prosecutor initiated five judicial proceedings (of which three in the town of Petrópolis, one in the town of Niterói and one in the municipality of Angra dos Reis) for lack of licenses for distribution grids.
		Precautionary measures in the Angra dos Reis region: the Federal Public Prosecutor challenged an environmental license obtained by the distribution company (Ampla) for works in a protected area.
		Civil proceeding for problems connected with electricity supply in the town of Saquarema.
		Claim for damages due to trimming of vegetation in the town of Paraty.
		Civil proceeding for logging of vegetation in the town of Trajano de Morais.
		Fine for lack of environmental license for a distribution grid. On December 21, 2006, Ampla lodged an administrative appeal. The fine (€ 1,230) was paid in 2009.
Chile	Electricity generation	The municipality of Nacimiento claimed for damages (about € 5 million) and reparatory measures (protection and mitigation measures with a total cost of € 2 billion) for alleged environmental damage caused by the operation of the Pangue plant and, in particular, by waste water releases in July 2006. On August 28, 2009, a first-instance judgment in favor of Pangue was rendered. The grounds of the judgment were as follows: "The acts of Empresa Eléctrica Pangue S.A. do not represent willful misconduct or gross negligence, as the company strictly complied with legal and administrative regulations. Furthermore, there is no causal link between the damage and the acts of the company". The municipality of Nacimiento lodged an appeal, but the likelihood of losing the case appears to be remote.

Environmental commitment

EN30 Financial resources

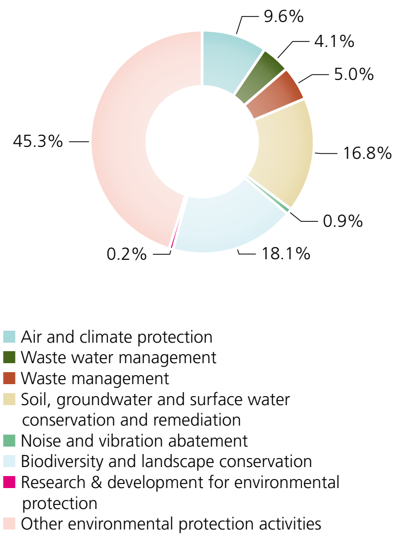
Enel records its environmental expenditure (investments and current expenditure) according to a classification system based on the criteria adopted by Eurostat and Istat (the latter being the Italian Statistical Institute). Under Istat's criteria, "environmental protection expenditure" is defined as the costs incurred for preventing and mitigating environmental pollution and degradation and for restoring the quality of the environment, whatever the origin of such costs (legislation, agreements with local governments, corporate decisions, etc.). It excludes the expenditure incurred for minimizing the use of natural resources, as well as for activities that, albeit environmentally beneficial, primarily satisfy other requirements, such as health & safety in workplaces. The term "expenditure" has always an algebraic sense, as it may also refer to revenues, such as those which may accrue from waste delivery to recovery operators.

GROUP'S FINANCIAL ALLOCATIONS FOR ENVIRONMENTAL PROTECTION IN 2009 (€ MILLION)

	Investments	Current expenditure
Renewable Energy	16	12
Generation and Energy Management	47	103
Iberia and Latin America	80	76
Infrastructure and Networks	40	11
International	11	192
Total	**194**	**394**

Overall environmental investments in 2009 (by environmental protection activity)

Total: € **194** million



The **Renewable Energy** Division invested € 16 million.
The **Generation and Energy Management** Division invested about € 47 million (50 in 2008).
The **Iberia and Latin America** Division invested € 81 million (56 in 2008); the deviation between the two years is chiefly due to the full consolidation of Endesa in 2009 (67.05% in 2008).
The **Infrastructure and Networks** Division invested roughly € 40 million (65 in 2008). Investments were down from 2008 owing to: i) lower rate of disposal of PCBs (most of them had been eliminated in previous years); and ii) lower rate of replacement of bare conductors with overhead and underground cables in power lines.
In the **International** Division, environmental investments were equal to € 11 million vs. 13 in 2008.

Among the investments on existing **thermal power plants** made by the Generation and Energy Management Division (Enel Produzione), the Iberia and Latin America Division (Endesa) and the International Division (Enel Maritza East 3, OGK-5 and Slovenské elektrárne), mention is to be made of:

> significant improvements to SO_2, NO_X and particulate emission abatement systems (plant system upgrades to comply with emission limits and modernization of desulfurizers, denitrification and particulate abatement systems (the latter especially in coal-fired power plants);
> installation of new low-NO_X burners;
> revamping and remediation of some fuel-oil storage & handling tanks and upgrades of passive protection systems (containment basins in fuel storage areas and installation of fire prevention systems);
> renovation and modernization of waste water treatment systems (desulfurizer drainage, waste water and sewage water);
> new systems for monitoring and analyzing flue gases;
> characterization of contaminated sites, planning and implementation of rehabilitation projects;
> morphological, hydrographic and landscape restoration in mining areas;
> removal of asbestos-containing materials;
> decontamination of PCB-contaminated oils and machinery.

The same Divisions made the following investments on existing **hydro power plants**:

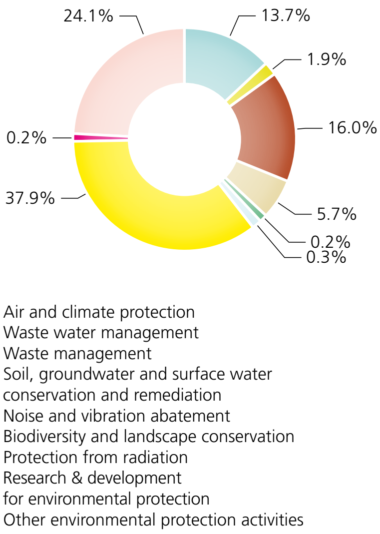
> upgrades of transformer oil collection tanks;
> retrofitting of outlets;
> desilting of basins;
> consolidation of some channels and of landslide-prone slopes;
> improved methods to collect materials removed from the trashracks of intake structures;
> noise abatement in installations and replacement of noisy generators;
> construction of infrastructure to safeguard the faunal communities living near installations;
> better integration of installations into the environment;
> retrofitting of intake structures to release the minimum in-stream flow into the diverted streams;
> construction of fish ladders;
> testing of a new system for microorganism-based clean-up of channels.

The Iberia and Latin America, Infrastructure and Networks and International Divisions made the following investments in new and existing **electricity distribution** installations:

> disposal of PCB-contaminated equipment;
> use of overhead or underground cables in power lines to conserve biodiversity and landscape; the following extra cost items are recorded as environmental investments: overhead and underground cables instead of bare conductors in medium-voltage lines in areas of low population density; extra costs for underground cables instead of overhead cables in low-voltage lines in the above areas; underground cables instead of bare conductors in high-voltage lines, whatever their location.

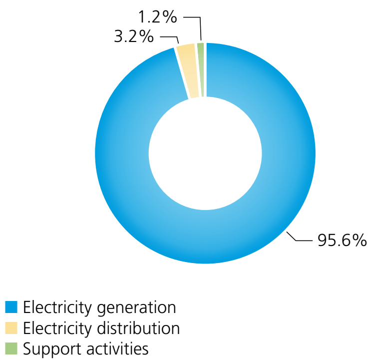
Current environmental expenditure in 2009, excluding extra fuel costs
(by environmental protection activity)

Total: € **385** million



Current environmental expenditure in 2009, excluding extra fuel costs
(by business activity)

Total: € **385** million



With regard to **current expenditure**, the situation is as follows.
The **Renewable Energy** Division allocated roughly € 12 million to current expenditure.
The **Generation and Energy Management** Division spent € 103 million vs. 224 in 2008. The decrease is due, above all, to the reduced operation of fuel-oil-fired installations. Indeed, this expenditure includes the extra cost incurred for using low-sulfur fuels or natural gas to comply with environmental regulations vs. the cost of a corresponding amount of medium-sulfur fuel oil.
The current expenditure of the **Iberia and Latin America** Division was € 76 million (41 in 2008); the deviation between the two years is mainly due to the full consolidation of Endesa in 2009 (67.05% in 2008).
The current expenditure of the **Infrastructure and Networks** Division was € 11 million (13 in 2008).
The **International** Division allocated € 192 million to current expenditure (174 in 2008), of which € 146 million for processing and permanent storage of spent nuclear fuel and for disposal of equipment.

Electricity generation accounted for as much as 95.6% of Enel's current environmental expenditure in 2009.
Costs for industrial clean-up (waste management, handling and removal) grew. The increase is due, above all, to the extra costs for disposal of coal ash (reflecting, among others, the building crisis) and sludges (owing to the unavailability of recovery facilities).
With regard to renewables in general, the current expenditure covered: removal of materials from trashracks, waste disposal, fish restocking, periodical monitoring of significant environmental aspects, operation and maintenance of hydraulic structures (to keep them efficient and prevent risks to the environment), environmental training & education of employees. In particular, in geothermal generation, emission control costs went up owing to the entry into operation of new mercury and hydrogen sulfide abatement systems (AMIS), which involved extra costs of personnel and expendables (especially sodium hydroxide) for their operation.

The above expenditure includes (in part as investments and in part as current expenditure) the following **research items.**

- The **Iberia and Latin America** Division allocated a total of € 61 million to research, mostly in power-driven mobility and smart grids. The main ongoing projects are:
  - MOVELE, installation of 550 electric vehicle recharging stations in Madrid, Barcelona and Seville;
  - Málaga SmartCity, urban development of power-driven mobility;
  - Store, study of a large-scale, low-cost, electricity storage system with a view to encouraging power-driven mobility;
  - Cervantes and CENIT DENISE, development of smart grids.
- In 2009, the Research technical area of the **Engineering and Innovation** Division carried out activities of development and demonstration of innovative technologies, as part of Enel's Technological Innovation Plan (total allocation: € 650 million in the 2009-2013 period). These efforts were focused on: fossil-fired power generation (46%, namely carbon capture & storage, hydrogen, emission abatement and enhanced efficiency of installations); renewables (50%, namely solar photovoltaic and solar thermodynamic,

geothermal and wind energy, biomass); and energy efficiency (4%, namely power-driven mobility and development of smart grids). The contracts that the Engineering and Innovation Division executed in 2009 on behalf of the companies of the Group (see also the "Research & Innovation" paragraph in this chapter) amounted to about € 83.4 million, divided as follows:
  - Enel Produzione: about € 76 million (post-combustion carbon capture, € 7.9 million; carbon capture after oxy-combustion, € 5.4 million; gasification system integrated with combined-cycle power plant and CCS, € 1.1 million; carbon sequestration, € 1.4 million; experimental use of hydrogen fuel in the Fusina plant, € 19.1 million; high-efficiency coal-fired thermal generation, € 0.5 million; pollution abatement, € 2.2 million; emission source analyses, € 0.7 million; expert systems to decrease the unavailability of gas-turbine and coal-fired power plants, € 1.2 million; exploitation of by-products from thermal generation, € 0.5 million; co-firing of biomass and RDF, € 0.5 million; concentrating solar thermodynamic generation, € 34.9 million; Green Islands project at Capraia, € 0.6 million);
  - Enel Green Power: € 6.7 million (innovative solar photovoltaic generation in Catania, € 1.5 million; low-enthalpy geothermal energy, € 0.7 million; abatement of geothermal pollutants, € 0.3 million; prediction of wind source availability, € 0.6 million; survey, characterization and selection of existing and new wind facilities of small and medium size, € 0.3 million; Energy Farm, € 1.1 million; systems of storage of energy from renewables, € 0.4 million; Diamond facility, € 1.3 million; innovative, low-cost, solar generation, € 0.5 million);
  - Enel Energia: € 0.9 million (Casa Enel, a project of research on smart demand-side management and energy efficiency, € 0.6 million; electric car, € 0.3 million).
- The **Infrastructure and Networks Division** spent about € 2.6 million on smart grid studies and projects, i.e.
  - project of an innovative system (Telegestore) for remote management of electricity meters, which will support a new approach to customer relations;
  - project of construction and operation of an electric-vehicle recharging infrastructure;
  - ADDRESS project, which is intended to develop technical and commercial solutions enabling small and medium consumers to modulate their usage and sell their electricity.

Other items of expenditure accrued in financial year 2009, which were separately recorded as they were not explicitly allocated to environmental protection, were as follows:
- € 33 million (at Group level) - purchase of carbon dioxide emission permits to cover the deficit between allocated emissions (under Directive 2003/87/EC on Emission Trading) and actual emissions;
- € 426 million (approximately) – purchase of Green Certificates to cover the deficit and fulfill the green quota obligation.

Climate strategy

Industrial commitment

Climate change is a global challenge to which governments, companies and citizens are called to respond within the scope of their duties.
Aware of its responsibilities, Enel is engaged in the fight against climate change. Indeed, Enel believes that, by improving its environmental performance, it can both safeguard the Planet's equilibria and create corporate value.
In March 2009, Enel's CEO was among the 60 leaders of European power companies who - as part of an initiative taken by Eurelectric - committed to achieving a carbon-neutral European electricity industry by 2050. This is an ambitious commitment, which will translate not only into a sharp increase of zero-emission power generation (from renewable and nuclear sources), but also into a radical shift in consumption patterns (for instance, energy efficiency and greater reliance on electricity, e.g. in transport).
Crucial factors in moving towards the new scenario without sudden shocks in the economic system will include fast deployment of Carbon Capture & Storage (CCS) technologies and emission credits from international offset mechanisms (e.g. the Kyoto Protocol Clean Development Mechanism – CDM).

Enel's strategy rests upon five pillars, which cover all the main elements of carbon neutrality.

> **Use of the best available technologies**: Enel's generating mix is progressively evolving towards 100% high-efficiency - and thus low-emission - power plants.

> **Development of zero-emission sources, e.g. renewables and nuclear:** Enel is consolidating its long-standing leadership in renewables through a dedicated company - Enel Green Power - and plans to gradually increase the nuclear share of the Group's generating mix.

> **Energy efficiency**: Enel plans to enhance the efficiency of its grids and to take end-use efficiency initiatives relying, among others, on the Group's energy service companies.

> **Research & innovation**: Enel allocated a little less than € 1 billion in the 2009-2013 period to CCS demonstration projects, development of innovative solar technologies, smart grids and power-driven mobility dissemination.

> Global commitment to curbing CO_2 emissions through **dissemination of projects and best practices in East-European and developing countries**, resorting, among others, to the Kyoto Protocol flexible mechanisms (Clean Development Mechanism – CDM – and Joint Implementation – JI), in which the Group stands as a worldwide leader.

Policy commitment

Enel has established a dialogue with decision-makers to promote the adoption of immediate and effective public policies, as well as a long-term stable regulatory framework, which may facilitate choices by the industry in line with strategies like those pursued by the Group.
Unlike command-and-control measures (based on plant-level emission standards), market mechanisms may give a CO_2 price signal, encouraging emission reductions and optimizing resources to the benefit of companies and consumers. The Kyoto Protocol and the European Emission Trading Scheme (EU-ETS) have taken the first steps in this direction. However, the current

reference framework is riddled with uncertainties in the long term that the December 2009 Copenhagen Conference did not solve.

Enel feels that the climate strategies of responsible companies may be favored by an international agreement underpinned by the following principles.

> **Global approach**: mechanisms should be put in place to promote commitment by all countries, taking into account their specific capabilities and legitimate development expectations.
> **Reasonable and reachable long-term goals**: investors in sectors like the energy one should have a clear and realistic view of actions to be undertaken.
> **Extension of the CO_2 market under clear and stable rules**: this would guarantee liquidity and long-term price signals, which are absolutely necessary to allow energy-sector operators to make massive investments on the transition towards a low-emission economy.
> **Support to development of technologies**: the public sector should provide financial resources to foster the fast development of technologically-advanced solutions in cooperation with the private sector, avoiding that companies may suffer from the "first-mover disadvantage".
> **Direct involvement of the private sector**: procedures should be streamlined to further encourage participation by the private sector, which has proved to be the main player of emission reduction projects in developing countries; for instance, private-sector CDM initiatives account for 85% of CO_2 emission reductions in Asia and Latin America.

Public climate policies should also take into account the specific features of the various sectors of action. For instance, in the sector of renewables, the authorization procedures should be simplified and the construction of power plants, as well as their effective and secure integration into the power grid, should be supported by uncomplicated and predictable systems, capable of providing security to investors.

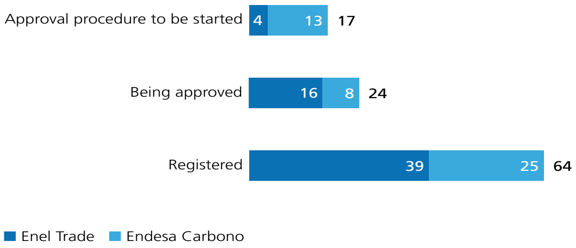
CLEAN DEVELOPMENT MECHANISM AND JOINT IMPLEMENTATION

Clean Development Mechanism (CDM) and Joint Implementation (JI) are two of the three flexible mechanisms envisaged in the Kyoto Protocol. As of December 31, 2009, the registered CDM projects totaled 1,900. These projects will allow developing countries to displace over 1.5 billion tonnes of CO_2 emissions into the atmosphere by 2012. About 85% of these initiatives were privately funded.
Under European Directives, companies involved in the EU-ETS may, within certain limits, count their emission credits from CDM and JI projects towards compliance with their targets.
CDM projects have been a successful experience for the Group. Today, Enel and Endesa are among the key players in the global CO_2 market.
It is also thanks to these projects that the Group succeeded in:
> achieving environmental targets at the least cost (result being equal, the marginal cost of abatement measures in developing countries is lower than in developed ones);
> transferring technologies to developing countries, thus contributing to climate change mitigation measures.

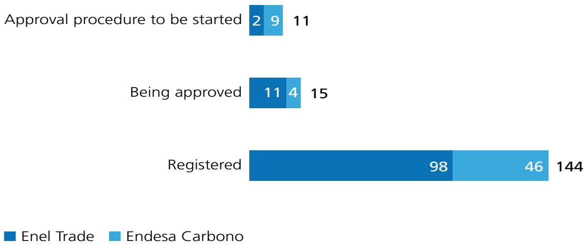
The Group's portfolio includes 105 direct-participation projects. Considering also the projects in which the Group participates through carbon funds (with a view to diversifying implementation and performance risks), the CO_2 emission abatement potential is equal to about 200 million tonnes in the 2005-2020 period.
The contribution (in terms of credits) expected from participation in the funds amounts to roughly 13% of the total. The fund projects regard, among others, landfill gas recovery, capture of methane from mines and abatement of emissions from cement factories.
As much as 85% of the potential of direct projects concerns already registered projects. Most of the initiatives were taken bilaterally between Enel-Endesa and the host country.
In 2009 alone, Enel-Endesa registered 39 CDM projects, ranking no. 2 in the world in terms of registered projects. The growth in the volume of accrued credits (CERs) has been particularly significant in the past two years.
Most of the projects in the current portfolio are located in China, where the Group found fertile ground thanks to the Sino-Italian Cooperation Program (SICP), started in 1999 between the Italian Environment Ministry, on one hand, and the State Environmental Protection Administration (SEPA) as well as other Chinese institutions, on the other hand. The program has the purpose of promoting sustainable development projects in China, by leveraging – among others – the technologies provided by Italian companies which operate in the sectors of energy, as well as air, water and landscape conservation. The program made it possible to timely reach local institutions and easily identify the best project opportunities.
In China, the portfolio of Enel-Endesa includes 80 projects of renewable (hydro and wind) power generation, abatement of industrial gas emissions and efficiency improvements in some large factories. Other projects are located in India, Africa and Latin America.
As to the JI mechanism, the Group's portfolio includes 7 directly-managed projects in Uzbekistan and Ukraine and 14 initiatives of participation in funds in Russia, Moldova and Ukraine. The details of all the projects where Enel and Endesa act as project participants are available on the UNFCCC website (starting from page http://cdm.unfccc.int/Projects/index.html).

CO_2 credit portfolio of the Enel Group (as of February 22, 2010)

Number of direct projects: 105*

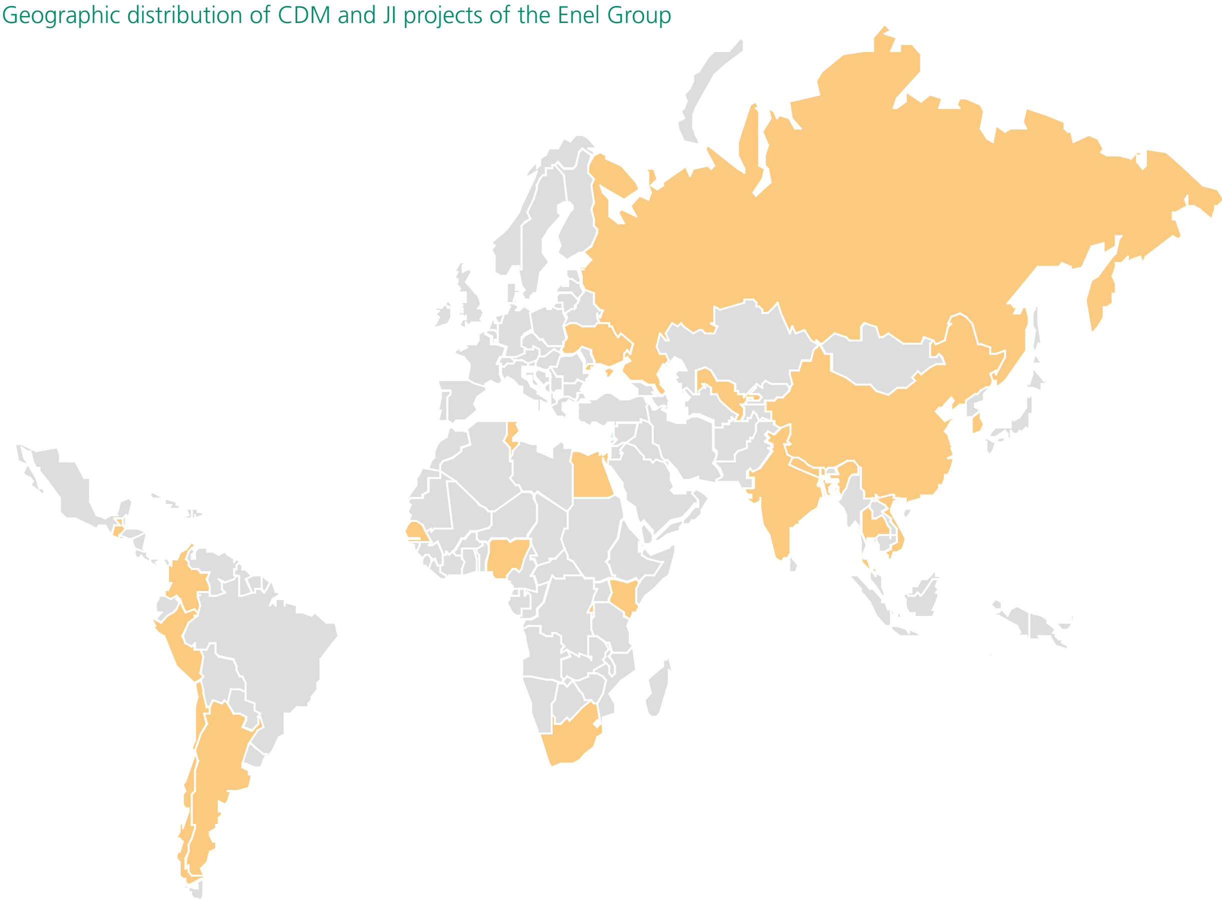


2005-2020 potential volumes: 170 Mt*

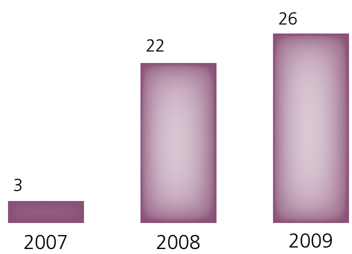


* to which participation in nine carbon funds (26 $MtCO_2$ of additional credits) is to be added.

Geographic distribution of CDM and JI projects of the Enel Group



Credits issued (CERs)
$MtCO_2$



SCENARIOS FOR A CARBON-NEUTRAL ELECTRICITY INDUSTRY

Attaining the target of making the electricity industry carbon-neutral by 2050 calls for a thorough analysis of technically and economically practicable solutions.
These solutions encompass measures for progressive decarbonization of electricity generation and options for offsetting the share of emissions that cannot be abated at reasonable costs by present or future technologies.
Supporting this approach, Enel participated in Eurelectric's study on "Power Choices: Pathways to Carbon-Neutral Electricity in Europe by 2050", whose results were presented at the European Parliament in November 2009.
The study is a scenario exercise based on the target of slashing European greenhouse gas emissions by 75% of their 2005 levels by 2050. The underlying assumptions were as follows:

> use of technologies which are currently available or with actual development prospects, such as renewables, nuclear energy and the CCS technology applied to conventional power plants;
> full integration of the European energy market;
> use of a CO_2 price applicable to all sectors, so as to share the cost of emissions;
> use of offsets deriving from the transfer of low-emission technologies to developing countries and from forestry activities;
> promotion of energy savings and greater electricity penetration into end uses, in particular in transport, space heating & cooling.

The "Power Choices" scenario was developed through the PRIMES model, already used by the European Commission for long-term energy forecasts.

KEY OUTCOMES

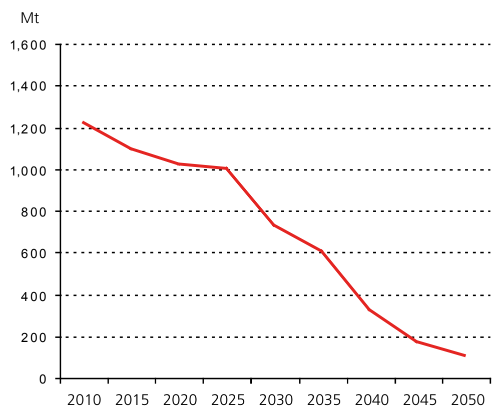
The study indicated that the target of converting the electricity industry into a carbon-neutral one by 2050 is reachable and that appropriate choices may yield benefits to the economy, society and environment.
Under the "Power Choices" scenario, the overall CO_2 emissions from the European electricity sector may potentially decrease by as much as 90% of their 2005 levels by 2050, i.e. to below 130 million tonnes (equal to the emissions from one coal-fired plant every two Member States). Until 2025, the main instrument to curb emissions will be energy efficiency; then, deployment of CCS technologies, penetration of renewables and increased nuclear capacity will be fundamental.
In addition to reducing emissions, "Power Choices" contributes to increasing energy supply security by cutting net energy imports by 40%.
The study also suggests that energy costs as a percentage of GDP will first increase – owing to the required investments – but then gradually decrease thanks to the reduction of CO_2 costs connected with lower carbon intensity, growing role of electricity in transport and specific demand-side management schemes.

RECOMMENDATIONS FOR POLICY-MAKERS

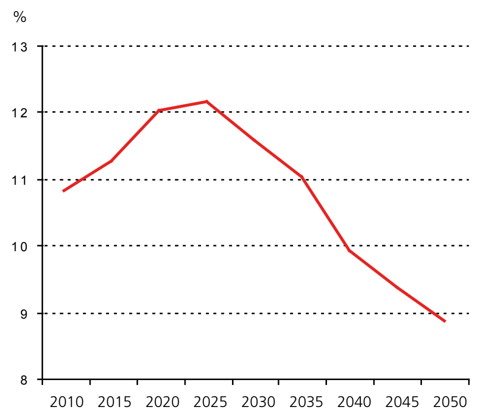
The study made it possible to identify some recommendations for policy-makers, so as to favor the transition towards a low-emission economy.
In particular, policies and measures should be rapidly implemented to support the change, favor the maturity of innovative technological solutions and mitigate the impact that energy cost increases in the initial stages might have on consumers.

Priorities are:
> supporting the carbon market so as to achieve emission reduction targets at the least cost;
> ensuring that all sectors internalize the cost of greenhouse gas emissions;
> actively promoting an international agreement on climate change;
> ensuring that public authorities take a leading role in energy efficiency, adopting standards and incentives to help consumers choose goods & services with a low energy consumption;
> enabling the use of all low-carbon technology options, by ensuring substantial investments in:
  – large-scale applications of renewable technologies;
  – early development of CCS technologies and completion of demonstration projects by 2020;
  – new nuclear power plants;
  – smart grids and systems for energy transport;
  – widespread energy efficiency in the economy and society;
> encourage public acceptance of modern energy infrastructure;
> facilitate the electrification of road transport and space heating & cooling.

CO_2 emissions from the electricity industry
("Power Choices" scenario)

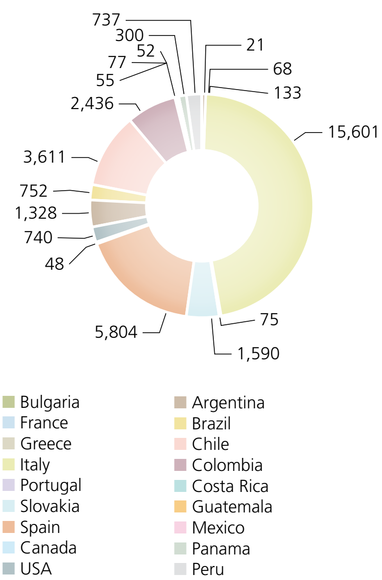


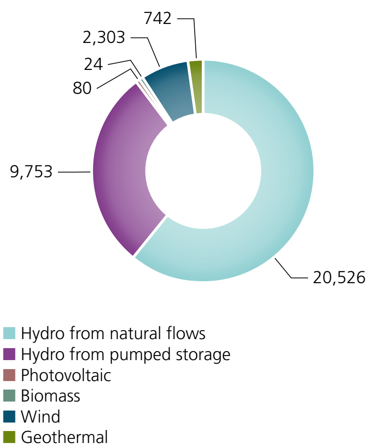
Cost of energy as a percentage of GDP
("Power Choices" scenario)



RES-E generating mix
as of Dec. 31, 2009

Total: **33,428** MW





Renewables

Renewable energy sources (RES) are one of the main strategic levers that the energy industry can and must use to cut down CO_2 emissions into the atmosphere and, at the same time, cover energy demand, which is potentially growing quantitatively and in terms of areas to be reached.
Electricity generation from renewables (RES-E) is among the key choices that Enel has made not only to adequately safeguard the environment, but also to make its generating mix more competitive. Biomass, wind, solar photovoltaic, geothermal, hydro and solar thermal are the energy sources on which Enel decided to invest, becoming one of the leaders of the sector.
To boost its activities in this field, Enel set up a dedicated company: Enel Green Power. In 2009, with a net maximum capacity of over 4,800 MW in Europe and in the American continent, Enel Green Power generated over 17 billion kWh. The company - a leader in the world, with a technological mix well diversified and well distributed in the countries where the Group operates - plans to consolidate its position of advantage thanks to a program of investments (€ 5.15 billion) until 2015. In 2009, the company's net maximum capacity went up thanks to the acquisition of wind farms in Bulgaria, Canada, France, Greece, Italy and Spain and to the entry into operation of new geothermal power plants in the US and Italy.
Considering also the large-sized hydro and RES-E plants belonging to the other companies of the Group (e.g. Enel Produzione in Italy, Endesa and its subsidiaries in Europe and Latin America, Slovenské elektrárne in Slovakia), the net maximum capacity of Enel's RES-E plants all over the world is equal to over 33,000 MW, i.e. about 30% of the overall capacity of Enel's generating mix. With this mix, Enel generated a total of about 84 billion kWh from RES in 2009, displacing approximately 64 million tonnes of CO_2 emissions into the atmosphere.

Thanks to its know-how, Enel is in the forefront of hydro power generation in the world. In addition to enhancing the efficiency of existing technologies (tapping the hydro power potential via large-sized plants), Enel looks with particular interest to the development of run-of-river installations. Even if these installations have individually limited capacities, they can together give a significant contribution to the coverage of electricity demand. Furthermore, small-scale hydro power installations: i) have a low impact on landscape in their construction and operation stages; ii) may be operated even by small communities; and iii) permit multiple and balanced uses of the water resource.

Italy is no. 1 in the world in the harnessing of geothermal energy (a steady renewable source) for power generation, since it has mastered this complex technology for over one century, thanks to geological skills and plant/system know-how. Building on the experience acquired in Italy, especially in Tuscany, Enel can export the secrets of this technology to all over the world: already today, Enel's Italian technical experts are at work in Chile and in the US.

In the planning, siting and design of wind facilities, consideration is given not only to quality of the wind resource but also to access and connection to the power transmission grid. As to the environmental footprint:

- Enel's designers integrate wind turbines into the landscape and use an appropriate number of turbines per unit of surface;
- the siting of facilities takes into account birds' migratory routes, although (as

demonstrated by many studies conducted, among others, jointly with universities), the avian fauna can spot and avoid wind turbine blades;

- the noise emitted by the blades is not higher than the one produced by the wind;
- other precautions include low-reflection paints and paint colors harmonizing with the environment, which are being experimented with the support of some universities and of particular interest for off-shore installations.

On the innovation front, Enel's efforts and investments are centered on some new frontiers of research and engineering. Enel's chief goal is to make RES-E installations competitive by relying on:

- efficiency, e.g. very-high-efficiency solar-power generation;
- use of currently marginal resources, e.g. low-enthalpy geothermal energy;
- continuity, like in the Diamond project (photovoltaic panels coupled with fuel cells) and the Archimedes project (integrating a combined-cycle gas-turbine plant with a high-efficiency solar thermodynamic facility); for details about these projects, see "Research & innovation" in this chapter;
- predictability, especially for the wind source.

Green energy is regarded as inexhaustible. However, power generation from green energy should be adequately planned and scheduled through geographic and technological diversification. For instance, the temporary lack of wind may be offset by sunlight, not necessarily in the same area as the one of the wind facility. Enel is gaining good experience in scheduling, which should be necessarily associated with reliable weather forecasts in order to reduce the error margin.

Also the grid infrastructure should adjust to the growth of the RES market. Enel is the leader of the ADDRESS (Active Distribution network with full integration of Demand and distributed energy RESourceS) project. The project is focused on smart grids, i.e. interactive power grids exploiting distributed generation (i.e. at the end-user premises), thereby integrating large conventional power plants with small RES-E installations (for details about the project, see also "Research & innovation").

The growth of the RES sector in the latest period has seen many countries introduce or revise support schemes in order to offset the long investment payback periods. Today, the evolution of RES technologies is associated with cost reductions. It is in this scenario – where the role of institutions is crucial to speeding up authorization procedures and where the rules should be shared and complied with by all players – that Enel intends to work at best, contributing to the dissemination of technologies and confirming its leadership.

To know more about the activities carried out in 2009 in the RES sector, the reader is referred to the chapters devoted to the individual countries.

Nuclear energy

The role of nuclear energy in Enel's environmental policy

Enel regards nuclear power generation as a necessary - but not sufficient - ingredient to effectively pursue its energy and environmental strategy.
At present, the Group has a net maximum nuclear capacity of about 5,300 MW (5.6% of its overall electrical capacity). In 2009, Enel generated about 36 TWh net from nuclear power plants (12.5% of its total generation), displacing over 30 million tonnes of CO_2 emissions into the atmosphere.
The rationale behind Enel's renewed interest in and relaunch of nuclear generation is both strategic (energy independence and fight against pollution and climate change) and economic (oil-related volatility of conventional fossil-fuel prices and political instability in the main oil- and natural gas-supplying countries) and suggests the need for resorting to a more balanced and more sustainable energy mix, so as to ensure electricity supply at competitive prices.
In the past few years, Enel has reacquired nuclear skills, know-how and expertise abroad, by making targeted investments in: i) Slovakia, where Slovenské elektrárne operates Russian-technology power plants and two new reactors are being built; ii) Spain, where Endesa runs American-technology power plants; iii) Romania, where the Group takes part in the project of doubling of the Canadian-technology plant of Cernavodă; and iv) Russia, where Enel signed an agreement with Rosatom for joint development of new power plants.
Finally, in France, Enel participates with EDF in the construction of a third EPR (European Pressurized Reactor) in the Flamanville power plant (Normandy). This is an evolutionary technology in terms of high plant capacity, advanced waste management and component lifetime. It is also the most suitable solution for building new power plants in a country, like Italy, where available sites are not many.
Additionally, Italy has an about 80% dependence on primary energy imports and a generating mix which is unbalanced towards gas and oil, two factors making the country extremely vulnerable.
In contrast, nuclear fuel (uranium) has a small share of the overall cost of generation and is a resource which is geographically diversified and generally coming from politically stable countries.

Proper management of nuclear power plants

The Enel Group is associated with the Institute of Nuclear Power Operations (INPO) through Slovenské elektrárne and with the World Association of Nuclear Operators (WANO), two international reference entities of paramount importance to continuously improve and give impetus to the dissemination of nuclear best practices. Furthermore, Enel seconded one member of its personnel to IAEA (International Atomic Energy Agency); the agency, working under the aegis of the UN, is in charge of monitoring civilian nuclear safety and averting the risk of nuclear proliferation.
Nuclear safety activities are regularly conducted by Slovenské elektrárne and Endesa. Examples are: quality management of processes, radiation protection and nuclear plant safety oversight. The latter translates into continuous monitoring of safe plant operation, so as to provide the top management of the Group with a systematic picture of its plants, favoring the sharing of best practices and the continuous improvement of plant safety. Moreover,

international experts' committees conduct constant and independent audits of Endesa's and Slovenské elektrárne's plants, as part of nuclear oversight processes in line with the best practices of multinational groups.

Nuclear training & education activities are intense and rigorous and subject to the supervision and assessment by WANO and IAEA. In particular, nuclear personnel members attend an intensive full-time training course for two-three years, including psychological, theoretical and practical tests. All the nuclear personnel members receive systematic training and undergo periodical independent assessments. In Spain and Slovakia, nuclear training takes place under well-established agreements between internal and external organizations and internationally-accredited nuclear-training companies.

This Environmental Report puts particular stress, among others, on the indicators concerning the most typical nuclear issue, i.e. nuclear waste management. In Slovakia and Spain, radioactive waste is not managed by Slovenské elektrárne and Endesa but by external companies. The services of these companies are paid from a special fund set aside during plant operation.

> In Slovakia, the activities of radioactive waste and spent-fuel management are entrusted to Javys, a State-owned company which is also responsible for plant decommissioning.
  Medium- and low-level radioactive waste (decay time: 20-30 years for low-level and 300 years for medium-level) from nuclear power plants in service or under decommissioning - just as the radioactive waste coming from research centers, laboratories and hospitals - is conditioned (via vitrification and other processes) and then placed in the national storage facility (located near the Mochovce plant and active since 2001).
  Conversely, for high-level radioactive waste (decay time: thousands of years), including spent fuel, no final geological storage site is yet available. At present, after completing its cycle, the fuel is stored in special pools for about 3 years and then delivered to a temporary storage facility located near Bohunice. A study is under way on the creation of a final geological storage site, to become operational in about 30 years.
> In Spain, the situation is very similar to the Slovak one. Radioactive waste management and decommissioning activities are assigned to the State-owned company Enresa.
  Medium- and low-level radioactive waste is appropriately treated and then stored in the final storage facility of El Cabril, in the province of Córdoba (Andalusia).
  High-level waste, mostly consisting of spent fuel, is provisionally stored in pools or dry storage facilities in the sites of origin. A study on a centralized, above-ground, temporary storage facility (where the high-level waste may remain for 60 years) is being conducted. The facility will adjoin a technological park, a center of excellence for nuclear research & development in the country. The facility, whose location will be chosen in the course of 2010, is expected to be built and go into service within short timescales.
  The temporary storage facility will make it possible to defer decisions about the delivery of the spent fuel to a final geological storage site or its reprocessing and use in fourth-generation reactors, depending on availability of new technologies.

It is worth pointing out that the content of fission products in the spent fuel is as little as about 3%. The remaining components are: uranium (about 96%) and

plutonium (a by-product, about 1%). In 2009, the spent uranium removed from power plants amounted to 17.2 tonnes. Both residual uranium and plutonium may be used to produce new fuel.
At any rate, all waste management activities are carried out under quality criteria and standards, in line with the best practices of the sector, which safeguard the environment, the population and future generations.

Optimizing performance

In-service power plants are upgraded and repowered.

> In Slovakia, Slovenské elektrárne's nuclear share of total electricity generation has grown in the past few years thanks to adoption of the most advanced technologies, which increased the generation of units 1 and 2 of the Mochovce plant and of the two units of the Bohunice plant.

> In Spain, projects of modernization, with major improvements in environmental performance, are also under way. In the Ascó and Vandellòs power plants, works are being carried out, among others, for decreasing the volume of waste, for reconditioning the cooling towers and on the cold core for reducing dependence on the Ebro river.
In the Almaraz plant, measures are planned to increase capacity and improve cooling and water treatment systems. Among the various activities carried out in the Garoña power plant, it is worth mentioning the treatment of concentrated radioactive sludges, the reconditioning of about 3,000 casks to be delivered to the El Cabril facility and the declassification of large components with potential radioactive content.

With regard to future developments, namely in Italy, Enel opted for the EPR, advanced third-generation technology. The choice was based on the excellence and unique features of the EPR technology, whose evolution has benefited from the operational experience that engineers and operators all over the world (above all, French and German) have acquired in over 30 years (and some tens of thousands of reactor-years) of operation.
The efficiency of the EPR is by far higher than the one of previous-generation technologies. This means generating more power with the same amount of fuel, producing smaller waste volumes and extending the useful life of the plant. But the EPR is also intrinsically safer, because it uses passive or largely redundant systems to cope with both extreme-incident scenarios (previously disregarded by engineering projects) and maintenance jobs. In all these cases, the probability of occurrence of extreme events was lowered by at least one order of magnitude with respect to the one of present power plants and measures to mitigate potential consequences were further strengthened, until excluding any impact on the population and the environment even at minimum distance from the plant.
From the viewpoint of radioactive waste, the EPR technology sharply decreases the volume of high-level radioactive waste vs. previous technologies, by better exploiting the fuel and by siting the systems that are in contact with radioactive agents in concentrated zones.
Enel is already active through:

> specialist on-the-job training: about 60 of Enel's engineers, to be charged with tasks of engineering, construction and operation in connection with the Flamanville 3 project, are being full-time trained in the sites of EDF dedicated to the project;

> research strategy: the Group is using its available specific resources in an

integrated way, in particular by coordinating the dialogue between the Spanish and Slovak teams, and is working to relaunch nuclear research in Italy, so as to restore a sound body of knowledge, which is imperative for the new Italian nuclear program.

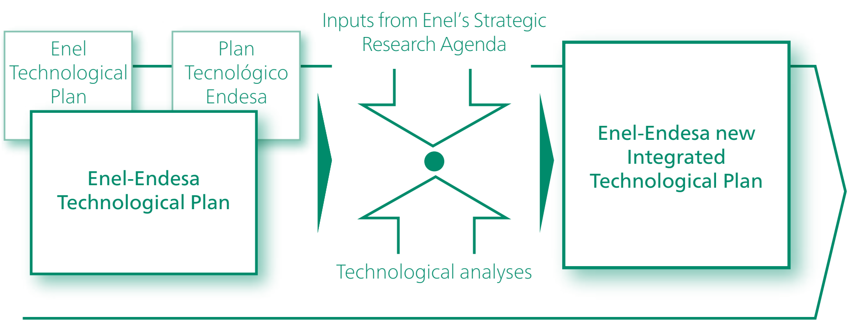
To know more about the activities carried out in 2009 in the nuclear field, the reader is referred to the parts of the Report which are devoted to Slovakia and Spain.

Research & innovation

Innovation in the energy sector is now the focus of worldwide attention, as it is one of the levers for responding to the growing global energy demand in sustainable ways.
Enel and Endesa initiated R&D programs (with an allocation of almost € 900,000 in the 2009-2013 period) to enhance the Group's competitiveness, as well as technological and environmental leadership.
In 2009, Enel and Endesa began a process of integration of their R&D activities, consisting of the following stages:

> exchange of data on their ongoing projects, take-off of their first joint projects and streamlining of their portfolios in order to draw up a single, integrated, Technological Plan;
> setting-up of a new integrated structure for innovation coordination so as to:
  - develop a long-term strategic vision and ensure an adequate resource allocation to new projects (via a Coordination Committee);
  - share technological know-how (via Technical Specialist Groups);
  - monitor the development and implementation of the Technological Plan.

R&D integration process



The following are the main projects in which Enel and Endesa are currently engaged.

Carbon Capture & Storage (CCS)

Enel and Endesa are in the front line of the testing of these technologies and conduct a broad range of activities, from carbon capture in the flue gases of coal-fired power plants (post-combustion capture) to innovative fossil-fuel oxy-combustion and gasification (pre-combustion capture) and to solutions for geological storage of CO_2. Enel's main focus is post-combustion capture,

through a project of construction of a demonstration facility at Porto Tolle (province of Rovigo, Italy).
The project is expected not only to capture CO_2 from the flue gases of the plant, but also to compress, transport and store it into a saline aquifer. This is one of the most advanced projects of pre-commercial demonstration of CCS in the world and among those funded under the European Energy Plan for Recovery (EEPR) of the European Union (funding of the first stage of the works – € 100 million). The project will be preceded by the construction of a pilot-scale facility in the Brindisi plant.
Also the pilot facility of Compostilla (Spain) is funded under the EEPR. This project (testing of oxy-combustion in a coal-fired plant) is being implemented by Endesa in cooperation with Fundación Ciudad de la Energía (CIUDEN).
Endesa is also engaged in the development of technologies of pre-combustion (ELCOGAS project) and post-combustion (demonstration facility of Compostilla and pilot facility of La Pereda).

The following is a list of the main activities that the Group carries out in the various types and stages of the CCS technology.

Post-combustion carbon capture

In 2009, Enel started the construction of a pilot facility in the Federico II plant (Brindisi), in parallel with a laboratory study on optimized selection of sorbents. The project is at a very advanced stage, as the commissioning of the facility is scheduled in June 2010. The facility, one of the first of the size in Europe and in the world, will treat 10,000 Nm^3/h of flue gases, separating 15-20 kt/yr of CO_2.
It has the goal of optimizing the capture process and strengthening Enel's know-how in view of the construction of an industrial-scale demonstration facility (about 250 MW) at Porto Tolle. This facility, which was included in the list of the most mature and promising projects at EU level, will become operational at the end of 2015.
At the power plant of Compostilla, Endesa is experimenting the development of chemical adsorbents for the CO_2 contained in the flue gases, by using new amine media with higher resistance to flue-gas pollutants (SO_2 and NO_X) and lower energy requirements for regeneration.
At La Pereda, research is going on into a low-cost carbon capture process for both new and existing power plants.

Coal oxy-combustion

To assess the prospects of this promising technology, Enel upgraded its Leghorn experimental facility (Italy), where combustion in oxygen at atmospheric pressure will be tested. Combustion in pressurized oxygen (a technique potentially improving overall efficiency) is being tested at the ITEA experimental facility of Gioia del Colle (Italy).
Endesa's efforts in this field are concentrated on the pilot facility of Compostilla, which has already obtained a pre-financing from the EU. The project involves the testing of oxy-combustion on a circulating fluidized-bed boiler and other CCS stages, including CO_2 storage into deep saline aquifers.

Pre-combustion carbon capture

Pre-combustion carbon capture uses the fossil-fuel gasification technology. Enel converged its efforts on the development of systems using the hydrogen produced by industrial processes.

In 2009, Enel put into service its demonstration plant of Fusina (Venice). The 16-MW plant, developed by Enel, represents one of the first major achievements. The project was supported by the Veneto region administration, the Environment Ministry and the Hydrogen Park consortium, which was created to exploit the resources, opportunities and technical-scientific know-how historically existing in the Porto Marghera area. The plant may be fueled with hydrogen (from the Marghera petrochemical hub) or with variable proportions of hydrogen and methane. It is the first example in the world of gas turbine equipped with a pure hydrogen burner. The chief objective of the research program is to develop an industrial-scale hydrogen burner with very low NO_X emissions.

Geological storage of carbon

Enel made preliminary estimations of the potential of geological storage of CO_2 in the off-shore areas of the central Tyrrhenian and upper and lower Adriatic seas and intensified studies to identify an optimum site for storage of the CO_2 to be separated from the Porto Tolle plant flue gases.
In its Brindisi laboratory, Enel is also investigating pilot-scale solutions for biological carbon sequestration through microalgal systems.

Electricity generation from renewables

Enel and Endesa have a long tradition of development and deployment of technologies for power generation from renewables. Their innovation-intensive projects are as follows.

Biomass

Enel is developing its Energy Farm project, which is aimed at demonstrating the conversion of biomass of different nature into electrical and thermal energy and into biofuels via both consolidated and innovative technologies.

Solar photovoltaic

In Catania (Italy), Enel created an important solar laboratory, based on latest-generation technologies, to test the large-scale and low-cost application of more efficient photovoltaic systems.
In Florence, in the Medicean villa of Pratolino, Enel installed Diamond, a solar photovoltaic facility designed by Enel's Research and the University of Pisa. The facility consists of photovoltaic panels, mounted on the faces of a diamond-shaped structure. The unique architecture was created to experiment new concepts of integration between technology and nature, tradition and innovation. The electricity generated during the day is used to recharge the batteries of electric bikes made available to visitors. The surplus is stored and then used – via fuel cells – at night to feed the lighting system of part of the park.

Geothermal

In its Leghorn experimental facility (Italy), Enel is building a 500 kW_e pilot facility for the study of a high-performance cycle.

Hydro and wind

In Chile, Endesa is engaged in the Novare Hydro project, which is expected to yield a hydrological prediction model, based on satellite monitoring, to be applied in hydro power generation.
Another project of Endesa (El Hierro, power generation by hydro and wind

power plants) is geared to make the homonymous island of the Canary archipelago self-sufficient in terms of electricity.

Solar thermodynamic

The Archimedes project involves the construction (in Syracuse, Italy) of an innovative solar thermodynamic plant (5 MW), equipped with parabolic troughs and based on a molten-salt technology developed by ENEA. The plant will go into operation in mid-2010. Molten salts may reach temperatures of over 500°C, i.e. above those typical of diathermal fluids, thereby increasing the efficiency and generating capability of the plant.
Endesa, too, is experimenting the solar thermodynamic technology through its GDV-500 project.

Smart grids

In 2009, Enel went on with its program of development of smart grids, i.e. infrastructure systems where: i) producers and consumers may interact; ii) power usage may be anticipated; and iii) power generation may be flexibly adjusted to power consumption. Enel Distribuzione is the leader and coordinator of the European ADDRESS project, gathering 25 partners from 11 countries. The project is intended to set up an innovative infrastructure, including systems for power generation, as well as load balancing and management.
Particularly critical scenarios will be investigated and pilot tests will be run in different European countries.
In the area of research on smart grids, it is also worth recalling the following projects: Energy@home, development of services for efficient management of household demand; and Navicelli, development and testing of new systems for managing heating and power grids in industrial energy districts.
With the DENISE (Distribución Energética Inteligente - Segura - Eficiente) project, falling under the CENIT (Consorcios Estratégicos Nacionales de Investigación Técnica) program, Endesa is spearheading the first Spanish smart-grid initiative. The project (2007-2010) - development of technological concepts and information systems for next-generation grids - received a public financing of more than € 20 million in 2009.
Endesa has also embarked on the Cervantes program, which will replace 13 million electromechanical meters with smart meters in Spain in the 2010-2015 period.

Power-driven mobility

In 2009, Enel signed a first agreement with Daimler-Mercedes for a pilot project to be started in 2010. Under the agreement, Smart will provide 100 electric cars, whereas Enel will put in place the recharging infrastructure, with at least 400 dedicated posts in customers' garages and parking areas, as well as in strategic points of three sample cities: Milan, Pisa and Rome. The project combines the specific skills and considerable expertise of two large companies with the goal of contributing to eco-friendly mobility in urban areas.
Another important deal was made with Piaggio to support the development of commercial electric vehicles and hybrid scooters. The objectives of the project are to boost power-driven mobility and to offer innovative services to electric vehicle fleet customers.
Endesa is engaged in the development of power-driven mobility initiatives thanks to the impetus that the Spanish Government is giving to sustainable transport. In particular, as part of the MOVELE (Movilidad Eléctrica) project, the company is

installing 546 recharging posts for electric cars in Madrid (280), Barcelona (191) and Seville (75).

Systems to enhance energy efficiency and hold down emissions

Enel takes part in various international projects, including the European COMTES700 (Component test facility for a 700 °C power plant) for the study of optimized components for high-efficiency coal-fired power plants. The development of technologies which may support increasing values of operating temperature and pressures will permit, in a matter of a few years, to build coal-fired power plants with an efficiency exceeding 50%.
Enel also continued efforts to develop technologies for holding down polluting emissions, in which it boasts long-standing experience.

> **Mercury.** After experimental work in the pilot facility of La Spezia (Italy), Enel ran the first tests on a process of electro-catalytic oxidation in a small-scale facility in Leghorn and lab tests on mercury adsorption in a desulfurizer system.
> **Particulates.** Enel started the development of an integrated system to assess the contribution of coal-fired power plants to atmospheric concentrations of particulates in neighboring areas.
> **Hydrochloric acid.** Enel successfully completed the qualification of a process to abate hydrochloric acid in the superheated steam of its geothermal power plants, by using dry sodium-bicarbonate injection.

Endesa is implementing programs to enhance the environmental efficiency of its conventional power plants: efficiency optimization (CFB500 program); development of new amine adsorbent beds to capture CO_2 from flue gases (Novare CO2SOLSORB); hybrid plasma filtering systems (Novare Plasmacol); and continuous monitoring of emissions of heavy metals, in particular mercury.

Other initiatives

Green ports. This project is aimed at providing integrated services to large Italian ports, with a view to curbing emissions of pollutants and greenhouse gases from maritime traffic.
Under an agreement with the Civitavecchia Port Authority (Italy), Enel completed the project of electrification of one pier of the port to supply electricity to cruise ships when their main and auxiliary engines are switched off ("cold ironing"). Similar projects are being agreed on with the La Spezia and Venice Port Authorities (Italy).
Smart-Info. This project (active in Italy until 2014) concerns the development of a communication device between electrical and electronic systems in homes and smart meters. The device will transmit the data recorded by the smart meter to a monitor in order to make customers aware of their power usage so that they may adopt power-saving behaviors.
Archilede. In February 2009, Enel Sole (leader in the public lighting sector) launched an innovative LED lighting system (Archilede) on the market. With the use of this system for street lighting, over 250 Italian municipalities (including Alessandria, Arezzo, Erba, Lodi and Vasto) saved a total of about 12.8 GWh of electricity, displacing more than 7,100 tonnes of CO_2 emissions into the atmosphere.

Biodiversity conservation

Biodiversity means the set of all the genetically-dissimilar living forms and of the related ecosystems. Therefore, "biodiversity" implies a biological variety of genes, species and habitats. It is thanks to its wealth of species that nature can renew the resources that are vital to life. Therefore, the loss of variety of living organisms is one of the most severe risks to which our planet and mankind in general are exposed.
Enel, too, regards biodiversity as a universal heritage and its conservation as a priority commitment. This is why Enel promotes a number of projects in Italy and abroad, with the purpose of giving support to the conservation of ecosystems and natural habitats in the areas where it acts not only as an industrial company, but also as an active player in their social, cultural and environmental life.
It is with these projects, especially those located in parks and nature sanctuaries, that Enel intends to give a factual contribution to Countdown 2010. This initiative arose in 2002 from the UN World Summit on Sustainable Development. During the summit, the main Heads of Government committed to achieving a significant reduction in the current rate of loss of biodiversity by 2010.

EN12 In all the countries where it operates, the Group has sites and installations which are located in or close to protected areas (national parks, sites of Community importance, WWF sanctuaries, etc.). Enel's activities are conducted in full respect of the natural environment and of ecosystems. These ecosystems always have an excellent conservation status and are often actively monitored by the companies of the Group under arrangements with local, national and international agencies.
The lack of negative impacts on biodiversity is substantiated by the results of sea-, river- and land-based biomonitoring surveys, which are conducted in various production sites.
For biodiversity conservation, reliance is also made on environmental management systems, which are very widespread within the Group: effects on biodiversity are among the relevant aspects which are assessed upon the initial environmental analysis. Also environmental impact studies for new installations include in-depth investigations on biodiversity conservation.

For wind facilities, the selection of sites always takes into account the protection of birds' migratory flows.

Finally, to mitigate birds' electrocution due to power distribution lines, Enel carries out numerous studies to identify the best options in terms of structure, materials, components and geometry of conductor supports (including studies on the use of overhead cables). Efforts for prevention of avian fauna collisions are concentrated on high-voltage lines, whose routes are carefully selected and whose conductors are fitted with bird diverters.

In the operation of installations, especially if they are located in protected areas, Enel adopts specific precautions to mitigate impacts on the surrounding environment, e.g. reduction of water abstraction and releases and mitigation of noise from equipment.
In particular, Enel conservation efforts are focused on the species included in the Red List of the International Union for Conservation of Nature and Natural Resources (IUCN). Surveys showed that in no case do Enel's activities threaten the extinction of these species.

In fact, in some areas, the presence of Enel's installations, e.g. those for hydro power generation, is conducive to biodiversity.
For instance, impoundments establish a new equilibrium in the habitats of the diverted streams. Water releases from the dams (as in the case of the minimum in-stream flow) make the flow of the downstream ephemeral streams more constant than the natural one, preventing their drying up, at least in some periods. The roles that basins play, both as minor wetlands hosting avian species and in stabilizing stream flows, represent major environmental enhancements in terms of biodiversity conservation.

For Enel, biodiversity conservation - one of the strategic targets of its environmental policy - has become a consolidated practice. Therefore, Enel's efforts in this field regard both installations and their areas of influence and consist of preventive and corrective actions, socio-environmental projects and studies, as well as research applied to sustainable development.

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From June 2010, Enel's websites (http://www.enel.com/it-IT/sustainability/environment/biodiversity/projects/ and http://www.enel.com/en-GB/sustainability/environment/biodiversity/projects/) will post detailed data on: i) the above situations; ii) all water bodies from which water is withdrawn for hydro power generation and cooling (whatever the volumes of withdrawal); or iii) water releases exceeding 5% of the yearly average flow rate of the stream or of the impoundment volume.

The following table shows the projects initiated or fully implemented in 2009 and those continued or completed in the same year.

Country	Conserved species or aggregate species	IUCN cat. (1)	Project (2)	GRI Indicator
Bulgaria	Griffon Vulture *(Gyps fulvus)*	LC	Central Balkan National Park: as part of the project for reintroduction of the species, installation of a release cage (used for growth and gradual release of the raptor), with the two first raptors coming from Spain. [Enel Maritza East 3, Bulgarian Society for the Protection of Birds of Prey]	**EU13**
France	Common Buzzard *(Buteo buteo)*	LC	Conservation of the original habitat in an area of 1 hectare, used as natural permanent meadow, where nesting and egg-laying take place. [Enel Erelis]	**EU13**
Italy	Red Deer *(Cervus elaphus)*	LC	Parco Nazionale dell'Appennino Lucano Val D'Agri Lagonegrese: take-off of the project of study of the deer. [Enel jointly with Legambiente and under the aegis of the Italian Environment Ministry]	
	White Stork *(Ciconia ciconia)*	LC	Parco Nazionale del Cilento e Vallo di Diano: enhancement of the value of storks' staging areas, also in view of educational-scientific activities. [Enel jointly with LIPU and WWF]	**EN13** **EN14**
	Griffon Vulture *(Gyps fulvus)*	LC	Sardinia: study and monitoring of the species and of its habitat in the area surrounding the town of Bosa (Nuoro); attention to threats to its survival; awareness actions in schools and among local communities; creation of sighting points and of a nature trail. [Enel jointly with Legambiente]	**EN13** **EN14**
	European Otter *(Lutra lutra)*	NT	Upper Volturno river valley: habitat monitoring and protection; population estimates; demarcation of home ranges; and creation of sighting points and educational signs. [Enel jointly with the Pianeta Terra association]	**EN13** **EN14**
	Northern Pike *(Esox lucius)*		Thermal power plant of La Casella: restocking of the Po river with 5,000 trout juveniles, replaced in 2009 (at the request of the Piacenza province) with 1,500 Northern Pike juveniles; the obligation is laid down in the Po river water abstraction specifications. [Enel Produzione]	**EU13**
	Loggerhead Sea Turtle *(Caretta caretta)*	EN	Sea turtle recovery center of Brancaleone (Reggio Calabria): development of the center, dealing with recovery and care of injured animals; awareness & education actions; supply of data to the national database. [Enel jointly with CTS, owner of the center]	**EN13** **EN14**
			Sea turtle recovery centers of the Lake Salso Sanctuary (Foggia) and of the Rauccio Forest (Lecce): activities of support to the centers; study of habitats suitable for egg-laying and youth awareness actions in local schools. [Enel jointly with Legambiente]	**EN13** **EN14**
	Montagu's Harrier *(Circus pygargus)*, Short-Toed Snake-Eagle *(Circaetus gallicus)*, Lanner Falcon *(Falco biarmicus)*, Peregrine Falcon *(Falco peregrinus)*	LC	Mt. Labbro and upper Albegna river valley, Tuscany: mitigation of avian fauna electrocution on 5 km of MV lines by insulating potentially hazardous live components (near transformers, pole-mounted isolators, branching points, etc.); replacement of pin insulator supports with boxer-type cross-arms, equipped with suspension insulators. [Enel Distribuzione, LIFE Nature project of habitat and raptor conservation in the Mt. Labbro and upper Albegna river valley area]	**EU13** **EN14**
	Eel, trout, trout juveniles, cyprinids (various species including species at risk, among which Marble Trout *(Salmo trutta marmoratus)*, salmonoids	LC	Various sites: restocking of various species of local fishes. [Enel Produzione and Enel Green Power]	**EU13**
	Fish fauna		Hydro power plants of Amandola, Arci and Carassai: alternative route to the fish ladder. [Enel Green Power]	**EU13**
	Bioluminescent marine organisms		"20,000 volts under the sea": study of marine biodiversity related to bioluminescence (numerous marine organisms, often of small size and emitting energy, are increasingly threatened by degradation of their habitats). [Enel, Marevivo]	**EN13** **EN14**
	Posidonia oceanica		Thermal power plant of Torrevaldaliga Nord: planting of a marine prairie over a surface of 1 hectare. [Enel Produzione]	**EU13**
	Autochthonous flora		Thermal power plant of Leri Cavour: on a surface of about 0.15 km^2, creation of a hill by using spoil from excavations during construction of the plant; revegetation and planting of autochthonous species, e.g. acacia, beech, ash, horse-chestnut, poplar and plane tree. [Enel Produzione]	**EU13**
Romania	White Stork *(Ciconia ciconia)*	LC	Danube: mounting of circular supports on power line towers to favor nesting. [Enel Electrica Dobrogea]	**EN12**

Country	Conserved species or aggregate species	IUCN cat. (1)	Project (2)	GRI Indicator
Slovakia	Rainbow Trout *(Oncorhynchus mykiss)*		National parks (including the one of the High Tatras): restocking; habitat restoration; clean-up of streams through investments and voluntary actions by employees. [Slovenské elektrárne]	**EU13** **EN13**
	Golden Eagle *(Aquila chrysaetos)*, Alpine Tatra Chamois *(Rupicapra rupicapra tatrica)*, Peregrine Falcon *(Falco peregrinus)*, Alpine Marmot *(Marmota marmota latirostris)*	LC	High Tatras National Park: conservation of local species. [Slovenské elektrárne]	**EN15**
Spain	Osprey *(Pandion haliaetus)* and Black Kite *(Milvus migrans)*	LC	Balearic Islands: under the 2004-2009 cooperation agreement between Gesa-Endesa, the Environment Ministry and the Government of Balearic Islands, completion of 186 projects of conservation (128 in Majorca and 58 in Minorca), aimed above all at reducing collision with power lines. [Endesa Distribución]	**EN15**
	Avian fauna		Andalusia and Extremadura: under the 2008 agreement with the Government of Andalusia for co-funding of the LIFE-Nature and Biodiversity project of conservation and management of special protection areas for the birds of the Andalusian steppe, the European Commission's LIFE Committee selected the project of identification of critical points of birds' collision with and electrocution from power lines. Development of other research projects in conjunction with research centers and public institutions. [Endesa Distribución]	**EN14**
			Catalonia: census of the Pla d'Urgell (Ebro basin) avian fauna with identification of the technical requirements that power lines should fulfill to conserve the censused species. [Endesa Distribución jointly with the Forest Technology Center of Catalonia]	**EN15**
			Canary Islands: under the 2008 agreement with the Spanish Ornithological Society, completion of the study on risks of collision of avian fauna with overhead lines in Lanzarote and Fuerteventura and identification of critical points. [Endesa Distribución]	**EN15**
	Wild fauna		Guadalajara in Castile-La Mancha: inauguration of the site for construction of a wild fauna recovery center. [EUFER]	**EN15**
	Species threatened by the Zebra Mussel *(Dreissena polymorpha)*		Endesa is engaged at international level in research on Dreissena polymorpha, an invading exotic species which occurs in various Spanish water bodies. This is a freshwater bivalve zebra mollusk, similar to the common mussels and autochthonous of the Black Sea and Caspian Sea. This non-edible mollusk is known to withstand salty water and to rapidly propagate. Fluvial navigation and maritime transport have facilitated the spreading of this species, causing serious economic and ecological effects: among the latter, interference with feeding, growth, movement, respiration and reproduction of other species (in particular, mussels and clams).	**EN13** **EN14**
	Flora, fauna and landscape		Mining areas of Andorra, As Pontes and Puertollano: hydrogeomorphological and landscape restoration to reinstate the local original biodiversity. [Endesa]	**EN13**
			Doñana National Park (Andalusia): support to initiatives of the Doñana 21 Foundation for conservation of natural heritage and maintenance of a wild avian fauna care center. [EUFER]	**EN14**
Chile	Flora and fauna		Chilean Patagonia: study of the functioning of the aquatic ecosystem and assessment of the biodiversity value of ponds and lakes in the steppe. [Endesa]	**EN14**
			Cooperation with the San Ignacio del Huinay Foundation for conservation of the last rainforests of the planet. The foundation, traditionally oriented at the study of marine invertebrates, also conducts microbiological investigations on hot springs, surveys flora and fauna and performs limnological studies of previously uninvestigated water bodies. These activities led to identify numerous new species and ecosystems in areas of particular interest. [Endesa]	**EN15**
	Flora		Atacama Desert: conservation of the Incas' crops under agreements with local communities aimed at creating new areas of development improving their quality of life. [GDN Chile, geothermal energy company]	**EN13** **EN14**
Colombia	Mangrovie		Thermal power plant of Cartagena: implementation of the 2008 plan of actions for biodiversity recovery, focused on the lagoonal mangroves located in the area of the plant (landscape restoration and solutions for drought periods). [Endesa]	**EN13** **EN14**
Costa Rica	Flora		Hydro power plants of Don Pedro and Rio Volcán: funding of the activities conducted by the FUNDECOR NGO for maintenance of 3 and 5 hectares of reforested areas, respectively. [Enel Latin America]	**EN14**
Guatemala	Avian fauna		Maintenance of corridors near transmission lines over an overall surface area of about 6 hectares. [Enel Latin America]	**EN12**
	Flora		Hydro power plants of Matanzas/San Isidro and El Canadá/Montecristo: reforestation of the areas surrounding the plants (1.13 and 17.50 hectares, respectively), which are undergoing heavy deforestation by the local population. [Enel Latin America]	**EU13** **EN13**

Country	Conserved species or aggregate species	IUCN cat. (1)	Project (2)	GRI Indicator
Panama	Flora and fauna and, in particular, the Jaguar *(Panthera onca)*	NT	Administration of 19,500 hectares of forest, a national protected area with unique animal species (large mammals, birds, reptiles, etc.) and vegetal species. Promotion of research activities starting with biodiversity monitoring in the Fortuna site, with the involvement of national- and international-standing institutes. These activities identified, among others, near-threatened species, such as the Jaguar. [Enel Latin America jointly with the Smithsonian Tropical Research Institute and the National Conservancy Association]	**EN13** **EN14**

(1) IUCN risk of extinction: Extinct: EX EW; Threatened: CR EN VU; At lower risk: CD NT LC

(2) For each project, the following data are generally reported: location/name, content (referring to the species shown in the first column, unless otherwise specified) and, between brackets, the project coordinator/s.

The following table includes (but is not limited to) the species that are included in the IUCN Red List and that are located in the protected areas of some of Enel's installations (chiefly thermal power plants). Similar data on the high number of other protected areas where the Group carries out hydro and wind power generation activities are posted at http//www.enel.com/it-IT/sustainability/environment/.

CONSERVED SPECIES FALLING WITHIN ENEL'S INSTALLATION SITES

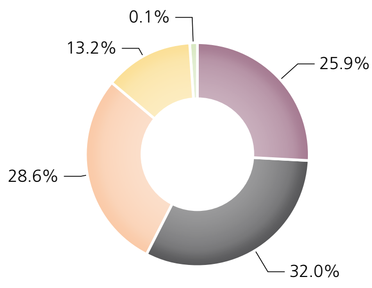
Country	Conserved species	IUCN cat. (1)	Protected area	GRI Indicator
Bulgaria	Branta ruficollis and Oxyura leucocephala	EN	Protected area connecting the Maritza East III power plant with lake Rozov Kladenetz through the Sokolitza river.	**EU13**
	Aquila clanga and Aythya nyroca	NT		
	Great White Egret *(Egretta alba)*, Montagu's Harrier *(Circus pygargus)*, Hen Harrier *(Circus cyaneus)*, Purple Heron *(Ardea purpurea)*, Spotted Eagle *(Aquila pomarina)*, Goshawk *(Accipiter gentilis)*, Red-Backed Shrike *(Lanius collurio)*, Short-Toed Snake-Eagle *(Circaetus gallicus)*, Tawny Pipit *(Anthus campestris)*, Eastern Olivaceous Warbler *(Hippolais pallida)*, Great Reed Warbler *(Acrocephalus arundinaceus)*, Ruddy Shelduck *(Tadorna ferruginea)*, Black-Winged Stilt *(Himantopus himantopus)*, White Stork *(Ciconia ciconia)*, Black Stork *(Ciconia nigra)*, Bewick's Swan *(Cygnus bewickii)*, Whooper Swan *(Cygnus cygnus)*, Great Tit *(Parus major)*, Long-Tailed Tit *(Aegithalos caudatus)*, Ruff *(Philomachus pugnax)*, Common Cuckoo *(Cuculus canorus)*, Yellow Wagtail *(Motacilla flava)*, Western Marsh Harrier *(Circus aeruginosus)*, European Honey-Buzzard *(Pernis apivorus)*, Honey Buzzard *(Pandion haliaetus)*, Little Egret *(Egretta garzetta)*, Lesser Kestrel *(Falco naumanni)*, Pygmy Cormorant *(Phalacrocorax pygmeus)*, Glossy Ibis *(Plegadis falcinellus)*, Black-Crowned Night-Heron *(Nycticorax nycticorax)*, Spanish Sparrow *(Passer hispaniolensis)*, Dalmatian Pelikan *(Pelecanus crispus)*, Syrian Woodpecker *(Dendrocopos syriacus)*, Long-Legged Buzzard *(Buteo rufinus)*, European Tree Frog *(Hyla arborea)*, Eurasian Golden Oriole *(Oriolus oriolus)*, Red-Rumped Swallow *(Hirundo daurica)*, Squacco Heron *(Ardeola ralloides)*, Eurasian Spoonbill *(Platalea leucorodia)*, Arctic Loon *(Gavia arctica)*, Little Bittern *(Ixobrychus minutus)*, Great Bittern *(Botaurus stellaris)*, Eurasian Hoopoe *(Upupa epops)*	LC		
France	Red Kite *(Milvus milvus)*	NT	Zone designated as ZICO (Zone d'Importance pour la Conservation des Oiseaux).	**EN15**
	White Stork *(Ciconia ciconia)* and Common Buzzard *(Buteo buteo)*	LC		
Italy	Hermann's Tortoise *(Testudo Hermanni)* and European Pond Turtle *(Emys orbicularis)*	NT	Littoral area facing the thermal power plant of Montalto di Castro (Viterbo), hosting two sites of Community importance.	**EN15**
	Little Egret *(Egretta garzetta)* and Black-Crowned Night-Heron *(Nycticorax nycticorax)*	LC		
	Pied Avocet *(Recurvirostra avosetta)*, Black-Winged Stilt *(Himantopus himantopus)*, Kentish Plover *(Charadrius alexandrinus)*, Black-Headed Gull *(Chroicocephalus ridibundus)*, Little Egret *(Egretta garzetta)*, Pygmy Cormorant *(Phalacrocorax pygmeus)*, Glossy Ibis *(Plegadis falcinellus)*, Whiskered Tern *(Chlidonias hybridus)*, anatids, caradriforms	LC	Pialassa Baiona lagoonal wetland area, adjoining the thermal power plant of Porto Corsini (Ravenna).	**EN13**

(1) IUCN risk of extinction: Extinct: EX EW; Threatened: CR EN VU; At lower risk: CD NT LC

Awareness, training & education

Environmental training & education in 2009

Total: **232,056** person-hours

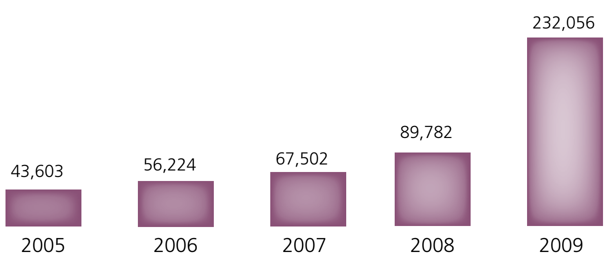


Environmental awareness, training & education initiatives are core elements of the yearly plan for improving the skills and know-how of Enel's human resources.

In this Report, training & education activities are mentioned with reference to the recipient units, whatever the organizational entity that proposed or manages them. The reported data also concern the support personnel, i.e. personnel members rendering services to multiple units, even if such units are involved in the same industrial business activity; indeed, the environmental responsibilities of an intellectual nature that these personnel members fulfill are assumed to provide support to industrial operations only.
In 2009, Enel developed education modules for its environment-dedicated personnel: in the overall Group, approximately 232,000 person-hours of courses were delivered. Training & education efforts in 2009 were concentrated in places with installations under construction and/or with certified environmental management systems.

The Generation and Energy Management Division held roughly 9,500 person-hours of courses.
The Infrastructure and Networks Division totaled about 6,500 person-hours.
Excellence in environmental management is key to the culture of Endesa and one of the goals of its multi-year environment & sustainability plan. Therefore, also in 2009, Endesa made huge investments in education & training, which translated into roughly 191,000 person-hours of courses. This high value is due, above all, to the increase recorded in Argentina and Chile (in the latter case, it was related to the construction of the Bocamina II plant). The hours of environmental training & education delivered by Endesa clearly affected the total number of hours of training & education delivered by the Enel Group in 2009.
The International Division delivered about 18,500 person-hours of courses.
The courses held by the Renewable Energy Division were equal to approximately 742 person-hours.

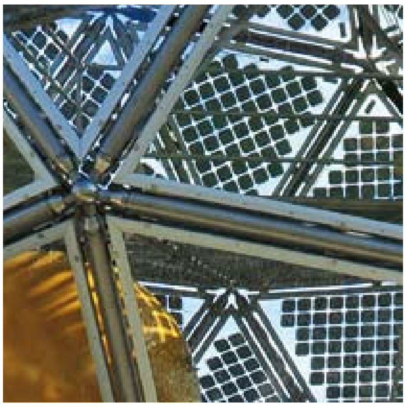
Environmental training & education
(person-hours)



Enel also relies on communication for disseminating knowledge of its initiatives internally and externally.
Its intranet site has a structured thematic section on environmental topics. The environmental section comes with: CEO's messages, environmental policy, Environmental Reports, data on environmental management systems, environmental procedures issued at different organizational levels. For environment-dedicated personnel, access to the environmental reporting application is provided. Links to the environmental pages of Enel's intranet and Internet sites are also provided.

Enel's websites (http://www.enel.it/it-IT/azienda/ambiente/ and http://www.enel.com/en-GB/sustainability/environment/) have a comprehensive section dedicated to environmental themes, called "Enel for the Environment" ("Environmental Policy" on the international website).
The page provides access to the Environmental Reports published over the years and gives an overview of:

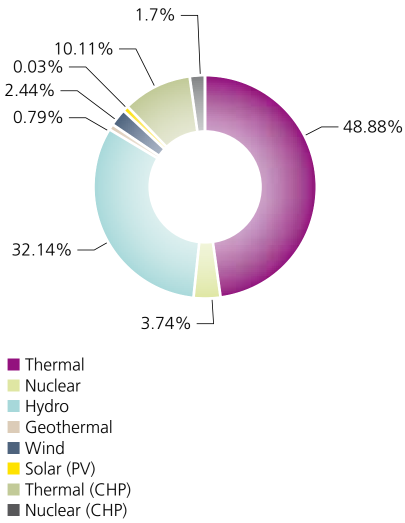
- the Group's environmental policy;
- commitment to the fight against climate change, renewables, energy efficiency and biodiversity conservation;
- ISO 14001 certifications;
- EMAS Environmental Declarations;
- innovative projects;
- emission abatement (zero-emission) projects.



Group's Eco-Balance

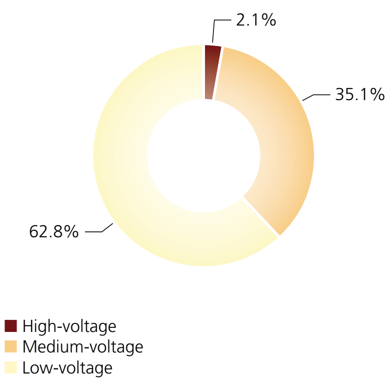
Net maximum electrical capacity
of power plants as of Dec 31, 2009

Total: **94,199** MW



Circuit-length of power lines
as of Dec. 31, 2009

Total: **1,817,997** km

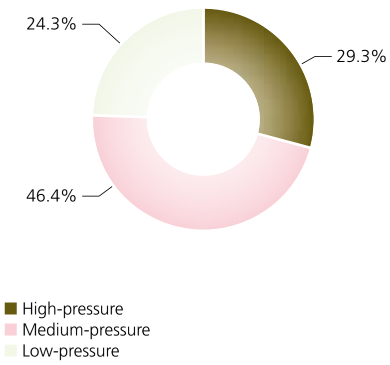


Electricity generation (especially thermal) is the activity of Enel which has the most significant effects on and interactions with the environment.
However, the Eco-Balance takes also into consideration the other activities that Enel carries out in the world and quantifies their interactions with the environment in an integrated way.
The data of the Eco-Balance are divided into three parts:
> resources;
> processes and products;
> emissions, liquid releases and waste.
For each item, the Eco-Balance provides and comments on the data for the past five years.

In the past 5 years, Enel has recorded major changes in its assets.
> In 2005, Enel completed the sale of its controlling stake in Terna and Wind, which are no longer included in its scope of consolidation.
> In April of the same year, Enel acquired 51% of two electricity distribution companies in Romania (Banat and Dobrogea).
> In 2006, Enel completed its acquisition of the Bulgarian company Enel Maritza 3.
> In 2006, Enel also continued its expansion into the natural-gas distribution business, by purchasing a grid with an about 15,000 customer base in the Italian provinces of Catania, Ragusa and Syracuse.
> In late April 2006, Enel acquired 66% of Slovenské elektrárne, the first power producer of Slovakia and the second in central-eastern Europe, with a generating capacity of roughly 4,600 MW, balanced among nuclear, thermal and hydro.
> In the same year and in 2007, Enel continued to sell part of its Italian power grids to local companies, as per Legislative Decree 79/1999 on rationalization of the electricity distribution business.
> In the course of 2007, Enel acquired important renewable power generation assets in Latin America (Brazil, Mexico and Panama).
> In October of the same year, Enel completed the acquisition of 67.05% of the Endesa Group, the major power producer and distributor of Spain with significant operations in a large part of Latin America.
> In the same month, Enel acquired control of some wind generation assets located in Greece.
> In June 2008, Enel included its acquisition of a controlling stake in the Russian company OGK-5 in its accounting records.
> In June 2008, Enel acquired a majority holding in the electricity distribution company Muntenia Sud (then Enel Distributie Muntenia) in Romania.
> In the same month, Enel sold the companies Viesgo Generación and Viesgo Distribución to E.ON.
> In July 2008, Enel inaugurated its first wind farm in France.
> In the same year, gas grid acquisitions in Italy - especially of the infrastructure of Avisio (Trento) - were dominant over sales.
> In 2009, most of the high-voltage distribution grid in Italy was transferred from Enel Distribuzione to Terna under the agreement signed on December 29, 2008.

Length of gas pipelines
as of Dec. 31, 2009

Total: **3,440** km



> In February of the same year, Enel completed the acquisition of Endesa by transferring some hydro and wind power plants in Portugal and Spain to Acciona, as part of the deal under which Acciona sold its stake in Endesa to Enel.
> In September 2009, Enel sold 80% of Enel Rete Gas, which is no longer part of the Group's consolidated assets.
> In 2009, the Enel Group started its operations in Ireland (thermal generation) through Endesa and extended its operations in Bulgaria (wind generation) through Enel Green Power.

To facilitate the understanding and assessment of the Eco-Balance, the following graphs and tables summarize the key data of Enel's installations in the world as of December 31 of each of the years elapsed from 2005 to 2009 ("status data").
The status data and the absolute values of resources, processes and products, emissions, liquid releases and waste are accompanied by appropriate indicators (ratios between homogeneous or heterogeneous quantities). These indicators express Enel's environmental performance over time, whatever the volume of activities in each year. Details on their nature and commentaries, if any, on their trends are provided.
Details on absolute data and indicators are shown in the datasheets and tables pertaining to each country where Enel is present.

In the tables of this section and in those of the individual countries, the expression "various activities" means a number of activities (not all of which are present in the different contexts) which contribute – albeit to a minor extent – to the following:
> consumption of fuels (in this case, the activities are mining & extracting, fuel storage & handling, geothermal drilling, operation of auxiliary boilers and emergency generating sets in industrial business activities other than thermal generation, service and real-estate management);
> consumption of electricity (in this case, the activities are mining & extracting, fuel storage & handling, gas distribution, service and real-estate management);
> CO_2 emissions (in this case, the activities are mining & extracting, fuel storage & handling, gas distribution, geothermal drilling, operation of auxiliary boilers and emergency generating sets in industrial business activities other than thermal generation, service and real-estate management);
> waste production (in this case, the activities are mining & extracting, fuel storage & handling, gas distribution, service and real-estate management).

Status Data

Absolute data

(1/2)

		2005	2006	2007	2008	**2009**
Power-generating installations						
Power plants	no.	728	760	1,172	1,158	1,162
thermal	no.	53	53	104	98	105
nuclear	no.	-	-	5	5	5
hydro (1)	no.	606	637	873	858	845
geothermal	no.	32	31	32	32	34
wind	no.	33	35	154	161	167
solar (photovoltaic)	no.	4	4	4	4	6
Net maximum electrical capacity	MW	46,139	46,045	71,687	70,222	82,916
thermal	MW	29,226	27,472	39,538	38,088	46,046
nuclear	MW	-	-	2,441	2,442	3,522
hydro (1)	MW	15,573	17,199	27,122	26,561	30,279
geothermal	MW	671	671	678	687	742
wind	MW	666	699	1,902	2,440	2,303
solar (photovoltaic)	MW	4.17	3.88	4.52	4.20	23.9
Combined heat & power installations						
Power plants	no.	8	12	12	21	22
thermal	no.	8	10	10	19	20
nuclear	no.	-	2	2	2	2
Net maximum electrical capacity	MW	103	3,341	2,995	11,218	11,283
thermal	MW	103	1,701	1,355	9,506	9,521
nuclear	MW	-	1,640	1,640	1,712	1,762
Useful thermal capacity	million kcal/h	43.5	681	477	3,198	3,340
thermal	million kcal/h	43.5	319	87.9	2,785	2,876
nuclear	million kcal/h	-	361	389	413	464
Power lines (circuit-length)						
Total	km	1,176,268	1,179,280	1,571,009	1,582,066	1,817,997
high-voltage	km	25,916	24,965	45,023	44,753	38,705
medium-voltage	km	367,703	369,566	536,374	542,757	638,698
low-voltage	km	782,649	784,749	989,613	994,556	1,140,593
Gas pipelines						
Total	km	29,372	30,600	30,664	31,765	3,440
high-pressure	km	191	191	58.8	205	1,007
medium-pressure	km	11,315	11,615	11,766	12,342	1,596
low-pressure	km	17,866	18,794	18,839	19,219	837

-: no data due to absence of activities in the year.

(1) The data do not include those of the Gabcikovo power plant in Slovakia (net maximum electrical capacity: 739 MW – net generation in 2009: 2,376 MWh), which is operated, but not owned, by Enel.

(2/2)

		2005	2006	2007	2008	**2009**
Mining & extracting activities (1)						
Mining activities						
Mines	no.				7	8
coal	*no.*				*4*	*5*
other	*no.*				*3*	*3*
Amount of fuels extractable since the start of activities	Mt				60	60
Areas occupied by excavations and other activities	ha				2,724	5,351
coal mines	*ha*				*2,714*	*5,341*
other mines	*ha*				*10*	*10*
Extracting activities						
Areas occupied by excavations, drilling and other activities	ha				2,300	1,800
EN29 Service & real-estate management (2)						
Vehicle fleet						
service vehicles	no.			14,585	14,065	16,185
special vehicles	no.			2,117	2,244	2,537
vehicles for both private and service use	no.			1,030	1,019	1,244
Gross real-estate surface area	thousand m^2			1,542	1,749	102,981

(1) These activities have been surveyed since 2008.
(2) The surveying of these activities began in Italy in 2007 and has been gradually extended to the overall Group.

Performance Indicators - KPIs

			2005	2006	2007	2008	**2009**
EN29	**Land**						
	LV cable lines						
	overhead	% of entire LV grid	51.9	52.1	51.5	45.2	41.9
	underground	% of entire LV grid	29.9	30.6	29.5	32.8	32.6
	Total cable lines	**% of entire LV grid**	**81.8**	**82.7**	**80.9**	**78**	**74.5**
	MV cable lines						
	overhead	% of entire MV grid	2.16	2.24	2.01	1.68	2.03
	underground	% of entire MV grid	35.4	35.9	30.4	32.3	30.5
	Total cable lines	**% of entire MV grid**	**37.6**	**38.1**	**32.4**	**34**	**32.5**
	Overhead and underground cables in HV+MV+LV distribution lines	% of total distribution grid	66.2	67	62.2	60.8	58.3

EN29 Overhead and underground cables in power lines

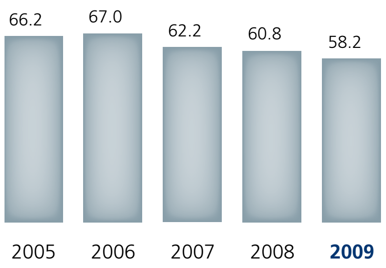
To express land and landscape protection efforts, the percentage ratio of the length of overhead and underground cables in power lines to the total length of power lines is reported by voltage level and type of cable.

The reported length of low-voltage lines includes the last section, which extends from the junction box to the point of delivery. This also applies to Romania (whose electricity distribution business *de facto* corresponds to the one of the International Division) but only from 2009 on; indeed, for the 2005-2008 period, alignment of the data of Romania with those reported by the rest of the Group was not feasible.

This explains why the percentage of cables in the power lines of the overall Group dropped from 60.8% in 2008 to 58.2% in 2009, in spite of the positive effect of actual changes in the length of cable and bare-conductor lines in all other countries.

Conversely, the percentage of overhead and underground cables in power lines grew in both the Iberia and Latin America Division (Spain, Argentina, Brazil, Chile, Colombia, Peru: from 36.4% to 36.9%) and in the Infrastructure and Networks Division (Italy from 70.1% to 71.8%).

Overhead and underground cables in HV+MV+LV distribution lines
(% of total length)



EN29 Transport

The data of the Group’s vehicles are shown in the table.

The impact of the Group’s vehicle fleet is due to fuel consumption and to polluting and greenhouse-gas emissions into the atmosphere. Enel is trying to mitigate this impact by switching to certified Euro 4 and higher-efficiency vehicles.

Under its ISO 14001-certified or EMAS-registered environmental management systems, Enel assesses the indirect impact caused by suppliers and contractors in the use of vehicles, so as to reward companies with more environmentally sustainable behaviors (e.g., all other conditions being equal, preference is given to ISO 14001-certified or EMAS-registered companies).

Resources

Absolute data

(1/4)

		2005	2006	2007	2008	**2009**
EN1 EN3 **Fossil fuels**						
Thermal generation						
fuel oil	thousand t	3,883	3,690	2,157	2,862	3,154
	thousand toe	3,821	3,649	2,116	2,818	3,093
	TJ	159,997	152,775	88,609	118,003	129,503
HS	*thousand t*	*109*	*8.28*	*46.4*	*6.18*	*6.92*
	thousand toe	*105*	*7.86*	*44.6*	*5.87*	*6.57*
	TJ	*4,376*	*329*	*1,868*	*246*	*275*
MS	*thousand t*	*163*	*247*	*179*	*310*	*256*
	thousand toe	*157*	*237*	*171*	*300*	*248*
	TJ	*6,583*	*9,941*	*7,167*	*12,541*	*10,369*
LS	*thousand t*	*1,180*	*1,597*	*831*	*1,708*	*2,180*
	thousand toe	*1,153*	*1,565*	*798*	*1,679*	*2,137*
	TJ	*48,254*	*65,533*	*33,427*	*70,317*	*89,461*
VLS	*thousand t*	*2,432*	*1,839*	*1,100*	*838*	*711*
	thousand toe	*2,407*	*1,838*	*1,102*	*834*	*702*
	TJ	*100,784*	*76,972*	*46,147*	*34,898*	*29,398*
gas-oil	thousand t	65.2	81.1	551	1,653	1,909
	thousand toe	66.6	82.7	498	1,619	1,958
	TJ	2,787	3,464	20,833	67,773	81,966
natural gas	million m^3	8,625	7,343	8,053	10,130	9,718
	thousand toe	7,282	6,228	6,896	8,678	8,285
	TJ	304,874	260,735	288,705	363,315	346,880
technologically captive use	*million m^3*	*5,137*	*4,550*	*5,702*	*8,391*	*8,378*
	thousand toe	*4,344*	*3,849*	*4,886*	*7,187*	*7,149*
	TJ	*181,860*	*161,146*	*204,561*	*300,890*	*299,312*
of which in combined-cycle units	million m^3	4,266	3,760	5,077	7,809	7,829
	thousand toe	3,613	3,175	4,340	6,684	6,679
	TJ	151,260	132,934	181,694	279,833	279,621
non-technologically captive use	*million m^3*	*3,488*	*2,793*	*2,351*	*1,739*	*1,339*
	thousand toe	*2,938*	*2,379*	*2,010*	*1,491*	*1,136*
	TJ	*123,014*	*99,588*	*84,143*	*62,425*	*47,568*
coal	thousand t	14,231	12,537	16,635	19,998	20,598
	thousand toe	8,313	7,377	9,306	11,328	11,800
	TJ	348,060	308,848	389,617	474,278	494,036
brown coal	thousand t	6,491	6,763	7,192	8,382	7,915
	thousand toe	1,127	1,157	1,199	1,548	1,440
	TJ	47,176	48,461	50,203	64,804	60,300
coke-oven gas	million m^3			0.002	0.002	0.003
	thousand toe			0.003	0.002	0.003
	TJ			0.126	0.084	0.126
Total	**thousand toe**	**20,610**	**18,493**	**20,015**	**25,991**	**26,576**
	TJ	**862,894**	**774,283**	**837,968**	**1,088,172**	**1,112,685**

RESOURCES - ABSOLUTE DATA (2/4)

		2005	2006	2007	2008	**2009**
EN1 EN3 **Fossil fuels**						
Thermal generation (CHP)						
fuel oil	thousand t	52.5	47.2	55.6	84.4	89.4
	thousand toe	50	45.5	52.7	83.2	87.0
	TJ	2,109	1,905	2,205	3,484	3,641
MS	*thousand t*	*0*	*0*	*0*	*55.4*	*59.7*
	thousand toe	*0*	*0*	*0*	*53.6*	*56.4*
	TJ	*0*	*0*	*0*	*2,244*	*2,362*
LS	*thousand t*	*52.5*	*47.2*	*55.6*	*29*	*29.7*
	thousand toe	*50.4*	*45.5*	*52.7*	*29.6*	*30.5*
	TJ	*2,109*	*1,905*	*2,205*	*1,240*	*1,279*
gas-oil	thousand t	0.010	0.043	0.031	0.030	0.003
	thousand toe	0	0.044	0.032	0.033	0.004
	TJ	0	1.84	1.34	1.38	0.167
natural gas	million m^3	58.6	74.8	59.8	3,948	6,185
	thousand toe	59.9	65.8	54.1	3,192	5,018
	TJ	2,507	2,754	2,266	133,652	210,098
technologically captive use	*million m^3*	*31.5*	*18.1*	*21.4*	*185*	*65.6*
	thousand toe	*32.3*	*16.7*	*19.7*	*154*	*56.1*
	TJ	*1,352*	*699*	*826*	*6,436*	*2,348*
of which in combined-cycle units	million m^3	31.5	0.258	0	168	51
	thousand toe	32.3	0.24	0	139	42.5
	TJ	1352	10	0	5,822	1,780
non-technologically captive use	*million m^3*	*27.1*	*56.6*	*38.4*	*3,764*	*6,119*
	thousand toe	*27.6*	*49.1*	*34.4*	*3,039*	*4,962*
	TJ	*1,156*	*2,055*	*1,440*	*127,216*	*207,750*
coal	thousand t	0	1,093	837	7,936	11,993
	thousand toe	0	657	502	3,204	5,073
	TJ	0	27,504	20,997	134,143	212,409
brown coal	thousand t	0	2,036	1,981	2,318	2,308
	thousand toe	0	501	505	585	571
	TJ	0	20,978	21,128	24,494	23,894
Various activities (1)	thousand toe	5.52	6.25	25	39.6	56.5
	TJ	231	262	1,047	1,658	2,366
Grand total	**thousand toe**	**20,726**	**19,769**	**21,152**	**33,095**	**37,382**
	TJ	**867,742**	**827,687**	**885,612**	**1,385,604**	**1,565,092**

(1) The data do not include those of the Gabcikovo power plant in Slovakia (net maximum electrical capacity: 739 MW – net generation in 2009: 2,376 MWh), which is operated, but not owned, by Enel.

(3/4)

			2005	2006	2007	2008	**2009**
EN1 EN3	**Biomass and waste**						
	Thermal generation						
	Solid biomass	t	753	5,913	65,427	115,905	223,616
		toe	175	1,431	17,458	32,271	70,717
		TJ	7	60	731	1,351	2,961
	Liquid biomass	t	0	0	36.9	114	0.336
		toe	0	0	37.6	115	0.331
		TJ	0	0	1.57	4.82	0.014
	Biogas	thousand m³	0	0	0	0	33,104
		toe	0	0	0	0	13,197
		TJ	0	0	0	0	553
	RDF	t	18,362	26,997	32,081	22,546	55,235
		toe	6,592	10,931	12,990	9,129	23,027
		TJ	276	458	544	382	964
	Thermal generation (CHP)						
	Solid biomass	t	327,013	403,901	400,458	451,239	411,188
		toe	66,567	89,948	89,181	100,479	91,910
		TJ	2,787	3,766	3,734	4,207	3,848
	Grand total	**thousand toe**	**73.3**	**102**	**120**	**142**	**199**
		TJ	**3,070**	**4,283**	**5,010**	**5,945**	**8,326**
EN1 EN3	**Geothermal fluid**						
	Total fluid extracted	thousand t	45,804	49,929	62,075	59,371	76,375
	net of reinjected fluids	*thousand t*	*32,080*	*32,985*	*30,364*	*29,855*	*28,462*
	Used for electricity generation	thousand t	41,687	43,937	55,812	53,130	70,982
EN4	**Primary electricity**						
	Various activities	million kWh	4.08	5.35	127	131	163
EN8	**Water for industrial uses**						
	From rivers (including meteoric waters from secondary rainfall)	million m³	34.8	141	132	265	326
	From wells	million m³	6.91	7.27	6.32	11.3	11.9
	From aqueducts	million m³	6.43	5.84	6.65	8.91	11
	Total abstraction from inland waters	**million m³**	**48.1**	**155**	**145**	**286**	**349**
	From the sea (as-is)	million m³	13.9	12.2	12.1	13.0	8.60
	From the sea (desalinated)	million m³	7.32	7.17	6.47	7.63	9.06
EN10	From waste waters (used inside the plants)	million m³	3.28	6.35	6.16	15.2	16.9
	Total requirements	**million m³**	**72.6**	**180**	**170**	**321**	**383**
	for thermal generation	million m³	71.9	70.5	85.1	109	109
	for thermal generation (CHP)	million m³	0.599	74.3	23.8	65.9	59.8
	for nuclear generation	million m³	-	-	24	106	171
	for nuclear generation (CHP)	million m³	-	35.3	37	38.5	40.4
	for geothermal drilling	million m³	0.043	0.047	0.049	0.007	0.211
	for fuel storage & handling	million m³	0.049	0.045	0.010	0.016	0.051
	for mining & extracting activities	million m³	-	-	-	2.55	3.09
EN8 EN21	**Open-cycle cooling water**						
	For thermal generation (simple and CHP)	million m³	13,540	13,145	11,809	20,166	23,210
	For nuclear generation (simple and CHP)	million m³	-	-	433	1,827	2,435
	Total	**million m³**	**13,540**	**13,145**	**12,242**	**21,993**	**280,138**
	Water for non-industrial uses						
	Real-estate & service management	million m³	-	-	1.32	1.52	35.8

-: no data due to absence of activities in the year.

RESOURCES - ABSOLUTE DATA (4/4)

			2005	2006	2007	2008	2009
EN1	**Expendables** (1)						
	Resins	t	74.1	24	82.5	148	504
	Hydrazine	t	13.7	19.6	79.8	58.3	83.4
	Carbohydrazide	t	22.1	17.7	270	269	296
	Hydrogen peroxide	t	81.8	44.5	83.5	46.3	0.231
	Ammonia	t	19,787	19,170	22,125	20,127	20,567
	Limestone for flue-gas desulfurization	t	162,412	334,854	514,034	1,136,959	1,097,191
	Magnesium oxide	t	41.1	53.2	33.3	136	326
	Sodium hypochlorite	t	1,084	1,439	2,448	7,450	5,827
	Chlorine dioxide	t	0	0	0	0	0.514
	Ferrous sulfate	t	45.6	0.0	10.2	255	272
	Ferrous chloride	t	45.4	61.4	39.9	44.2	41
	Trisodium phosphate	t	20	3.63	12.7	29.8	35.6
	Lime	t	8,913	9,465	26,360	36,436	33,374
	Ferric chloride	t	783	702	1,128	1,091	1,239
	Polyelectrolyte	t	41.4	84.2	57.7	93.5	120
	Sulfuric & hydrochloric acids	t	8,965	7,188	8,242	12,361	15,111
	Caustic soda	t	10,281	14,630	17,653	21,154	32,118
	Bentonite	t	1,505	1,927	549	1,696	1,739
	Barite	t	0	90.3	0	0	471
	Geothermal cement	t	3,676	3,506	2,729	3,909	4,559
	Lubricating oil	t	950	5,304	1,068	11,905	17,702
	Dielectric oil	t	286	2,249	494	1,604	1,383
	Printing paper	t			1,393	1,224	1,284
	Other	t	6,010	1,781	2,281	14,140	12,519
	Total	**t**	**225,037**	**402,613**	**601,172**	**1,271,136**	**1,246,764**
	for thermal generation	t	210,666	285,393	482,865	1,125,440	1,090,140
	for thermal generation (CHP)	t	82.7	95,667	92,475	110,896	108,781
	for nuclear generation	t	-	-	0	2,433	1,047
	for nuclear generation (CHP)	t	-	-	5,771	5,738	6,361
	for hydro generation	t	183	3,671	301	616	797
	for geothermal activities	t	13,936	17,846	17,845	20,661	30,557
	for wind generation	t	0.663	7.77	17.5	62.5	1,395
	for fuel storage & handling	t	7	1.57	0.047	0.105	712
	for electricity distribution	t	162	26.4	413	594	624
	for gas distribution	t	n.a.	n.a.	91.1	91.8	n.a.
EN1	**PCB survey** (2)						
	Equipment & transformers with PCBs >500 ppm (excluding their oil)	t	-	-	6,634	77.5	1,305
	Oil with PCBs >500 ppm contained in equipment & transformers	t	-	-	3,346	69.8	34.1
	Equipment & transformers with PCBs>50 ppm and ≤500 ppm (excluding their oil)	t	-	-	142	988	21,602
	Oil with PCBs >50 ppm and ≤500 ppm contained in equipment & transformers	t	-	-	216	341	3,158

-: no data due to absence of activities in the year.
n.a.: not available.

(1) The data do not include those of the Gabcikovo power plant in Slovakia (net maximum electrical capacity: 739 MW – net generation in 2009: 2,376 MWh), which is operated, but not owned, by Enel.
(2) The survey began in 2007.

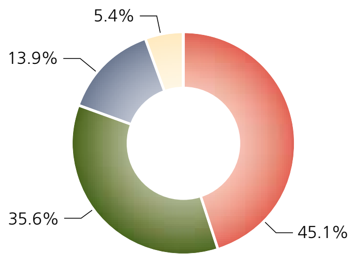
This part of the Eco-Balance reports the consumption of energy resources (fossil and non-fossil fuels, geothermal fluid and primary electricity) and of non-energy resources (water for industrial uses, expendables).

EN1
EN3

Fuels

Fossil-fuel consumption for thermal generation (simple and combined heat & power) in 2009

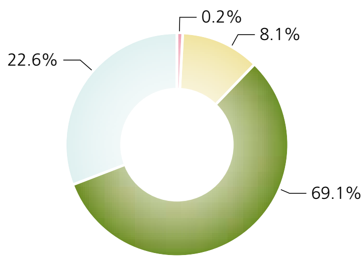
Total: **37.3** million toe



Coal
Natural gas
Fuel oil & gas-oil
Brown coal

Fuel-oil consumption for thermal generation in 2009

Total: **3.2** million t



HS
MS
LS
VLS

The near totality of fuels (mostly of fossil origin) are used for thermal generation.

> The consumption of fuel oils is indicated on the basis of their sulfur content (HS = high: >2.5%; MS = medium: >1.3% and ≤2.5%; LS = low: >0.5% and ≤1.3%; VLS = very low: ≤0.5%).

> Coal and brown coal are used in power plants usually equipped with flue-gas desulfurizers and denitrification systems.

> Gas-oil, a high-cost fuel, is used on an exceptional basis: i) in single-cycle gas-turbine power plants that are not connected to the natural gas grid (as an emergency fuel in the other gas-turbine power plants); ii) in diesel-engine power plants (supplying some minor Italian islands); iii) in start-up of steam-cycle power plants, auxiliary boilers and emergency generating sets.

> The consumption of natural gas is broken down on the basis of its uses: non-technologically captive (when the use of gas is a corporate choice) and technologically captive (when gas feeds single-cycle, combined-cycle or repowering gas turbines, for which it is the only practicable option).

> The contribution of non-fossil fuels consists of:
- refuse-derived fuel (RDF), co-fired with coal;
- solid biomass, used as main fuel or co-fired with coal;
- biodiesel, used in some gas-turbine units located on small Italian islands.
- biogas, used in some small installations with alternative engines located in Spain.

Natural gas and start-up gas-oil feed the boilers which heat the fuel oil contained in the storage tanks (heating fluidifies fuel oil before its transfer to destination). Small quantities of gas-oil are also used for driving geothermal drilling equipment and in emergency generating sets, which are present in practically all of Enel's installations.

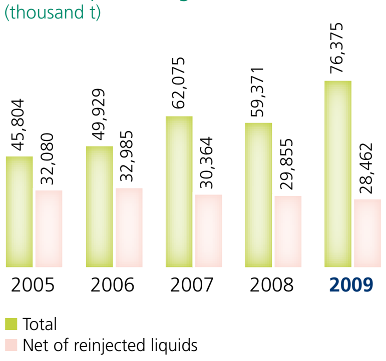
Fuel consumption, measured and certified in each installation, is expressed both in metric units (thousand tonnes or million cubic meters) and in energy potential (tonnes or thousand tonnes of oil-equivalent – toe or ktoe – and thousands of billions of Joules - Terajoules – TJ). To sum the various contributions, use is instead made of the corresponding energy potential.

The consumption of fossil fuels in the overall Group went up from 33.1 Mtoe in 2008 to 37.4 Mtoe in 2009 as a result of full consolidation of Endesa (February 2009) and of the different weight of OGK-5, whose data are reported for the first time for the entire year.
In the mix of fuels, the share of coal went up, the one of gas-oil was slightly up, while those of brown coal, natural gas and fuel oil were down.
With respect to 2008, the consumption of oil products with different sulfur content was as follows: high-sulfur oil remained practically unchanged and close to zero (0.2%); medium-sulfur oil was down (from 12 to 10%); low-sulfur oil was up (from 59% to 68%); and very low-sulfur oil was down (from 29% to 22%).

Geothermal fluid

EN1
EN3

Consumption of geothermal fluid
(thousand t)



Geothermal fluid, in the form of steam at adequate pressure and temperature, is the energy source for geothermal generation.
If the extracted fluid has thermodynamic properties unsuitable for geothermal generation, it may be used for the same purpose in an indirect way by resorting to binary cycles (e.g. in North America, where the geothermal resource is a low-salinity brine at a temperature of 135-165 °C), or it may be employed in non-electric uses. In the case of Enel, these uses are now limited to the supply of heat (especially for greenhousing and district heating, but also as process heat in the food industry). For the supply of heat, use is also made of the fluid which becomes available after expansion in Enel's only geothermal unit equipped with an atmospheric-exhaust turbine.
The capability of geothermal fields is mostly sustained by the reinjection of fluids into geothermal reservoirs. These fluids consist of: water entrained by steam and separated from it at the well outlet; steam condensed after its expansion in the turbines; and liquid remaining after use in the primary circuits of binary cycles and after non-electric uses. Reinjection and extraction of fluids into/from the deep subsoil do not jeopardize shallow aquifers which are isolated from the wells by casings, which are cemented to the soil and between them.

The difference between the total fluid extracted and the fluids reinjected is due to: incondensibility of the gases contained in geothermal steam; vaporization and entrainment of condensates in cooling towers (by far the largest contribution) and inevitable losses.
The amount of fluid used for electricity generation mounted from 53 Mt in 2008 to 71 Mt in 2009, owing to the opening of the new wells of the Stillwater and Salt Wells power plants (Nevada - USA). In 2009, its percentage increase with respect to 2008 was higher than the one of the overall extracted fluid.

Nuclear fuel

EN1
EN3

Enriched natural uranium, improperly called "fuel", is the energy source for nuclear generation. The uranium that is found in nature is practically composed of two isotopes: uranium 238 (about 99.3%) and uranium 235 (0.7% only), as uranium 234 only accounts for 0.056%.
Uranium enrichment – usually obtained by diffusion or centrifugation of a gaseous uranium compound (hexafluoride, UF_6) – raises the U235 content to values lying in the typical range of 3-5%. U235 is the only fissile isotope: when the nucleus of a U235 atom is hit by a slow neutron, it splits up into two smaller nuclei (fission), releasing energy and other (fast) neutrons. These neutrons are slowed down by the water that is contained in light-water reactors and that acts as a "moderator" (the water also carries the heat produced by the fission process), and they hit other nuclei, inducing a chain reaction.
Nuclear fuel may generate an amount of energy 50,000 times higher than the one released upon combustion of an equal mass of fuel oil.
In a nuclear power plant, nuclear fuel management consists of three stages:
> procurement of fresh fuel;
> transport of fresh fuel to the power plant site (dry storage containers in the reactor building or fresh fuel pond), preparation of reload, reload, start-up tests, monitoring of operation, unloading from the reactor and storage in the reactor pools (prior to transfer to temporary storage pools);
> organization of the transfer of the spent fuel to the pools of the temporary

storage facility (where available, the storage facility may be on-site or off-site) or to reprocessing facilities; the spent fuel must be transferred to a temporary storage facility or to reprocessing facilities after a given number of years of operation of the plant, in order to avoid saturation of the storage capacity of reactor pools.

Reload is needed when, after being utilized in the reactor for a few years, the fuel loses its efficiency (i.e. its U235 content diminishes) owing to the fission process.

Reload is usually carried out on a 12-, 18- or 24-month basis, but only replacing a fraction of the core. Fuel is loaded into the core, shuffling the remaining assemblies that have not been unloaded, so as to optimize fuel utilization and overall efficiency of the plant. The content of fission products (regarded as high-activity and "long-lived" radioactive waste) in the spent fuel is as little as about 3%. The remaining components are: unused uranium (96%), which is recovered via reprocessing and may be used for generating new fuel; and plutonium (about 1%), which is a by-product arising from nuclear reactions and radioactive decays of U238. The plutonium isotopes (Pu239 and Pu241) are fissile. Plutonium may be recycled as Mixed Oxide fuel (MOX, i.e. $UO_2 + PuO_2$). MOX combines normal fuel with fissile substances (plutonium). MOX, consisting of 7-9% plutonium mixed with depleted uranium, is equivalent to uranium oxide fuel enriched to 4.5% in U235.

EN4 Primary electricity

Electricity is used as energy raw material in fuel-oil storage & handling, natural-gas distribution, mining & extracting activities, and real-estate management.

In the first case, it is used for pumping fuel oil into pipelines and for feeding the auxiliaries of installations.

In the case of natural-gas distribution, electricity is mainly used for cathode protection of gas pipelines and for driving the water pumps of the circuits which heat natural gas upon its depressurization.

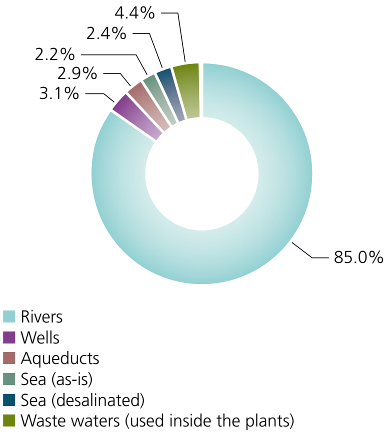
In real-estate management, electricity is used for lighting and air conditioning of buildings.

The amounts of net electricity generation and electricity wheeled on distribution grids (see "Processes and products") already take into account own consumption and losses.

EN8 Water for industrial uses

Coverage of water requirements for industrial uses in 2009

Total: **383** million m³



Water for industrial uses is consumed in thermal power plants, especially to make up for the amounts lost in the generation process of steam-turbine power plants and in closed-cycle wet cooling tower systems, but also to carry out clean-up jobs (above all of boilers) and to feed auxiliaries and desulfurizers.

To a much lesser extent, water is used:

> in geothermal activities for the preparation of the drilling slurry; the amounts of water used in these activities are very variable, depending on the type of activity (e.g. drilling of new wells, rehabilitation or deepening of existing wells) and on the characteristics of the geological formations crossed (by contrast, the functioning of cooling towers does not require water, since it is based on revaporization of part of the condensates from the steam discharged by turbines);

> in fuel-oil storage & handling, especially for preparing demineralized water; this water is used to make up for the amount lost in the closed-cycle production of steam for heating and fluidifying fuel oil before its transfer to destination.

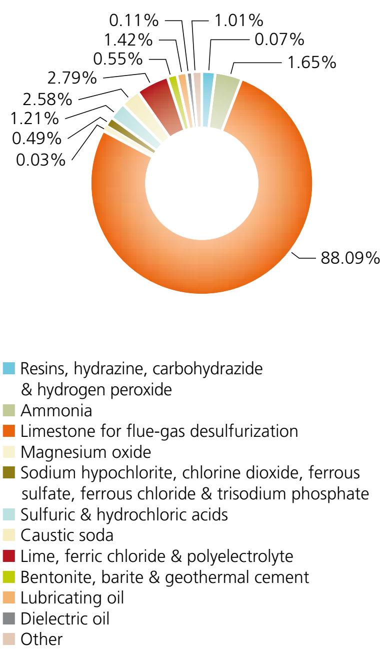
Water requirements do not include the water used for open-cycle cooling of thermal power plants, because it is returned to the original water body with negligible physico-chemical changes.

The data show the significant contribution of surface water is very high. This water is mostly used in: closed-cycle cooling systems of nuclear power plants in Slovakia and Spain; closed-cycle cooling and ash handling systems of thermal power plants in Bulgaria, Slovakia and Russia (in the latter case only for ash handling).

EN1 Expendables

Expendables in 2009

Total: **1,247** thousand t



Expendables, used mainly in thermal and nuclear power plants and in geothermal drilling, complete the list of resources.
The following are the main ones and their most common uses.

> Resins are used to produce (via ion exchange) the high-purity water which is needed for the thermal cycle of steam-cycle and nuclear power plants.
> Hydrazine, carbohydrazide and hydrogen peroxide are used for deoxygenation and pH balancing of thermal-cycle water and steam.
> Ammonia, too, is used to balance the pH of the thermal-cycle water, but above all as a reagent in the flue-gas denitrification process.
> Limestone is the reagent for the flue-gas desulfurization process.
> Magnesium oxide is injected into the flue-gas circuits of thermal plant boilers that are fed with vanadium-containing fuel, in order to prevent corrosion of heat-transfer surfaces due to the indirect action of vanadium.
> Sodium hypochlorite, chlorine dioxide, ferrous sulfate, ferrous chloride and trisodium phosphate are occasionally added to the cooling waters of steam-cycle power plants to prevent deposits and fouling or to protect condenser tube surfaces from corrosion.
> Lime, ferric chloride and polyelectrolyte are mainly used in waste water treatment, thanks to their neutralizing and/or flocculating properties.
> Sulfuric acid, hydrochloric acid and caustic soda are most commonly used in the regeneration of ion-exchange resins and in the clean-up of equipment, but also in waste water treatment. In geothermal activities, soda has various applications, including as an additive in the slurries used in the drilling of geothermal wells.
> Bentonite is a type of clay used as a slurry for the drilling of geothermal wells.
> Barite is used in some cases to thicken bentonite slurries, thereby improving their effectiveness when drilling into mechanically-unstable rock formations.
> Geothermal cement is used for joining the steel walls of new wells and for permanent plugging of disused wells.
> Printing paper is used in different formats in office activities. An increasing share of this paper derives from processes of recycling of used paper.
> "Other" expendables (antifouling, defouling, deoxidizing, antifoam, detergent and antifreezing agents, carbon dioxide, bottled hydrogen, etc.), just as lubricating oil and dielectric oil, are used in the generality of installations.

The figures shown for expendables are obtained from the accounting records of purchases, which are held in each installation. Given the small size of stocks and the high number of installations surveyed, the amounts purchased are practically equivalent to those consumed.

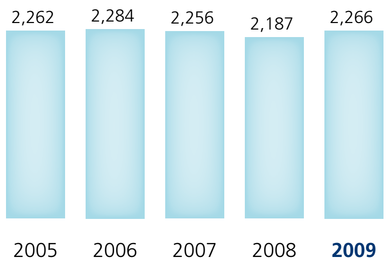
A number of factors make it extremely difficult to interpret the trends of most of the expendables at aggregated level: plurality of business activities, multiple uses of many materials, variety of installation configurations and the fact that the consumption of some products is often independent of the basic operating parameters of the installations involved.
Limestone is an exception. Together with ammonia, it plays a key role among expendables. However, unlike ammonia, limestone has a single use: in the flue-gas desulfurizers which are installed in coal-fired power plants of larger size. The increase in the consumption of limestone is due to the entry into operation of new desulfurizers in Bulgaria, Portugal and Spain and to the full consolidation of Endesa (in 2008, 67.05% only).

Performance indicators - KPIs

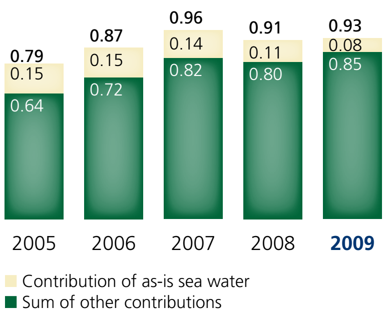
			2005	2006	2007	2008	**2009**
	Resource conservation and quality						
EN1 EN3	Net heat rate of thermal generation	kcal/kWh	2,262	2,284	2,256	2,187	2,266
EN1 EN3	Net heat rate of thermal generation (CHP)	$kcal/kWh_{eq}$	1,818	2,763	2,684	2,204	2,151
EN1 EN3	Net heat rate of geothermal generation	kcal/kWh	5,313	5,447	5,729	5,724	6,022
EN1 EN3	Net efficiency of hydro generation from pumped storage	%	72.7	71.6	72.4	72.6	75.9
EN4	Consumption of electricity for distribution grid operation	% of electricity distributed	0.164	0.129	0.141	0.106	0.101
EN1 EN3	Consumption of natural gas for distribution grid operation	% of natural gas distributed	0.124	0.150	0.156	0.137	n.a.
	Natural-gas losses along the grid	% of natural gas distributed	0.650	0.650	0.650	0.650	n.a.
EN8	Net specific requirements of water for industrial uses in thermal generation						
	including contribution of as-is sea water	liters/kWh	0.789	0.870	0.958	0.913	0.927
	excluding contribution of as-is sea water	liters/kWh	0.637	0.719	0.822	0.803	0.854
EN8	Net specific requirements of water for industrial uses in thermal generation (CHP)	$liters/kWh_{eq}$	0.616	15.1	5.32	1.87	1.19
EN8	Net specific requirements of water for industrial uses in nuclear generation	liters/kWh	-	-	5.82	6.04	7.55
EN8	Net specific requirements of water for industrial uses in nuclear generation (CHP)	$liters/kWh_{eq}$	-	3.11	3.11	3.02	2.95
EN8	Coverage of requirements of water for industrial uses						
	From rivers (including meteoric waters from secondary rainfall)	% of requirements	47.9	78.5	77.8	82.8	85.4
	From wells	% of requirements	9.52	4.04	3.72	3.17	2.66
	From aqueducts	% of requirements	8.86	3.24	3.91	2.79	2.85
	Total from inland waters	**% of requirements**	**66.2**	**85.8**	**85.5**	**88.7**	**90.9**
	From the sea (as-is)	% of requirements	19.1	6.75	7.10	4.09	2.26
	From the sea (desalinated)	% of requirements	10.1	3.98	3.81	2.39	2.38
EN10	from waste waters (used inside the plants)	% of requirements	4.52	3.52	3.63	4.78	4.44
EN1 EN3	Fossil fuel consumption for thermal generation						
	fuel oil	% of total fuel consumption	18.7	18.7	10.3	8.78	8.52
	gas-oil	% of total fuel consumption	0.321	0.419	2.36	4.90	5.25
	natural gas	% of total fuel consumption	35.4	31.8	32.9	35.9	35.6
	coal	% of total fuel consumption	40.1	40.7	46.4	44	45.2
	brown coal	% of total fuel consumption	5.44	8.39	8.06	6.45	5.39
	HS fuel oil	% of total fuel-oil consumption	2.70	0.213	2.06	0.202	0.207
	MS fuel oil	% of total fuel-oil consumption	4.06	6.43	7.89	12.2	9.56
	LS fuel oil	% of total fuel-oil consumption	31.1	43.6	39.2	58.9	68.2
	VLS fuel oil	% of total fuel-oil consumption	62.2	49.8	50.8	28.7	22.1
	natural gas, technologically captive use	% of total natural-gas consumption	59.6	61.4	70.6	61.8	54.2
	of which in combined-cycle units	*% of total natural-gas consumption*	*49.6*	*50.5*	*62.4*	*57.5*	*50.5*
	natural gas, non-technologically captive use	% of total natural-gas consumption	40.4	38.6	29.4	38.2	45.8
	Geothermal fluid for electricity generation	% of total geothermal fluid extracted	96.8	96.9	99.5	97.4	97.9

-: no data due to absence of activities in the year.
n.a.: not available.

Net heat rate of simple thermal generation (kcal/kWh)



Net specific requirements of water for industrial uses in simple thermal generation (liters/kWh)



EN1
EN3
The **net heat rate of thermal generation** defines the average quantity of fuels consumed by thermal power plants to generate 1 kWh net. In the past few years, its trend in the overall Group and in the individual countries was the result of opposite effects: the growing amount of electricity absorbed by systems abating emissions into the atmosphere; the entry into operation of new high-efficiency combined-cycle power plants (in Italy and Spain) and the full consolidation of Endesa.
The value recorded in 2009 is 79 kcal/kWh higher than the one of 2008 and 15 kcal/kWh higher than the average one of the five-year period.

EN1
EN3
The **net heat rate of thermal combined heat & power generation (CHP),** expressed here in terms of energy, defines the average quantity of fuels consumed by thermal CHP plants to generate 1 kWh_{eq} net (i.e. from generation of both electricity and heat, expressed in kWh).
In this case, the value is sharply down from the one of 2008 and from the average one recorded in the five-year period: -53 $kcal/kWh_{eq}$ and -173 $kcal/kWh_{eq}$, respectively.

EN1
EN3
The **net heat rate of geothermal generation** defines the average quantity of geothermal steam, expressed here in terms of energy, used by geothermal power plants to produce 1 kWh net.
In the calculation, the residual energy content of the fluid used for supply of heat (fluid becoming available after expansion in the geothermal unit equipped with an atmospheric-exhaust turbine) is subtracted from the energy content of the endogenous fluid.
The increase in this rate is due to the natural decline of geothermal field pressure over time.

EN1
EN3
The **net heat rate of nuclear generation (simple and CHP)** is obtained from the energy content of the steam used to generate 1 kWh net and 1kW_{eq} net, respectively.

EN1
EN3
The **net efficiency of hydro generation from pumped storage** expresses, in percentages, the ratio of net electricity generated by pumped-storage hydro power plants to electricity consumed for pumping.

EN4
The **consumption of electricity and natural gas for grid operation** and the **losses of natural gas along the grid** are expressed as percentages of the total amounts distributed.

EN8
The **net specific requirements of water for industrial uses in simple thermal generation** express the amount of water consumed per kWh thermal net.
Their 2009 value is in line with those of the rest of the five-year period.

EN8
The **net specific requirements of water for industrial uses in thermal combined heat & power generation (CHP)** express the amount of water consumed per kWh_{eq} thermal net.
Their 2009 value is 41.5% lower than the one of 2008, owing to decreased consumption, in particular in the Russian power plants.

EN8
The **net specific requirements of water for industrial uses in nuclear generation** express the amount of water consumed per kWh nuclear net.
Their high values are due to the make-up water used for the closed-cycle cooling system of the Almaraz plant.

EN8 The **net specific requirements of water for industrial uses in nuclear combined heat & power generation (CHP)** express the amount of water consumed per kWh_{eq} nuclear net.

Their 2009 value is the lowest in the period, thanks to a slight decrease (2.4%) from 2008.

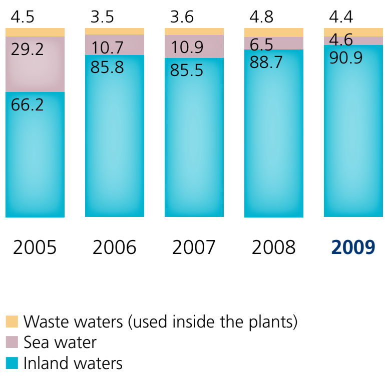
EN8 **Coverage of requirements of water for industrial uses.**
In the overall Group, the total contribution of inland waters (rivers, wells and aqueducts) to coverage of requirements of water for industrial uses in 2009 was largely dominant (90.9%).

EN10 As to waste waters reused inside power plants, it is worth stressing that, in some cases, they may be unsuitable for reuse. In these cases, reuse is avoided in order to reduce the frequency of clean-up and maintenance jobs, thus limiting the share of reusable waste waters.

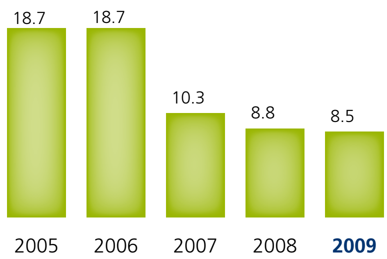
EN3 The **fossil fuel mix** in 2009 shows that coal increased, while brown coal, natural gas and fuel oil decreased.

EN3 The share of **endogenous fluid used for electricity generation** accounts for the near totality of the fluid extracted.

Coverage of requirements of water for industrial uses (%)



Relative consumption of fuel oil
(% of total consumption of fossil fuels for thermal generation)



Processes and products

Absolute data

(1/3)

		2005	2006	2007	2008	**2009**
Electricity generation (net)						
From fossil fuels	**million kWh**	**91,597**	**84,973**	**92,243**	**145,798**	**159,006**
simple	million kWh	91,117	80,977	88,701	118,830	117,290
fuel oil & gas-oil	*million kWh*	*15,878*	*15,258*	*10,858*	*18,732*	*20,601*
natural gas	*million kWh*	*38,174*	*32,304*	*36,156*	*48,282*	*42,959*
of which in combined-cycle units	million kWh	22,186	19,463	25,625	40,850	37,729
coal	*million kWh*	*33,458*	*29,838*	*38,033*	*46,335*	*48,238*
brown coal	*million kWh*	*3,607*	*3,577*	*3,655*	*5,481*	*5,492*
combined with heat generation	million kWh	479	3,996	3,541	26,968	41,716
fuel oil & gas-oil	*million kWh*	*233*	*180*	*240*	*118*	*119*
natural gas	*million kWh*	*246*	*227*	*184*	*12,257*	*19,176*
coal	*million kWh*	*0*	*2,192*	*1,693*	*12,953*	*20,780*
brown coal	*million kWh*	*0*	*1,397*	*1,424*	*1,640*	*1,640*
From waste (non-biodegradable fraction)	**million kWh**	**16.2**	**25.2**	**28.8**	**21.2**	**51.9**
From renewables	**million kWh**	**26,974**	**29,298**	**36,514**	**64,989**	**83,900**
biomass and biodegradable fraction of waste	million kWh	174	193	260	308	491
simple	*million kWh*	*12.8*	*22.8*	*84.5*	*135*	*334*
combined with heat generation	*million kWh*	*162*	*171*	*175*	*172*	*157*
geothermal	million kWh	5,012	5,208	5,292	5,218	5,150
hydro from natural flows (1)	million kWh	20,518	22,585	29,020	55,505	73,839
wind	million kWh	1,267	1,312	1,941	3,955	4,392
solar (photovoltaic)	million kWh	2.11	0.463	1.34	2.94	27.8
Hydro from pumped storage	**million kWh**	**7,327**	**7,030**	**6,473**	**6,228**	**7,672**
Nuclear generation	**million kWh**	**-**	**10,902**	**15,528**	**29,672**	**35,685**
simple	million kWh	-	-	4,132	17,508	22,630
combined with heat generation	million kWh	-	10,902	11,395	12,164	13,055
Total	**million kWh**	**125,914**	**132,228**	**150,786**	**246,708**	**286,314**
simple	million kWh	125,273	117,160	135,674	207,404	231,386
combined with heat generation	million kWh	641	15,069	15,112	39,303	54,927
Electricity consumption for pumping	million kWh	10,083	9,812	8,939	8,581	10,111
Available generation	million kWh	115,831	122,416	141,847	238,127	276,203

-: no data due to absence of activities in the year.

(1) The data do not include those of the Gabcikovo power plant in Slovakia (net maximum electrical capacity: 739 MW – net generation in 2009: 2,376 MWh), which is operated, but not owned, by Enel.

PROCESSES AND PRODUCTS - ABSOLUTE DATA (2/3)

			2005	2006	2007	2008	2009
	Useful heat output (combined with power generation)						
	In thermal power plants	million kcal	285,157	647,630	655,135	4,621,536	7,338,791
	fossil fuels	million kcal	281,407	615,415	625,509	4,591,387	7,315,748
	biomass and biodegradable fraction of waste	million kcal	3,750	32,215	29,626	30,149	23,042
	In nuclear power plants	million kcal	-	397,752	454,001	478,592	541,146
	Total	**million kcal**	**285,157**	**1,045,382**	**1,109,136**	**5,100,128**	**7,879,937**
		million kWh	**332**	**1,216**	**1,290**	**5,931**	**9,164**
	Fuel storage & handling						
	Fuel transferred to destination	t	169,583	574,091	58,295	42,282	10,144
	Heat generation	million kcal	51,471	36,505	3,858	8,700	8,700
	Geothermal drilling						
	Extent	m	13,792	10,684	15,225	14,718	27,816
	Electricity distribution						
	Electricity distributed	million kWh	263,910	269,129	299,169	398,017	417,851
EN4	Electricity consumption for grid operation	million kWh	433	347	422	423	421
	Natural-gas distribution						
	Natural gas distributed	million m^3	3,924	3,659	3,418	3,570	442
	Natural-gas consumption for grid operation	million m^3	4.86	5.49	5.32	4.90	n.a.
	Natural-gas losses along the grid	million m^3	25.5	23.8	22.2	23.2	n.a.
	Mining & extracting activities (1)						
	Areas restored in the year (geomorphology, hydrogeology and landscape)						
	Areas revegetated with plant, shrub and tree species	ha				36.9	23.1
	Areas occupied by water bodies	ha				154	234
	Areas restored since the start of activities (geomorphology, hydrogeology and landscape)						
	Areas revegetated with plant, shrub and tree species	ha				1,165	2,287
	Areas of high landscape-cultural value	ha				64.4	132
	Areas occupied by water bodies	ha				190	509
	Areas occupied by infrastructure (roads, canals, aqueducts, power lines)	ha				65.7	97.9
	Areas awaiting final restoration	**ha**				**120**	**271**

-: no data due to absence of activities in the year.
n.a.: not available.

(1) These activities have been surveyed since 2008.

(3/3)

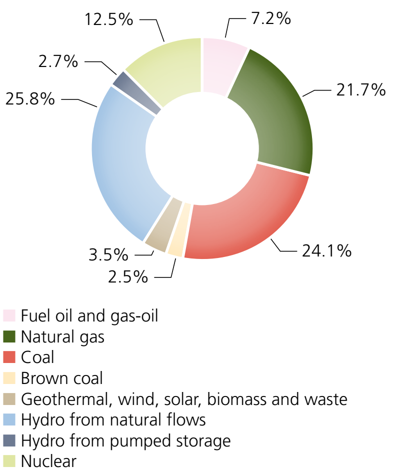
		2005	2006	2007	2008	**2009**
Market (1)						
Open Market						
Residential segment						
Green offerings						
Customers	no.			0	673,370	1,364,507
Power sold	million kWh			0	1,290	3,032
Time-of-use offerings						
Customers	no.			37,492	224,450	192,651
Power sold	million kWh			17	512	889
Total						
Customers	no.			233,648	902,126	1,806,129
Power sold	million kWh			106	2,345	4,549
Business segment						
Green offerings						
Customers	no.			196,181	204,024	367,527
Power sold	million kWh			1,063	3,230	3,950
Time-of-use offerings						
Customers	no.			18,305	168,370	569,235
Power sold	million kWh			6,316	17,603	20,740
Total						
Customers	no.			962,753	996,425	1,068,029
Power sold	million kWh			19,885	27,705	32,972
Large customers' segment						
Green offerings						
Customers	no.			6	16	7,925
Power sold	million kWh			0.141	80	986
Time-of-use offerings						
Customers	no.			3,641	27,441	38,115
Power sold	million kWh			7,693	8,054	8,088
Total						
Customers	no.			21,356	31,534	52,545
Power sold	million kWh			8,624	9,429	10,290
Very large customers' segment						
Total						
Customers	no.			99	101	134
Power sold	million kWh			13,543	15,406	46,864
Universal-Service Market						
Household customers' segment						
Time-of-use offerings						
Customers	no.			689,740	168,012	187,982
Power sold	million kWh			2,758	594	617
Total						
Customers	no.			23,816,519	24,816,711	25,135,660
Power sold	million kWh			52,952	54,071	53,082
Non-household customers' segment						
Time-of-use offerings						
Customers	no.			316	5,696	3,091,587
Power sold	million kWh			24.5	263	18,245
Total						
Customers	no.			5,473,851	4,824,492	4,607,488
Power sold	million kWh			34,743	26,914	26,767
Overall power sold						
high-voltage	million kWh			18,418	18,006	51,374
medium-voltage	million kWh			22,069	21,711	23,636
low-voltage	million kWh			101,420	113,781	112,843
Total	million kWh			141,907	153,499	187,853
Total RECS certificates redeemed	no. (MWh)			1,066,000	4,600,000	7,968,119

(1) These activities have been surveyed since 2007.

Enel's activities are today focused on generation of electricity and distribution of electricity and gas. However, the Report also deals with geothermal drilling, fuel storage & handling, mines, electricity sales and service and real-estate management.

Net electricity generation (simple and CHP) by source in 2009

Total: **286** TWh



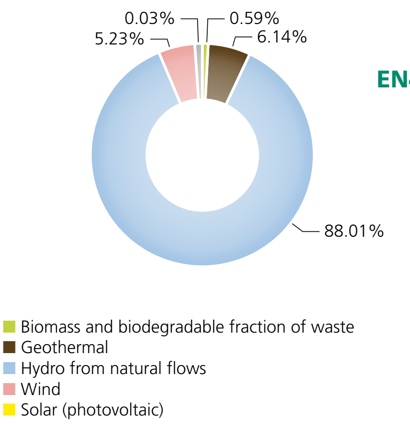
Electricity generation

With regard to electricity generation, it is worth pointing out that:

> the various contributions are net of the electricity consumed by power plant auxiliaries and of losses in the main transformers (net generation);
> the above-defined net generation does not necessarily match the amount of electricity sold; the latter value is measured further ahead (and thus affected by grid losses) and is gross of the electricity consumed by some auxiliaries (medium-voltage auxiliaries in some dams, start-up auxiliaries in thermal power plants, etc.);
> generation from RDF (refuse-derived fuel) is distinguished into: i) the one obtained from the non-biodegradable fraction of waste; and ii) the one obtained from the biodegradable fraction of waste and regarded as generation from renewables;
> hydro generation from pumped storage is the electricity that is produced, in peak-load hours, through the falling of water previously pumped from a lower reservoir to an upper reservoir, using electricity surpluses arising in low-load hours (pumped storage is the only available option for storing significant amounts of electricity, albeit indirectly);
> combined heat & power generation (CHP) takes place simultaneously in both thermal and nuclear power plants ;
> actually available generation is the overall net generation, i.e. after deducting the electricity consumed for pumping.

Net electricity generation from renewables in 2009

Total: **83.9** TWh



In 2009, the overall Group increased its electricity generation from fossil and renewable sources, especially as a result of the full consolidation of Endesa.
In 2009, total generation was equal to 286 TWh. Renewables gave a contribution of 84 TWh, up by 19 TWh from 2008.

EN4 Electricity distribution

The data on this activity are expressed in terms of electricity wheeled on the distribution grid and own consumption of electricity.
The former is the overall electricity delivered to end users connected to the grid.
Own consumption is the consumption of electricity required for the operation of the grid.
The growth in the electricity wheeled in 2009 mostly reflects the weight of the full consolidation of Endesa.

Natural-gas distribution

The amount of natural gas wheeled represents the total amount of gas delivered to customers.
The consumption of natural gas for grid operation ("own consumption") is due to the combustion of one fraction of the gas that is wheeled; this fraction is used for heating of the wheeled gas, to prevent the moisture that it contains from freezing upon depressurization (passage from the high-pressure grid to the medium pressure one and from the medium-pressure grid to the low-pressure one).
Natural-gas losses from the grid are estimated on the basis of the amount of natural gas wheeled, using loss factors (% by volume), which take into account gas pressures, length and configuration of pipelines, their state of conservation,

etc. The estimation process relies on systematic and increasingly accurate *in-situ* measurements (based on standard methodologies) and on parameters from the literature.
The total amount of natural gas wheeled sharply fell owing to the sale of Italian grids in the course of 2009.

Fuel storage & handling

This activity, which is carried out far from thermal plant sites, is aimed at storing and handling fuels:

> liquid fuels: oil and gas-oil storage tanks and pipelines;
> solid fuels: coal and brown-coal bunkers located in dedicated port terminals.

The amounts of the product transferred to destination and of heat generation only refer to fuel oil, which may be carried via pipelines and which needs heat for fluidification.
For this activity, the Eco-Balance shows, in particular, the use of resources, the consumption of primary energy, the consumption of electricity and the production of emissions, waste waters and waste.

Geothermal drilling

This activity is aimed at making available endogenous fluid for geothermal generation.
Geothermal drilling involves the use of technologies and know-how in which Enel is a worldwide leader.
The extent of yearly drilling represents, in some way, the volume of activity. Nevertheless, it should be emphasized that operating conditions – and thus consumption of energy and expendables and generation of waste and residues – may vary significantly, depending on the nature of the rock formations that are crossed.

Mining & extracting activities

These activities are carried out in the mines from which coal and brown coal are extracted.
The Eco-Balance shows not only the extractable amount of fuel (among the "Status data") but also the activities of geomorphological, hydrogeological and landscape restoration.
In particular, the Eco-Balance displays the use of resources, the consumption of primary energy, the consumption of electricity and the production of emissions, waste waters and waste.

Market

This is the activity of sale of both green power and time-of-use power, which has positive effects on the environment.
In the case of green rate plans, customers pay a small extra amount to finance the development of renewables.
Time-of-use rate plans shift electricity demand to off-peak hours (lower number of thermal power plants, higher generating efficiency and lower grid losses thanks to the shorter distance between generation and consumption).

Service & real-estate management

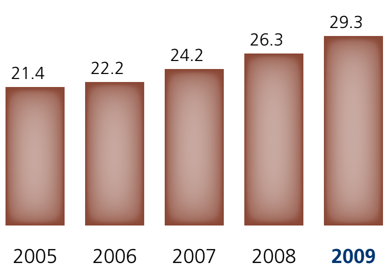
This activity refers to the management of the vehicle fleet and of buildings.
The typical data of this activity are fuel consumption, uses of water and resources and production of waste.

Performance Indicators - KPIs

		2005	2006	2007	2008	**2009**
Electricity generation from renewables						
thermal from biomass & biodegradable fraction of waste	% of total generation	0.139	0.146	0.172	0.125	0.171
geothermal	% of total generation	3.98	3.94	3.51	2.12	1.80
hydro from natural flows	% of total generation	16.3	17.1	19.2	22.5	25.8
wind and solar (photovoltaic)	% of total generation	1.01	0.992	1.29	1.60	1.54
Total	**% of total generation**	**21.4**	**22.2**	**24.2**	**26.3**	**29.3**
EN6 Market (1)						
Open Market						
Residential segment						
Green power sold	% of power sold			0	55	66.6
Time-of-use power sold	% of power sold			16	21.8	19.5
Business segment						
Green power sold	% of power sold			5.35	11.7	12
Time-of-use power sold	% of power sold			31.8	63.5	50.9
Large customers' segment						
Green power sold	% of power sold			0.002	0.848	9.58
Time-of-use power sold	% of power sold			89.2	85.4	78.6
Universal-Service Market						
Household customers' segment						
Time-of-use power sold	% of power sold			5.21	1.10	1.16
Non-household customers' segment						
Time-of-use power sold	% of power sold			0.070	0.977	68.2
Overall power sold						
high-voltage	% of power sold			13	11.7	27.3
medium-voltage	% of power sold			15.6	14.1	12.6
low-voltage	% of power sold			71.5	74.1	60.1
Total green power sold	% of power sold			**0.749**	**3**	**4.24**
Total time-of-use power sold	% of power sold			**11.8**	**17.6**	**23.8**

(1) These activities have been surveyed since 2007.

Electricity generation from renewables vs. total electricity generation (%)



> **Electricity generation from renewables**, expressed as a percentage of total electricity generation, is equal to 29% in 2009, the highest value in the five-year period.

> **Green power sold**, expressed as a percentage of total power sold to each customer segment of the open market (residential, business and large customers) shows a progressively growing trend throughout the period, highlighting the Group's commitment to promoting renewable sources in electricity generation.

> **Time-of-use power sold**, expressed as a percentage of total power sold to each customer segment (residential, business and large customers of the open market; household and non-household customers of the universal-service market) displays a gradually rising trend throughout the period; the trend underlines the Group's efforts to encourage a more environmentally sustainable usage of power, by enabling a more efficient operation of the generating mix (shift of demand towards hourly bands involving lower environmental impacts).

Emissions

Absolute data

(1/2)

		Source		2005	2006	2007	2008	**2009**
	Emissions into the atmosphere							
EN20	SO_2	thermal generation	thousand t	358	320	277	151	132
		thermal generation (CHP)	thousand t	0.001	40.4	33.2	117	156
		Total	**thousand t**	**358**	**360**	**310**	**267**	**288**
EN20	NO_X	thermal generation	thousand t	76.4	66.6	91.5	149	163
		thermal generation (CHP)	thousand t	0.003	7.93	6.55	55	98.8
		fuel storage & handling	thousand t	0.004	0.007	0.001	0.002	0.002
		Total	**thousand t**	**76.4**	**74.5**	**98**	**204**	**261**
EN20	Particulates	thermal generation	thousand t	10.9	9.75	10.8	7.17	7.70
		thermal generation (CHP)	thousand t	0.011	7.33	0.828	94.2	120
		Total	**thousand t**	**10.9**	**17.1**	**11.6**	**101**	**128**
EN16	CO_2	*fossil-fired thermal generation (from combustion)*	*thousand t*	*66,532*	*60,048*	*66,203*	*86,498*	*86,759*
		fossil-fired thermal generation (from desulfurization)	*thousand t*	*71.5*	*105*	*192*	*586*	*411*
		Total from fossil-fired thermal generation	thousand t	66,603	60,154	66,395	87,084	87,170
		non-fossil-fired thermal generation (from fossil carbon)	thousand t	12.4	18.2	23.3	16.2	39.7
		Total from thermal generation	thousand t	66,616	60,172	66,419	87,100	87,210
		fossil-fired thermal generation - CHP (from combustion)	*thousand t*	*280*	*4,853*	*4,332*	*23,333*	*34,679*
		fossil-fired thermal generation - CHP (from desulfurization)	*thousand t*	*0*	*42.1*	*34.1*	*37.3*	*37.6*
		Total from fossil-fired thermal generation - CHP	thousand t	280	4,895	4,367	23,370	34,772
		Various activities (1)	thousand t	24.4	26.8	85.5	94.5	106
		Total	**thousand t**	**66,920**	**65,093**	**70,871**	**110,565**	**122,089**
EN16	SF_6	electricity generation (1)	kg	1,530	1,598	2,103	2,282	1,378
			thousand t of CO_2-equivalent	34.9	36.4	48	52	31.4
		electricity distribution	kg	2,779	2,982	3,109	3,781	4,649
			thousand t of CO_2-equivalent	63.4	68	70.9	86.2	106
		Total	**kg**	**4,309**	**4,580**	**5,212**	**6,064**	**6,027**
			thousand t of CO_2-equivalent	**98.3**	**104**	**119**	**138**	**137**
EN16	CH_4	gas distribution, mining & extracting activities	thousand t	13	15.9	14.8	16.2	1.57
			thousand t of CO_2-equivalent	326	396	370	405	39.3
EN16	**Total greenhouse gases (CO_2, SF_6, CH_4)**		**thousand t of CO_2-equivalent**	**67,344**	**65,594**	**71,360**	**111,108**	**122,265**

(1) The data do not include those of the Gabcikovo power plant in Slovakia (net maximum electrical capacity: 739 MW – net generation in 2009: 2,376 MWh), which is operated, but not owned, by Enel.

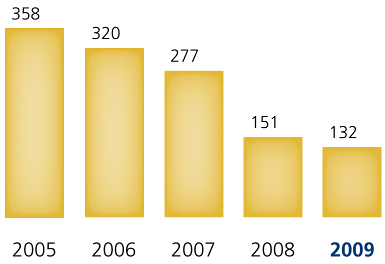
EMISSIONS - ABSOLUTE DATA (2/2)

		Source		2005	2006	2007	2008	2009
EN20	H_2S	geothermal generation (fluid)	thousand t	23.1	20.8	16.2	13.1	10.2
EN20	CO_2	geothermal generation (fluid)	thousand t	1,838	1,946	1,953	1,902	1,876
EN18	**Avoided CO_2 emissions**							
	Due to hydro generation from natural flows (1)		thousand t	14,370	16,889	21,575	44,152	55,441
	Due to geothermal generation		thousand t	3,444	3,643	3,686	3,617	3,877
	Due to wind and solar generation		thousand t	1,081	1,136	1,618	3,239	3,616
	Due to generation from biomass & biodegradable fraction of waste		thousand t	8.79	15.9	58.7	93.8	372
	Due to total generation from renewables		**thousand t**	**18,903**	**21,684**	**26,938**	**51,102**	**63,305**
	Due to total nuclear generation		**thousand t**	**-**	**12,975**	**17,238**	**28,392**	**33,367**
	Total		**thousand t**	**18,903**	**34,659**	**44,176**	**79,494**	**96,673**
EN20	**Radioactive emissions into the atmosphere**							
	Noble gases	nuclear generation	TBq	-	-	3.10	24.4	24
		nuclear generation (CHP)	TBq	-	13.5	9.17	6.52	6.56
		Total	**TBq**	**-**	**13.5**	**12.3**	**30.9**	**30.6**
	Iodine 131	nuclear generation	MBq	-	-	2.93	158	258
		nuclear generation (CHP)	MBq	-	20.7	10.6	0.648	0.556
		Total	**MBq**	**-**	**20.7**	**13.5**	**158**	**258**
	Aerosol β and γ	nuclear generation	MBq	-	-	1.87	37.5	69.1
		nuclear generation (CHP)	MBq	-	34.5	20.5	18.1	20.8
		Total	**MBq**	**-**	**34.5**	**22.3**	**55.6**	**89.8**
	Aerosol α	nuclear generation	kBq	-	-	4.88	35.9	63.7
		nuclear generation (CHP)	kBq	-	108	26.8	13.7	22.6
		Total	**kBq**	**-**	**108**	**31.7**	**49.7**	**86.3**
	Strontium 89 and 90	nuclear generation	kBq	-	-	681	2,781	8,482
		nuclear generation (CHP)	kBq	-	201	183	133	91.5
		Total	**kBq**	**-**	**201**	**864**	**2,914**	**8,573**

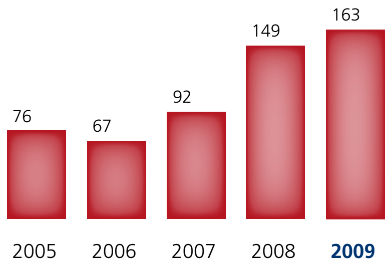
-: no data due to absence of activities in the year.

(1) The data do not include those of the Gabcikovo power plant in Slovakia (net maximum electrical capacity: 739 MW – net generation in 2009: 2,376 MWh), which is operated, but not owned, by Enel.

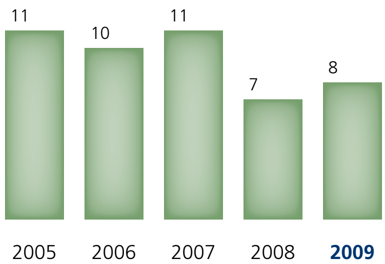
SO_2 emissions from simple thermal generation (thousand t)



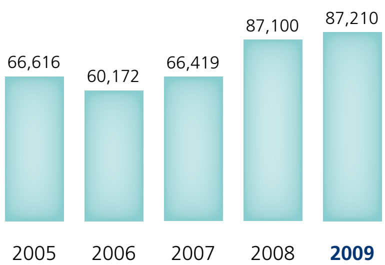
NO_X emissions from simple thermal generation (thousand t)



Particulate emissions from simple thermal generation (thousand t)



CO_2 emissions from simple thermal generation (thousand t)



Emissions into the atmosphere

The emissions of some substances into the atmosphere have a polluting effect, while those of other substances contribute to the greenhouse effect.
The emissions into the atmosphere, which are quantitatively most significant and typical of Enel's industrial activities, are as follows: in the first category, sulfur dioxide (SO_2), nitrogen oxides (NO_X) and particulates; and, in the second category, carbon dioxide (CO_2), sulfur hexafluoride (SF_6) and methane (CH_4).

EN20 **SO_2, NO_X and particulates** originate from the combustion process and mostly come from thermal and thermal CHP power plants.
SO_2 is abated by desulfurizers in large coal-fired power plants. Emissions of SO_2 may be prevented by using high-grade fuels with low or very low sulfur (LS and VLS).
Emissions of NO_X are controlled through the generalized use of advanced combustion systems (prevention measures) and their constant tuning, whereas post-combustion abatement is based on the installation of denitrification systems in coal- and oil-fired power plants.
Particulates are abated by particulate collection systems – usually based on electrostatic precipitators, but also on more efficient bag filters, which are suitable for coal-fired power plants only – in almost all power plants.
The amounts of emissions are calculated by multiplying their concentrations in the flue gases (generally continuously monitored) by the volumes of the gases.
NO_X are expressed in terms of NO_2-equivalent.
In the past few years, the emissions of SO_2 from simple thermal generation have fallen substantially, thanks to the installation or upgrade of abatement systems.
Conversely, the emissions of SO_2 from thermal CHP generation, as well as of NO_X and particulates from thermal generation (both simple and CHP), have gone up.
This is due, above all, to the international expansion of the Group and, namely, to the acquisition of Endesa and OGK-5. In the next few years, the mass emissions of the latter two pollutants are expected to progressively decline thanks to the planned introduction of the above-mentioned abatement systems, which are already largely widespread in Italy.

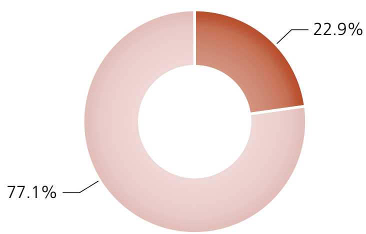
EN16 **CO_2** is the typical product of combustion and, as such, the near totality of it comes from thermal power plants (simple and CHP). Small amounts – reported here in view of the attention paid to the greenhouse effect – also derive from: geothermal drilling (combustion of the gas-oil which feeds the diesel engines of drilling equipment); distribution of natural gas (combustion of one fraction of the wheeled gas for heating of the gas upon depressurization); emergency generating sets installed in the generality of Enel's installations (combustion of gas-oil); fuel storage & handling (use of fuels for producing process steam); and service & real-estate management (combustion of gasoline, natural gas and gas-oil).
CO_2 is also contained in the reaction products from the process of desulfurization of the flue gases outgoing from the boilers of some thermal power plants.
Finally, natural-gas distribution contributes to CO_2 emissions also in another way: as CO_2 is a minor constituent of natural gas, it is also present in the losses from the distribution grid.

Since the implementation of Directive 2003/87/EC (establishing a scheme for greenhouse emission allowance trading within the Community – EU-ETS), a different procedure has been used for computing CO_2 emissions. For the fuels and installations covered by the scheme (and required to monitor and report their emissions), the calculation is based on analyses (carbon content of the fuel, calorific value, carbon content of ash) conducted on the individual lots of fuel. In the other cases (fuels and installations not covered by the scheme), Enel uses the reference parameters of the latest national greenhouse gas inventories.
The amount of CO_2 from the desulfurization process is computed stoichiometrically from the amount of limestone used.
CO_2 emissions associated with natural-gas losses are quantified on the basis of these losses, taking into account the carbon content of natural gas (average value in 2009: 0.12%) and its density (1.977 kg/m^3).
It is worth noting that the overall stock of power plants improved its performance, as CO_2 emissions grew less than generation (the improvement is reflected by specific emissions of CO_2 from thermal generation – simple and CHP – vs. overall net generation of electricity and heat, reported later on among the "Performance indicators").

EN16 SF_6 is used in high- and medium-voltage electrical equipment as an insulant and for electric arc extinction; in these applications, it is irreplaceable.
Its emissions into the atmosphere are due to leaks from the above equipment. These emissions are determined with a complex procedure, which takes into account replenishments (difference between the weights of SF_6 contained in the bottles used for replenishment, at the start of the year and at the end of the year, increased by the weight of SF_6 contained in the bottles purchased or acquired during the year and decreased by the weight of SF_6 contained in the bottles transferred during the year), including those made by third parties; in the very rare event of breakage of SF_6-containing equipment, its nominal SF_6 content is considered as leakage. Given the particular care with which SF_6 is removed from end-of-life equipment, the above procedure can yield fairly reliable data.
These emissions are expressed in weight of SF_6 and in weight of CO_2-equivalent, in terms of Global Warming Potential (GWP). The 100-year GWP value that has been used (22,800) is the one specified in the "IPCC Fourth Assessment Report: Climate Change 2007".
When expressed in CO_2-equivalent, the values of SF_6 appear to be extremely low (137,416 t in 2009) as against Enel's overall greenhouse gas emissions.
At local level, the variability of SF_6 emissions from one year to the other is largely due to the occasional character of the above-mentioned replenishments.

Origin of emissions of SF_6 in 2009

Total: **6,027** kg



EN16 CH_4 comes from:
- > losses of natural gas from the distribution grid, just as the aforesaid minor amount of CO_2;
- > coal extraction, since methane is naturally contained in coal seams.

In the first case, the emissions are determined on the basis of losses, taking into account the methane content of natural gas (average value in 2009: 91.13%) and its density (0.717 kg/m^3). They are expressed both in weight of CH_4 and in weight of CO_2-equivalent, in terms of Global Warming Potential. The 100-year GWP that has been used (25) is the one specified in the "IPCC Fourth Assessment Report: Climate Change 2007". When expressed in CO_2-equivalent, CH_4 emissions account for a very low percentage (about 39,300 t in 2009) of Enel's overall greenhouse gas emissions.
In the case of coal extraction, the emissions are determined on the basis of the

IPCC emission factors ("2006 IPCC Guidelines for National Greenhouse Gas Inventories"). These factors, which are different for surface mining (1.15m^3/t) and deep mining (17.5 m^3/t), are multiplied by the tonnes of fuel extracted.

EN20 With regard to "**minor" pollutants**" (e.g. metals), Enel conducted extensive programs of monitoring of their concentrations in the flue gases released by its thermal power plants, under different conditions of types of fuel and abatement systems. The results indicate that these concentrations comply – with wide margins – with the point-source limits of emissions indicated by the national legislation of the countries where Enel operates.

Separate considerations should be made about the **gases contained in geothermal steam**. As such gases are incondensible, they are emitted into the atmosphere when steam condenses after expansion in turbines.
These gases are:

EN20 > hydrogen sulfide (H_2S), the only potentially polluting substance (offensive odor) which is present in significant amounts in geothermal fluid;

EN16 > carbon dioxide.

A wide debate is under way on the natural or anthropogenic origin of these gaseous emissions.
The International Geothermal Association supports their natural origin: as spontaneous emissions are present in diffuse form in geothermal areas, geothermal power plants only convey them in concentrated form, thereby reducing natural ones.
The IPCC Guidelines for national greenhouse inventories do not include CO_2 emissions from geothermal generation among those to be censused. However, Italy included these CO_2 emissions in national reports on greenhouse gas emissions.
In this Environmental Report, CO_2 and H_2S emissions from geothermal generation are reported for information completeness.
Their values are estimated on the basis of periodical analyses and measurements of the composition and flow rate of geothermal steam used by power plants.
Thanks to the growing use of abatement systems, H_2S emissions are lower than those that would be naturally present in geothermal areas without geothermal power plants.
In line with the IPCC Guidelines, the Eco-Balance does not report the emissions of CO_2 from the share of thermal generation obtained from biomass and from the biodegradable fraction of RDF (containing non-fossil carbon). Indeed, these emissions counterbalance the CO_2 that biomass (organic component of waste or used on as-is basis) absorbs during its growth.
However, CO_2 emissions from combustion of the non-biodegradable fraction (containing fossil carbon) of RDF are reported.

EN18 Avoided CO_2 emissions

Avoided CO_2 emissions are an indicator of the environmental benefits arising from the mix of resources used for production processes and from the efficiency of the full cycle, going from utilization of the resources to end uses of the various products.
The tables show the CO_2 emissions that the Enel Group avoided thanks to renewable and nuclear generation, rather than from the otherwise necessary fossil-fired thermal generation.

These emissions are determined by multiplying the electricity generation from each renewable or nuclear source by the average specific CO_2 emissions from

fossil-fired thermal power plants in the various countries where the Group operates. Failing thermal power plants, reference is made to the national average specific emissions of Enerdata's database (htpp://services.enerdata.eu).
Overall avoided emissions are calculated as the sum of the avoided emissions in the various geographic areas.
In the case of hydro power, reference is made only to generation from natural flows, excluding the contribution of pumped-storage power plants.

In 2009, the overall Group avoided about 97 million tonnes of CO_2 emissions (more than 63 million tonnes thanks to generation from renewables and over 33 thanks to nuclear generation). The percentage ratio of the overall CO_2 emissions that Enel avoided thanks to renewable generation to those which would have been produced by its power generation activities, failing the contribution of renewables [avoided CO_2/(actual CO_2 + avoided CO_2)], is above 35%. If also the contribution of nuclear generation is considered, then this percentage exceeds 44%.

EN20 Radioactive emissions into the atmosphere (nuclear generation)

Nuclear fission produces unstable (radioactive) isotopes, which turn into stable isotopes - also through subsequent decays - and release energy in the form of radiation with different properties and penetrating power.
Alpha and beta radiation (consisting of electrically-charged particles) and gamma radiation (consisting of electromagnetic waves) are also produced naturally.
Alpha particles (helium nuclei) are relatively heavy and slow and have a low penetrating power, so that they can be blocked by less than 10 cm of air or merely by a sheet of paper.
Beta particles (electrons) are lighter and faster and their penetrating power is higher than the one of alpha particles; however, this power is so small that the particles can be blocked by a thin metal sheet: a few millimeters can stop them, whereas in air a few meters would be needed.
Gamma radiation is more penetrating and energetic and is stopped only by a thick layer of concrete, lead or steel.
Under normal operating conditions, the emissions of a nuclear power plant come from the ventilation system of the reactor containment and from other buildings (e.g. the condensate ejector one) and flow into the stack.

The total activity of the gamma rays emitted by the discharged noble gases, iodine 131 and radioactive aerosols is continuously monitored. Samples are collected to measure the activity of nuclides, which have radiotoxicological implications. The following isotopes are measured:

- Noble gases: Ar41, Kr85, Kr85m, Kr87, Kr88, Xe133, Xe133m, Xe135;
- Iodine 131;
- Alpha aerosols (alpha emitters): Pu238, Pu239+Pu240, Am241;
- Beta aerosols (beta emitters): Sr89, Sr90;
- Gamma aerosols (gamma emitters): Cr51, Mn54, Co57, Co58, Fe59, Co60, Zn65, Nb95, Zr95,Mo99, Ru103, Rh106, Ag110m, Sb122, Sb124, Cs134, Cs137, Ce141, Ce144;
- Tritium and C14.

The “activity” is defined as the number of disintegrations of a given amount of radioactive material per unit time. It is measured in Becquerel (Bq): 1 Bq = 1 disintegration per second. As the Becquerel is a very small unit of measurement, radioactivity is very often indicated in multiples of Becquerel. Radioactive emissions into the atmosphere are reported here in absolute values (using the most appropriate multiples of Becquerel).
When the activity refers to contamination on a given surface, it is expressed in Bq per unit surface area (Bq/cm^2). When it refers to volume (e.g. contamination of air or water), it is expressed in Bq per unit volume (Bq/cm^3). Likewise, in the case of contamination of matrices, such as soil, food, etc., reference is made to activity per unit mass (Bq/kg).

Performance Indicators - KPIs

			2005	2006	2007	2008	**2009**
	Specific emissions into the atmosphere						
EN20	SO_2 (thermal generation)	g/kWh thermal net	3.92	3.95	3.12	1.27	1.12
EN20	NO_X (thermal generation)	g/kWh thermal net	0.838	0.821	1.03	1.25	1.38
EN20	Particulates (thermal generation)	g/kWh thermal net	0.120	0.120	0.121	0.060	0.065
EN16	CO_2 (thermal generation)	g/kWh thermal net	731	743	748	732	741
EN20	SO_2 (thermal generation - CHP)	g/kWh_{eq} thermal net	0.001	8.21	7.41	3.59	3.10
EN20	NO_X (thermal generation - CHP)	g/kWh_{eq} thermal net	0.003	1.61	1.46	1.69	1.96
EN20	Particulates (thermal generation - CHP)	g/kWh_{eq} thermal net	0.011	1.49	0.185	2.90	2.38
EN16	CO_2 (thermal generation - CHP)	g/kWh_{eq} thermal net	287	995	975	719	690
EN16	CO_2 (thermal generation - simple and CHP)	g/kWh_{eq} total net	530	488	465	437	413
EN16	SF_6 (electric activities) (1)	% of SF_6 in equipment or in stock	0.917	0.893	0.948	0.687	0.555
	CH_4+CO_2, expressed as CO_2-equivalent (gas distribution)	g/m³ of natural gas distributed	85.5	111	111	111	n.a.
EN20	H_2S (geothermal fluid)	g/kWh geothermal net	4.61	3.99	3.06	2.51	1.98
EN16	CO_2 (geothermal fluid)	g/kWh geothermal net	367	374	369	365	364
EN20	**Specific radioactive emissions into the atmosphere**						
	Nuclear generation						
	Noble gases	kBq/kWh	-	-	1	1	1
	Iodine 131	kBq/kWh	-	-	1	9	11
	Aerosol β and γ	mBq/kWh	-	-	0	2	3
	Aerosol α	µBq/kWh	-	-	1	2	3
	Strontium 89 and 90	µBq/kWh	-	-	165	159	375
	Nuclear generation (CHP)						
	Noble gases	kBq/kWh_{eq}	-	1	1	1	0
	Aerosol β and γ	mBq/kWh_{eq}	-	3	2	1	2
	Aerosol α	µBq/kWh_{eq}	-	10	2	1	2
	Strontium 89 and 90	µBq/kWh_{eq}	-	18	15	10	7

-: no data due to absence of activities in the year.

n.a.: not available.

(1) The data do not include those of the Gabcikovo power plant in Slovakia (net maximum electrical capacity: 739 MW – net generation in 2009: 2,376 MWh), which is operated, but not owned, by Enel.

Specific emissions into the atmosphere

In electricity generation, specific emissions into the atmosphere express the amounts of the typical and significant substances emitted into the atmosphere per kWh net of thermal, geothermal or total electricity generation or per kWh_{eq} net of electricity and heat generation (in the case of CHP).

The specific emissions from thermal generation (simple or CHP) represent:

EN20 > for SO_2, NO_X and particulates, the cumulated effect of the fuel mix, of the efficiency of thermal power plants and of direct prevention and abatement measures;

EN16 > for CO_2, the cumulated effect of the fuel mix, of the efficiency of thermal power plants and of the marginal contribution of the desulfurization process.

With respect to 2005, the trends of specific emissions of SO_2, NO_X and particulates from simple thermal generation in 2009 are as follows: SO_2 is sharply down (thanks to the increasing use of desulfurizers); particulates have a value of 0.065 g/kWh net (thanks to the installation of abatement systems); and NO_X are up by 0.54 g/kWh net (due to the full consolidation of Endesa: see "Absolute data" in this chapter).

A distinction should be made between the performance of thermal power plants (which generate only electricity) and the one of combined heat & power (CHP) plants. Thermal power plants which generate only electricity are present especially in Bulgaria, Italy, Portugal, Spain and Latin America, whereas CHP plants are located above all in Slovakia and Russia. This distinction is useful both to separate the two types of generation and to distinguish assets which are located in geographic areas with completely different technological, cultural and socio-political traditions. Therefore, the related performance data should be analyzed on a case-by-case basis. The overall CHP performance is strongly influenced by the Russian power plants.

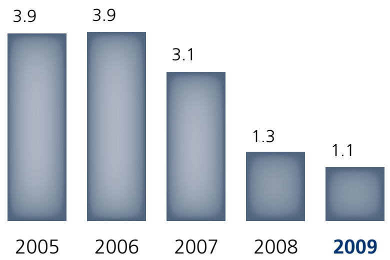
In line with a practice adopted by many power companies, net specific CO_2 emissions are also determined vs. total generation of electricity and heat (expressed in kWh_{eq}), thereby mirroring also the effect of the overall mix of energy sources.

Their trend is affected by changes in the Group's assets in 2009, when their value (about 413 g/kWh_{eq}) was the lowest in the period.

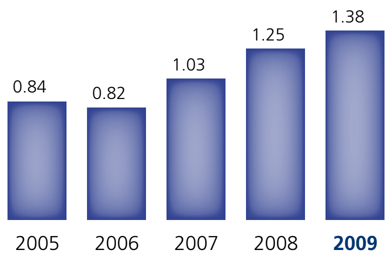
Relative SF_6 emissions, which concern all electric activities, express the ratio of the yearly emissions of SF_6 to the year-end volume of SF_6 contained in in-service & in-stock equipment, as well as in the bottles used for replenishments.

The percentages of SF_6 over the years have small fluctuations, owing above all to the occasional character of replenishments. However, they all lie below the value reported in the literature and suggested by the IPCC Guidelines for national greenhouse gas inventories (1%).

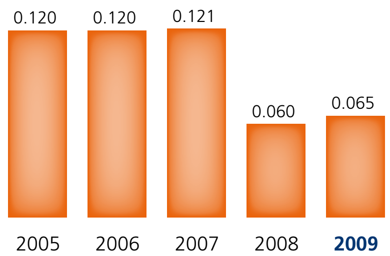
Specific SO_2 emissions from simple thermal generation (g/kWh thermal net)



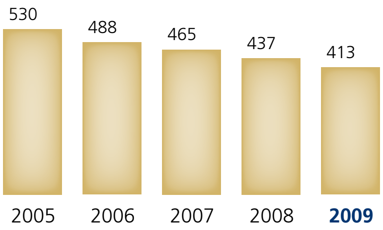
Specific NO_X emissions from simple thermal generation (g/kWh thermal net)



Specific particulate emissions from simple thermal generation (g/kWh thermal net)



Specific CO_2 emissions from thermal generation (simple and CHP) vs. total electricity and heat generation
(g/kWh_{eq} total net)



As for natural-gas distribution, the tables show the ratio of emissions of CO_2-equivalent (about 97% of which are due to losses of CH_4 from the grid and the remaining part to CO_2 from both losses and own consumption of natural gas) to the total gas wheeled.

Specific emissions from geothermal generation - bearing in mind the considerations made about their origin - are entirely attributed to electricity generation, on the assumption that no steam is lost during drilling and that the fluid used in non-electric applications is liquid (i.e. without gases, except those dissolved in it). These emissions express:

EN20 > for H_2S, the cumulated effect of the composition of geothermal steam, of the efficiency of geothermal power plants and of abatement systems;

EN16 > for CO_2, the cumulated effect of the composition of geothermal steam and of the efficiency of geothermal power plants.

Both continued to progressively fall in 2009.

Liquid releases

Absolute data

(1/2)

		Source		2005	2006	2007	2008	2009
EN21	**Waste waters (discharged quantity)**	thermal generation	million m^3	20.8	19.9	20.9	44.5	47.7
		thermal generation (CHP)	million m^3	0.210	63.7	12.8	27.5	40.6
		nuclear generation	million m^3	-	-	21.7	96.1	158
		nuclear generation (CHP)	million m^3	-	39.6	7.30	8.14	8.22
		Total from electricity generation	million m^3	21	123	62.8	176	254
		Fuel storage & handling	million m^3	0.110	0.070	0.034	0.031	0.037
		Total	**million m^3**	**21.1**	**123**	**62.8**	**176**	**254**
EN21	**Conventional polluting load of waste waters discharged by the installations**							
	Metals and compounds (expressed as metal equivalents)	thermal generation (only in some large plants)	kg	13,280	12,216	22,260	7,245	66,132
		thermal generation (CHP)	kg	0	0	0	89,549	53,085
		nuclear generation	kg	-	-	111	49.7	70.3
		nuclear generation (CHP)	kg	-	383	169	168	158
		Total in electricity generation	kg	13,280	12,599	22,540	97,012	119,444
		Fuel storage & handling	kg	40	10.5	12	12.2	7.70
		Total	**kg**	**13,320**	**12,610**	**22,552**	**97,025**	**119,452**
	Total nitrogen (expressed as N)	thermal generation (only in some large plants)	kg	203,406	96,211	146,778	110,133	286,230
		nuclear generation	kg	-	-	2,213	7,407	17,612
		nuclear generation (CHP)	kg	-	93,764	86,596	40,295	34,566
		Total in electricity generation	kg	203,406	189,975	235,587	157,835	338,409
		Fuel storage & handling	kg	800	115	47.3	16.9	12.6
		Total	**kg**	**204,206**	**190,090**	**235,634**	**157,852**	**338,421**
	Total phosphorus (expressed as P)	thermal generation (only in some large plants)	kg	11,719	11,515	18,234	8,873	16,625
		nuclear generation	kg	-	-	76.6	99.4	118
		nuclear generation (CHP)	kg	-	3,608	2,387	2,319	2,213
		Total in electricity generation	kg	11,719	15,123	20,698	11,292	18,956
		Fuel storage & handling	kg	435	48.1	6.15	1.83	1.85
		Total	**kg**	**12,154**	**15,171**	**20,704**	**11,294**	**18,958**
	COD	thermal generation (only in some large plants)	kg	443,919	519,690	359,746	289,006	335,660
		thermal generation (CHP)	kg	2,934	1,667,536	229,453	131,714	72,306
		nuclear generation	kg	-	-	1,734	2,064	2,714
		nuclear generation (CHP)	kg	-	149,668	117,003	105,591	111,648
		Total in electricity generation	kg	446,853	2,336,894	707,936	528,375	522,329
		Fuel storage & handling	kg	6,160	1,021	325	38.5	397
		Total	**kg**	**453,013**	**2,337,915**	**708,260**	**528,413**	**522,726**
	BOD	thermal generation (only in some large plants)	kg	208,672	130,938	82,978	69,734	75,016
		thermal generation (CHP)	kg	4,291	241,608	33,463	18,167	14,208
		nuclear generation	kg	-	-	297	1,376	1,792
		nuclear generation (CHP)	kg	-	17,710	15,290	15,497	17,605
		Total in electricity generation	kg	212,963	390,256	132,028	104,775	108,621
		Fuel storage & handling	kg	205	314	345	12.2	167
		Total	**kg**	**213,168**	**390,569**	**132,372**	**104,787**	**108,787**

-: no data due to absence of activities in the year.

LIQUID RELEASES - ABSOLUTE DATA (2/2)

	Source		2005	2006	2007	2008	2009
EN21 Radionuclides in waste waters discharged by the plants							
Tritium	nuclear generation	GBq	-	-	9,028	58,777	57,746
	nuclear generation (CHP)	GBq	-	14,579	12,970	12,444	21,621
	Total	**GBq**	**-**	**14,579**	**21,998**	**71,221**	**79,367**
Corrosion and fission products	nuclear generation	GBq	-	-	3.08	4.09	21.7
	nuclear generation (CHP)	GBq	-	0.067	0.029	0.034	0.032
	Total	**GBq**	**-**	**0.067**	**3.11**	**4.09**	**21.8**

-: no data due to absence of activities in the year.

EN21 Waste waters

Waste waters include residual waters for industrial uses and meteoric waters collected from the outdoor areas of thermal power plants when they are susceptible to oil contamination. They are treated on a regular basis and always if they are to be returned to surface water bodies. After treatment, waste waters are in part used inside power plants – thereby contributing to coverage of water requirements for industrial uses – and in part released into surface water bodies.

The volumes of waste waters are estimated by referring to the potential capability and utilization of water treatment systems, as well as to the modes of operation of the industrial installation to which these systems belong.

As is obvious, waste waters reflect the trend of water requirements for industrial uses, with a few deviations due, above all, to the variability of precipitation.

EN21 Polluting load of waste waters

Waste waters carry substances which alter the physico-chemical characteristics of the receiving water bodies, thus causing a potentially negative impact on ecosystems and affecting subsequent water uses (e.g. drinking, farming and recreation).
In the case of Enel, the extent of the problem is much smaller than in other industries, such as the chemical one. Nevertheless, the applicable legislation specifies strict limits for concentration of pollutants, with which Enel complies through the use of treatment systems.
Waste waters are distinguished on the basis of their characteristics (acidic/alkaline, oily, ammonia-containing, coming from desulfurizer drains, meteoric, gray water) and separately treated. After treatment, some of their parameters (e.g. conductivity, pH, turbidity, dissolved oxygen and oil content) are continuously monitored.

This activity ensures compliance with legislative limits; indeed, when pollutant concentrations get close to legislative limits, waste waters are treated again until reaching compliance.
Also the waste waters that are reused inside power plants (contributing to coverage of water requirements for industrial uses) usually need prior treatment to conform to the applicable legislation.

The use of environmental management systems (certified or to be certified) makes it possible to record the mass emissions of typical and quantitatively significant pollutants (metals and compounds, nitrogen and compounds, phosphorus and compounds), as well as COD (Chemical Oxygen Demand) and BOD (Biochemical Oxygen Demand) in the waste waters released by almost all installations (except for some small thermal power plants).
These data are obtained by multiplying the measured concentrations by the volumes of the released waste waters.

EN21 Radionuclides in waste waters (nuclear generation)

The most common sources of radionuclide-containing waste waters are laundries, decontamination areas, drains or losses from primary loop components. Before being discharged, radioactive waste waters are mixed with conventional waste waters. If radionuclide concentrations (corrosion and fission products and tritium) exceed the limits mandated by the applicable legislation or specified in the authorizations for releases into the receiving water bodies, then radioactive waste waters are conveyed to a vaporization treatment system. Given its low level of radioactivity, the vaporized water may, after condensing, be reused or rejoin waste waters, while the remaining concentrated solution flows into liquid radioactive waste.
The following radioactive isotopes are monitored:

- corrosion and fission products: the same radionuclides as those measured in aerosols (alpha, beta and gamma emitters);
- tritium.

Here, the activity of the radionuclides contained in the discharged waste waters (obtained by multiplying their measured concentrations by the volumes of the discharged waste waters) is expressed in billions of Becquerel (GBq).

Performance Indicators - KPIs

			2005	2006	2007	2008	**2009**
EN21	**Net specific conventional polluting load of waste waters discharged by the plants (nuclear CHP)**						
	Metals and compounds (expressed as metal equivalents)	mg/kWh_{eq}	-	0.034	0.014	0.013	0.012
	Total nitrogen (expressed as N)	mg/kWh_{eq}	-	8.25	7.26	3.17	2.53
	Total phosphorus (expressed as P)	mg/kWh_{eq}	-	0.317	0.200	0.182	0.162
	COD	mg/kWh_{eq}	-	13.2	9.81	8.30	8.16
	BOD	mg/kWh_{eq}	-	1.56	1.28	1.22	1.29
EN21	**Net specific polluting load of radionuclides in waste waters**						
	Nuclear generation						
	Tritium	kBq/kWh	-	-	2.19	3.36	2.55
	Nuclear generation (CHP)						
	Tritium	kBq/kWh_{eq}	-	1.28	1.09	0.978	1.58

-: no data due to absence of activities in the year.

EN21 Specific polluting load of waste waters

This item expresses the amount (per kWh net or kWh_{eq} net of thermal/nuclear generation, simple or CHP) of the typical and significant polluting substances and of the parameter values of the waste waters from thermal and nuclear power plants which are returned to water bodies.
As is obvious, this load is chiefly dependent on the efficiency of waste water treatment systems and cannot be easily correlated with other factors concerning the power plants and their modes of operation.

Waste

Absolute data

(1/3)

		Source		2005	2006	2007	2008	**2009**
EN22	**Non-hazardous special waste**							
	Coal bottom ash	fossil-fired thermal generation (simple and CHP)						
	production		t	356,344	445,097	483,123	629,873	639,282
	delivery to recovery operators		t	44,107	42,241	82,748	91,679	194,976
	Coal flyash	fossil-fired thermal generation (simple and CHP)						
	production		t	2,590,925	2,905,986	3,715,085	6,649,187	7,589,536
	delivery to recovery operators		t	1,786,031	1,633,647	2,328,985	2,644,072	2,152,508
	Oil bottom ash	fossil-fired thermal generation (simple and CHP)						
	production		t	40.8	93.1	24.4	60.5	3,574
	Gypsum from desulfurization	fossil-fired thermal generation (simple and CHP)						
	production		t	279,632	405,710	860,546	1,709,131	1,630,099
	delivery to recovery operators		t	284,421	280,767	286,811	320,523	861,570
	Other							
	production	electricity generation & geothermal drilling (1)	t	265,701	824,873	753,318	760,421	812,714
		electricity distribution	t	48,032	31,439	43,384	129,505	208,474
		various activities	t	175	371	278	1,395	3,432
		Total	**t**	**313,908**	**856,683**	**796,979**	**891,320**	**1,024,621**
	delivery to recovery operators	electricity generation & geothermal drilling (1)	t	118,515	140,013	141,401	102,061	85,743
		electricity distribution	t	46,347	29,296	32,477	32,945	46,047
		various activities	t	125	331	273	2,607	3,019
		Total	**t**	**164,986**	**169,641**	**174,151**	**137,613**	**134,809**
	Total							
	production	electricity generation & geothermal drilling	t	3,492,643	4,581,759	5,812,095	9,748,671	10,675,205
		electricity distribution	t	48,032	31,439	43,384	129,505	208,474
		various activities	t	175	371	278	1,395	3,432
		Total	**t**	**3,540,850**	**4,613,569**	**5,855,757**	**9,879,571**	**10,887,112**
	delivery to recovery operators	electricity generation & geothermal drilling	t	2,233,074	2,096,667	2,839,945	3,158,335	3,294,798
		electricity distribution	t	46,347	29,296	32,477	32,945	46,047
		various activities	t	125	331	273	2,607	3,019
		Total	**t**	**2,279,545**	**2,126,295**	**2,872,695**	**3,193,887**	**3,343,864**

(1) The data do not include those of the Gabcikovo power plant in Slovakia (net maximum electrical capacity: 739 MW – net generation in 2009: 2,376 MWh), which is operated, but not owned, by Enel.

WASTE - ABSOLUTE DATA (2/3)

		Source		2005	2006	2007	2008	2009
EN22	**Hazardous special waste**							
	Oil flyash	fossil-fired thermal generation (simple and CHP)						
	production		t	10,109	7,212	1,914	1,403	1,130
	delivery to recovery operators		t	94.3	133	118	0	753
	Other							
	production	electricity generation & geothermal drilling (1)	t	30,146	22,449	25,769	23,402	195,980
		electricity distribution	t	18,730	16,308	24,606	39,959	61,103
		various activities	t	22.6	13.8	756	968	1,481
		Total	**t**	**48,899**	**38,771**	**51,130**	**64,329**	**258,564**
	of which with PCBs	*electricity generation & geothermal drilling*	*t*	*1,077*	*1,192*	*3,161*	*2,966*	*4,135*
		electricity distribution	*t*	*2,065*	*1,386*	*1,479*	*2,025*	*1,428*
		various activities	*t*	*0.660*	*0.060*	*0*	*0.640*	*0.403*
		Total	***t***	***3,142***	***2,577***	***4,640***	***4,991***	***5,563***
	delivery to recovery operators	electricity generation & geothermal drilling (1)	t	8,480	3,910	3,731	4,416	5,451
		electricity distribution	t	7,182	8,537	12,800	18,496	15,829
		various activities	t	0.805	3.49	2.35	36.5	312
		Total	**t**	**15,663**	**12,450**	**16,533**	**22,948**	**21,592**
	of which with PCBs	*electricity generation & geothermal drilling*	*t*	*947*	*1,095*	*1,177*	*2,512*	*3,893*
		electricity distribution	*t*	*1,911*	*1,297*	*1,200*	*1,723*	*1,069*
		various activities	*t*	*0.660*	*0*	*0*	*0*	*0*
		Total	***t***	***2,858***	***2,392***	***2,377***	***4,236***	***4,962***
	Total							
	production	electricity generation & geothermal drilling	t	40,256	29,661	27,683	24,805	197,118
		electricity distribution	t	18,730	16,308	24,606	39,959	61,103
		various activities	t	22.6	13.8	756	968	1,481
		Total	**t**	**59,008**	**45,982**	**53,045**	**65,731**	**259,703**
	delivery to recovery operators	electricity generation & geothermal drilling	t	8,574	4,043	3,849	4,416	6,205
		electricity distribution	t	7,182	8,537	12,800	18,496	15,829
		various activities	t	0.805	3.49	2.35	36.5	312
		Total	**t**	**15,757**	**12,583**	**16,652**	**22,948**	**22,346**

(1) The data do not include those of the Gabcikovo power plant in Slovakia (net maximum electrical capacity: 739 MW – net generation in 2009: 2,376 MWh), which is operated, but not owned, by Enel.

(3/3)

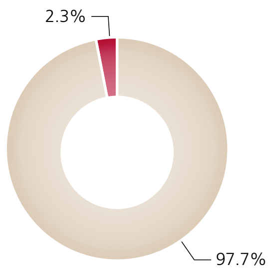
		Source		2005	2006	2007	2008	**2009**
EN22	**Total special waste**							
	production	electricity generation & geothermal drilling (1)	t	3,532,898	4,611,420	5,839,778	9,773,476	10,872,316
		electricity distribution	t	66,762	47,747	67,989	169,463	269,578
		various activities	t	198	385	1,034	2,363	4,913
		Total	**t**	**3,599,858**	**4,659,551**	**5,908,801**	**9,945,302**	**11,146,806**
	delivery to recovery operators	electricity generation & geothermal drilling (1)	t	2,241,648	2,100,710	2,843,795	3,162,751	3,301,002
		electricity distribution	t	53,529	37,833	45,277	51,441	61,876
		various activities	t	125	335	275	2,643	3,332
		Total	**t**	**2,295,302**	**2,138,878**	**2,889,347**	**3,216,835**	**3,366,210**
EN22	**Radioactive waste**							
	Low- , intermediate- and high-level: stored inside the plants	nuclear generation (simple and CHP)						
	liquid		m^3	-	3,054	2,923	2,795	2,643
	solid		t	-	441	346	338	310
	Low- and intermediate-level: production	nuclear generation (simple and CHP)						
	liquid		m^3	-	161	125	119	93.6
	solid		t	-	44.6	81.2	n.a.	n.a.
	of which: fraction not storable in off-site surface or subsurface sites		*t*	-	*0*	*12.8*	*n.a.*	*0*
	High-level: production	nuclear generation (simple and CHP)						
	solid		t	-	0.901	14.4	4.93	n.a.

-: no data due to absence of activities in the year.
n.a.: not available.

(1) The data do not include those of the Gabcikovo power plant in Slovakia (net maximum electrical capacity: 739 MW – net generation in 2009: 2,376 MWh), which is operated, but not owned, by Enel.

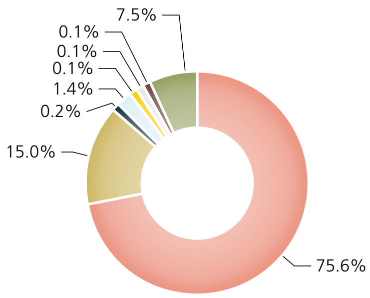
Special waste in 2009

Total production: **11.1** million t



Non-hazardous special waste in 2009

Total production: 10.9 million t



EN22 Special waste

Special waste represents the refuse from Enel's activities. This refuse is covered by the national legislation applicable in the countries where the Group operates. At European level, the reference legislation is Directive 2008/98/EC.

For classification of waste into non-hazardous and hazardous, Enel refers to Community legislation.

> In the pie chart, the **non-hazardous special waste** includes: i) the most representative items (specified in the "Waste" table: coal ash (flyash and bottom ash) and gypsum from desulfurization; ii) "other" waste (also globally shown in the tables), i.e. typical items which are individually inventoried or grouped as "not included in the previous categories". The typical items that are individually inventoried are: machinery & equipment and their parts; sludges from water treatment (waste waters and waters from dredging or septic tanks); materials removed by Enel from the trashracks of hydro power plant intake structures; the portion of alluvial sediments – mechanically removed from hydro basins upon emptying – which is not reused locally, because it is not classified as inert or classified as inert without a specified use; drill cuttings from geothermal activities; and packaging materials (paper and cardboard, wood, glass, plastics and metal). The waste "not included in the previous categories" consists of items of a general or exceptional nature, both liquid (e.g. aqueous waste from groundwater remediation) and solid (e.g. waste from fuel storage and preparation in coal-fired thermal power plants, absorbents, filtering materials, rags and protective clothing, batteries and accumulators, paper and cardboard, cables, miscellaneous components, iron and steel, wood, insulating materials, bituminous mixes, plastics, copper, bronze, brass, saturated or exhausted ion-exchange resins, waste equivalent to non-separately collected municipal waste, inorganic waste, mixed waste from building and demolition activities, waste from primary filtering and screening processes, waste from cooling water treatment, salts and their solutions, soil and rocks, exhausted toner cartridges, glass), as well as other items produced in low amounts but also individually inventoried, such as fuel-oil bottom ash and other ash.

> **Hazardous special waste** comprises: i) fuel-oil flyash (specified in the "Waste" table as the most representative item); ii) "other" waste (only specified in the pie chart), including: typical items which are individually inventoried (PCB-contaminated equipment, e.g. transformers, capacitors and their parts; used oils; used batteries; asbestos-containing materials; sludges from condensation of geothermal steam; waste from material contaminated by geothermal fluids); or items of a general or exceptional nature (oil-stained clothing, dirt and deposits, soil from remediation works, oil-in-water emulsions, etc.) which are grouped under the "remaining solid" and "remaining liquid" waste categories.

"Delivery to recovery operators" means the waste which is transferred to operators authorized to recover waste.

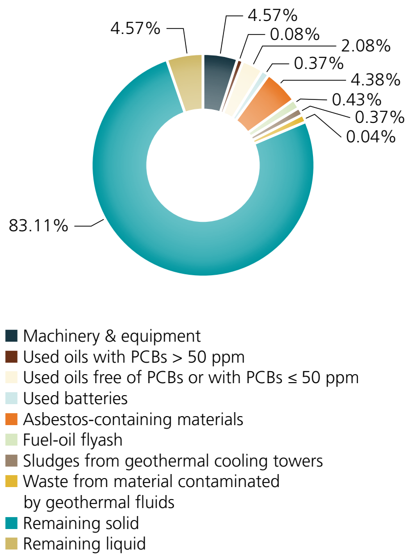
The waste data are those yearly reported to the waste inventory (for activities carried out within the European Union) or obtained from the qualitative and quantitative characteristics of the waste indicated in the relevant records.

The results show that:

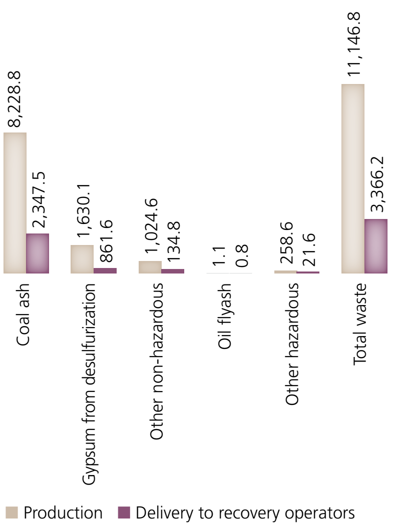
> the production of ash is obviously correlated with fuel consumption and

Hazardous special waste in 2009

Total production: **259.7** thousand t



Main categories of special waste in 2009 (thousand t)



characteristics, as well as with the presence of more or less effective treatment systems (bag filters or electrostatic precipitators); however, the amount of ash depends on various factors, such as: frequency of ash removal from flue-gas ducts and from the hoppers of boilers and of particulate collectors; possible "watering" of the ash to prevent the formation of dust during its temporary storage in the plant site; combustion of flyash in the upper part of boiler furnaces in the case of dual oil-gas firing;

> the production of gypsum naturally reflects limestone consumption in the flue-gas desulfurization process;
> the "remaining solid" waste includes the following main items: in the case of electricity generation, packaging materials containing residues of or contaminated by hazardous substances, absorbents, filtering materials, rags and protective clothing contaminated by hazardous substances, fluorescent tubes and other mercury-containing waste; in the case of distribution, soil from clean-up of accidental oil spills;
> the "remaining liquid" waste mostly derives from meteoric waters potentially contaminated by oils and collected in the vats underlying the transformers of high-voltage/medium-voltage substations in the electricity distribution grid.

The data show that, in the overall Group, about one third only of the waste produced is recovered. In contrast, the percentage of recovery in Italy, where the waste management capability is higher, is 80%. Enel plans to progressively extend this capability to its non-Italian operations through an intense awareness-raising activity, which is already under way. It should be stressed that the recovery of the main categories of waste (ash, gypsum and sludges) requires the presence of an advanced manufacturing industry (cement and brick factories, building industry) near Enel's installations. In areas where these industrial settlements are not present, Enel intends to assess the cost-effectiveness of transferring the waste to more distant locations or spurring the development of activities capable of taking up the amounts of waste produced.

Radioactive waste (nuclear generation)

The radioactive waste produced in Slovakia is treated in State-owned facilities. Both liquid and solid radioactive waste is classified into the following categories:

> low-level (e.g. clothing, paper towels, laboratory equipment used in areas where radioactive material is handled) and intermediate-level (e.g. contaminated equipment, sludges and resins from various treatments); this waste releases less than 2 kW/m³ of residual heat and may be further distinguished into:
  – "short-lived", the waste that, after conditioning, qualifies under the requirements for off-site surface or subsurface storage (specified average concentration of alpha-emitting nuclides: below 400 Bq/g);
  – "long-lived": the waste that, after conditioning, does not qualify under the requirements for off-site surface or subsurface storage (specified average concentration of alpha-emitting nuclides: equal to or greater than 400 Bq/g);
> high-level: waste releasing more than 2 kW/m³ of residual heat; it does not qualify under the requirements for off-site surface or subsurface storage; production of this waste is very small under the normal operating conditions of a nuclear power plant (e.g. metal waste and corrosion products removed during clean-up of the reactor core).

Solid waste is sorted on the basis of its activity and classified as follows:

> burnable technological waste;
> compactable technological waste;

> suitable for other treatment, such as fragmentation and cementing.

The waste is characterized and, depending on its type, it may be decontaminated, dried, cut, low-pressure compacted and finally packaged in drums or plastic bags. These drums or bags are temporarily segregated in shielded enclosures and then fed to treatment systems. The waste that cannot be stored in off-site surface or subsurface sites and remains in the plant site is placed into stainless steel containers.

Another category of solid waste, whose activity decreases rapidly (e.g. filters of the reactor ventilation system), may be delivered as special waste (normal industrial waste) immediately or after an adequate period of decay within the plant.

Liquid waste mostly consists of concentrated solutions arising from the treatment of waste waters via vaporization (see "Radionuclides in waste waters" in the "Liquid releases" chapter) and of drainage waters from systems, pipings and floors of the reactor building. Other contaminated liquid waste includes used oils, oils separated from waters, solvents, etc.

In Spain, the radioactive waste management is defined in the General Radioactive Waste Plan prepared by Enresa and approved by the Ministry of Industry. The current plan (the sixth one) was approved in July 2006 and will be replaced by the next plan in the course of 2010.

Two categories of radioactive waste are considered:

> low- and intermediate-level waste with "short-lived" beta-gamma radiation and limited content of "long-lived" alpha emitters; this waste is treated, solidified (if liquid) and conditioned in 220-liter drums in the nuclear power plants (resins, concentrates, sludges, dried sludges and filters are cementified and compactable waste is supercompacted); once the waste has been accepted by Enresa, it is delivered to the El Cabril facility for final storage;

> high-level waste with higher concentration of "long-lived" emitters and creation of considerable amounts of residual heat; the basic strategy (applying also to some intermediate-level waste which is not suitable for being finally stored at the El Cabril facility) is to deliver this waste to a dry, centralized, temporary storage facility operated by Enresa.

The tables show the most significant absolute data on radioactive waste: share of waste produced since the beginning of operation of the power plants and stored inside the same plants, as well as production of low/intermediate- and high-level waste in the year, distinguishing in both cases between liquid and solid waste.

Performance Indicators - KPIs

(1/2)

			2005	2006	2007	2008	**2009**
EN22	**Specific production of waste**						
	Coal and brown-coal ash (thermal generation)	g/kWh net from coal and brown coal	79.5	84.7	89.9	75.4	64.6
	Oil flyash (thermal generation)	g/kWh net from fuel oil & gas-oil	0.637	0.473	0.176	0.075	0.054
	Oil bottom ash (thermal generation)	g/kWh net from fuel oil & gas-oil	0.639	0.479	0.179	0.078	0.058
	Coal and brown-coal ash (thermal generation - CHP)	g/kWh_{eq} net from coal and brown coal	-	130	125	219	204
EN22	**Specific production of radioactive waste**						
	Nuclear generation						
	low- and intermediate-level						
	liquid	mm^3/kWh net	-	-	1	0	0
	solid	mg/kWh net	-	-	10	0	0
	Nuclear generation (CHP)						
	high-level						
	solid	mg/kWh_{eq} net	-	0	3	0	0
	low- and intermediate-level						
	liquid	mm^3/kWh_{eq} net	-	14	10	9	7
	solid	mg/kWh_{eq} net	-	4	3	7	2
EN22	**Low-, intermediate- and high-level radioactive waste stored in the plants**						
	liquid	% in volume of production since the start of operation	-	73.8	92	64.3	58.2
	solid	% in weight of production since the start of operation	-	55.8	87.9	37.1	32.8

-: no data due to absence of activities in the year.

WASTE - PERFORMANCE INDICATORS (2/2)

		2005	2006	2007	2008	**2009**
EN22 Waste recovery						
Coal and brown-coal ash	% of production	62.1	50	57.4	37.6	28.5
bottom ash	*% of production*	*12.4*	*9.49*	*17.1*	*14.6*	*30.5*
flyash	*% of production*	*68.9*	*56.2*	*62.7*	*39.8*	*28.4*
Gypsum from desulfurization	% of production	102	69.2	33.3	18.8	52.9
Other non-hazardous special waste						
electricity generation & geothermal drilling (1)	% of production	44.6	17	18.8	13.4	10.5
electricity distribution	% of production	96.5	93.2	74.9	25.4	22.1
fuel storage & handling, gas distribution	% of production	71	89.4	98.1	93.5	21.4
Total	**% of production**	**52.6**	**19.8**	**21.9**	**15.2**	**12.9**
Total non-hazardous special waste						
electricity generation & geothermal drilling	% of production	63.9	45.8	48.9	32.4	30.9
electricity distribution	% of production	96.5	93.2	74.9	25.4	22.1
fuel storage & handling, gas distribution	% of production	71	89.4	98.1	93.5	21.4
Total	**% of production**	**64.4**	**46.1**	**49.1**	**32.3**	**30.7**
Oil flyash	% of production	0.933	1.85	6.18	0	67.1
Other hazardous special waste						
electricity generation & geothermal drilling (1)	% of production	28.1	17.4	14.5	18.9	2.78
electricity distribution	% of production	38.3	52.3	52	46.3	25.9
fuel storage & handling, gas distribution	% of production	3.56	25.4	0.311	1.25	0
Total	**% of production**	**32**	**32.1**	**32.3**	**35.7**	**8.28**
Total hazardous special waste						
electricity generation & geothermal drilling	% of production	21.3	13.6	13.9	17.8	3.15
electricity distribution	% of production	38.3	52.3	52	46.3	25.9
fuel storage & handling, gas distribution	% of production	3.56	25.4	0.311	1.25	0
Total	**% of production**	**26.7**	**27.4**	**31.4**	**34.9**	**8.53**
Total special waste						
electricity generation & geothermal drilling	% of production	63.5	45.6	48.7	32.4	30.4
electricity distribution	% of production	80.2	79.2	66.6	30.4	23
fuel storage & handling, gas distribution	% of production	63.3	87.1	26.6	42.3	20.6
Total	**% of production**	**63.8**	**45.9**	**48.9**	**32.3**	**30.2**

(1) The data do not include those of the Gabcikovo power plant in Slovakia (net maximum electrical capacity: 739 MW – net generation in 2009: 2,376 MWh), which is operated, but not owned, by Enel.

EN22 Specific production of waste

Ash and gypsum from desulfurization (both from thermal generation, simple and CHP) are the only categories of waste which have a significant correlation with the volume of activities.

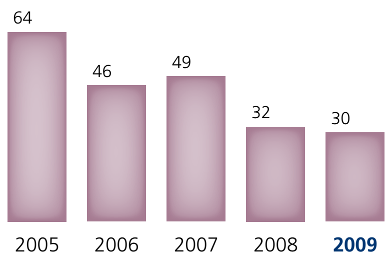
The tables show the overall production of coal ash and oil ash per kWh net (thermal generation) or kWh_{eq} net (CHP) obtained with each of the two fuels. The use of better quality fuels (lower production of ash) and the generalized application of advanced particulate collection technologies (higher separation of flyash) have opposite effects, which are accompanied by fluctuations that depend on contingent circumstances, as previously pointed out with reference to the waste production figures in absolute terms.

The net specific production of ash from thermal generation (simple and CHP) dropped from 75.4 g/kWh in 2008 to 64.6 in 2009 (simple) and from 219 g/kWh_{eq} in 2008 to 204 in 2009 (CHP).

For nuclear generation, the tables show two indicators that are typical of the sector:

> production of radioactive waste (distinguished by activity and state of aggregation) per unit of electricity produced in the year;
> ratio of the amount of (liquid and solid) radioactive waste stored in the plant site to the overall amount of the same waste produced since the beginning of operation of the plant.

Total waste recovery
(% of waste production)



EN22 Special waste recovery

For the main categories of special waste, this indicator expresses the ratio of the quantities delivered to recovery operators to the quantities produced.

The trends suggest that the overall value of special waste recovery has remained practically unchanged in the past two years (roughly 30%). Conversely, the recovery of gypsum mounted from 18.8% in 2008 to 52.9% in 2009.

EN24 Weight of transported, imported, exported or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III and VIII, and percentage of transported waste shipped internationally.

The overall weight of hazardous waste delivered by Enel or on behalf of Enel to recovery or disposal operators coincides with the amounts of the individual types of waste produced during the year, except for the amounts temporarily remaining in authorized deposits, located in the waste production sites. All the amounts of waste are delivered to authorized waste management operators.

Enel does not import or export waste.

For details, see the commentary on indicator EN22.

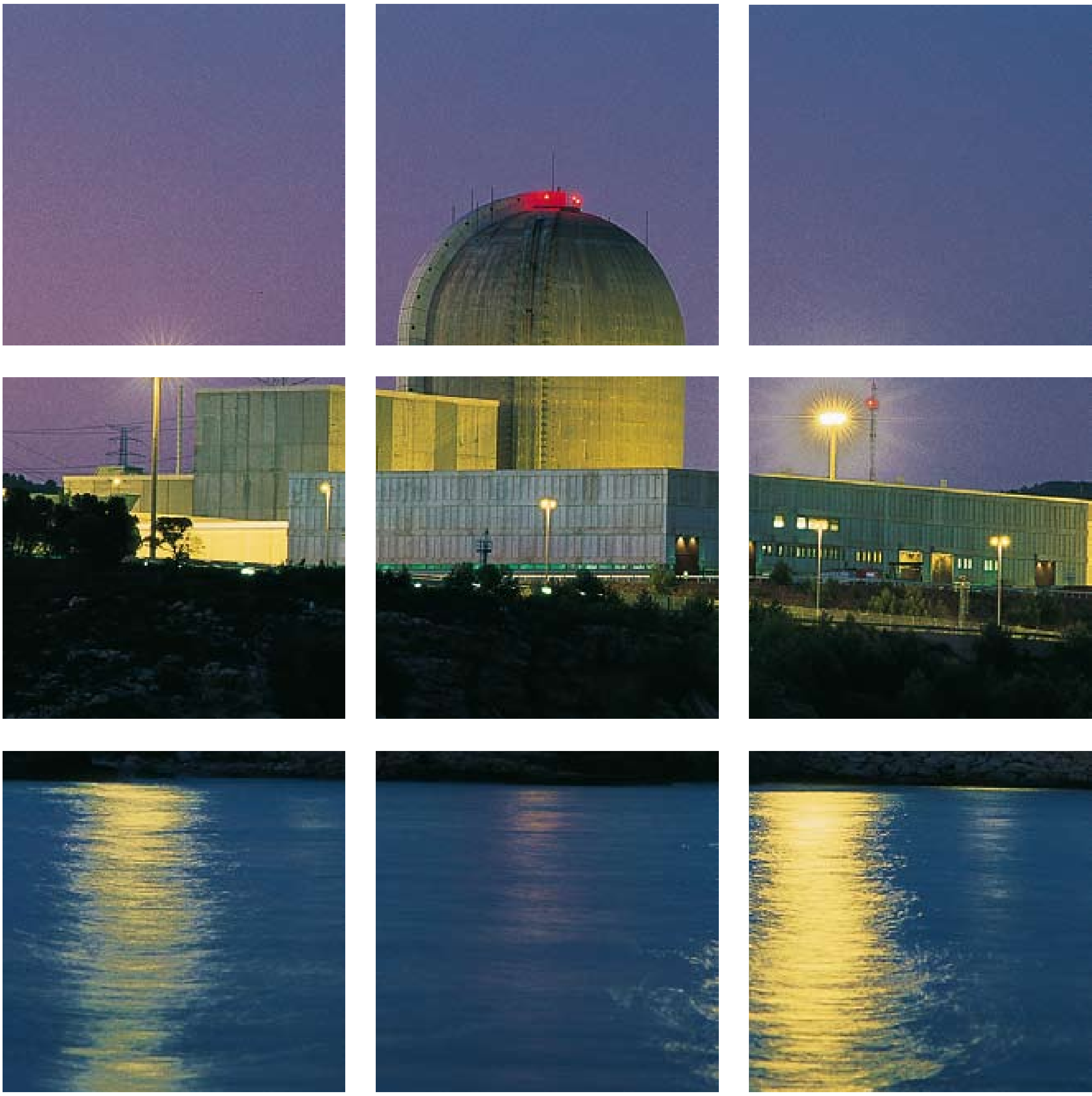
EN27 Percentage of products sold and their packaging materials that are reclaimed by category.

To carry out its activities, Enel purchases a broad range of products and raw materials in the market; these products and materials are packaged in containers of different shape and materials.

The pursuit of environmental management policies throughout the Group and the dissemination of ISO 14001-certified or EMAS-registered environmental management systems (with emphasis on performance) improve the sorting of waste and the recovery of packaging materials. Packaging materials are separately collected (paper and cardboard, wood, plastics, metals and glass).

Metal waste is sold, whereas the other separately-collected items of waste are disposed of at zero or extremely low costs.
The following are the categories of packaging materials that are produced and recovered.

Waste packaging (non-hazardous special waste)			
Paper and cardboard packaging (CER 15 01 01)	production	t	155.146
	delivery to recovery operators	t	109.155
Wooden packaging (CER 15 01 03)	production	t	443.732
	delivery to recovery operators	t	385.772
Plastic packaging (CER 15 01 02)	production	t	16.838
	delivery to recovery operators	t	10.331
Metallic packaging (CER 15 01 04)	production	t	40.370
	delivery to recovery operators	t	5.560
Other waste packaging not falling under the previous categories	production	t	502.098
	delivery to recovery operators	t	175.434
Paper and cardboard (CER 19 12 01, 20 01 01)	production	t	281.744
	delivery to recovery operators	t	255.462
Ferrous metal (iron, aluminum and steel) (CER 12 01 01, 12 01 02, 16 01 17, 17 04 05, 19 10 01, 19 10 02)	production	t	28,507.904
	delivery to recovery operators	t	17,776.584
Wood (CER 19 12 07, 17 02 01, 20 01 38)	production	t	949.244
	delivery to recovery operators	t	865.377
Plastic (CER 07 02 13, 12 01 05, 16 01 19, 17 02 03, 19 12 04, 20 01 39)	production	t	551.204
	delivery to recovery operators	t	337.968
Copper, bronze, brass (CER 17 04 01)	production	t	513.265
	delivery to recovery operators	t	509.841
Glass (CER 16 01 20, 17 02 02, 20 01 02)	production	t	30.124
	delivery to recovery operators	t	13.884
Waste packaging (hazardous special waste)			
Packaging containing residues of or contaminated by dangerous substances (CER 15 01 10)	production	t	149.762
	delivery to recovery operators	t	18.274
Metal waste contaminated with dangerous substances, metallic packaging containing a dangerous solid porous matrix (for example asbestos), including empty pressure containers (CER 17 04 09, 15 01 11)	production	t	65.622
	delivery to recovery operators	t	43.739
Glass, plastic and wood containing or contaminated with dangerous substances (CER 17 02 04)	production	t	1,171.451
	delivery to recovery operators	t	5.512



Europe

Bulgaria

Thermal power generation

(Enel Maritza East 3 AD)

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The Maritza East III power plant is ISO-14001 certified.

Power installations

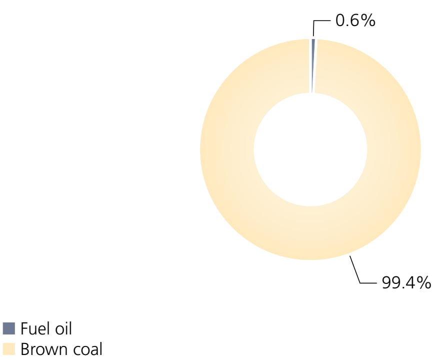
	Power plants no.	Units no.	Net maximum electrical capacity MW
Steam (condensing)	**1**	**4**	**775**

Net electricity generation

Total: 3,731 million kWh

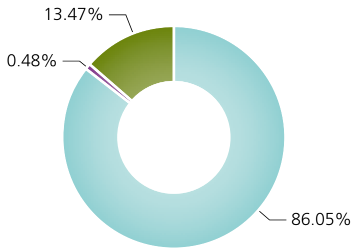
Fuel consumption

Total: 1,077,231 toe



Water for industrial uses

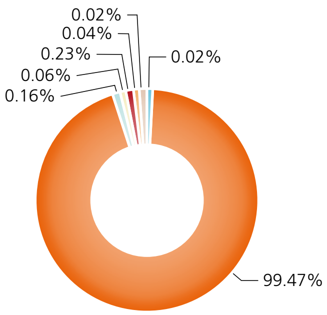
Total requirements: 23.6 million m³
Total abstraction from inland waters: 20.4 million m³



- From rivers
- From wells
- From waste waters (used inside the plants)

Expendables

Total: 389,747 t



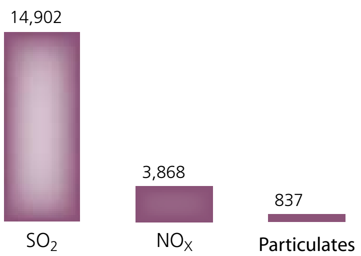
- Resins, hydrazine, carbohydrazide and hydrogen peroxide
- Limestone for flue-gas desulfurization
- Sulfuric & hydrochloric acids
- Caustic soda
- Lime, ferric chloride and polyelectrolyte
- Lubricating oil
- Other

Waste waters (m³)

Discharged	4,635,550
Used inside the plants	3,176,660

Waste waters include those meteoric waters that are susceptible to pollution and are therefore fed to treatment systems before being discharged or used.

Emissions into the atmosphere (t)



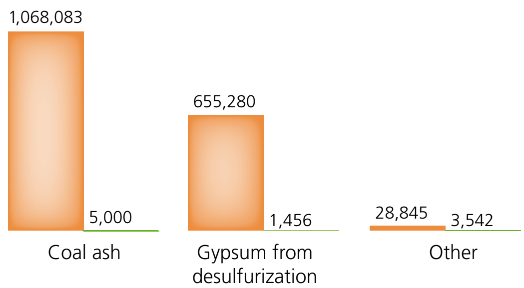
CO_2 (t)	5,166,302
from combustion	*5,004,185*
from desulfurization	*162,117*

Special waste

Total production: 1,752,343 t
Total delivery to recovery operators: 10,122 t

Non-hazardous
Production: 1,752,208 t
Delivery to recovery operators: 9,998 t

Hazardous
Production: 134 t
Delivery to recovery operators: 124 t



- Production
- Delivery to recovery operators

Wind power generation

(Enel Green Power SpA)

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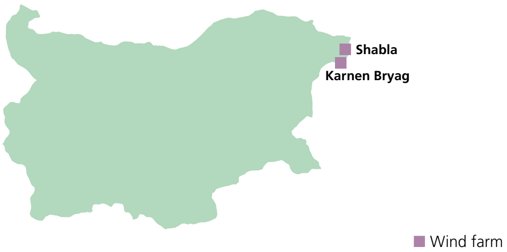


Power installations

Power plants no.	Net maximum electrical capacity MW
14	**21**

Net electricity generation

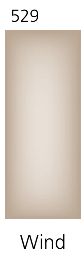
Total: 11 million kWh
(100% from wind)

Avoided CO_2 emissions

Due to wind power generation (t)	15,379

Emissions from the otherwise necessary fossil-fired thermal generation.

Equivalent yearly hours of utilization*



* On a statistical basis, yearly generation/capacity ratio. Generation is considered to refer to the entire year.

Eco-Balance and Indicators

STATUS DATA

		2005	2006	2007	2008	**2009**
Power-generating installations						
Power plants	no.	1	1	1	1	15
thermal	no.	1	1	1	1	1
wind	no.	-	-	-	-	14
Net maximum electrical capacity	MW	732	763	778	602	796
thermal	MW	732	763	778	602	775
wind	MW	-	-	-	-	21
EN29 **Service & real-estate management** (1)						
Vehicle fleet (special vehicles)	no.					18
Gross real-estate surface area	thousand m^2					650

-: no data due to absence of activities in the year.

(1) These activities have been surveyed since 2009.

RESOURCES

			2005	2006	2007	2008	2009
EN1 EN3	**Fossil fuels**						
	Thermal generation (including auxiliary boilers and emergency generating sets)						
	fuel oil (HS)	thousand t	14	8.28	7.11	6.18	6.92
	brown coal	thousand t	5,957	6,297	6,614	6,969	6,702
	Total	thousand toe	969	1,007	1,058	1,120	1,077
	Various activities	thousand toe	0	0	0	0	0.205
	Grand total	**thousand toe**	**969**	**1,007**	**1,058**	**1,120**	**1,077**
EN8	**Water for industrial uses**						
	From rivers (including meteoric waters from secondary rainfall)	million m^3	20.4	20.8	25.7	23.5	20.3
	From wells	million m^3	0.081	0.085	0.091	0.036	0.113
	From aqueducts	million m^3	0.095	0	0	0	0
	Total abstraction from inland waters	million m^3	20.6	20.9	25.8	23.6	20.4
	From waste waters (used inside the plants)	million m^3	0	3.59	4.39	4.15	3.18
	Total requirements	**million m^3**	**20.6**	**24.5**	**30.2**	**27.7**	**23.6**
	for thermal generation	million m^3	20.6	24.5	30.2	27.7	23.6
	Water for non-industrial uses						
	For real-estate and service management (1)	million m^3					0.269
EN1	**Expendables**						
	Resins	t	24.8	3.64	50	38.4	92.8
	Hydrazine	t	3.20	1.81	3.70	2.11	1.60
	Ammonia	t	41.1	4.83	8.11	7.90	2.65
	Limestone for flue-gas desulfurization	t	0	69,661	244,090	400,081	387,675
	Sodium hypochlorite	t	8	0	0	0	10.2
	Ferrous sulfate	t	44.7	0	0	0	0
	Trisodium phosphate	t	2.18	0	2.10	1.85	2.78
	Lime	t	187	155	164	331	762
	Ferric chloride	t	1	16	35.7	127	119
	Polyelectrolyte	t	0	0	0.500	1.37	1.81
	Sulfuric & hydrochloric acids	t	1,097	919	938	738	611
	Caustic soda	t	671	758	867	669	248
	Lubricating oil	t	53	46	74.1	194	142
	Dielectric oil	t	0	0	10.4	0	0
	Printing paper	t	0	0	0	0	4.16
	Other	t	39	57	45.6	59	73.7
	Total	**t**	**2,171**	**71,622**	**246,288**	**402,251**	**389,747**
	for thermal generation	t	2,171	71,622	246,288	402,251	389,743

(1) These activities have been surveyed since 2009.

PROCESSES AND PRODUCTS

		2005	2006	2007	2008	**2009**
Electricity generation (net)						
Thermal generation (simple)	**million kWh**	**3,005**	**3,065**	**3,467**	**3,720**	**3,731**
fuel oil & gas-oil	million kWh	0	23.9	22	19.5	22.8
brown coal	million kWh	3,005	3,041	3,445	3,700	3,709
From renewables (wind)	**million kWh**	-	-	-	-	**11.1**
Total	**million kWh**	**3,005**	**3,065**	**3,467**	**3,720**	**3,743**

EMISSIONS, LIQUID RELEASES & WASTE (1/2)

		Source		2005	2006	2007	2008	**2009**
	Emissions into the atmosphere							
EN20	SO_2	thermal generation	thousand t	211	194	99.7	28.5	14.9
EN20	NO_X	thermal generation	thousand t	6.91	7.21	5.44	4.78	3.87
EN20	Particulates	thermal generation	thousand t	3.32	3.37	1.55	0.816	0.837
EN16	CO_2	fossil-fired thermal generation (from combustion)	thousand t	4,362	4,393	4,697	4,996	5,004
		fossil-fired thermal generation (from desulfurization)	thousand t	0	30.7	107	171	162
EN16	Total greenhouse gases (CO_2, SF_6, CH_4)		thousand t of CO_2-equivalent	**4,362**	**4,424**	**4,804**	**5,167**	**5,166**
EN18	**Avoided CO_2 emissions**							
	Due to wind generation		thousand t	0	0	0	0	15.4
EN21	**Waste waters (discharged quantity)**	thermal generation	million m3	4.79	5.68	6.28	7.63	4.64
EN21	**Conventional polluting load of waste waters (thermal generation)**							
	Metals and compounds (expressed as metal equivalents)		kg	9,790	9,280	6,453	4,912	939
	Total nitrogen (expressed as N)		kg	11,522	0	0	33,111	23,417
	Total phosphorus (expressed as P)		kg	1,882	0	0	1,487	783
	COD		kg	29,881	115,407	1,891	2,981	1,504
	BOD		kg	115,760	31,371	664	876	404

-: no data due to absence of activities in the year.

EMISSIONS, LIQUID RELEASES & WASTE (2/2)

		Source		2005	2006	2007	2008	2009
EN22	**Non-hazardous special waste**							
	Coal bottom ash	thermal generation						
	production		t	126,564	157,894	107,008	111,780	106,808
	delivery to recovery operators		t	0	0	0	0	500
	Coal flyash	thermal generation						
	production		t	717,195	894,735	963,072	1,006,024	961,275
	delivery to recovery operators		t	0	0	0	0	4,500
	Gypsum from desulfurization	thermal generation						
	production		t	0	113,826	419,834	682,941	655,280
	delivery to recovery operators		t	0	0	0	0	1,456
	Other	electricity generation						
	production		t	893	21,749	24,269	38,863	28,845
	delivery to recovery operators		t	881	2,734	3,772	5,523	3,542
	Total	electricity generation						
	production		t	844,652	1,188,204	1,514,183	1,839,608	1,752,208
	delivery to recovery operators		t	881	2,734	3,772	5,523	9,998
EN22	**Hazardous special waste**							
	production	electricity generation	t	12,503	263	823	1,114	134
		various activities	t	0	0	0	0	134
	of which with PCBs	*electricity generation*	*t*	*0*	*12.8*	*72.3*	*67.9*	*106*
	delivery to recovery operators	electricity generation	t	6,523	17.1	66.9	76.1	124
	of which with PCBs	*electricity generation*	*t*	*6,523*	*17.1*	*66.9*	*76.1*	*124*
EN22	**Total special waste**							
	production	electricity generation	t	857,156	1,188,467	1,515,005	1,840,722	1,752,343
		various activities	t	0	0	0	0	134
	delivery to recovery operators	electricity generation	t	7,404	2,751	3,839	5,599	10,122

INDICATORS

			2005	2006	2007	2008	**2009**
	Resource conservation and quality						
EN1 EN3	Net heat rate of thermal generation	kcal/kWh	3,224	3,285	3,052	3,011	2,887
EN8	Net specific requirements of water for industrial uses in thermal generation	liters/kWh	6.86	8	8.72	7.45	6.32
EN8	Coverage of requirements of water for industrial uses						
	From rivers (including meteoric waters from secondary rainfall)	% of requirements	99.1	85	85.2	84.9	86
	From wells	% of requirements	0.393	0.347	0.301	0.130	0.479
	From aqueducts	% of requirements	0.461	0	0	0	0
	Total from inland waters	**% of requirements**	**100**	**85.4**	**85.5**	**85**	**86.5**
EN10	from waste waters (used inside the plants)	% of requirements	0	14.7	14.5	15	13.5
EN1 EN3	Fossil fuel consumption for thermal generation						
	fuel oil	% of total fuel consumption	1.37	0.781	0.638	0.524	0.610
	brown coal	% of total fuel consumption	98.6	99.2	99.4	99.5	99.4
	Specific emissions into the atmosphere						
EN20	SO_2 (thermal generation)	g/kWh thermal net	70.4	63.4	28.8	7.66	3.99
EN20	NO_X (thermal generation)	g/kWh thermal net	2.30	2.35	1.57	1.28	1.04
EN20	Particulates (thermal generation)	g/kWh thermal net	1.11	1.10	0.447	0.219	0.224
EN16	CO_2 (thermal generation)	g/kWh thermal net	1,452	1,443	1,386	1,389	1,385
		g/kWh total net	1,452	1,443	1,386	1,389	1,380
EN22	**Specific production of waste**						
	Brown-coal ash (thermal generation)	g/kWh net from coal	281	346	311	302	288
EN22	**Waste recovery**						
	Brown-coal ash	% of production	0	0	0	0	0.468
	bottom ash	*% of production*	*0*	*0*	*0*	*0*	*0.468*
	flyash	*% of production*	*0*	*0*	*0*	*0*	*0.468*
	Gypsum from desulfurization	% of production	0	0	0	0	0.222
	Other non-hazardous special waste						
	electricity generation	% of production	98.6	12.6	15.5	14.2	12.3
	Total non-hazardous special waste						
	electricity generation	% of production	0.104	0.230	0.249	0.300	0.571
	Hazardous special waste						
	electricity generation	% of production	52.2	6.49	8.13	6.84	92.1
	Total special waste						
	Electricity generation	% of production	0.864	0.231	0.253	0.304	0.578
	Electricity generation from renewables						
	Wind	% of total generation	0	0	0	0	0.297

Highlights

Enel operates in Bulgaria through Enel Maritza East 3 (thermal generation) and Enel Green Power (wind generation).

Wind power

At the end of 2009, Enel entered the market of renewables in Bulgaria, thanks to an agreement with Global Wind Power Bulgaria, a subsidiary of the Danish company Global Wind Power A/S (net maximum capacity in 2009: 21 MW). However, wind power generation in 2009 was very low because the related power plants were commissioned at the end of the year.

Environmental management systems

In 2009, Enel's Maritza East III plant (in the south-east of the country, near Stara Zagora) gained the ISO 14001 certification.

Plant efficiency enhancement and environmental protection

In 2009, the fourth unit (about 208 MW) of Enel's thermal plant of Maritza East III went back into service. After environmental and efficiency enhancements, the plant increased its capacity by about 35%. Additionally, two new start-up units were inaugurated. The units consist of two gas-oil-fired boilers with a total capacity of 24 MW_{th}. Thermal generation rose slightly (11 GWh) on 2008.
With the completion of modernization works, Maritza East III has become the single brown-coal-fired thermal plant in the Balkan area operating in full compliance with the most advanced environmental standards introduced by the European Union. Environmental enhancements included the construction of desulfurizers, the introduction of a water resource management system and the installation of waste water purification systems.
Lake Rozov Kladenetz (from which water is abstracted for cooling of the plant) and an about 15-km section of the Sokolitza inlet river (extending from the plant's water release channel to the lake) are protected to conserve natural habitats and favor the nesting of wild avian fauna. This area represents a major biocorridor interconnecting mount Sakar and the Maritza and Sazliyka rivers.
Enel's efforts to protect the basin are focused on reduced consumption of water (for both cooling and other industrial services) and on chemical and biological purification of releases. In 2009, water consumption significantly declined (see EN8).

Applicable GRI indicators

EN1 Among expendables, consumption of limestone for flue-gas desulfurization progressively went up in connection with the entry into operation of desulfurizers.
Consumption of caustic soda and hydrazine was down by 63% and 24%, respectively; this result is due to the lower consumption of water for industrial uses (which was treated) than during modernization of the plant. Conversely, lime for waste water treatment was up by 130%.

EN1
EN3 Fuel consumption in office buildings and for services (mostly transport) amounted to 205 toe (8.58 TJ).

EN4 In 2009, the Maritza East III plant consumed about 113 TJ (31.4 GWh) of electricity for the operation of its machinery and equipment (e.g. pumping stations and excavators for the ash settling basin), which are used in generation activities and located off the plant site. Considering the Bulgarian average heat rate of 12,087 kJ/kWh (2,887 kcal/kWh), the corresponding primary energy consumption was 379,290 GJ.

EN5 The efficiency of the Maritza thermal plant improved in the course of 2009. The energy saved was equal to 1,943 TJ, thanks to reduction of the net heat rate from 3,011 kcal/kWh to 2,887 kcal/kWh, the lowest value in the past five years in spite of the presence of desulfurizers.
The following efficiency enhancements were made:

> installation of an automatic system to sample and measure quality and quantity of stored brown-coal; the system permits to make an adequate selection of the fuel and to optimize the heat rate;
> retrofit of the high-pressure pulverized-water supply system by replacing cold water with water coming from a high-pressure preheater;
> installation of steam traps along the turbine outlet lines to eliminate losses and reduce the energy consumed to produce demineralized make-up water;
> adoption of a new, integrated, water management system (see EN21), which saved electricity thanks to reduced operation (and consumption) of pumps withdrawing water for industrial uses.

EN8 The reduction (15%) of net specific requirements of water for industrial uses in 2009 is mainly due to optimized use of the resource through a new, integrated, water management system (see EN21). This system decreased overall requirements, despite the fact that desulfurizers use large amounts of water.

EN16 The slight improvement in specific CO_2 emissions in 2009 is due to the decrease of the overall heat rate of the plant.

EN18 Progressive increase of efficiency from 2004 to 2009 was the solution chosen to abate specific CO_2 emissions from thermal generation. The decrease of the heat rate displaced 41,610 t of CO_2 emissions in 2009.
As for renewables, wind power generation displaced over 15,000 t of CO_2 emissions into the atmosphere in 2009.

EN20 Environmental upgrades of the plant (started in 2004 and ended in 2009) curbed specific emissions of SO_2 (by over 86% on 2007 and about 94% on 2005), as well as those of other macro-pollutants (NO_X down by about 55%, particulates down by about 80%, both vs. 2005).

EN21 The amount of treated and released waste waters fell after introducing a new water management system, which increased their recovery through:

> construction of a 30,000 m^3 tank collecting part of the waters from the ash settling basin; these waters are reused as make-up waters for the ash handling system, especially when the edges of the settling basin are periodically lifted to facilitate the settling of suspended solids on its bottom; this increases the storable volume, requiring a larger amount of water;
> construction of a rainwater collection basin, including also an oil separation tank; the basin collects the water drained from the sewer system, to be subsequently used in ash handling;

> reuse of the closed-cycle cooling-system drainage waters to feed desulfurizers and cover other requirements of the plant;
> construction of a new ash-handling water-supply system.

EN22 The waste management process aims at maximizing recovery through separate collection of all types of special waste. The introduction of a dehydration system made it possible to sell roughly 1,500 t of gypsum in 2009. In 2010, this figure is expected to reach approximately 300,000 t, thanks to arrangements made with building firms which manufacture plasters.
Efficiency improvements sharply decreased specific production of coal ash (from 346 g/kWh in 2006 to 288 g/kWh in 2009).

EN23 The ash handling system had some leaks, which caused the spilling of water and ash onto the soil and into the Sokolitza river. The spilt substances are not hazardous and investigations confirmed that no damage to the environment was caused. Owing to these spills, fines were paid to the local authority. In these cases, measures to promptly restore the correct operation of the system and to minimize spills are taken. Additionally, the ash handling system is undergoing major remedial maintenance, which will lead to its gradual replacement so as to minimize or eliminate these incidents. Use will be made of new pipings with a layer of abrasion-proof basalt, which will avoid the formation of cracks.

France

Wind power generation

(Enel Erelis Sas)

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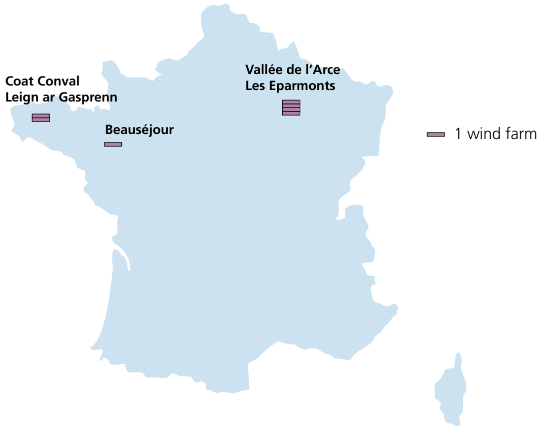


Power installations

	Power plants no.	Net maximum electrical capacity MW
	7	**68**

Net electricity generation

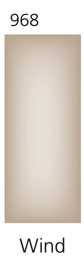
Total: 66 million kWh
(100% from wind)

Avoided CO_2 emissions

Due to wind power generation (t)	42,920

Emissions from the otherwise necessary fossil-fired thermal generation.

Equivalent yearly hours of utilization*



* On a statistical basis, yearly generation/capacity ratio. Generation is considered to refer to the entire year.

Eco-Balance and Indicators

STATUS DATA

		2008	**2009**
Power-generating installations			
Power plants (wind)	**no.**	**1**	7
Net maximum electrical capacity	**MW**	**11.6**	68.1
Service & real-estate management (1)			
Service vehicles	no.		10
Gross real-estate surface area	thousand m^2		0.7

(1) These activities have been surveyed since 2009.

RESOURCES

			2008	**2009**
EN1 EN3	**Fossil fuels**			
	Various activities	thousand toe	0	0.013
EN4	**Primary electricity**			
	Various activities	million kWh	0	0.013
	Water for non-industrial uses (for real-estate and service management)	million m^3	0	0.001
EN1	**Expendables**			
	Printing paper	t	0	0.499

PROCESSES AND PRODUCTS

		2008	**2009**
Electricity generation (net)			
From renewables (wind)	**million kWh**	**7**	65.9

EMISSIONS

		Source		2008	**2009**
	Emissions into the atmosphere				
EN16	CO_2	various activities	thousand t	0	0.039
EN18	**Avoided CO_2 emissions**				
	Due to wind generation		thousand t	4.56	42.9

INDICATORS

		2008	**2009**
Electricity generation from renewables			
Wind	% of total generation	100	100

Highlights

Enel operates in France through Enel Erelis (wind generation).

Wind power

Enel Erelis put into service six new wind farms in 2009, increasing its net maximum capacity by roughly 56.5 MW. During the year, wind power generation was equal to roughly 66 GWh net.

Nuclear power

In France (see the “Environmental commitment” chapter), Enel participates in the construction of a plant based on the EPR (European Pressurized Reactor) technology, in joint venture with EDF.

Applicable GRI indicators

EN2 In wind power generation, reuse of reconditioned components is fairly widespread.

EN1
EN3 Fuel consumption by office buildings and for services (mostly for heating, canteens and transport) amounted to about 13 toe (0.54 TJ) in 2009.

EN4 In 2009, offices consumed 46.8 GJ (about 13 MWh) of electricity.

EN5 Use is made of newest-generation machinery, with the highest efficiency available in the market.

EN7 To reduce indirect energy consumption, priority is given to commuting by train.

EN18 In 2009, wind power generation displaced 43,000 t of CO_2 emissions into the atmosphere.

EN26 Studies to mitigate noise are conducted upon development of installations.

Greece

Hydro and wind power generation

(Enel Green Power SpA)

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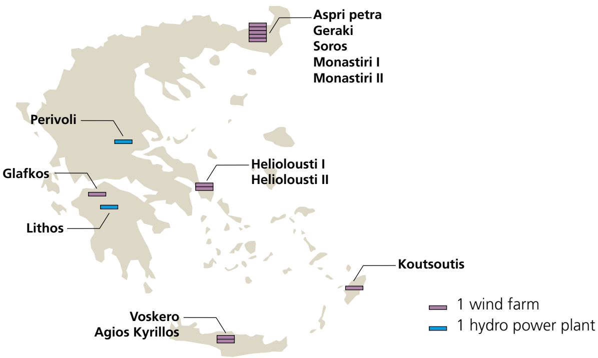


Power installations

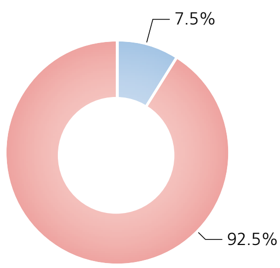
HYDRO

	Power plants no.	Head installations no.	Net maximum electrical capacity MW
	2	**2**	**10**

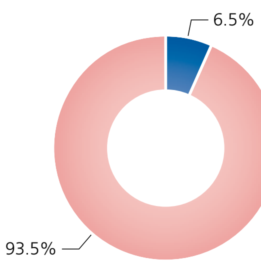
WIND

	Power plants no.	Net maximum electrical capacity MW
	11	**123**

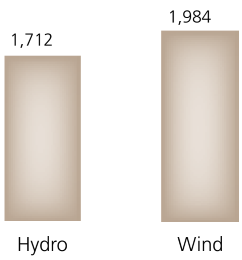
Net maximum electrical capacity
Total: 133 MW



Net electricity generation
Total: 262 million kWh



Equivalent yearly hours of utilizzation*



* Yearly generation/capacity ratio.

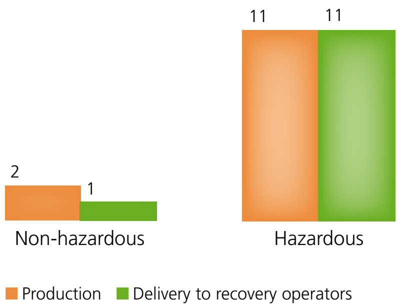
Expendables
Total: 0.5 t

Avoided CO_2 emissions

Due to hydro generation from natural flows (t)	16,435
Due to wind generation (t)	234,845
Total (t)	**251,280**

Emissions from the otherwise necessary fossil-fired thermal generation.

Special waste
Total production: 13 t
Total delivery to recovery operators: 12 t



Other data

WIND GENERATION

Wind systems	Surface area occupied by platforms, service roads and buildings (ha)	40.41
	Total surface area affected by the installations (ha)	20 to 100 times larger

Eco-Balance and Indicators

STATUS DATA

			2007	2008	2009
	Power-generating installations				
	Power plants	no.	7	16	13
	hydro	no.	-	7	2
	wind	no.	7	9	11
	Net maximum electrical capacity	MW	79.6	107	133
	hydro	MW	-	9.58	10
	wind	MW	79.6	97.2	123
EN29	**Service management** (1)				
	Vehicle fleet				
	service vehicles	no.			7
	special vehicles	no.			4

(1) These activities have been surveyed since 2009.

RESOURCES

			2007	2008	2009
EN4	**Primary electricity**				
	Various activities	million kWh	0	0	0.467
EN1	**Expendables**				
	Lubricating oil	t	0	1.53	0.500
	Printing paper	t	0	0	1.25
	Other	t	0	0.040	0
	Total	**t**	**0**	**1.57**	**1.75**
	for hydro generation	t	0	0	0.500
	for wind generation	t	0	1.57	0

PROCESSES AND PRODUCTS

		2007	2008	2009
Electricity generation (net)				
From renewables	million kWh	53.5	243	262
hydro from natural flows	million kWh	0	2.81	17.1
wind	million kWh	53.5	240	245

EMISSIONS & WASTE

		Source		2007	2008	2009
EN18	**Avoided CO_2 emissions**					
	Due to hydro generation from natural flows		thousand t	0	2.70	16.4
	Due to wind generation		thousand t	51.3	230	235
	Total		**thousand t**	**51.3**	**233**	**251**
EN22	**Non-hazardous special waste**	electricity generation				
	production		t	0.200	5.24	1.52
	delivery to recovery operators		t	0	4.76	0.600
EN22	**Hazardous special waste**					
		electricity generation				
	production		t	0.100	3.60	11.4
	of which with PCBs		*t*	*0.100*	*1.78*	*11.4*
	delivery to recovery operators		t	0	1.04	11.4
	of which with PCBs		*t*	*0*	*0*	*11.4*
EN22	**Total special waste**	electricity generation				
	production		t	0.300	8.84	13
	delivery to recovery operators		t	0	5.80	12

INDICATORS

			2007	2008	2009
EN22	**Waste recovery**				
	Non-hazardous special waste				
	electricity generation	% of production	0	90.7	39.4
	Hazardous special waste				
	electricity generation	% of production	0	28.9	100
	Total special waste				
	electricity generation	% of production	0	65.6	92.9
	Electricity generation from renewables				
	Hydro from natural flows	% of total generation	0	1.16	6.54
	Wind	% of total generation	100	98.8	93.5

Highlights

Renewables

Enel operates in Greece through EGP Hellas (wind and hydro power generation). In 2009, net maximum capacity was up by about 27 MW, thanks to the commissioning of three new wind farms (26 MW) and to the increase of the net maximum capacity of hydro power plants by about 1 MW. The latter result may be ascribed to both the entry into operation of a new run-of-river mini-hydro installation and the fact that Endesa's facilities are no longer part of Enel's assets. With 245 GWh from wind farms and 17.1 GWh from hydro power plants, net electricity generation was up by 19 GWh on 2008.

Applicable GRI indicators

EN2 Wind farm manufacturers withdraw no-longer-functioning machinery and equipment, recovering and recycling about 35% of materials inside their process.

EN4 In 2009, offices consumed about 1,681 GJ (467 MWh) of electricity.

EN18 Electricity generation from renewables avoided 251,000 t of CO_2 emissions into the atmosphere in 2009.

Ireland

Thermal power generation

(Endesa SA)

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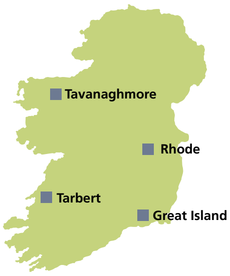


Fuel-oil and gas-oil thermal power plant

Power installations

	Power plants no.	Units no.	Net maximum electrical capacity MW
Steam (condensing)	**4**	**11**	**1,068**

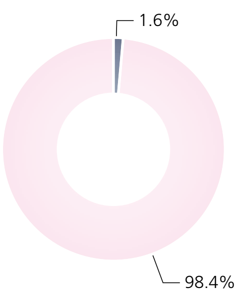
Both the Great Island and the Tarbert power plants (total capacity: 860 MW) are ISO-14001 certified.

Net electricity generation

Total: 627 million kWh

Fuel consumption

Total: 214,314 toe



Fuel oil
Gas-oil

Water for industrial uses

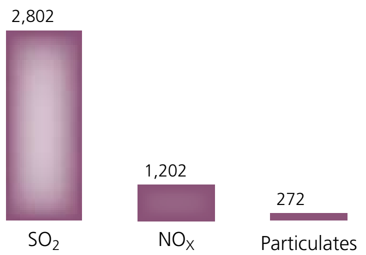
Total requirements: 417,881 m³
Total abstraction from inland waters: 417,881 m³

Waste waters

Discharged (m³)	10,500

Waste waters include those meteoric waters that are susceptible to pollution and are therefore fed to treatment systems before being discharged or used.

Emissions into the atmosphere (t)



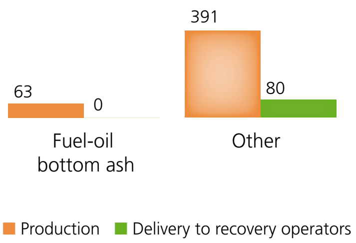
CO_2	552,075

Special waste

Total production: 1,304 t
Total delivery to recovery operators: 274 t

Non-hazardous
Production: 454 t
Delivery to recovery operators: 80 t

Hazardous
Production: 850 t
Delivery to recovery operators: 194 t



Eco-Balance and Indicators

STATUS DATA

			2009
	Power-generating installations		
	Power plants (thermal)	no.	4
	Net maximum electrical capacity	MW	1,068

RESOURCES

			2009
EN1 EN3	**Fossil fuels**		
	Thermal generation (including auxiliary boilers and emergency generating sets)		
	fuel oil (VLS)	thousand t	221
	gas-oil	thousand t	3.46
	Total	**thousand toe**	**214**
EN8	**Water for industrial uses**		
	From aqueducts	million m^3	0.418
EN8 EN21	**Open-cycle cooling water** (thermal generation)	million m^3	222

PROCESSES AND PRODUCTS

		2009
Electricity generation (net)		
Fuel oil & gas-oil	million kWh	627

EMISSIONS, LIQUID RELEASES & WASTE

		Source		2009
	Emissions into the atmosphere			
EN20	SO_2	thermal generation	thousand t	2.80
EN20	NO_X	thermal generation	thousand t	1.20
EN20	Particulates	thermal generation	thousand t	0.272
EN16	CO_2	fossil-fired thermal generation (from combustion)	thousand t	552
EN21	**Waste waters (discharged quantity)**	thermal generation	million m^3	0.011
EN22	**Non-hazardous special waste**			
	Oil bottom ash	thermal generation		
	production		t	63
	Other	electricity generation		
	production		t	391
	delivery to recovery operators		t	80
	Total	electricity generation		
	production		t	454
	delivery to recovery operators		t	80
EN22	**Hazardous special waste**	electricity generation		
	production		t	850
	of which with PCBs		*t*	*194*
	delivery to recovery operators		t	194
	of which with PCBs		*t*	*194*
EN22	**Total special waste**	electricity generation		
	production		t	1,304
	delivery to recovery operators		t	274

INDICATORS

			2009
	Resource conservation and quality		
EN1 EN3	Net heat rate of thermal generation	kcal/kWh	3,418
EN8	Net specific requirements of water for industrial uses in thermal generation		
	including contribution of as-is sea water	liters/kWh	0.667
	excluding contribution of as-is sea water	liters/kWh	0.667
EN8	Coverage of requirements of water for industrial uses (from aqueducts)	% of requirements	100
EN1 EN3	Fossil fuel consumption for thermal generation		
	fuel oil	% of total fuel consumption	98.4
	gas-oil	% of total fuel consumption	1.63
	VLS fuel oil	% of total fuel-oil consumption	100
	Specific emissions into the atmosphere		
EN20	SO_2 (thermal generation)	g/kWh thermal net	4.47
EN20	NO_X (thermal generation)	g/kWh thermal net	1.92
EN20	Particulates (thermal generation)	g/kWh thermal net	0.434
EN16	CO_2 (thermal generation)	g/kWh thermal net	880
EN22	**Specific production of waste**		
	Oil bottom ash (thermal generation)	g/kWh net from fuel oil & gas-oil	0.100
EN22	**Waste recovery**		
	Non-hazardous special waste		
	electricity generation	% of production	17.6
	Hazardous special waste		
	electricity generation	% of production	22.8
	Total special waste		
	electricity generation	% of production	21

Highlights

Enel operates in Ireland through Endesa (thermal generation).

Applicable GRI indicators

EN26 The yearly goals of the environmental management system (ISO-14001 certified) include a noise-abatement action plan concerning all four thermal power plants. The competent authority is the Environmental Protection Agency (EPA).
The noise-immission zoning plan establishes limits of 55 dB during the day and 45 dB during the night in the most sensitive areas lying close to the power plants. Monitoring surveys confirmed compliance with these thresholds.

Italy

Thermal power generation

(Enel Produzione SpA)

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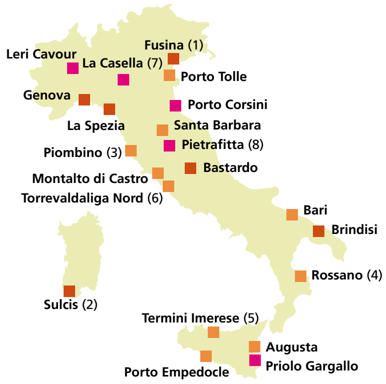


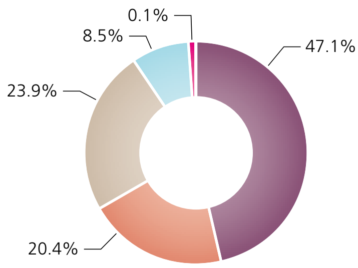
Power plants
(1) Fusina, Porto Marghera.
(2) Sulcis, Portoscuso, Assemini.
(3) Piombino, Livorno, Portoferraio, Capraia.
(4) Rossano, Mercure.
(5) Termini Imerese, Alicudi, Filicudi, Malfa, Panarea, Santa Marina Salina, Stromboli, Vulcano.
(6) Torrevaldaliga Nord, Ventotene.
(7) La Casella, Alessandria, Carpi.
(8) Pietrafitta, Camerata Picena, Campomarino, Giugliano, Larino, Maddaloni.

Business Unit
- Generation from coal
- Generation from fuel oil and gas
- Combined-cycle and gas-turbine generation

Power installations

	Power plants no.	Units no.	Net maximum electrical capacity MW
Steam (condensing)	16	44	11,706
Steam repowered with gas turbines	2	8	5,068
Combined-cycle gas turbines	7	15	5,946
Gas turbines	9	27	2,107
Diesel engines	9	40	28
	43	**134**	**24,855**

Net maximum electrical capacity
Total: 24,855 MW



- Steam (condensing)
- Steam repowered with gas turbines
- Combined-cycle gas turbines
- Gas turbines
- Diesel engines

Fuel-oil storage & handling

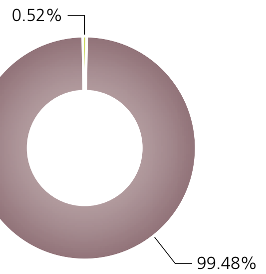
The Thermal Generation Business Area operates an integrated fuel-oil storage & handling facility in Ravenna. The facility (IICO), which is equipped with pumping and heating systems, supplies fuel oil via a pipeline to the Porto Tolle power plant.

Overall length of supply pipelines, from sea terminal and from AGIP dock (km)	28
Capacity of storage tanks (m^3)	183,630
Length of transfer pipeline to Porto Tolle (km)	92
Fuel oil transferred to Porto Tolle (t)	10,144
Heat generation - 15 bar and 210°C steam (million kcal)	8,700
Electricity consumption (million kWh)	1

In the following pages, the other flow data (consumption of natural gas and gas-oil, expendables, water for industrial uses, waste waters, emissions into the atmosphere and into water bodies, waste) are included among the thermal generation data.

Net electricity generation

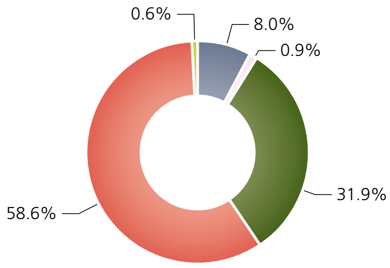
Total: 49,690 million kWh



- From fossil fuels
- From biomass & waste

Fuel consumption

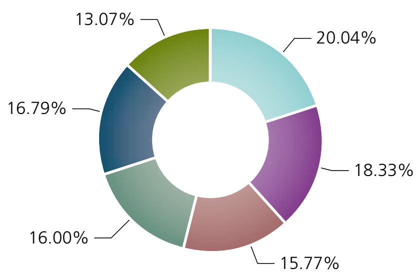
Total: 11,231,679 t of oil-equivalent



- Fuel oil
- Gas-oil
- Natural gas
- Coal
- Biomass & waste

Water for industrial uses

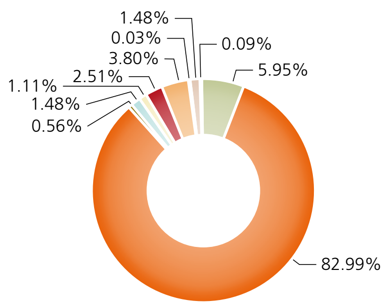
Total requirements: 36,709,333 m^3
Total abstraction from inland waters: 19,875,712 m^3



- From rivers
- From wells
- From aqueducts
- From the sea (as-is)
- From the sea (desalinated)
- From waste waters (used inside plants)

Expendables

Total: 314,269 t



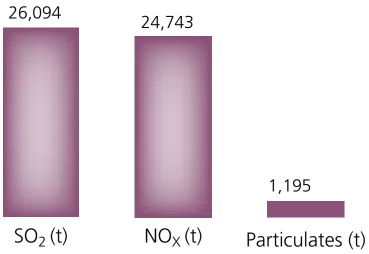
- Resins, hydrazine, carbohydrazide & hydrogen peroxide
- Ammonia
- Limestone for flue-gas desulfurization
- Sodium hypochlorite, chlorine dioxide, ferrous sulfate, ferrous chloride & trisodium phosphate
- Sulfuric & hydrochloric acids
- Caustic soda
- Lime, ferric chloride & polyelectrolyte
- Lubricating oil
- Dielectric oil
- Other

Waste waters (m3)

Discharged	9,076,985
Used inside the plants	4,798,717

Waste waters include those meteoric waters that are susceptible to pollution and are therefore fed to treatment systems before being discharged or used.

Emissions into the atmosphere



CO_2 (t)	37,062,182
from combustion	*36,947,710*
from desulfurization	*114,472*
SF_6 (kg)	654
(t of CO_2-equivalent)	14,519
Total (t of CO_2-equivalent)	**37,076,701**

Avoided CO_2 emissions

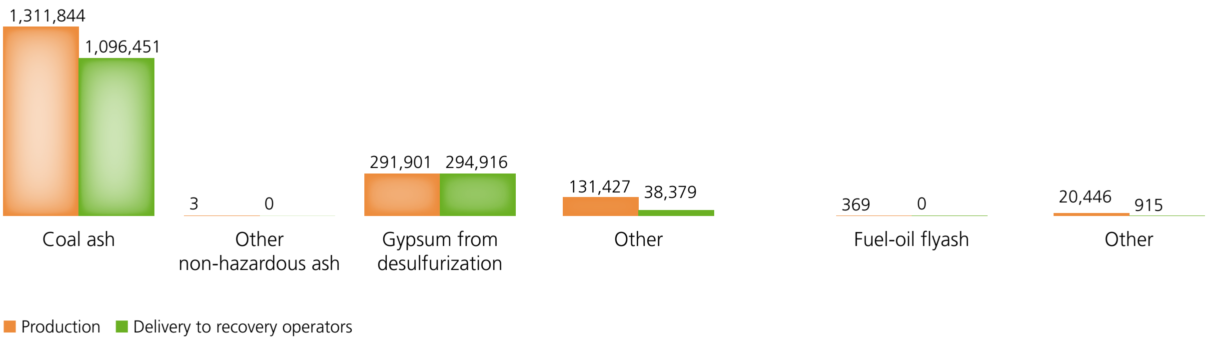
Electricity generation from biomass and biodegradable fraction of waste (t)	154,925

Special waste

Total production: 1,755,990 t
Total delivery to recovery operators: 1,430,661 t

Non-hazardous
Production: 1,735,175 t
Delivery to recovery operators: 1,429,746 t

Hazardous
Production: 20,814 t
Delivery to recovery operators: 915 t



Electricity generation from renewables

(Enel Produzione SpA, Enel Green Power SpA)

Enel Green Power SpA:
- O&M - hydro, solar and wind
- O&M Italy - geothermal

Enel Produzione SpA:
Business Unit
- Hydro generation Alps
- Hydro generation Apennines

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Power plants
(1) Including the wind power plant of Collarmele (L'Aquila).
(2) Including the wind power plants of Campolieto and Campolieto 2 (Campobasso), Acquaspruzza and Montarone (Isernia), Serra Cortina (Matera) and the solar photovoltaic power plant of Serre Persano (Salerno).
(3) Including the wind power plants of Monte Arci (Oristano), Nuova Alta Nurra, Sa Turrina Manna and Littigheddu (Sassari) and the solar photovoltaic power plant of Alta Plug (Sassari).
(4) Including the wind power plants of Caltabellotta (Agrigento), Serra Marrocco (Enna), Contrada Colla, Contrada Corvo-Cozzo Miturro, Cozzo Vallefondi 1, Monte Zimmara, Sclàfani Bagni and Sclàfani Bagni 2 (Palermo), Carlentini (Siracusa) and the solar photovoltaic power plants of Vulcano and Vulcano Plug (Messina).

Power installations

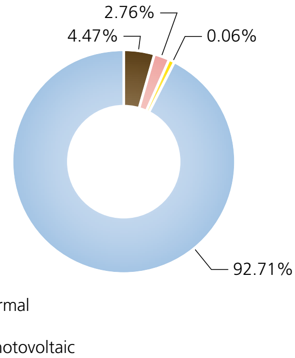
HYDRO	Power plants no.	Head installations no.	Net maximum electrical capacity MW
Run-of-river	310	251	2,005
Pondage/reservoir	173	183	4,945
Pure/mixed pumped storage	19	20	7,481
	502	**454**	**14,431**

GEOTHERMAL	Power plants no.	Generating units no.	Net maximum electrical capacity MW
Condensing	31	32	689
Atmospheric exhaust	1	1	6
	32	**33**	**695**

WIND	Power plants no.	Net maximum electrical capacity MW
	25	**429**

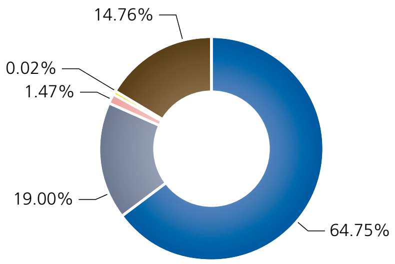
SOLAR PHOTOVOLTAIC	Power plants no.	Net maximum electrical capacity MW
	5	**12**

Net maximum electrical capacity
Total: 15,567 MW



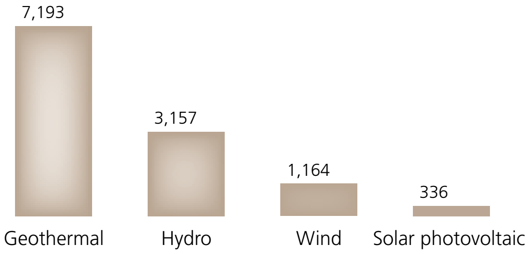
445 plants (14,772 MW) – of which 392 hydro, 18 wind, 31 geothermal and 4 solar photovoltaic plants – have an ISO 14001-certified environmental management system in place; 180 of them (8,395 MW) are also EMAS-registered.

Net electricity generation
Total: 33,885 million kWh



- Hydro from natural flows
- Hydro from pumped storage
- Wind
- Solar photovoltaic
- Geothermal

Equivalent yearly hours of utilization*



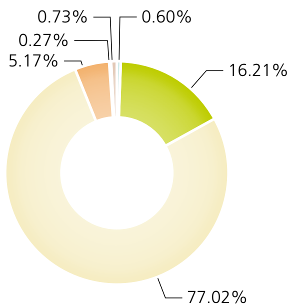
* yearly generation/capacity ratio (excluding hydro from pumped storage)

Geothermal fluid (t)

Total fluid extracted	**46,777,905**
Net of reinjected liquids	28,461,953
Steam for electricity generation	**41,385,271**
Fluid used for supply of heat	**598,450**
directly	*379,450*
after utilization for electricity generation	*219,000*

Geothermal fluid may not have or may have lost the thermodynamic properties that make it suitable for geothermal generation. In this case, the fluid is used for supply of heat, especially for greenhousing and district heating.

Expendables
Total: 30,229 t



- Hydrochloric acid
- Bentonite, barite and geothermal cement
- Caustic soda
- Lubricating oil
- Dielectric oil
- Other

Water for industrial uses (geothermal drilling)

Abstraction from inland waters, entirely from rivers (m^3)	69,000

Gas-oil

Total consumption (toe)	2,362

Used for driving the drilling equipment and, to a much lesser extent, for feeding emergency generating sets.

Emissions into the atmosphere

SF_6 - all types of generation (kg)	426
(t of CO_2-equivalent)	9,449
CO_2 (t)	7,272

Carbon dioxide emissions from gas-oil combustion.

H_2S - from geothermal fluid (t)	10,213
CO_2 - from geothermal fluid (t)	1,875,548

A large debate is under way on the natural or anthropogenic origin of emissions of incondensible gases from geothermal fluid.

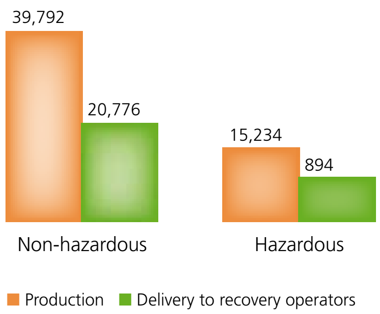
Avoided CO_2 emissions (t)

Hydro generation from natural flows	16,433,197
Geothermal generation	3,744,622
Wind generation	373,725
Solar photovoltaic generation	4,362
Generation from biomass and biodegradable fraction of waste	154,925
Total	**20,710,831**

Avoided CO_2 emissions from the otherwise necessary fossil-fired thermal generation. The contribution of geothermal generation has been calculated on the assumption that the related CO_2 emissions are of natural origin.

Special waste

Total production: 55,026 t
Total delivery to recovery operators: 21,670 t



Other data

HYDRO

Emptied reservoirs	quantity (no.)	13
	alluvial sediments removed by flushing them out through bottom outlets (m^3)	297,940
	alluvial sediments removed by mechanical equipment (m^3)	37,000
	of which reused locally (m^3)	*37,000*
Fish ladders (no.)		39
Fish restocking campaigns	quantity (no.)	87
	restocked fish:	
	individuals	2,726,349
	in addition to kg	4,650

GEOTHERMAL ACTIVITIES

Drilled wells	new (no.)	6
	rehabilitated (no.)	4
Extent of drilling (m)		14,824
In-service wells	for steam production (no.)	303
	for reinjection (no.)	63
	for other uses (no.)	133
	Total (no.)	**499**

WIND & SOLAR PHOTOVOLTAIC GENERATION

Wind systems	Surface area occupied by platforms, service roads and buildings (ha)	92
	Total surface area affected by the installations (ha)	20 to 100 times larger
Photovoltaic solar systems	Surface area occupied by modules (ha)	8
	Total surface area affected by the installations (ha)	17

Electricity distribution

(Enel Distribuzione SpA, Deval SpA)

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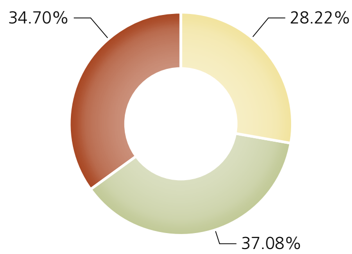
● Enel Distribuzione SpA: Grid regional area and headquarters' location
■ Deval SpA

Power installations

SUBSTATIONS	no.	Installed transforming capacity MVA
HV/MV	2,128	99,496
Satellite substations and MV units	446	32
MV/LV	424,397	75,453
MV/MV	134,246	11,717
	561,217	**186,698**

LINES (length in km)	Overhead bare conductors	Overhead cables	Underground cables	Total
HV (>40 kV)	56	-	0	**57**
MV (1-30 kV)	198,885	9,317	134,088	**342,290**
LV (380 V)	111,339	398,486	247,512	**757,337**
	310,280	**407,803**	**381,600**	**1,099,684**



Enel Distribuzione has an ISO 14001-certified environmental management system in place, which extends to its entire organization.

General data

Grid regional areas (no.)	11
Operation centers (no.)	11
Zones (no.)	111
Municipalities served (no.)	7,723
Surface area served (km^2)	286,853
Customers connected to the grid (no.)	31,318,524
supplied by companies of the Group	*27,305,446*

Electricity

Total electricity distributed (TWh)	241,817
Own consumption for grid operation (million kWh)	318

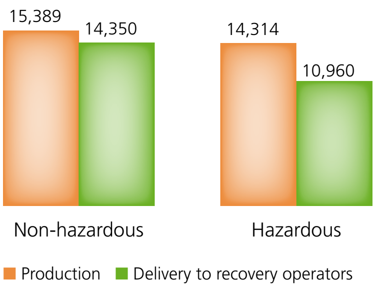
Resource consumption

Expendables (t)	207
Gas-oil (t of oil-equivalent)	263

Used for feeding emergency generating sets.

Special waste

Total production: 29,703 t
Total delivery to recovery operators: 25,310 t



Emissions into the atmosphere

SF_6 (kg)	4,023
(t of CO_2-equivalent)	89,311
CO_2 (t)	812

Emissions from gas-oil combustion.

Total (t of CO_2-equivalent)	**90,123**

Eco-Balance and Indicators

STATUS DATA

		2005	2006	2007	2008	2009
Power-generating installations						
Power plants	no.	599	600	599	604	607
thermal	no.	46	46	43	43	43
hydro	no.	500	500	501	501	502
geothermal	no.	32	31	31	31	32
wind	no.	17	19	20	25	25
solar (photovoltaic)	no.	4	4	4	4	5
Net maximum electrical capacity	MW	42,216	40,475	40,397	40,324	40,422
thermal	MW	26,902	25,117	25,005	24,862	24,855
hydro	MW	14,363	14,379	14,401	14,424	14,431
geothermal	MW	671	671	671	671	695
wind	MW	277	305	315	362	429
solar (photovoltaic)	MW	4.17	3.88	4.52	4.2	11.6
Power lines (circuit-length)						
Total	km	1,090,129	1,096,299	1,104,980	1,112,164	1,099,683
high-voltage	km	18,951	18,804	18,930	18,952	56.5
medium-voltage	km	335,151	336,517	338,644	340,424	342,290
low-voltage	km	736,026	740,979	747,406	752,789	757,337
Gas pipelines						
Total	km	29,372	30,600	30,664	31,765	-
high-pressure	km	191	191	58.8	205	-
medium-pressure	km	11,315	11,615	11,766	12,342	-
low-pressure	km	17,866	18,794	18,839	19,219	-
Mining & extracting activities (1)						
Mining activities						
Mines	no.				3	3
Amount of fuels extractable since the start of activities	Mt				60	60
Areas occupied by excavations and other activities	ha				10	10
Extracting activities						
Areas occupied by excavations, drilling and other activities	ha				1,800	1,800
EN29 **Service & real-estate management** (2)						
Vehicle fleet						
service vehicles	no.			14,585	14,065	13,382
special vehicles	no.			2,177	2,244	2,218
vehicles for both private and service use	no.			1,030	1,019	1,031
Gross real-estate surface area	thousand m^2			1,253	1,749	1,460

-: no data due to absence of activities in the year.

(1) These activities have been surveyed since 2008.
(2) These activities have been surveyed since 2007.

RESOURCES (1/2)

			2005	2006	2007	2008	**2009**
EN1 EN3	**Fossil fuels**						
	Thermal generation (including auxiliary boilers and emergency generating sets)						
	fuel oil	thousand t	3,705	3,637	1,773	1,389	910
	HS	*thousand t*	*94.7*	*0*	*39.2*	*0*	*0*
	MS	*thousand t*	*163*	*247*	*179*	*308*	*249*
	LS	*thousand t*	*1,016*	*1,551*	*456*	*249*	*173*
	VLS	*thousand t*	*2,432*	*1,839*	*1,098*	*832*	*488*
	gas-oil	thousand t	63.7	79.1	69.9	93.4	96.1
	natural gas	million m^3	8,493	7,305	7,233	6,652	4,216
	technologically captive use	*million m^3*	*5,137*	*4,550*	*4,970*	*5,286*	*3,476*
	of which in combined-cycle units	million m^3	4,266	3,760	4,510	4,997	3,357
	non-technologically captive use	*million m^3*	*3,356*	*2,755*	*2,263*	*1,367*	*740*
	coal	thousand t	11,755	10,749	11,386	11,724	11,122
	coke-oven gas	million m^3	0	0	0.002	0.002	0.003
	Total	**thousand toe**	**17,995**	**16,390**	**14,752**	**14,027**	**11,163**
	Various activities	**thousand toe**	**5.52**	**5.65**	**23.2**	**24.9**	**27.9**
	Grand total	**thousand toe**	**18,001**	**16,396**	**14,775**	**14,052**	**11,191**
EN1 EN3	**Biomass and solid waste**						
	Thermal generation	thousand toe	6.77	12.4	30.5	41.5	67.0
EN1 EN3	**Geothermal fluid**						
	Total fluid extracted	thousand t	45,804	49,929	50,478	50,172	46,778
	net of reinjected liquids	*thousand t*	*32,080*	*32,985*	*30,364*	*29,855*	*28,462*
	Used for electricity generation	thousand t	41,687	43,937	44,215	43,931	41,385
EN4	**Primary electricity**						
	Various activities	million kWh	4.08	5.35	127	131	130
EN8	**Water for industrial uses**						
	From rivers (including meteoric waters from secondary rainfall)	million m^3	9.99	9.40	9.44	8.48	7.43
	From wells	million m^3	4.07	3.87	3.60	6.56	6.73
	From aqueducts	million m^3	5.40	4.85	5.52	6.50	5.81
	Total abstraction from inland waters	million m^3	19.5	18.1	18.6	21.5	20.0
	From the sea (as-is)	million m^3	13.9	12.2	11.9	10.0	5.87
	From the sea (desalinated)	million m^3	7.32	7.17	6.40	5.87	6.16
	From waste waters (used inside the plants)	million m^3	3.28	2.45	1.48	2.09	4.80
	Total requirements	**million m^3**	**44.0**	**39.9**	**38.4**	**39.5**	**36.8**
	for thermal generation	million m^3	43.9	39.8	38.3	39.1	36.7
	for geothermal drilling	million m^3	0.043	0.047	0.049	0.007	0.069
	for fuel-oil storage & handling	million m^3	0.049	0.045	0.010	0.016	0.024
EN3 EN21	**Open-cycle cooling water** (for thermal generation)	million m^3	13,126	12,904	10,531	11,729	10,460
	Water for non-industrial uses Real-estate & service management (1)	million m^3			1.32	1.52	1.06

(1) These activities have been surveyed since 2007.

RESOURCES (2/2)

			2005	2006	2007	2008	**2009**
EN1	**Expendables**						
	Resins	t	48.3	19.2	32.0	22.8	32.6
	Hydrazine	t	3.41	1.00	0.380	0.100	0
	Carbohydrazide	t	22.1	17.7	270	262	260
	Hydrogen peroxide	t	81.8	44.5	83.5	46.2	0.033
	Ammonia	t	19,744	19,164	19,759	17,708	18,702
	Limestone for flue-gas desulfurization	t	162,412	169,594	192,376	249,858	260,830
	Magnesium oxide	t	41.1	53.2	33.3	0	8.58
	Sodium hypochlorite	t	477	975	1,766	2,543	1,701
	Ferrous sulfate	t	0.900	0	0	0	6.94
	Ferrous chloride	t	45.4	61.4	39.9	44.2	41.0
	Trisodium phosphate	t	17.2	2.60	2.10	2.00	1.64
	Lime	t	8,417	9,101	10,128	8,244	7,039
	Ferric chloride	t	779	683	1,030	654	759
	Polyelectrolyte	t	40.4	84.1	57.0	59.0	76.5
	Sulfuric & hydrochloric acids	t	6,516	4,946	4,547	4,278	4,825
	Caustic soda	t	9,193	13,489	15,601	16,784	26,778
	Bentonite	t	1,505	1,927	549	1,696	1,359
	Barite	t	0	90.3	0	0	211
	Geothermal cement	t	3,676	3,506	2,729	3,909	3,329
	Lubricating oil	t	847	4,042	855	7,792	13,492
	Dielectric oil	t	113	106	120	554	369
	Printing paper	t	0	0	1,393	1,224	1,132
	Other	t	5,458	1,108	1,745	2,884	4,885
	Total	**t**	**219,438**	**229,015**	**253,114**	**318,563**	**345,838**
	for thermal generation	t	205,335	210,971	233,521	296,221	314,268
	for hydro generation	t	159	175	199	253	224
	for geothermal activities	t	13,936	17,846	17,832	20,660	28,665
	for wind generation	t	0.600	0.030	0.600	0.600	1,341
	for fuel-oil storage & handling	t	7.00	1.57	0.047	0.105	0.533
	for electricity distribution	t	0	21.3	78.4	113	207
	for gas distribution	t	0	0	91.1	91.8	-
EN1	**PCB survey** (1)						
	Equipment & transformers with PCBs >500 ppm (excluding their oil)	t			6,634	63.7	0
	Oil with PCBs >500 ppm contained in equipment & transformers	t			3,346	62.3	0
	Equipment & transformers with PCBs>50 ppm and ≤500 ppm (excluding their oil)	t			107	939	14,181
	Oil with PCBs >50 ppm and ≤500 ppm contained in equipment & transformers	t			214	334	3,021

(1) The survey began in 2007.

PROCESSES AND PRODUCTS (1/2)

		2005	2006	2007	2008	**2009**
Electricity generation (net)						
From fossil fuels	million kWh	81,794	73,726	67,261	64,163	49,431
fuel oil & gas-oil	million kWh	15,270	15,070	7,023	5,259	3,405
natural gas	million kWh	37,718	32,183	32,852	31,208	19,254
of which in combined-cycle units	*million kWh*	*22,186*	*19,463*	*23,273*	*25,828*	*17,047*
coal	million kWh	28,805	26,473	27,386	27,696	26,772
From waste (non-biodegradable fraction)	million kWh	16.2	25.2	28.8	21.2	51.9
From renewables	million kWh	23,537	24,035	21,487	26,478	27,655
biomass and biodegradable fraction of waste	million kWh	12.8	22.8	84.5	135	207
geothermal	million kWh	5,012	5,208	5,243	5,181	5,000
hydro from natural flows	million kWh	18,142	18,406	15,691	20,695	21,943
wind	million kWh	367	398	468	464	499
solar (photovoltaic)	million kWh	2.11	0.463	1.34	2.94	5.82
Hydro from pumped storage	million kWh	6,741	6,284	5,501	5,418	6,437
Total	**million kWh**	**112,087**	**104,070**	**94,278**	**96,080**	**83,575**
Electricity consumption for pumping	million kWh	9,244	8,704	7,570	7,540	8,285
Available generation	million kWh	102,843	95,366	86,707	88,540	75,290
Fuel storage & handling						
Fuel transferred to destination	t	169,583	574,091	58,295	42,282	10,144
Heat generation	million kcal	51,471	36,505	3,858	8,700	8,700
Geothermal drilling						
Extent	m	13,792	10,684	15,225	13,130	14,824
Electricity distribution						
Electricity distributed	million kWh	251,077	255,613	257,093	260,473	241,817
Electricity consumption for grid operation	million kWh	401	317	364	365	318
Natural-gas distribution						
Natural gas distributed	million m^3	3,924	3,659	3,418	3,570	-
Natural-gas consumption for grid operation	million m^3	4.86	5.49	5.32	4.9	-
Natural-gas losses along the grid	million m^3	25.5	23.8	22.2	23.2	-

PROCESSES AND PRODUCTS (2/2)

		2005	2006	2007	2008	**2009**
Market (1)						
Open Market						
Residential segment						
Green offerings						
Customers	no.			-	673,370	1,364,507
Power sold	million kWh			-	1,290	3,032
Time-of-use offerings						
Customers	no.			37,492	224,450	183,328
Power sold	million kWh			17	512	847
Total						
Customers	no.			233,648	902,126	1,603,426
Power sold	million kWh			106	2,345	4,099
Business segment						
Green offerings						
Customers	no.			196,181	204,024	367,527
Power sold	million kWh			1,063	3,230	3,950
Time-of-use offerings						
Customers	no.			18,305	168,350	569,160
Power sold	million kWh			6,316	17,600	16,770
Total						
Customers	no.			962,753	995,287	1,057,383
Power sold	million kWh			19,885	27,495	25,789
Large customers' segment						
Green offerings						
Customers	no.			6	16	7,925
Power sold	million kWh			0.141	80	986
Time-of-use offerings						
Customers	no.			3,635	27,434	38,109
Power sold	million kWh			7,693	8,020	8,068
Total						
Customers	no.			21,356	31,377	52,373
Power sold	million kWh			8,624	9,015	9,733
Very large customers' segment						
Total						
Customers	no.			99	101	133
Power sold	million kWh			13,543	15,375	14,402
Universal-Service Market						
Household customers' segment						
Time-of-use offerings						
Customers	no.			689,740	164,127	178,917
Power sold	million kWh			2,758	584	599
Total						
Customers	no.			23,816,519	23,479,632	22,750,962
Power sold	million kWh			52,952	52,199	49,193
Non-household customers' segment						
Time-of-use offerings						
Customers	no.			316	574	3,077,277
Power sold	million kWh			24.5	1.2	15,121
Total						
Customers	no.			5,473,851	4,712,437	4,435,542
Power sold	million kWh			34,743	24,578	22,080
Overall power sold						
high-voltage	million kWh			18,418	17,763	15,148
medium-voltage	million kWh			22,069	21,129	18,645
low-voltage	million kWh			101,420	110,364	104,832
Total	million kWh			141,907	149,256	138,625
Total RECS certificates redeemed	**no. (MWh)**			**1,066,000**	**4,600,000**	**7,968,119**

(1) These activities have been surveyed since 2007.

EMISSIONS, LIQUID RELEASES & WASTE (1/5)

		Source		2005	2006	2007	2008	**2009**
	Emissions into the atmosphere							
EN20	SO_2	thermal generation	thousand t	73.1	68.9	45.2	34.5	26.1
EN20	NO_X	thermal generation	thousand t	48.7	43.1	35.2	31.8	24.7
		fuel-oil storage & handling	thousand t	0.004	0.007	0.001	0.002	0.002
		Total	**thousand t**	**48.7**	**43.1**	**35.2**	**31.8**	**24.7**
EN20	Particulates	thermal generation	thousand t	2.62	2.11	1.64	1.51	1.20
EN16	CO_2	*fossil-fired thermal generation (from combustion)*	*thousand t*	*56,124*	*51,498*	*46,657*	*44,290*	*36,905*
		fossil-fired thermal generation (from desulfurization)	*thousand t*	*71.5*	*74.6*	*84.6*	*109*	*114*
		total from fossil-fired thermal generation	thousand t	56,195	51,572	46,742	44,399	37,019
		non-fossil-fired thermal generation (from fossil carbon)	thousand t	12.4	18.2	23	16.2	39.7
		Total from thermal generation	thousand t	56,207	51,590	46,765	44,415	37,059
		Various activities	thousand t	24.4	25.4	80.8	83.4	23.1
		Total	**thousand t**	**56,232**	**51,616**	**46,846**	**44,498**	**37,082**
EN16	SF_6	electricity generation	kg	1,530	1,394	1,819	1,562	1,080
			thousand t of CO_2-equivalent	34.9	31.8	41.5	35.6	24.6
		electricity distribution	kg	2,700	2,937	3,004	3,319	4,023
			thousand t of CO_2-equivalent	61.6	67	68.5	75.7	91.7
		Total	**kg**	**4,230**	**4,331**	**4,823**	**4,881**	**5,103**
			thousand t of CO_2-equivalent	**96.4**	**98.7**	**110**	**111**	**116**
EN16	CH_4	mining & extracting activities	thousand t	13	15.9	14.8	15.5	0
			thousand t of CO_2-equivalent	326	396	370	387	0
EN16	**Total greenhouse gases (CO_2, SF_6, CH_4)**		**thousand t of CO_2-equivalent**	**56,654**	**52,111**	**47,326**	**44,996**	**37,198**
EN20	H_2S	geothermal generation (fluid)	thousand t	23.1	20.8	16.2	13.1	10.2
EN16	CO_2	geothermal generation (fluid)	thousand t	1,838	1,946	1,953	1,902	1,876

EMISSIONS, LIQUID RELEASES & WASTE (2/5)

		Source		2005	2006	2007	2008	2009
EN18	**Avoided CO_2 emissions**							
	Due to hydro generation from natural flows		thousand t	12,464	12,875	10,904	14,320	16,433
	Due to geothermal generation		thousand t	3,444	3,643	3,643	3,585	3,745
	Due to wind and solar generation		thousand t	254	279	326	323	378
	Due to generation from biomass & biodegradable fraction of waste		thousand t	8.79	15.9	58.7	93.8	155
	Due to generation from renewables		**thousand t**	**16,171**	**16,813**	**14,932**	**18,322**	**20,711**
EN21	**Waste waters (discharged quantity)**	thermal generation	million m^3	14.7	13.2	13.6	11.4	9.04
		fuel-oil storage & handling	million m^3	0.110	0.070	0.034	0.031	0.037
		Total	**million m^3**	**14.8**	**13.3**	**13.7**	**11.4**	**9.08**
EN21	**Conventional polluting load of waste waters**							
	Metals and compounds (expressed as metal equivalents)	thermal generation (only in some large plants)	kg	3,178	2,672	4,232	2,333	3,372
		fuel-oil storage & handling	kg	40	10.5	12	12.2	7.70
		Total	**kg**	**3,218**	**2,683**	**4,244**	**2,346**	**3,380**
	Total nitrogen (expressed as N)	thermal generation (only in some large plants)	kg	104,881	86,785	118,131	66,818	40,525
		fuel-oil storage & handling	kg	800	115	47.3	16.9	12.6
		Total	**kg**	**105,681**	**86,900**	**118,178**	**66,835**	**40,538**
	Total phosphorus (expressed as P)	thermal generation (only in some large plants)	kg	7,524	9,268	8,300	7,268	5,221
		fuel-oil storage & handling	kg	435	48.1	6.15	1.83	1.85
		Total	**kg**	**7,959**	**9,316**	**8,306**	**7,269**	**5,223**
	COD	thermal generation (only in some large plants)	kg	384,393	379,948	351,702	259,942	245,687
		fuel-oil storage & handling	kg	6,160	1,021	325	38.5	132
		Total	**kg**	**390,553**	**380,969**	**352,027**	**259,981**	**245,819**
	BOD	thermal generation (only in some large plants)	kg	76,439	83,147	81,207	66,976	60,861
		fuel-oil storage & handling	kg	205	314	345	12.2	52.9
		Total	**kg**	**76,644**	**83,460**	**81,551**	**66,989**	**60,914**

(3/5)

	Source		2005	2006	2007	2008	2009
EN22 Non-hazardous special waste							
Coal bottom ash	thermal generation						
production		t	30,552	28,626	23,606	14,855	31,714
delivery to recovery operators		t	29,710	28,548	24,325	14,519	28,876
Coal flyash	thermal generation						
production		t	1,157,709	1,058,323	1,290,650	1,440,304	1,280,130
delivery to recovery operators		t	1,161,008	974,404	1,079,355	1,258,693	1,067,575
Oil bottom ash	thermal generation						
production		t	40.8	93.1	24.4	0	0
Other non-hazardous ash	thermal generation						
production		t	0	0	0	0	2.75
Gypsum from desulfurization	thermal generation						
production		t	279,632	267,814	260,341	322,667	291,901
delivery to recovery operators		t	284,421	256,696	258,884	300,060	294,916
Other							
production	electricity generation & geothermal drilling	t	241,363	158,442	157,254	129,539	171,146
	electricity distribution	t	46,584	28,947	30,847	24,345	15,389
	various activities	t	175	371	278	1,104	1,663
	Total	**t**	**288,122**	**187,760**	**188,380**	**154,988**	**188,197**
delivery to recovery operators	electricity generation & geothermal drilling	t	99,187	92,911	101,316	80,837	59,084
	electricity distribution	t	45,723	28,395	30,331	23,480	14,350
	various activities	t	125	331	273	1,058	1,660
	Total	**t**	**145,034**	**121,638**	**131,920**	**105,375**	**75,094**
Total							
production	electricity generation & geothermal drilling	t	1,709,297	1,513,298	1,731,875	1,907,365	1,774,893
	electricity distribution	t	46,584	28,947	30,847	24,345	15,389
	various activities	t	175	371	278	1,104	1,663
	Total	**t**	**1,756,056**	**1,542,616**	**1,763,001**	**1,932,814**	**1,791,945**
delivery to recovery operators	electricity generation & geothermal drilling	t	1,574,326	1,352,559	1,463,880	1,654,110	1,450,451
	electricity distribution	t	45,723	28,395	30,331	23,480	14,350
	various activities	t	125	331	273	1,058	1,660
	Total	**t**	**1,620,173**	**1,381,285**	**1,494,485**	**1,678,647**	**1,466,461**

EMISSIONS, LIQUID RELEASES & WASTE (4/5)

		Source		2005	2006	2007	2008	**2009**
EN22	**Hazardous special waste**							
	Oil flyash	thermal generation						
	production		t	10,096	7,212	1,811	868	369
	delivery to recovery operators		t	94.3	133	118	0	0
	Other							
	production	electricity generation & geothermal drilling	t	17,016	14,580	13,011	11,772	35,671
		electricity distribution	t	18,254	15,689	22,864	20,536	14,314
		various activities	t	22.6	13.8	756	892	12.4
		Total	**t**	**35,292**	**30,282**	**36,631**	**33,200**	**49,997**
	of which with PCBs	*electricity generation & geothermal drilling*	*t*	*991*	*848*	*2,246*	*726*	*918*
		electricity distribution	*t*	*1,939*	*1,154*	*1,223*	*818*	*426*
		various activities	*t*	*0.660*	*0.060*	*0*	*0.640*	*0*
		Total	***t***	***2,930***	***2,002***	***3,470***	***1,545***	***1,344***
	delivery to recovery operators	electricity generation & geothermal drilling	t	1,330	1,411	1,732	1,748	1,809
		electricity distribution	t	7,024	8,225	12,289	12,899	10,960
		various activities	t	0.805	3.49	2.35	16.7	2.05
		Total	**t**	**8,355**	**9,639**	**14,023**	**14,664**	**12,771**
	of which with PCBs	*electricity generation & geothermal drilling*	*t*	*861*	*820*	*836*	*717*	*796*
		electricity distribution	*t*	*1,842*	*1,148*	*1,112*	*721*	*424*
		various activities	*t*	*0.660*	*0*	*0*	*0*	*0*
		Total	***t***	***2,704***	***1,968***	***1,949***	***1,438***	***1,220***
	Total							
	production	electricity generation & geothermal drilling	t	27,112	21,792	14,822	12,639	36,039
		electricity distribution	t	18,254	15,689	22,864	20,536	14,314
		various activities	t	22.6	13.8	756	892	12.4
		Total	**t**	**45,389**	**37,494**	**38,442**	**34,068**	**50,366**
	delivery to recovery operators	electricity generation & geothermal drilling	t	1,424	1,544	1,850	1,748	1,809
		electricity distribution	t	7,024	8,225	12,289	12,899	10,960
		various activities	t	0.805	3.49	2.35	16.7	2.05
		Total	**t**	**8,449**	**9,772**	**14,141**	**14,664**	**12,771**

(5/5)

		Source		2005	2006	2007	2008	**2009**
EN22	**Total special waste**							
	production	electricity generation & geothermal drilling	t	1,736,410	1,535,089	1,746,697	1,920,004	1,810,933
		electricity distribution	t	64,838	44,636	53,711	44,881	29,703
		various activities	t	198	385	1,034	1,996	1,675
		Total	**t**	**1,801,445**	**1,580,110**	**1,801,442**	**1,966,881**	**1,842,311**
	delivery to recovery operators	electricity generation & geothermal drilling	t	1,575,750	1,354,103	1,465,730	1,655,858	1,452,260
		electricity distribution	t	52,746	36,619	42,620	36,379	25,310
		various activities	t	125	335	275	1,075	1,662
		Total	**t**	**1,628,621**	**1,391,058**	**1,508,626**	**1,693,311**	**1,479,232**

INDICATORS (1/4)

			2005	2006	2007	2008	**2009**
	Resource conservation and quality						
EN1 EN3	Net heat rate of thermal generation	kcal/kWh	2,200	2,223	2,193	2,186	2,258
EN1 EN3	Net heat rate of geothermal generation	kcal/kWh	5,313	5,447	5,415	5,473	5,344
EN1 EN3	Net efficiency of hydro generation from pumped storage	%	72.9	72.2	72.7	71.9	77.7
EN4	Consumption of electricity for distribution grid operation	% of electricity distributed	0.160	0.124	0.142	0.140	0.131
EN1 EN3	Natural-gas consumption for grid operation	% of natural gas distributed	0.124	0.150	0.156	0.137	-
	Natural-gas losses along the grid	% of natural gas distributed	0.650	0.650	0.650	0.650	-
EN8	Net specific requirements of water for industrial uses in thermal generation						
	including contribution of as-is sea water	liters/kWh	0.536	0.540	0.569	0.608	0.739
	excluding contribution of as-is sea water	liters/kWh	0.366	0.375	0.392	0.452	0.621
EN8	Coverage of requirements of water for industrial uses						
	from rivers (including meteoric waters from secondary rainfall)	% of requirements	22.7	23.6	24.6	20.7	20.2
	from wells	% of requirements	9.27	9.71	9.39	16.8	18.3
	from aqueducts	% of requirements	12.3	12.1	14.4	16.6	15.8
	Total from inland waters	**% of requirements**	**44.3**	**45.4**	**48.4**	**54**	**54.3**
	from the sea (as-is)	% of requirements	31.6	30.5	31.1	25.6	16
	from the sea (desalinated)	% of requirements	16.7	18	16.7	15	16.7
EN10	from waste waters (used inside the plants)	% of requirements	7.47	6.15	3.85	5.34	13
EN1 EN3	Fossil fuel consumption for thermal generation						
	fuel oil	% of total fuel consumption	20.3	21.9	11.9	9.79	8.05
	gas-oil	% of total fuel consumption	0.361	0.492	0.484	0.682	0.882
	natural gas	% of total fuel consumption	39.8	37.8	41.6	40.2	32.1
	coal	% of total fuel consumption	39.6	39.8	46	49.3	59
	HS fuel oil	% of total fuel-oil consumption	2.50	0	2.16	0	0
	MS fuel oil	% of total fuel-oil consumption	4.31	6.60	9.75	21.6	26.7
	LS fuel oil	% of total fuel-oil consumption	27.2	42.3	25.4	17.8	18.8
	VLS fuel oil	% of total fuel-oil consumption	66	51.1	62.7	60.6	54.5
	natural gas, technologically captive use	% of total natural-gas consumption	60.7	62.2	68.6	79.2	82.4
	of which in combined-cycle units	*% of total natural-gas consumption*	*50.5*	*51.3*	*62.2*	*74.8*	*79.5*
	natural gas, non-technologically captive use	% of total natural-gas consumption	39.3	37.8	31.4	20.8	17.6
	Geothermal steam for electricity generation	% of total geothermal fluid extracted	96.8	96.9	99.5	97.3	97.6

-: no data due to absence of activities in the year.

(2/4)

			2005	2006	2007	2008	**2009**
	Specific emissions into the atmosphere						
EN20	SO_2 (thermal generation)	g/kWh thermal net	0.894	0.934	0.671	0.537	0.525
EN20	NO_X (thermal generation)	g/kWh thermal net	0.595	0.584	0.523	0.494	0.498
EN20	Particulates (thermal generation)	g/kWh thermal net	0.032	0.029	0.024	0.024	0.024
EN16	CO_2 (thermal generation)	g/kWh thermal net	687	699	694	691	746
		g/kWh total net	501	496	496	462	443
EN16	SF_6 (electric activities)	% of SF_6 in equipment or in stock	0.925	0.940	1.02	1.02	1.07
	CH_4+CO_2. expressed as CO_2-equivalent (gas distribution)	g/m³ of natural gas distributed	85.5	111	111	111	-
EN20	H_2S (geothermal fluid)	g/kWh geothermal net	4.61	3.99	3.09	2.53	2.04
EN20	CO_2 (geothermal fluid)	g/kWh geothermal net	367	374	372	367	375
EN22	**Specific production of waste**						
	Coal ash (thermal generation)	g/kWh net from coal	41.3	41.1	48	52.5	49
	Oil flyash (thermal generation)	g/kWh net from fuel oil & gas-oil	0.661	0.479	0.258	0.165	0.108
	Oil bottom ash (thermal generation)	g/kWh net from fuel oil & gas-oil	0.664	0.485	0.261	0.165	0.108

-: no data due to absence of activities in the year.

INDICATORS (3/4)

			2005	2006	2007	2008	2009
EN22	**Waste recovery**						
	Coal ash	% of production	100	92.3	84	87.5	83.6
	bottom ash	*% of production*	*97.2*	*99.7*	*103*	*97.7*	*91.1*
	flyash	*% of production*	*100*	*92.1*	*83.6*	*87.4*	*83.4*
	Gypsum from desulfurization	% of production	102	95.8	99.4	93	101
	Other non-hazardous special waste						
	electricity generation & geothermal drilling	% of production	41.1	58.6	64.4	62.4	34.5
	electricity distribution	% of production	98.2	98.1	98.3	96.4	93.3
	fuel-oil storage & handling, gas distribution	% of production	71	89.4	98.1	93.5	95.9
	Total	**% of production**	**50.3**	**64.8**	**70**	**67.9**	**39.4**
	Total non-hazardous special waste						
	electricity generation & geothermal drilling	% of production	92.1	89.4	84.5	86.7	81.7
	electricity distribution	% of production	98.2	98.1	98.3	96.4	93.3
	fuel-oil storage & handling, gas distribution	% of production	71	89.4	98.1	93.5	95.9
	Total	**% of production**	**92.3**	**89.5**	**84.8**	**86.8**	**81.8**
	Oil flyash	% of production	0.934	1.85	6.54	0	0
	Other hazardous special waste						
	electricity generation & geothermal drilling	% of production	7.82	9.68	13.3	14.8	5.07
	electricity distribution	% of production	38.5	52.4	53.7	62.8	76.6
	fuel-oil storage & handling, gas distribution	% of production	3.56	25.4	0.311	1.25	0
	Total	**% of production**	**23.7**	**31.8**	**38.3**	**44.2**	**25.5**
	Total hazardous special waste						
	electricity generation & geothermal drilling	% of production	5.25	7.09	12.5	13.8	5.02
	electricity distribution	% of production	38.5	52.4	53.7	62.8	76.6
	fuel-oil storage & handling, gas distribution	% of production	3.56	25.4	0.311	1.25	0
	Total	**% of production**	**18.6**	**26.1**	**36.8**	**43**	**25.4**
	Total special waste						
	electricity generation & geothermal drilling	% of production	90.7	88.2	83.9	86.2	80.2
	electricity distribution	% of production	81.4	82	79.4	81.1	85.2
	fuel-oil storage & handling, gas distribution	% of production	63.3	87.1	26.6	42.3	85.6
	Total	**% of production**	**90.4**	**88**	**83.7**	**86.1**	**80.3**

(4/4)

			2005	2006	2007	2008	**2009**
EN29	**Land**						
	LV cable lines						
	overhead	% of entire LV grid	52.4	52.4	52.4	52.6	52.6
	underground	% of entire LV grid	30.7	31.3	31.7	32.2	32.7
	Total cable lines	**% of entire LV grid**	**83.2**	**83.7**	**84.1**	**84.8**	**85.3**
	MV cable lines						
	overhead	% of entire MV grid	2.37	2.46	2.53	2.60	2.72
	underground	% of entire MV grid	37.3	37.9	38.4	38.8	39.2
	Total cable lines	**% of entire MV grid**	**39.7**	**40.4**	**40.9**	**41.4**	**41.9**
	Overhead and underground cables in HV+MV+LV distribution lines	% of total distribution grid	68.4	69	69.4	70.1	71.8
	Electricity generation from renewables						
	Thermal from biomass & biodegradable fraction of waste	% of total generation	0.011	0.022	0.090	0.141	0.248
	Geothermal	% of total generation	4.47	5	5.56	5.39	5.98
	Hydro from natural flows	% of total generation	16.2	17.7	16.6	21.5	26.3
	Wind and solar (photovoltaic)	% of total generation	0.330	0.383	0.497	0.486	0.604
	Total	**% of total generation**	**21**	**23.1**	**22.8**	**27.6**	**33.1**
EN6	**Market** (1)						
	Open Market						
	Residential segment						
	Green power sold	% of power sold			0	55	74
	Time-of-use power sold	% of power sold			16	21.8	20.7
	Business segment						
	Green power sold	% of power sold			5.35	11.7	15.3
	Time-of-use power sold	% of power sold			31.8	64.0	65.0
	Large customers' segment						
	Green power sold	% of power sold			0.002	0.887	10.1
	Time-of-use power sold	% of power sold			89.2	89.0	83.0
	Universal-Service Market						
	Household customers' segment						
	Time-of-use power sold	% of power sold			5.21	1.12	1.22
	Non-household customers' segment						
	Time-of-use power sold	% of power sold			0.070	0.005	68.5
	Overall power sold						
	high-voltage	% of power sold			13	11.9	10.9
	medium-voltage	% of power sold			15.6	14.2	13.5
	low-voltage	% of power sold			71.5	73.9	75.6
	Total green power sold	% of power sold			**0.749**	**3.08**	**5.75**
	Total time-of-use power sold	% of power sold			**11.8**	**18**	**29.9**

(1) These activities have been surveyed since 2007.

Highlights

Enel operates in Italy through Enel Produzione (thermal and renewable power generation) and Enel Green Power (renewable power generation).
In 2009, thermal generation from fossil fuels fell by about 15 TWh, owing, above all, to the sharp contraction of demand.
Net maximum capacity and net generation from renewables were up by 105 MW (7 MW hydro, 24 MW geothermal, 67 MW wind and 8 MW photovoltaic) and by about 1.2 TWh (increase of generation by hydro, biomass, wind & photovoltaic power plants of 1,300 GWh, 72 GWh and 38 GWh, respectively, and decrease of generation by geothermal power plants by 181 GWh) from 2008.
As regards the absolute value of electricity generation from renewables in Italy in 2009, Enel generated a total of roughly 28 TWh net from the following sources: hydro from natural flows, about 22 TWh net; geothermal, 5 TWh; wind and photovoltaic, about 0.5 TWh; biomass and waste, about 0.2 TWh.
The drop in the contribution of geothermal generation is due both to the lower availability of geothermal fluid and to the natural decline of geothermal-field pressure over time. Most of the geothermal fluid (97.6%) is used for electricity generation. The yearly extent of geothermal drilling had a downward trend, in line with the one of the related activities.
With regard to grids, it is worth pointing out that, in 2009, a further portion of high-voltage lines (about 18,900 km) was sold to Terna and that most of Enel Rete Gas was also sold. Consequently, they are no longer part of the Group's assets.

Renewables

Photovoltaic power

In 2009, Enel put into service its photovoltaic plant of Montalto di Castro (Viterbo). With 6 MW of net maximum capacity, the plant can generate over 7 million kWh/yr (equal to the requirements of 2,700 households), displacing nearly 5,000 tonnes of CO_2 emissions.
Enel Green Power, Centro Ingrosso Sviluppo Campania and Interporto Campano signed an agreement for construction of a 25-MW photovoltaic plant in Campania, the largest roof-integrated project with innovative technology in Italy and among the largest at worldwide level. The plant will be located in the municipality of Nola (province of Naples) and will be fully architecturally integrated into the rooftops of commercial and logistic buildings. The plant, equipped with innovative, flexible, thin-film, photovoltaic modules in amorphous silicon, will go into operation in 2010.

Geothermal power

In 2009, Enel Green Power's Sasso II geothermal plant was commissioned. The plant, located in Val di Cornia (province of Pisa), has a net maximum capacity of 20 MW and can generate 130 million kWh/yr, corresponding to the consumption of 50,000 households. Also the Nuova Lagoni Rossi (new) plant went into service; this plant will increase the net maximum capacity of Enel Green Power's geothermal power plants in the area of Larderello by 4 MW (+12 MW from the new plant and -8 MW from the decommissioned plant).
Always in Tuscany, Enel entered into a voluntary memorandum of understanding with the Region for development of geothermal energy. Thanks to this initiative, € 650 million will be invested in environmental enhancements, e.g. mercury & hydrogen sulfide emission abatement systems and an emission monitoring system fitted with sensors and public-information monitors.

Wind power

In 2009, Enel Green Power signed a deal with Eurus Energy Europe, a joint venture (stakes held by Tokyo Electric Power Company and Toyota Tsusho Corporation) having leadership in wind power generation. The company has developed large-scale wind farms in various countries of the world for decades. The deal covers the acquisition of rights on 50% of the wind power projects located in sites of Calabria with a high generating capability (net maximum capacity of up to 400 MW).
Always in Calabria, Enel Green Power made an agreement with the company Micropower, which has operated successfully in the Italian sector of renewables for several years. Under the agreement, Enel Green Power acquired a majority holding in two wind power projects, totaling 64 MW of net maximum capacity. The two wind farms, which have already been authorized, will come on line in 2010 and generate about 150 million kWh/yr in the commercial-operation stage; this generation will be sufficient to cover the consumption of approximately 60,000 households, displacing over 110,000 t of CO_2 emissions/yr.
Always in 2009, Enel Green Power commissioned 10.5 MW of net maximum capacity from wind farms in Sardinia.

Nuclear power

In 2009, Enel and EDF set up Sviluppo Nucleare Italia Srl, a joint venture with equal stakes by the two companies. The joint venture is expected to develop a feasibility plan for construction of nuclear power plants in Italy, beginning in 2013, as provided for in the agreement signed by Italy and France at the beginning of 2009; the agreement marks Italy’s *de facto* return to nuclear power.

Applicable GRI indicators

EN1 Among expendables, the consumption of those used to abate pollutants (listed below) went up:
> polyelectrolyte for waste water treatment;
> limestone for flue-gas desulfurization (used on a larger number of coal-fired power plants).

EN2 The following are the resources recycled in 2009:
> PCB-decontaminated oil (about 120 t in total);
> refuse-derived fuel (about 55,300 t in total);
> recycled paper (about 670 t in total; at least 70% of the purchased boxes and cartons contain recycled paper, i.e. with at least 75% of recycled fibers, as the remaining part consists of virgin fibers coming from forests managed in environmentally sustainable ways).

EN1
EN3 Interestingly, the consumption of non-fossil fuels in thermal power generation grew from 42,000 to 67,000 toe in a single year.
This contribution includes:
> refuse-derived fuel, co-fired with coal;
> solid biomass, used as main fuel or co-fired with coal;
> biodiesel, used in some gas-turbine units in small islands.
In contrast, the consumption of fossil fuel in thermal power generation was down from 2008 (from 14,027 ktoe to 11,163). In the 2009 fossil-fuel mix, the share of coal was up, owing to the entry into operation of the third unit

(660 MW) of the new high-efficiency plant of Torrevaldaliga Nord, to the shrinking share of fuel oil and to a slight contraction of the one of natural gas used in steam-fired units.

EN4 The primary electricity used for fuel storage & handling, mining activities and real-estate & service management amounted to 130 GWh.
In Italy, for the operation of its grids, Enel used roughly 1,145 TJ (318 GWh) of electricity. The figure is divided as follows:

> 1,134 TJ were used by Enel Distribuzione; of this figure, 9.4 TJ were supplied by photovoltaic rooftops installed on HV/MV substations (to cover their requirements);

> 11 TJ were used by Deval; of this figure, 5.2 GJ were supplied by photovoltaic rooftops installed on HV/MV substations.

The percentage of electricity consumption for grid operation dropped slightly in 2009.

EN5 Electricity generation

Conversion of the Torrevaldaliga Nord plant to coal firing was completed in 2009. The project significantly increased the efficiency of the plant, which passed from 40.6% (oil firing) to 44.7%.
In unit 3 of the thermal plant of La Spezia, the heat rate was reduced (under a three-year program) by: using variable seals for Ljungstroem air preheaters; installing a system to control the number of revolutions of fans (secondary air and desulfurizer boosters); replacing the drum blading in the supercritical section of the turbine and internals in the low-pressure one.
New parts of the turbine (with a 5% efficiency increase) were installed in the geothermal plant of Farinello.

Electricity distribution

Enel plans to achieve considerable energy savings by increasing the efficiency of its power grid.
The installation of new HV/MV and MV/LV substations in the distribution grid may rationalize and optimize the lower-voltage grid, by reducing the average length of and the average load on the grid and thus power losses.
MV and LV lines are usually refurbished by replacing existing conductors with other conductors with a larger cross-section, which diminish resistance and thus power losses. For MV lines, the main renovation projects involve the replacement of 16-mm^2 conductors of old offtakes or sections of overhead lines with conductors or overhead cables having larger cross-sections. For LV lines, 16- or 25-mm^2 bare copper conductors are replaced with 35-mm^2 overhead aluminum cables.
As part of efficiency measures, use will be made of MV/LV transformers with reduced losses with respect to those currently adopted in the distribution grid. These transformers reduce losses thanks to two contributions:

> under no-load conditions, average reduction of losses which may be estimated at about 30% vs. the one of present transformers;

> under on-load conditions, average reduction of losses which may be estimated at about 10% vs. the one of present transformers, for about 1,800 hrs/yr; the reduction coefficient takes into account the original oversizing of the equipment with respect to the load at which it is operated.

Under the 2010-2012 Development Plan, roughly 33,000 MV/LV transformers with reduced losses will be installed.

Finally, the mode of operation of the grid (evolved monitoring systems, remote operation of switching points, sophisticated systems to compute and simulate electric data, both on line and off line, that Enel Distribuzione is adopting) and careful management of grid configurations (namely, on the MV grid) may significantly decrease the power dissipated in conductors through the Joule effect. The expected savings are equal to 280 TJ/yr.
Additionally, Enel Sole's LED project (see Environmental Report 2008) is achieving major savings in electricity consumption for public lighting.

EN6 Enel's marketing activity in Italy involves time-of-use rate plans, which encourage night-time power usage. This increases the efficiency of the power sector as a whole, decreasing wastage and negative environmental impacts.
Commercial offerings based on RECS certificates enable the customer to obtain a guarantee of origin by paying a small extra cost to finance further development of renewables. The RECS (Renewable Energy Certificate System) certificates give evidence of the renewable origin of the generated power. One RECS certificate is worth 1 MWh of consumption of renewable power.
The initiatives of the Sales Division in 2009 were as follows:

> portfolio of offerings based on RECS certificates for all customer segments (Energia Pura - Pure Power - line of products, offerings for business customers with option to redeem RECS certificates, "e-light" web offering with e-mailing of bills);
> two-rate time-of-use plans for residential and business customers;
> customer-loyalty point program (Enel Premia - Enel Rewards You) for residential customers and customers with VAT registration number and subscribed demand of less than 15 kW; the program grants bonuses to customers who: i) reduce their yearly usage; ii) sign up for e-mail bills (CO_2 free); iii) pay through credit card and direct debit (no need to go to the post office/bank/pay point and saving on paper and postage);
> energy audits for public administrations and large businesses.

Thanks to these initiatives: i) about 8 TWh of RECS certificates were redeemed; ii) customers who signed up for the Enel Premia program reduced their yearly usage (about 40 GWh in 2008 and 40 million points assigned in 2009); and iii) e-bill customers and direct-debit residential customers totaled about 190,000 and about 1.5 million, respectively.
To quantify the energy savings and the power usage of customers who signed up for green offerings, use is made of data provided by distributors (invoiced usage). All other data come from corporate information systems.

Smart meters and remote control of the distribution grid

Enel Distribuzione is the European company most advanced and active in the installation of smart meters, a technology that is crucial to energy efficiency.
The innovative smart metering system (Telegestore), including telemetered usage data acquisition, is a key component and a driver of the development of smart grids, the grids of the future. Telegestore is the single example in the world of a large-scale metering and customer contract management system using the low-voltage grid to exchange data.
In particular, smart meters not only measure the power that is consumed, but are also capable of exchanging a number of data with the central systems of power supply companies. For instance, their telemetering and telemanagement features allow customers to display up-to-date usage data and contracts on their monitors. The system makes the distribution grid more efficient, reduces the

costs and inefficiencies connected with the sending of repair crews to the premises of customers and provides them with a way to keep their electricity bills under control.

Energy@Home

In 2009, Electrolux, Enel, Indesit and Telecom Italia signed an agreement to design and develop innovative services based on communication between future-generation household appliances, Enel's smart metering infrastructure and Telecom Italia's network.
The project (Energy@Home) is expected to create a system where smart appliances will automatically adjust home energy consumption, avoiding peaks and overloads on the grid.
The goal is to raise energy consumption awareness and promote energy efficiency.

Ecodieta CO_2

In 2009, Enel launched an environmental awareness initiative, called Ecodieta CO_2 (Cut CO_2). A special website explains what Enel does and, above all, what each of us can do for the environment.
The website (www.ecodieta.it) is part of Enel's portal. By accessing the website, Internetters may improve their knowledge of Enel's commitment to reducing CO_2 emissions and take an interactive virtual tour of a home, visiting all the rooms where they may perform daily activities, from the use of household appliances to eating. By clicking on the various objects contained in each room, visitors will know the CO_2 emissions associated with each of their activities. At the end of the tour, the system will compute the total amount of CO_2 emitted by each user on a typical day. Therefore, through the "eco-calculator", each user can measure the levels of emissions of CO_2 connected with his/her daily activities and decide how to adjust his/her energy consumption.

EN6
EN7
In 2009, Enel recorded an upward trend in its sales of green and time-of-use power, demonstrating its commitment to promoting environmentally sustainable usage in Italy.
In December 2009, Enel Servizi (managing the buildings and the vehicle fleet mostly in Italy) gained the ISO 14001 certification for some typical buildings of Enel's Italian real-estate assets. In 2010, the certification will be extended to all the real-estate assets. Endesa, too, conducted a similar activity in its office buildings.
Enel Servizi launched many initiatives to cut energy consumption: introduction of special vehicles into its fleet (cranes, vehicles with buckets, heavy vehicles, etc.), equipped with the recently marketed Euro 5 engines, with clear environmental and efficiency improvements; participation in panels of fleet operators with common sustainable-mobility objectives, e.g. use of hybrid (conventional and power-driven) transport vehicles, reduction of personnel mobility by resorting to alternative communication tools (conference calls, Communicator software, etc.) and arrangements with numerous manufacturers of electric vehicles for inducing more efficient and zero-emission mobility practices.
Thanks to a number of already ongoing initiatives, which make part of its ISO 14001-certified environmental management system, Enel may considerably slash its consumption of fuels and electricity. To achieve this goal, an awareness campaign will be organized. The campaign will spread knowledge of sustainable practices, such as the switching-off of PCs and the closing of windows. Systems for automatic control of lighting and heating were also put in place.

EN7 Enel pursues mobility policies and takes initiatives to optimize the use of its car fleet, both through correct management and safe and environmentally-sustainable driving courses; these efforts are undertaken as part of the deployment of environmental management systems.

In Italy, to reduce indirect energy consumption, Enel launched the following mobility management initiatives:

> purchase of public-transport subscriptions, already implemented in some areas (Piedmont, Ancona and its province, Genoa, Milan, Rome) and being implemented in other areas (Tuscany, Palermo and its province, Bologna);
> purchase of car- and bike-sharing subscriptions (being extended throughout the country);
> car pooling service in Rome (being extended throughout the country), promoted by making available corporate car parks to the users of the service.

The estimated energy savings and avoided emissions resulting from Enel's plans of commuting to work and back are based on: usual commuting practices; average distance of transfers and average emission factors of different modes of transport (car, motorcycle, mass transit, etc.).

In 2009, the energy savings from the public-transport subscription initiative were around 5,200 toe (218 TJ). The figure results from the application of the following formula:

*toe = FC * no. of users of a specific mode of transport * average home-to-work distance * 2,*

where FC is the consumption obtained as the average consumption of all the replaced modes of transport (from the report "Reducing CO_2 Emissions from Cars: A Study of Major Car Manufacturers", published by Transport & Environment - T&E).

EN8 In the past five-year period, net specific requirements of water for industrial uses in thermal generation progressively rose. The rise may be attributed to two factors: the installation of a growing number of flue-gas desulfurization systems to radically curb sulfur dioxide emissions into the atmosphere; and the larger use of closed-cycle cooling systems to zero the thermal impact of open-cycle cooling systems on the receiving water body.

EN10 The contribution of waste waters to the coverage of water requirements mounted from 3.9% in 2007 to 13% in 2009 thanks, among others, to the entry into operation of crystallizers in the coal-fired plant of Brindisi Sud. In absolute values, the consumption of waste waters increased from 2 to roughly 5 million m^3 between 2008 and 2009.

This figure excludes the waste waters coming from the treatment system of the local municipally-owned company (Vesta) in 2009 and entirely reused (approximately 792,000 m^3) in the same year as make-up waters for the closed-cycle cooling system of the Fusina thermal plant (province of Venice).

EN13 Environmental rehabilitation (Enel Produzione)

In 2009, Enel continued its environmental rehabilitation and restoration of contaminated sites in industrial areas considered to be at high industrial risk. These sites are designated as of "national interest" by Law 426/1998 and subject to the technical rules referred to in Legislative Decree 152/2006. The highlights of 2009 are as follows.

> Power plants of Assemini (province of Cagliari) and Giugliano (province of Naples): characterization plans were approved.
> Power plants of Maddaloni (province of Caserta) and Piombino (province of Leghorn): based on findings from characterization studies, emergency

groundwater safety and conservation measures were taken.

> Power plant of Brindisi Sud (province of Brindisi): planning of environmental rehabilitation and restoration works was completed.
> Power plants of Augusta and Priolo Gargallo (province of Syracuse): environmental rehabilitation continued.

The following cases of minor contamination occurred in 2009.

> Diesel power plant of Panarea (province of Messina): start of remediation procedure for an old - but recently detected - case of gas-oil contamination.
> Power plant of Fondovalle (province of Verbano-Cusio-Ossola): positive outcome (certified by ARPA Piemonte) of environmental rehabilitation and monitoring measures prescribed after an accidental oil spill which occurred in April 2006.

Environmental rehabilitation (Enel Green Power)

Rehabilitation works in 2009 concerned the following power plants.

> Hydro power plant of Acquoria (province of Rome): removal of stagnant water from the left side of the intake structure of the San Giovanni basin.
> Hydro power plant of Cardone (province of Como) and wind power plant of Sclafani Bagni (province of Palermo): safety measures on roads of access to the intake structure of the hydro plant (involved by a landslide) and to the wind power plant.
> Hydro power plant of Gratacasolo (province of Brescia): demolition of the structure (towers and equipment) of the substation.
> Hydro power plants of Forno Allione (province of Brescia) and Ludrigno (province of Bergamo): remediation of out-of-service hydrocarbon tanks.

EN14 Biomonitoring (Enel Produzione)

> Power plant of La Casella (province of Piacenza). Lichen species are used for air biomonitoring.
> Power plant of La Spezia. The release of cooling waters might cause thermal disturbance to the surrounding port area. In some periods of the year, the waters are chlorinated to prevent marine fouling. Therefore, the released sea water might contain residues of active chlorine. A careful water monitoring survey was carried out (under art. 3, para. 2 of Law 502/1993) by the multizonal prevention centre of the La Spezia local health unit, jointly with Istituto Nazionale per la Ricerca sul Cancro (national cancer research institute), ENEA-CRAM and the University of Genoa. The survey lasted two years, during which investigations were conducted on the possible impact of releases on the local marine biofauna. The summary report indicated that the gulf of La Spezia is subject to pollution from port and industrial activities as well as from residential releases, but that: i) the releases from Enel’s power plant do not cause major and permanent alterations in the surrounding marine environment; ii) the water temperature increases generated in the gulf (even in its most confined parts) are not such as to contribute to eutrophication; and iii) the thermal gradient induced by the plant favors and accelerates the already significant mixing of waters in the gulf. The study took into consideration the plant in its configuration preceding the environmental enhancements and can be considered as precautionary for its current configuration. At present, the values of the parameters connected with the operation of the plant are compatible with the local ecosystem.
> Power plant of Livorno. The cooling water is conveyed by means of gates towards the Medicean Channels of the city, to support the natural circulation

of waters, permitting adequate oxygenation and avoiding oxygen deficiency by stagnation. The positive impact of these releases extends to the entire year but is much more marked in summer.

> Power plant of Montalto di Castro (province of Viterbo). Marine biomonitoring surveys are carried out in the areas near the cooling water release structure according to a methodology agreed on with ISPRA (higher institute for environmental protection and research).
> Power plant of Porto Corsini (province of Ravenna). A lagoonal wetland (Pialassa Baiona) occurs in the vicinity of the plant. Local ecosystems are biomonitored to determine the status of the area and thermal disturbances, if any, due to the plant's cooling water. Results show a good status of the area and no negative effects.
> Power plant of Santa Barbara (province of Arezzo). Air quality biomonitoring surveys use active sensors (tobacco) and passive sensors (lichens). Periodical surveys are conducted along the San Cipriano stream to measure algal concentration and composition, the Extended Biotic Index and some chemical parameters. The results of the surveys are forwarded to the regional environmental agency (ARPAT) and to local authorities.
> Power plants of Termini Imerese (province of Palermo) and Torrevaldaliga Nord (province of Rome). Marine biomonitoring surveys (benthic components and primary productivity of waters) and land-based biomonitoring surveys (with bioindicators and bioaccumulators, only at Termini Imerese) were conducted. Their results showed no disturbances to the surrounding environment.

EN16 In 2009, specific CO_2 emissions from thermal generation vs. total electricity generation had their lowest value in the period (443 g/kWh net) thanks to the contribution of electricity generation from renewables and, namely, hydro power generation from natural flows and wind power generation.
Results are remarkable, if they are compared with the 618 g/kWh net of 1990, i.e. the base year of the Kyoto Protocol targets.

EN18 In 2009, CO_2 emissions displaced by electricity generation from renewables accounted for about 21 million tonnes (about 13% more than in the previous year), thus favoring Italy's compliance with the Kyoto Protocol targets.
Additionally, the ratio of the above avoided CO_2 emissions to the overall CO_2 emissions from the otherwise necessary generation without the contribution of renewables [(avoided CO_2/(avoided CO_2 + total CO_2)] reached 36%.
To minimize SF_6 leaks from equipment, reference is made to technical specifications, providing that the yearly leakage rate should not exceed 0.5% of the filling volume and that the first replenishment requirement should arise at least ten years after the date of filling. The manufacturer should declare the actual leakage rate.

EN19 In Italy, approximately 1,000 residential buildings are fitted with air conditioning systems which use the R-22 gas, which will be no longer commercially available after 2010. Considering a 3% average leakage rate from these systems, about 500 kg (on a total of 15,000 kg) are estimated to have been released into the atmosphere in 2009. Initiatives are under way to identify a replacement gas to be progressively introduced.
In industrial activities, all ozone-depleting substances were replaced with non-ozone depleting ones.

EN20 In 2009, all the macro-pollutants emitted into the atmosphere (sulfur dioxide-SO_2, nitrogen oxides-NO_X, particulates) decreased in absolute terms thanks, in particular, to reduced electricity generation.
Specific emissions of SO_2 were down, whereas those of NO_X and particulates stood at their levels in the previous year, because flue-gas treatment is now pushed to the technological limit. These excellent results may be ascribed to advanced combustion and pollutant abatement systems, growing reliance on high-grade fuels and good average efficiency of the thermal generating mix.

EN20 Specific emissions of H_2S from geothermal generation are reported for the sake of completeness, in spite of their natural origin. However, Enel's commitment on this front (installation of abatement systems) is significant. The trend of these emissions shows a further decrease of 0.5 g/kWh from 2008 to 2009.

EN22 In 2009, in compliance with the applicable legislation, Enel completed its Italian plan of disposal of oil with a concentration of PCBs of more than 500 ppm and of equipment containing it.

In particular, the Infrastructure and Networks Division went on with the special project that it had started in 2005 for decontamination or disposal of equipment containing oil with PCBs. The project will be completed within 2010 (ahead of the time limit indicated in Legislative Decree 209/1999 and art. 18 of Law 62/2005). Decontamination or disposal of equipment containing oil with a PCB content exceeding 500 ppm was completed as early as in 2007, ahead of the legislative time limit (2009). Power and measuring transformers with a PCB content of 50 to 500 ppm will be totally disposed of by 2010, despite the fact that the applicable legislation provides for removal at the end of their lifetime. From the start of the project to the end of 2009, contaminated equipment (especially power transformers, but also measuring transformers, capacitors, bushing insulators, circuit-breakers, etc.) dropped by about 26,000 units.

Waste recovery efforts continued.
The percentage of recovery of waste delivered to authorized operators in 2009 was above 80%.
Ash and gypsum from desulfurization are the only items of waste whose production is significantly correlated with the volume of activities. These items show very high percentages of recovery: 84% of coal flyash and 100% of gypsum. The ash from the fluidized-bed plant of Sulcis is an exception to the high percentage of recovery: after being mixed with the spent fluidized-bed, it is delivered to disposal operators and recovered only in minimum part.

EN23 In the operation of the power grid, insulating dielectric oil was spilled from in-service equipment (99% of which consists of pole-mounted transformers): 438 incidents of Enel Distribuzione and 2 incidents of Deval. Each incident involved the spilling of an average of 80-100 liters of oil for Enel Distribuzione and 10-15 liters for Deval and a soil surface of some square meters. The safety and rehabilitation measures are taken under a simplified procedure applying to surface areas of less than 1,000 m^2; under this procedure, the contaminated areas are remediated within 30 days from the incident (without requiring a formal rehabilitation procedure). It is worth noting that these incidents are concentrated in sites where thefts from in-service equipment (to extract valuable materials, e.g. copper) are frequent.

EN26 Electricity generation

The following are the most important activities of mitigation of environmental impacts which were carried out in thermal power plants.

In 2009, at the plant of Augusta (province of Syracuse), the items of waste to be delivered to recovery operators increased; the plan of disposal of PCB-containing transformers was completed; and asbestos-containing insulating material was removed from the penthouse of the three steam generators.

The plant of Bari went on with its multi-year plan of gradual disposal of asbestos. Investments are also planned to reduce water abstraction from wells, as well as nitrogen oxide emissions (via the Over-Fire Air technique - OFA) lowering them to 120 mg/Nm^3. Finally, feasibility studies were conducted on the development of systems to treat and fully recover meteoric waters from runoff and to mitigate noise emissions.

At the plant of Camerata Picena (province of Ancona), priority is assigned to the repair of components (rather than to their replacement) and to the use of more eco-friendly materials and substances. Maintenance jobs are aimed at preventing and/or minimizing leaks from water systems. The plant completed the final disposal of oil with a PCB content exceeding 500 ppm, by selling one of its transformers.

The plant of Capraia (province of Leghorn) increased its use of biodiesel to drive units equipped with diesel prime movers. Its old unit 2 (gas-oil firing only) was replaced with a new one (gas-oil or biodiesel firing). The choice increased the installed capacity and the renewable power generation of the plant and decreased its gas-oil consumption and CO_2 and SO_2 emissions.

The plant of Fusina (province of Venice) introduced a new methodology to assess environmental risks and define mitigation plans. The methodology integrates its EMAS-registered environmental management system in terms of impact assessment and operational control of significant environmental aspects.

The plant of La Casella (province of Piacenza) discontinued its use of a detergent classified with the danger symbol Xi (irritant) in on-line clean-up of its gas-turbine units, replacing it with water.

The main activities carried out at the plant of La Spezia were as follows: reduction of (primary and secondary) emissions by upgrading the electrostatic precipitator; installation of ecological buckets in coal unloading systems; modernization of bunker particulate abatement systems; construction of a new system in the quay area for collecting rainwater and conveying it to a treatment system; and removal of flyash in the Campo Ferro area.

The plant of Leri Cavour (province of Vercelli) defined and implemented a plan to control combustion in auxiliary boilers. Under the plan, the parameters of emissions into the atmosphere are measured every six months alternatively by the plant personnel or by independent contractors. Thanks to these measures, boilers can operate under the best combustion conditions with optimum efficiency (and thus gas-oil consumption) and emissions into the atmosphere. Furthermore, consumption of SF_6 was monitored to reduce releases into the atmosphere.

The plant of Livorno applied for the Integrated Environmental Permit, by proposing co-firing of palm oil and dense fuel oil. This option might, among others, reduce emissions of CO_2 and macro-pollutants. Additionally, in 2009, the plant continued its plan of removal of asbestos-containing materials.

The plant of Montalto di Castro (province of Viterbo) used biodegradable lubricants in its sea water intake structure.

The plant of Pietrafitta (province of Perugia) decontaminated its asbestos-containing components; planned the replacement of its gas-turbine unit burners with low-NO_X burners; conducted preliminary studies on mitigation of noise emissions from the plant upon operating transients; completed the disposal of transformers with dielectric oil containing more than 500 ppm; carried out employees' and stakeholders' awareness & training activities as part of its environmental management system; and, finally, recovered a higher percentage of waste waters.
The Business Unit of Piombino sold its last PCB-contaminated transformers.
The plant of Porto Corsini (province of Ravenna) began the replacement of its noise abatement systems to mitigate noise emissions upon start-up transients.
The plant of Santa Barbara (province of Arezzo) removed asbestos and other insulating materials from its components (disused and being demolished) and disposed thereof. It also increased its recovery of office paper, cardboard and mixed packaging materials and carried out remediation work on disused tanks (previously containing chemical reagents for water treatment).

In the sector of renewables, the general objective is to increase electricity generation and accrue Green Certificates. The capacity of existing mini-hydro installations is planned to be increased by recovering energy from the water released to ensure the minimum in-stream flow.
Prior to the entry into force of the current legislation, some of these releases were made on a voluntary basis under specific agreements.
Other activities concerning hydro power generation are as follows:

- polluting and toxic products are being progressively replaced with alternative biodegradable and atoxic ones;
- noise emissions are being mitigated in some power plants, including Avio and Gardona (province of Trento), La Stanga and Saviner (province of Belluno);
- underground single-chamber tanks are being substituted with double-chamber ones equipped with leakage detectors;
- separators and trap ditches are being used to recover small leaks of oil into water:
- purchase of a solvent recovery tank to mitigate the risk of spill at the plant of Malegno (province of Brescia);
- noise abatement of the outlet channels of the power plants of Basso Piova (province of Turin) and of Dronero, Ponte Marmora and Pietraporzio (all in the province of Cuneo).

With regard to geothermal activities, the main highlights are:

- delivery of a new drill rig with lower environmental impact;
- installation of demisters to minimize boron salt emissions at the power plants of Farinello (province of Pisa) and Piancastagnaio 4 (province of Grosseto);
- reduction of hydrogen sulfide emissions during drilling via AMIS systems at the plant of Molinetto (province of Pisa);
- remediation of about 3.6 km of asbestos-insulated pipelines;
- experimental reduction of caustic soda consumption;
- tightness tests and remediation of underground single-chamber tanks still being used;
- removal of a 50-kV line and completion of disposal of oil-insulated transformers with a PCB concentration exceeding 500 ppm.

EN29 Electricity distribution

The percentage of overhead or underground cables in power lines (see “Performance indicators” in “Status data” of the “Group’s Eco-Balance”) passed from 70% in 2008 to about 72% in 2009, demonstrating Enel Distribuzione’s considerable efforts in diminishing the visual impact of its lines and risks of electrocution of the avian fauna.

Portugal

Thermal and combined heat & power generation

(Endesa SA, Enel Unión Fenosa Renovables SA)

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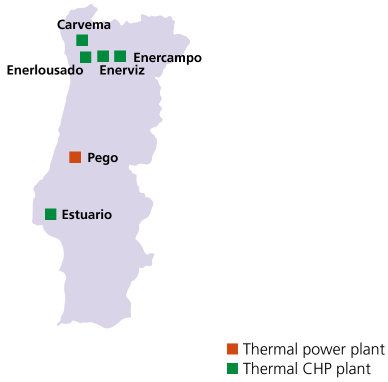
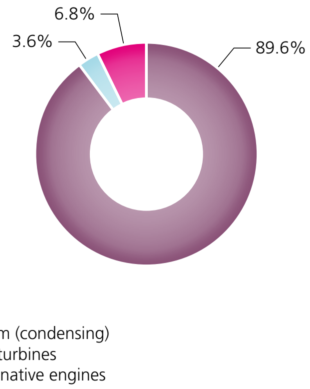


Power installations

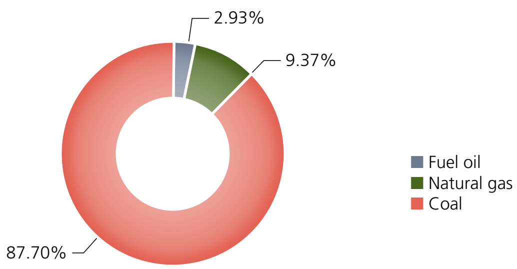
	Power plants no.	Generating units no.	Net maximum electrical capacity MW	Useful thermal capacity 10^6 kcal/h
Steam (condensing)	1	2	221	-
Gas turbines for CHP	1	1	9	13
Alternative engines for CHP	4	8	17	15
	6	**11**	**247**	**28**

The Pego power plant has an ISO 14001-certified environmental management system.

Net maximum electrical capacity
Total: 247 MW



Fuel consumption
Total: 312,000 t of oil-equivalent

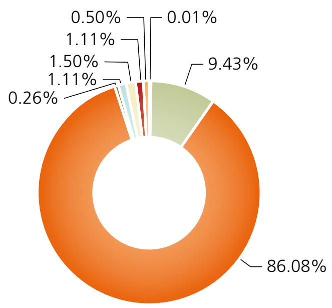


Net electricity generation
Total: 1,300 million kWh

Useful heat output (combined with power generation)
Total: 111,781 million kcal
(equal to 130 million kWh)

Water for industrial uses
Total requirements: 4,733,641 m³
Total abstraction from inland waters: 4,733,641 m³

Expendables
Total: 10,153 t



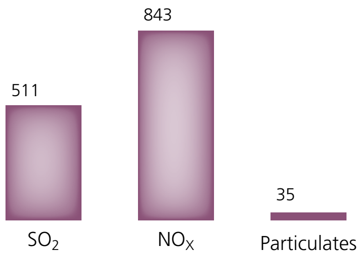
- Resins, hydrazine, carbohydrazide & hydrogen peroxide
- Ammonia
- Limestone for flue-gas desulfurization
- Sodium hypochlorite
- Sulfuric & hydrochloric acids
- Caustic soda
- Lime, ferric chloride and polyelectrolyte
- Lubricating oil

Waste waters

Discharged (m³)	3,568,179

Waste waters include those meteoric waters that are susceptible to pollution and are therefore fed to treatment systems before being discharged or used.

Emissions into the atmosphere (t)

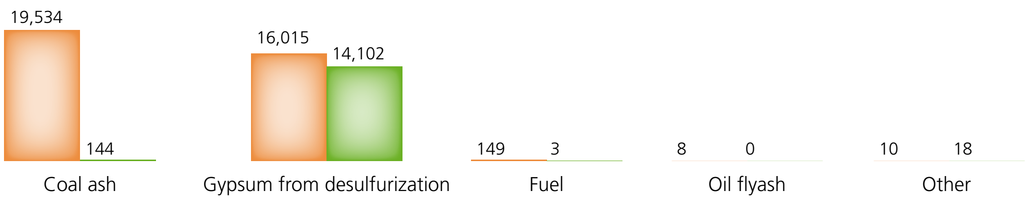


CO_2 (t)	1,161,673
from combustion	*1,152,043*
from desulfurization	*9,630*

Special waste
Total production: 35,716 t
Total delivery to recovery operators: 14,268 t

Non-hazardous
Production: 35,698 t
Delivery to recovery operators: 14,250 t

Hazardous
Production: 18 t
Delivery to recovery operators: 18 t



Production / Delivery to recovery operators

Wind power generation

(Endesa SA)

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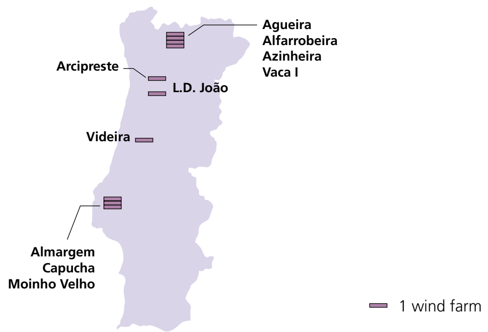


Power installations

	Power plants no.	Net maximum electrical capacity MW
	10	**75**

Net electricity generation

Total: 188 million kWh

Equivalent yearly hours of utilization*

* On a statistical basis, yearly generation/capacity ratio

Avoided CO_2 emissions

Due to wind generation (t)	169,529

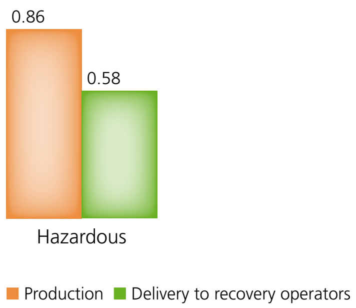
Emissions from the otherwise necessary fossil-fired thermal generation.

Other data

Wind systems	Surface area occupied by platforms, service roads and buildings (ha)	22
	Total surface area affected by the installations (ha)	20 to 100 times larger

Special waste

Total production: 0.86 t
Total delivery to recovery operators: 0.58 t



Eco-Balance and Indicators

STATUS DATA

		2007	2008	2009
Power-generating installations				
Power plants	no.	19	17	11
thermal	no.	1	1	1
wind	no.	18	16	10
Net maximum electrical capacity	MW	258	258	295
thermal	MW	148	148	221
wind	MW	110	110	74
Combined heat & power installations				
Power plants	no.	-	4	5
Net maximum electrical capacity	MW	-	22	25.7
Useful thermal capacity	million kcal/h	-	18.7	27.9

RESOURCES

			2007	2008	2009
EN1 EN3	**Fossil fuels**				
	Thermal generation (including auxiliary boilers and emergency generating sets)				
	fuel oil (LS) and gas-oil	thousand t	0.276	1.80	4.41
	coal	thousand t	87.6	355	461
	Total	**thousand toe**	**56.2**	**210**	**278**
	Combined heat & power generation (including auxiliary boilers and emergency generating sets)				
	fuel oil (LS) and gas-oil	thousand t	0	5.76	4.99
	natural gas	million m^3	0	26.3	31.9
	Total	**thousand toe**	**0**	**29.5**	**34.2**
	Grand total	**thousand toe**	**56.2**	**240**	**312**
EN8	**Water for industrial uses (for thermal generation)**				
	From rivers (including meteoric waters from secondary rainfall)	million m^3	0.594	2.73	4.73
	From wells	million m^3	0	0.001	0.001
	Total requirements	**million m^3**	**0.594**	**2.73**	**4.73**
EN1	**Expendables**				
	Hydrazine	t	0	1.30	1.10
	Ammonia	t	0	894	958
	Limestone for flue-gas desulfurization	t	0	3,335	8,740
	Sodium hypochlorite	t	0	121	26.2
	Trisodium phosphate	t	0	0.024	0.075
	Lime	t	0	0.536	87.4
	Ferric chloride	t	0	1.30	2.28
	Polyelectrolyte	t	0	14.7	22.8
	Sulfuric & hydrochloric acids	t	0	150	113
	Caustic soda	t	0	193	152
	Lubricating oil	t	0	51.2	51.1
	Dielectric oil	t	0	0.050	0.286
	Total	**t**	**0**	**4,762**	**10,154**
	for thermal generation	t	0	4,695	10,116
	for thermal generation (CHP)	t	-	66.3	36.8
	for wind generation	t	0	0	0.576

-: no data due to absence of activities in the year.

PROCESSES AND PRODUCTS

		2007	2008	**2009**
Electricity generation (net)				
From fossil fuels	million kWh	231	998	1,300
simple (coal)	million kWh	231	915	1,195
combined with heat generation	million kWh	-	83.6	105
fuel oil & gas-oil	*million kWh*	*-*	*18.3*	*31.1*
natural gas	*million kWh*	*-*	*65.3*	*73.7*
From renewables (wind)	million kWh	44.4	202	188
Total	**million kWh**	**275**	**1,200**	**1,488**
simple	million kWh	275	1,117	1,383
combined with heat generation	million kWh	-	83.6	105
Useful heat output (combined with power generation)				
From fossil fuels	million kcal	-	128,746	111,781
	million kWh	-	150	130

EMISSIONS, LIQUID RELEASES & WASTE (1/2)

		Source		2007	2008	**2009**
	Emissions into the atmosphere					
EN20	SO_2	thermal generation	thousand t	1.11	2.35	0.511
EN20	NO_X	thermal generation	thousand t	0.680	1.60	0.843
EN20	Particulates	thermal generation	thousand t	0.040	0.096	0.035
EN16	CO_2	*fossil-fired thermal generation (from combustion)*	*thousand t*	*208*	*838*	*1,068*
		fossil-fired thermal generation (from desulfurization)	*thousand t*	*0*	*1.47*	*9.63*
		Total from fossil-fired thermal generation	thousand t	208	839	1,077
		fossil-fired thermal generation - CHP (from combustion)	thousand t	0	75.4	84.3
		Total	**thousand t**	**208**	**915**	**1,162**
EN16	SF_6	electricity generation	kg	0	0.003	0
EN16	Total greenhouse gases (CO_2, SF_6, CH_4)		thousand t of CO_2-equivalent	208	915	1,162
EN18	**Avoided CO_2 emissions**					
	Due to wind generation		thousand t	40.1	185	170
EN21	**Waste waters (discharged quantity)**	thermal generation (simple)	million m^3	0	0.973	3.57
		thermal generation (CHP)	million m^3	0	0.113	0
		Total	**million m^3**	**0**	**1.09**	**3.57**

(2/2)

	Source		2007	2008	2009
EN22 Non-hazardous special waste					
Coal bottom ash	fossil-fired thermal generation (simple and CHP)				
production		t	0	2,745	3,745
delivery to recovery operators		t	0	56.1	69.2
Coal flyash	fossil-fired thermal generation (simple and CHP)				
production		t	810	3,225	15,789
delivery to recovery operators		t	22.7	289	75.2
Gypsum from desulfurization	fossil-fired thermal generation (simple and CHP)				
production		t	0	3,964	16,015
delivery to recovery operators		t	0	1,224	14,102
Other	electricity generation				
production		t	721	26.5	149
delivery to recovery operators		t	129	25.7	3.03
Total	electricity generation				
production		t	1,531	9,960	35,698
delivery to recovery operators		t	152	1,595	14,250
EN22 Hazardous special waste					
Coal flyash	fossil-fired thermal generation (simple and CHP)				
production		t	0	0	7.98
Other	electricity generation				
production		t	15.6	238	11.2
of which with PCBs		*t*	*8.15*	*35.1*	*7.96*
delivery to recovery operators		t	0	205	18.6
of which with PCBs		*t*	*0*	*6.60*	*16.3*
Total	electricity generation				
production		t	15.6	238	19.2
delivery to recovery operators		t	0	205	18.6
EN22 Total special waste	electricity generation				
production		t	1,547	10,199	35,717
delivery to recovery operators		t	152	1,800	14,268

INDICATORS (1/2)

			2007	2008	2009
	Resource conservation and quality				
EN1 EN3	Net heat rate of thermal generation	kcal/kWh	2,437	2,300	2,325
EN1 EN3	Net heat rate of thermal generation (CHP)	$kcal/kWh_{eq}$	0	1,263	1,454
EN8	Net specific requirements of water for industrial uses in thermal generation				
	including contribution of as-is sea water	liters/kWh	2.58	2.99	3.96
	excluding contribution of as-is sea water	liters/kWh	2.58	2.99	3.96
EN8	Coverage of requirements of water for industrial uses				
	from rivers (including meteoric waters from secondary rainfall)	% of requirements	100	100	100
EN1 EN3	Fossil fuel consumption for thermal generation				
	fuel oil	% of total fuel consumption	0.472	3.09	2.93
	gas-oil	% of total fuel consumption	0	0.015	0.002
	natural gas	% of total fuel consumption	0	9.91	9.37
	coal	% of total fuel consumption	99.5	87	87.7
	LS fuel oil	% of total fuel-oil consumption	100	100	100
	natural gas, technologically captive use	% of total natural-gas consumption	0	61.7	46.4
	natural gas non-technologically captive use	% of total natural-gas consumption	0	38.3	53.6
	Specific emissions into the atmosphere				
EN20	SO_2 (thermal generation)	g/kWh thermal net	4.79	2.57	0.428
EN20	NO_X (thermal generation)	g/kWh thermal net	2.95	1.75	0.705
EN20	Particulates (thermal generation)	g/kWh thermal net	0.174	0.105	0.029
EN16	CO_2 (thermal generation)	g/kWh thermal net	903	917	901
EN16	CO_2 (thermal generation - CHP)	g/kWh_{eq} thermal net	0	323	359
EN16	CO_2 (thermal generation - simple and CHP)	g/kWh_{eq} total net	757	677	718
EN16	SF_6 (electric activities)	% of SF_6 in equipment or in stock	0	0.230	0

(2/2)

			2007	2008	**2009**
EN22	**Specific production of waste**				
	Coal ash (thermal generation)	g/kWh net from coal	3.51	6.53	16.3
EN22	**Waste recovery**				
	Coal ash	% of production	2.81	5.78	0.739
	bottom ash	*% of production*	*0*	*2.04*	*1.85*
	flyash	*% of production*	*2.81*	*8.95*	*0.477*
	Gypsum from desulfurization	% of production	0	30.9	88.1
	Other non-hazardous special waste electricity generation	% of production	17.9	97.2	2.03
	Total non-hazardous special waste electricity generation	% of production	9.91	16	39.9
	Hazardous special waste electricity generation	% of production	0	85.9	96.7
	Total special waste electricity generation	% of production	9.81	17.6	39.9
	Electricity generation from renewables				
	wind	% of total generation	16.2	16.8	12.6

Highlights

Enel operates in Portugal through Endesa and EUFER (thermal and wind power generation).

Wind power

In Portugal, like in Spain, some power plants were acquired by Acciona as part of a deal under which Acciona sold its stake in Endesa to Enel.
Endesa commissioned 12 wind farms, with a total net maximum capacity of 156 MW, through the company ENEOP, in which it has a 30% stake (therefore, these wind farms are not part of the Group's assets), and enlarged a 100%-owned wind farm by 4-MW.
The total net maximum capacity of Endesa's wind farms was down by 35 MW on 2008. At the end of 2009, the share of this capacity included in the Group's assets was equal to 75 MW.
EUFER will build 50 MW of wind farms in 2010.

Thermal power

The increase in the net maximum capacity of thermal power plants as of Dec. 31, 2009 is due to the full consolidation of Endesa (from 67.05% in 2008 to 100% in 2009).

In 2009, the Enel Group generated in Portugal 188 GWh net in wind farms, 1,195 GWh net in thermal power plants and 105 GWh net in thermal CHP plants.

Applicable GRI indicators

In Portugal, just as in the other European countries where it is present, Endesa defined 5 targets and 26 action programs under its 2008-2012 strategic sustainability plan. With this plan, Endesa intends to help respond to global climate change challenges and provide electricity supply through a sustainable, efficient, reliable and low-CO_2 power system.
The five targets of this strategy are as follows:

> actively participating in development of technologies using renewables;
> prompting new technological breakthroughs in order to curb CO_2 emissions;
> catching opportunities to increase energy efficiency and cogeneration;
> spearheading the development of sustainable modes of transport based on electric vehicles;
> implementing a plan to develop a portfolio of CDM projects to be completed by 2020.

EN1 In 2009, efficient desulfurization of flue gases from thermal power plants caused the consumption of limestone to rise by 162%.

EN16 Net specific emissions of CO_2 from simple thermal generation were down by 1.7% (-16 g/kWh) from 2008.

EN18 Electricity generation from renewables displaced a total of 170,000 t of carbon dioxide emissions in 2009.

EN20 Net specific emissions of macro-pollutants from thermal generation have kept constant downward trends in the past few years. In 2009, significant reductions of SO_2 (-83%), NO_X (-60%) and particulates (-72%) were obtained thanks to the installation of both desulfurizers (having a positive effect also on particulates) and low-NO_X burners.

EN22 High rates of desulfurization produced a higher amount of gypsum, of which, however, 88% was recovered. Consequently, the percentage recovery of special waste mounted from 18% in 2008 to 40% in 2009.

Romania

Electricity distribution

(Enel Distributie Banat SA, Enel Distributie Dobrogea SA, Enel Distributie Muntenia SA)

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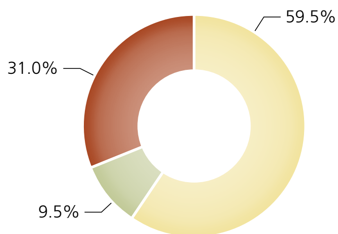
Provinces (and corresponding company districts) served
- Enel Distributie Banat
- Enel Distributie Dobrogea
- Enel Distributie Muntenia
- Headquarters

Power installations

SUBSTATIONS	no.	Installed transforming capacity MVA
HV/MV	272	13,133
Satellite substations and MV units	368	905
MV/LV	16,575	6,036
	17,215	**20,074**

LINES (length in km)	Overhead bare conductors	Overhead cables	Underground cables	Total
HV (110 kV)	5,800	-	223	**6,023**
MV	23,783	37	13,941	**37,761**
LV	44,429	11,795	24,269	**80,493**
	74,012	**11,832**	**38,433**	**124,277**



Enel Distributie Banat and Enel Distributie Dobrogea have an ISO 14001-certified environmental management system in place, extended to their entire organization.

General data

Municipalities served (no.)	2,115
Surface area served (km2)	61,799
Customers connected to the grids of the companies (no.)	2,583,840

Electricity

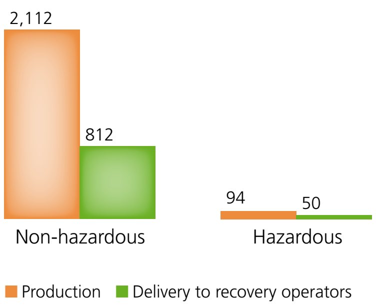
Total electricity distributed (million kWh)	13,224
Own consumption for grid operation (million kWh)	24

Resource consumption

Expendables: dielectric oil (t)	93
Gas-oil (toe)	20

Special waste

Total production: 2,206 t
Total delivery to recovery operators: 862 t



Emissions into the atmosphere

SF_6 (kg)	122
(t of CO_2-equivalent)	2,716

Emissions from gas-oil combustion

Eco-Balance and Indicators

STATUS DATA

			2005	2006	2007	2008	**2009**
	Power lines (circuit-length)						
	Total	km	56,654	52,972	53,228	90,240	124,277
	high-voltage	km	4,980	4,112	4,114	5,090	6,023
	medium-voltage	km	22,872	23,347	23,523	37,591	37,761
	low-voltage	km	28,802	25,513	25,591	47,559	80,493
EN29	**Service & real-estate management** (1)						
	Vehicle fleet						
	service vehicles	no.					1,162
	special vehicles	no.					79
	vehicles for both private and service use	no.					61
	Gross real-estate surface area	thousand m^2					93.5

(1) These activities have been surveyed since 2009.

RESOURCES

			2005	2006	2007	2008	**2009**
EN1 EN3	**Fossil fuels**						
	Various activities	thousand toe	0	0	0	0	1.94
EN4	**Primary electricity**						
	Various activities (1)	million kWh					10.9
	Water for non-industrial uses						
	Real-estate & service management (2)	million m^3					0.150
EN1	**Expendables**						
	Lubricating oil	t	0.236	0.001	-	0.240	0.830
	Dielectric oil	t	156	-	277	164	91.9
	Printing paper	t	-	-	-	-	74.2
	Total	**t**	**156**	**0.001**	**277**	**165**	**167**
	for electricity distribution	t	156	0.001	277	165	92.7
EN1	**PCB survey** (3)						
	Equipment & transformers with PCBs >500 ppm (excluding their oil)	t			34.9	49	36
	Oil with PCBs >50 ppm and ≤500 ppm contained in equipment & transformers	t			2.09	6.79	3.09

(1) The only activity involved (real-estate & service management) has been carried out since 2009.
(2) This activity has been surveyed since 2009.
(3) The survey began in 2007.

PROCESSES AND PRODUCTS

		2005	2006	2007	2008	**2009**
Electricity distribution						
Electricity distributed	million kWh	7,206	7,259	7,253	10,909	13,224
Electricity consumption for grid operation	million kWh	25.8	23.7	23.5	34.3	23.7
Market (1)						
Open Market						
Business segment						
Time-of-use offerings						
Customers	no.				20	39
Power sold	million kWh				3.2	11.3
Total						
Customers	no.				1,138	1,589
Power sold	million kWh				209	466
Large customers' segment						
Time-of-use offerings						
Customers	no.				7	6
Power sold	million kWh				33.7	20.0
Total						
Customers	no.				157	172
Power sold	million kWh				411	557
Universal-Service Market						
Household customers' segment						
Time-of-use offerings						
Customers	no.				3,885	9,065
Power sold	million kWh				9.9	18.1
Total						
Customers	no.				1,337,079	2,384,698
Power sold	million kWh				1,872	3,889
Non-household customers' segment						
Time-of-use offerings						
Customers	no.				5,122	14,310
Power sold	million kWh				262	3,124
Total						
Customers	no.				112,055	171,946
Power sold	million kWh				2,336	4,687
Overall power sold						
high-voltage	million kWh				212	369
medium-voltage	million kWh				579	2,153
low-voltage	million kWh				3,417	7,077
Total	**million kWh**				**4,208**	**9,599**

(1) These activities have been surveyed since 2008.

EMISSIONS, LIQUID RELEASES & WASTE

		Source		2005	2006	2007	2008	**2009**
	Emissions into the atmosphere							
EN16	CO_2	various activities	thousand t	0	0	0	0	5.62
EN16	SF_6	electricity distribution	kg	2	0	0	18.5	122
			thousand t of CO_2-equivalent	0.046	0	0	0.422	2.79
EN16	Total greenhouse gases (CO_2, SF_6, CH_4)		thousand t of CO_2-equivalent	**0.046**	**0**	**0**	**0.422**	**8.41**
EN22	**Non-hazardous special waste**							
		electricity distribution						
	production		t	1,263	2,409	2,215	2,447	2,112
	delivery to recovery operators		t	624	901	1,347	1,526	812
EN22	**Hazardous special waste**							
		electricity distribution						
	production		t	214	399	215	70.5	93.9
	of which with PCBs		*t*	*79.4*	*151*	*77.4*	*62.8*	*78.4*
	delivery to recovery operators		t	159	312	53	65.4	50.7
	of which with PCBs		*t*	*68.9*	*148*	*53*	*57.7*	*45.9*
EN22	**Total special waste**	electricity distribution						
	production		t	1,477	2,808	2,430	2,518	2,206
	delivery to recovery operators		t	783	1,214	1,400	1,591	862

INDICATORS

			2005	2006	2007	2008	**2009**
	Resource conservation and quality						
EN4	Consumption of electricity for distribution grid operation	% of electricity distributed	0.359	0.327	0.325	0.314	0.179
	Specific emissions into the atmosphere						
EN16	SF_6 (electric activities)	% of SF_6 in equipment or in stock	0.038	0	0	0.100	0.494
EN22	**Waste recovery**						
	Non-hazardous special waste						
	electricity distribution	% of production	49.4	37.4	60.8	62.3	38.4
	Hazardous special waste						
	electricity distribution	% of production	74.1	78.2	24.6	92.7	54
	Total special waste						
	electricity distribution	% of production	53	43.2	57.6	63.2	39.1
EN29	**Land**						
	LV cable lines	% of entire LV grid					
	overhead		14	15.6	17.5	21.5	14.7
	underground		21.6	22.7	22.8	40.9	30.2
	Total cable lines		**35.6**	**38.4**	**40.2**	**62.4**	**44.8**
	MV cable lines	% of entire MV grid					
	overhead		0	0	0	0	0.098
	underground		18.1	16.6	16.9	36.4	36.9
	Total cable lines		**18.1**	**16.6**	**16.9**	**36.4**	**37**
	Overhead and underground cables in HV+MV+LV distribution lines	% of total distribution grid	25.5	25.9	26.9	48.3	40.4
EN6	**Market** (1)						
	Open Market						
	Business segment						
	Time-of-use power sold	% of power sold				1.52	2.43
	Large customers' segment						
	Time-of-use power sold	% of power sold				8.22	3.59
	Universal-Service Market						
	Household customers' segment						
	Time-of-use power sold	% of power sold				0.531	0.466
	Non-household customers' segment						
	Time-of-use power sold	% of power sold				11.2	66.7
	Overall power sold						
	high-voltage	% of power sold				5.05	3.85
	medium-voltage	% of power sold				13.8	22.4
	low-voltage	% of power sold				81.2	73.7
	Total time-of-use power sold	**% of power sold**				**7.33**	**33.1**

(1) This activity has been carried out since 2008.

Highlights

In Romania, Enel is active in electricity distribution (through Enel Distributie Banat, Enel Distributie Dobrogea and Enel Distributie Muntenia) and marketing.

Wind power

In 2009, Enel Green Power entered into an agreement for the supply of wind turbines with a total capacity of 104 MW.

Grid losses

In 2009, the Project to Reduce Network Losses was launched. It is expected to reduce or eliminate commercial and technical factors responsible for high losses of electricity in distribution. The goal is to bring the current percentage of losses (13.5% of electricity demand) below 10% by 2013, in line with the corporate plans and with the country's regulatory framework.

The increase in the status data of the distribution grid as of Dec. 31, 2009 – in particular the length of low-voltage lines - is due to a different measuring method, which now includes the final section from the junction box to the point of delivery. The growth in the electricity wheeled in 2009 (21%) is chiefly due to the inclusion (June 2008) of Enel Distributie Muntenia SA in the Group's assets.

Applicable GRI indicators

EN1
EN3 Fuel consumption by offices and services (especially heating, canteens and transport vehicles) amounted to roughly 81 TJ (1,933 toe).

EN4 The primary electricity purchased for real-estate & service management was equal to about 39 TJ (about 11 GWh).
For the operation of their grids:
> Enel Distributie Banat used about 28 TJ (7.8 GWh) of electricity;
> Enel Distributie Dobrogea used about 27 TJ (7.4 GWh) of electricity;
> Enel Distributie Muntenia used over 30 TJ (8.5 GWh) of electricity;
totaling approximately 85 TJ (23.7 GWh).

EN5 Enel Distributie Banat made investments in grid efficiency which reduced losses by about 80 TJ.
Enel Distributie Dobrogea will pursue a similar program in the near future.
Enel Distributie Muntenia implemented the first stage (short-term actions) of its grid loss reduction program; the second stage of the program is in progress.
The solutions include:
> replacement of bare conductors with twisted cables in low-voltage lines;
> increased cross-section of conductors in medium-voltage lines;
> modernization of satellite substations with the introduction of low-loss transformers;
> revamping of metering systems.
Acid batteries were replaced with more efficient sealed ones with gel electrolyte.

EN6 Marketing activities include time-of-use rate plans, which encourage night-time power usage. This enhances the overall efficiency of the electric sector and diminishes wastage and negative impacts on the environment.
In 2009, the amount of electricity sold under these rate plans exceeded the one of 2008 by about 3,000 GWh; the share of this electricity in the overall electricity sold was up by roughly 26 percentage points.

EN18 Improved efficiency of the distribution grid (see EN5) displaced 21,000 tonnes of CO_2 emissions. This figure was estimated on the basis of the specific emissions of Romania (about 953 g/kWh thermal net – source: Enerdata).

EN22 Overall production of waste fell in 2009 owing to the lower contribution of non-hazardous waste. In 2008, the latter waste accounted for the most significant recovered fraction; as a consequence, overall special waste recovery dropped from over 60% to about 40%.

EN26 As regards land and landscape conservation, the total percentage of cables in power lines was slightly down in 2009 (from 48% to 40%). This result is due to the different method used to measure the length of overhead low-voltage lines with bare conductors, which now includes also the final section from the junction box to the point of delivery.
In accordance with its environmental monitoring program, Enel Distributie Dobrogea conducted 34 surveys to measure the noise level of pole-mounted transformers located near housing units. Results demonstrated compliance with the applicable limits.
Also Enel Distributie Banat carried out various surveys to measure noise. The activity confirmed compliance with the applicable limits, making further surveys unnecessary. Additionally, the company removed 108 capacitors (with a weight of about 2.90 t) with PCB-contaminated oil, in line with the program agreed on with local environmental agencies.
Enel Distributie Muntenia mitigated noise emissions from some of its installations by replacing: 28 fans on its 110/10/6-kV transformers; 6 fans and the feeding circuit on its 110/20-kV transformers; and public-lighting meters. It also removed 198 capacitors (with a weight of about 6.93 t) with PCB-contaminated oil in accordance with its disposal program.

Russia

Combined heat & power generation

(OGK-5)

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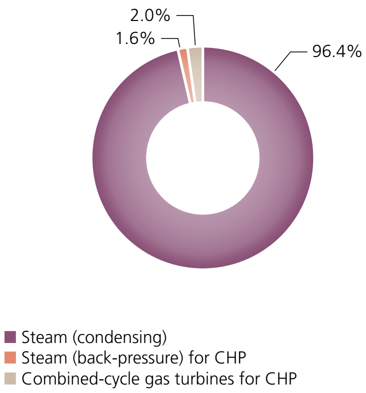
Power installations

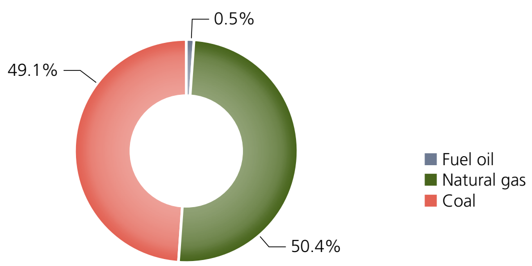
	Power plants no.	Units no.	Net maximum electrical capacity MW	Useful thermal capacity 10^6 kcal/h
Steam (condensing)	4	33	7,902	1,778
Steam (back-pressure) for CHP	0	5	133	628
Combined-cycle gas turbines for CHP	0	1	164	0
	4	**39**	**8,198**	**2,406**

Net maximum electrical capacity
Total: 8,198 MW



Fuel consumption

Total: 9,884,051 t of oil-equivalent



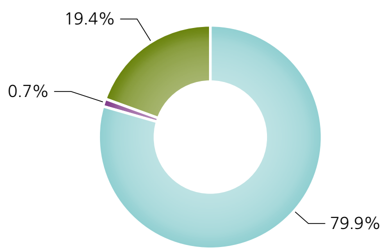
Net electricity generation

Total: 39,111 million kWh

Useful heat output (combined with power generation)

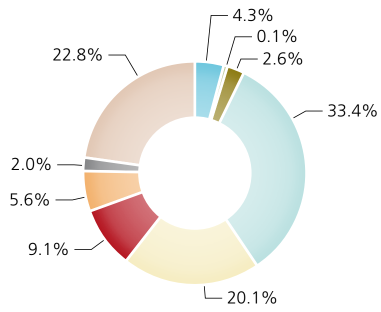
Total: 6,766,681 million kcal
(equal to 7,869 million kWh)

Water for industrial uses
Total requirements: 43,778,531 m3
Total abstraction from inland waters: 35,295,331 m3



- From rivers
- From wells
- From waste waters (used inside plants)

Expendables
Total: 8,103 t



- Resins, hydrazine, carbohydrazide & hydrogen peroxide
- Ammonia
- Sodium hypochlorite, chlorine dioxide, ferrous sulfate, ferrous chloride and trisodium phosphate
- Caustic soda
- Lime, ferric chloride and polyelectrolyte
- Lubricating oil
- Dielectric oil
- Other

Waste waters (m3)

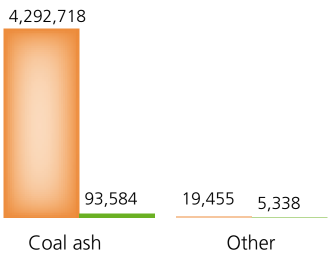
Discharged	34,603,500
Used inside the plants	8,483,200

Waste waters include those meteoric waters that are susceptible to pollution and are therefore fed to treatment systems before being discharged or used.

Special waste
Total production: 4,312,572 t
Total delivery to recovery operators: 99,285 t

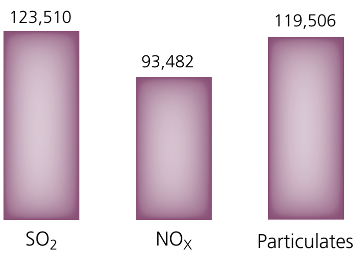
Non-hazardous
Production: 4,312,173 t
Delivery to recovery operators: 98,922 t

Hazardous
Production: 399 t
Delivery to recovery operators: 364 t



- Production
- Delivery to recovery operators

Emissions into the atmosphere (t)



CO_2 31,202,354

Eco-Balance and Indicators

STATUS DATA

			2008	2009
	Combined heat & power installations			
	Power plants	no.	4	4
	Net maximum electrical capacity	MW	8,183	8,198
	Useful thermal capacity	million kcal/h	2,373	2,406
	Mining & extracting activities			
	Extracting activities			
	Areas occupied by excavations, drilling and other activities	ha	500	-

RESOURCES

			2008	2009
EN1 EN3	**Fossil fuels**			
	Combined heat & power generation (including auxiliary boilers and emergency generating sets)			
	fuel oil (MS)	thousand t	55.4	59.7
	natural gas	million m³	3,906	6,143
	technologically captive use	*million m³*	*168*	*51*
	of which in combined-cycle units	million m³	168	51
	non-technologically captive use	*million m³*	*3,738*	*6,092*
	coal	thousand t	7,280	11,630
	Total	**thousand toe**	**6,014**	**9,884**
	Various activities	thousand toe	1.31	0
	Grand total	**thousand toe**	**6,015**	**9,884**
EN8	**Water for industrial uses**			
	From rivers (including meteoric waters from secondary rainfall)	million m³	36	35
	From wells	million m³	0.310	0.284
	Total abstraction from inland waters	**million m³**	**36.4**	**35.3**
	From waste waters (used inside the plants)	million m³	8.46	8.48
	Total requirements	**million m³**	**44.8**	**43.8**
	for thermal generation (CHP)	million m³	44.8	43.8
	for mining & extracting activities	million m³	0.025	0
EN8 EN21	**Open-cycle cooling water**			
	For thermal generation (CHP)	million m³	4,012	6,463
EN1	**Expendables**			
	Resins	t	64.1	345
	Hydrazine	t	1.99	1.70
	Hydrogen peroxide	t	0.001	0
	Ammonia	t	14.2	11
	Ferrous sulfate	t	213	200
	Trisodium phosphate	t	7.17	11.6
	Lime	t	384	735
	Sulfuric & hydrochloric acids	t	1,583	2,704
	Caustic soda	t	1,080	1,632
	Lubricating oil	t	225	452
	Dielectric oil	t	97	162
	Other	t	1,009	1,849
	Total	**t**	**4,678**	**8,103**
	for thermal generation (CHP)	t	4,678	8,103

PROCESSES AND PRODUCTS

		2008	**2009**
Electricity generation (net)			
From fossil fuels	million kWh	23,752	39,112
natural gas	million kWh	12,148	19,066
coal	million kWh	11,605	20,046
Useful heat output (combined with power generation)			
Total	**million kcal**	**3,982,193**	**6,766,684**
	million kWh	**4,631**	**7,870**
Market			
Open Market			
Residential segment			
Time-of-use offerings			
Customers	no.	0	9,323
Power sold	million kWh	0.01	42.1
Total			
Customers	no.	0	202,703
Power sold	million kWh	0.44	450
Business segment			
Time-of-use offerings			
Customers	no.	0	36
Power sold	million kWh	0.02	8.8
Total			
Customers	no.	0	9,057
Power sold	million kWh	1.42	6,717
Overall power sold			
high-voltage	million kWh	30.5	35,857
medium-voltage	million kWh	3.67	2,838
low-voltage	million kWh	0.81	934
Total	**million kWh**	**34.9**	**39,629**

EMISSIONS, LIQUID RELEASES & WASTE

		Source		2008	**2009**
	Emissions into the atmosphere				
EN20	SO_2	thermal generation (CHP)	thousand t	80.8	124
EN20	NO_X	thermal generation (CHP)	thousand t	49.3	93.5
EN20	Particulates	thermal generation (CHP)	thousand t	93.5	120
EN16	CO_2	fossil-fired thermal generation - CHP (from combustion)	thousand t	19,136	31,202
EN16	SF_6	electricity generation	kg	42.5	47.2
			thousand t of CO_2-equivalent	0.968	1.08
EN16	**Total greenhouse gases (CO_2, SF_6, CH_4)**		**thousand t of CO_2-equivalent**	**19,137**	**31,203**
EN21	**Waste waters** (discharged quantity)	thermal generation (CHP)	million m3	17.8	34.6
EN21	**Conventional polluting load of waste waters**	thermal generation (CHP)			
	Metals and compounds (expressed as metal equivalents)		kg	89,549	53,085
	BOD		kg	0	694
EN22	**Non-hazardous special waste**				
	Coal bottom ash	thermal generation (CHP)			
	production		t	144,032	214,636
	Coal flyash	thermal generation (CHP)			
	production		t	2,736,606	4,078,082
	delivery to recovery operators		t	119,673	93,584
	Other	electricity generation			
	production		t	12,343	19,455
	delivery to recovery operators		t	0	5,338
	Total	electricity generation			
	production		t	2,892,981	4,312,173
	delivery to recovery operators		t	119,673	98,922
EN22	**Hazardous special waste**	electricity generation			
	production		t	1,607	399
	of which with PCBs		*t*	*158*	*258*
	delivery to recovery operators		t	2.40	364
	of which with PCBs		*t*	*0*	*307*
EN22	**Total special waste**	electricity generation			
	production		t	2,894,588	4,312,572
	delivery to recovery operators		t	119,676	99,285

INDICATORS (1/2)

			2008	**2009**
	Resource conservation and quality			
EN1 EN3	Net heat rate of thermal generation (CHP)	kcal/kWh_{eq}	2,119	2,104
EN8	Net specific requirements of water for industrial uses in thermal generation (CHP)	liters/kWh_{eq}	1.58	0.932
EN8	Coverage of requirements of water for industrial uses			
	from rivers (including meteoric waters from secondary rainfall)	% of requirements	80.4	80
	from wells	% of requirements	0.683	0.649
	Total from inland waters	**% of requirements**	**81.1**	**80.6**
EN10	from waste waters (used inside the plants)	% of requirements	18.9	19.4
EN1 EN3	Fossil fuel consumption for thermal generation			
	fuel oil	% of total fuel consumption	0.891	0.571
	natural gas	% of total fuel consumption	52.4	50.3
	coal	% of total fuel consumption	46.7	49.1
	MS fuel oil	% of total fuel-oil consumption	100	100
	natural gas, technologically captive use	% of total natural-gas consumption	4.41	0.855
	of which in combined-cycle units	*% of total natural-gas consumption*	*4.41*	*0.855*
	natural gas, non-technologically captive use	% of total natural-gas consumption	95.6	99.1
	Specific emissions into the atmosphere			
EN20	SO_2 (thermal generation - CHP)	g/kWh_{eq} thermal net	2.85	2.63
EN20	NO_X (thermal generation - CHP)	g/kWh_{eq} thermal net	1.74	1.99
EN20	Particulates (thermal generation - CHP)	g/kWh_{eq} thermal net	3.29	2.54
EN20	CO_2 (thermal generation - CHP)	g/kWh_{eq} thermal net	674	664
EN16	SF_6 (electric activities)	% of SF_6 in equipment or in stock	0.919	1.10
EN22	**Specific production of waste**			
	Coal ash (thermal generation - CHP)	g/kWh_{eq} net from coal	242	209

(2/2)

			2008	**2009**
EN22	**Waste recovery**			
	Coal ash	% of production	4.15	2.18
	flyash	*% of production*	*4.37*	*2.30*
	Other non-hazardous special waste			
	electricity generation	% of production	0	27.4
	Total non-hazardous special waste			
	electricity generation	% of production	4.14	2.29
	Hazardous special waste			
	electricity generation	% of production	0.149	91.2
	Total special waste			
	electricity generation	% of production	4.13	2.30
EN6	**Market**			
	Open Market			
	Residential segment			
	Time-of-use power sold	% of power sold	2.27	9.35
	Business segment			
	Time-of-use power sold	% of power sold	1.41	0.131
	Overall power sold			
	high-voltage	% of power sold	87.2	90.5
	medium-voltage	% of power sold	10.5	7.16
	low-voltage	% of power sold	2.32	2.36
	Total time-of-use power sold	**% of power sold**	**0.086**	**0.128**

Highlights

In Russia, Enel is active in thermal generation (through OGK-5) and sale of electricity (through RusEnergoSbyt).
OGK-5 has four thermal CHP plants in different regions of the country, with an overall net maximum capacity of 8,198 MW.

Thermal power

In 2009, tests were run to lower the environmental footprint from the operation of the Reftinskaya coal-fired plant (province of Sverdlovsk, in the Urals).
At the plants of Nevinnomysskaya (Stavropol area, southern Russia) and Sredneuralskaya (province of Sverdlovsk, Urals), works for construction of two 410-MW combined-cycle units are in progress. The two units, which are scheduled to go into service by 2010, will both make the plants more efficient and curb their emissions.

Applicable GRI indicators

EN1 Among expendables, the use of resins for treating water for industrial uses progressively increased.

EN2 In 2009, dielectric and lubricating oils were regenerated and reused; the total regenerated and reused oils were equal to 187 t, i.e. 30.6% of the overall oils purchased.

EN5 The net heat rate of thermal CHP generation fell from about 2,119 kcal/kWh$_{eq}$ in 2008 to 2,104 kcal/kWh$_{eq}$ in 2009.

EN1
EN3 The fuel mix for thermal generation comprises coal (49%), natural gas (50%) and fuel oil (1%).

EN6 The marketing activity carried out in Russia involves time-of-use rate plans which encourage night-time power usage. This improves the overall efficiency of the power sector, diminishes wastage and environmental impacts.

EN5 A number of activities translated into efficiency improvements of about 22.4 TJ (6,228 MWh) of electricity, corresponding to 54.8 TJ of primary energy, considering a heat rate of 2,104 kcal/kWh$_{eq}$ (8.81 kJ/MWh$_{eq}$):

> Sredneuralskaya (province of Sverdlovsk, in the Urals) - the mode of operation of the district-heating system feedwater pumps was improved, with a saving of 453,900 kWh (1,634 GJ);

> Sredneuralskaya - the flow rate of air to gas boilers and the flue-gas conduit was kept within the specified range, with a saving of 1,717,800 kWh (6,185 GJ);

> Sredneuralskaya - the hydraulic coupling of the closed-cycle motor-driven pump was replaced, with a saving of 2,578,600 kWh (9,283 GJ);

> Sredneuralskaya - drinking water pumps were replaced with lower-capacity ones, with a saving of 299,600 kWh (1,079 GJ);

> Nevinnomysskaya - incandescent lamps were replaced with low-consumption ones, with a saving of 1,176,000 kWh (4,234 GJ);

> all power plants - personnel awareness & training courses were held on efficient operation of machinery and equipment in terms of fuel and electricity consumption;

> all power plants - the time required for restart of the plant after unscheduled outage was shortened (with respect to previous years), thereby decreasing the unavailability of the plant and fuel consumption;

> all power plants - the operation of in-service equipment was optimized with a view to shortening or zeroing unavailability;

> all power plants - fouling deposits were removed from condensers to optimize heat transfer and vacuum level and thus turbine efficiency;

> all power plants - leaks were identified and removed in boilers (water-steam circuit), gas circuits, vacuum system, air intakes and air supply piping.

EN8 In thermal generation, net specific requirements of water for industrial uses were down by 41%, reaching 0.932 liters/kWh$_{eq}$ in 2009 (1.58 liters/kWh$_{eq}$ in 2008). The saving is the result of optimized machinery operation.
In the future, at the Reftinskaya plant, the system for extraction of ash from electrostatic-precipitator hoppers will be converted from the "wet" to the "dry" mode.

EN10 Improved water management is evidenced by the share of water requirements covered with waste water, which passed from 18.9% in 2008 to 19.4% in 2009.

EN18 Environmental-efficiency enhancements displaced about 4.136 t of CO_2 in 2009.

EN20 In 2009, specific emissions of macro-pollutants declined: SO_2 by about 8% on 2008 and particulates by as much as about 23%, thanks to new approaches to the maintenance of electrostatic precipitators and to the use of a new type of coal.

EN26 The following activities were conducted to improve environmental efficiency:
> assessment of environmental risks for surface waters, soil and groundwater and formulation of mitigation plans (Reftinskaya and Konakovskaya power plants, the latter in the Tver province – central Russia):
> issuing of guidelines on waste management and recycling of some types of waste at power plants;
> introduction of an integrated environmental management & safety system;
> definition of policies for managing asbestos-containing materials (issuing of procedures to prevent exposure to asbestos fibers in workplaces and ban on the use of new asbestos-containing materials);
> development of a specific project to save water; the project will be implemented on the basis of specific goals at the power plants of Konakovskaya and Nevinnomysskaya;
> improvement of third parties' uptake of ash for recovery.

In 2009, a project was approved to install fish fauna protection systems near cooling water intakes (fish screens).

Slovakia

Thermal combined heat & power generation

(Slovenské elektrárne AS)

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- Brown-coal thermal power plant
- Coal and natural-gas thermal power plant

Thermal power installations

	Power plants no.	Generating units no.	Net maximum electrical capacity MW	Useful thermal capacity 10^6 kcal/h
Steam (condensing) with intermediate extraction of fluid for combined heat & power generation	**2**	**13**	**1,250**	**423**

The two power plants have an ISO 14001-certified environmental management system in place.

Net electricity generation

Total: 2,408 million kWh

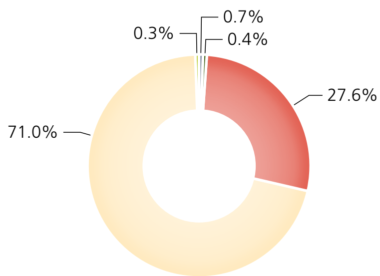
Useful heat output (combined with power generation)

Total: 359,842 million kcal
(equal to 418 million kWh)

The heat is supplied to district heating systems and to industrial consumers.

Fuel consumption

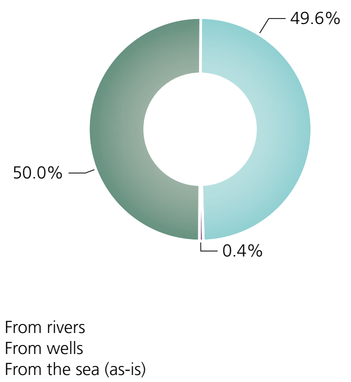
Total: 802,862 t of oil-equivalent



- Fuel oil
- Natural gas
- Coal
- Brown coal
- Biomass & waste

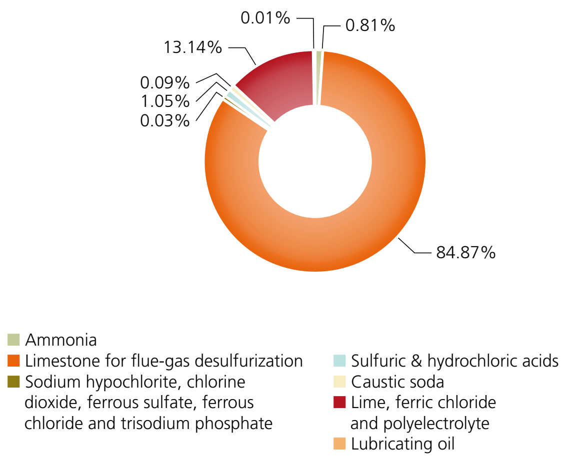
Water for industrial uses

Total requirements: 15,447,049 m³
Total abstraction from inland waters: 15,406,271 m³



Expendables

Total: 100,593 t

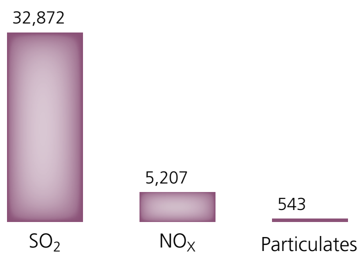


Waste waters (m³)

Discharged	5,907,561
Used inside plants	40,778

Waste waters include those meteoric waters that are susceptible to pollution and are therefore fed to treatment systems before being discharged or used.

Emissions into the atmosphere (t)



CO_2	3,400,000
from combustion	*3,362,434*
from desulfurization	*37,556*

Avoided CO_2 emissions (due to generation from biomass)

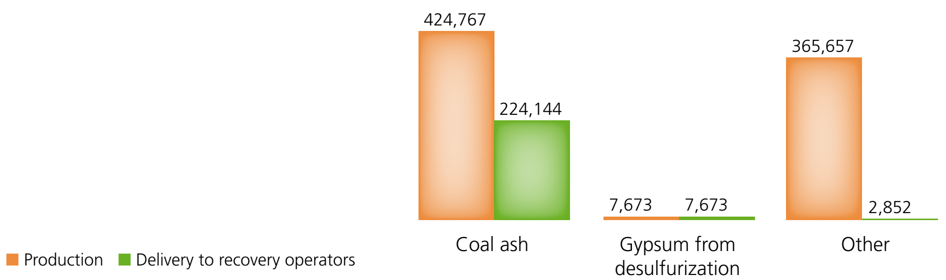
Due to combined heat & power generation (t)	8,536

Special waste

Total production: 798,606 t
Total delivery to recovery operators: 234,984 t

Non-hazardous
Production: 798,097 t
Delivery to recovery operators: 234,668 t

Hazardous
Production: 509 t
Delivery to recovery operators: 226 t



Nuclear combined heat & power generation

(Slovenské elektrárne AS)

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Power installations

	Power plants no.	Units no.	Net maximum electrical capacity MW	Useful thermal capacity 10^6 kcal/h
Steam (condensing) with intermediate extraction of fluid for combined heat & power generation	**2**	**4**	**1,762**	**464**

The two power plants have an ISO 14001-certified environmental management system in place.

Net electricity generation

Total: 13,055 million kWh

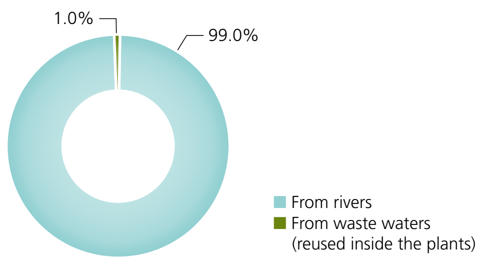
Useful heat output (combined with power generation)

Total: 541,146 million kcal
(equal to 629 million kWh)

The heat is supplied to district heating systems and to industrial consumers.

Water for industrial uses

Total requirements: 40,398,210 m^3
Abstraction from inland waters: 40,006,895 m^3



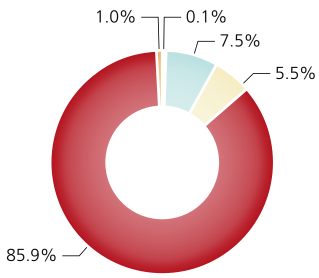
Waste waters

Discharged (m^3)	8,216,522
Used inside the plants (m^3)	391,315

Waste waters include those meteoric waters that are susceptible to pollution and are therefore fed to treatment systems before being discharged or used.

Expendables

Total: 6,361 t



- Sodium hypochlorite, chlorine dioxide, ferrous sulfate, ferrous chloride and trisodium phosphate
- Sulfuric & hydrochloric acids
- Caustic soda
- Lime, ferric chloride and polyelectrolyte
- Lubricating oil

Avoided CO_2 emissions

Due to nuclear generation (t)	15,248,001

Emissions from the otherwise necessary thermal generation by the Vojany power plant (combined heat & power plant whose fraction of generated heat is negligible).

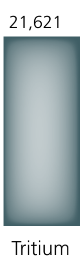
Radioactive emissions into the atmosphere

Noble gases (TBq)	6.6
Iodine 131 (MBq)	0.6
Aerosols β and γ (MBq)	20.8
Aerosol α (kBq)	22.6
Strontium 89 and 90 (kBq)	91.5

Emissions into the atmosphere

SF_6 (kg)	25
(t of CO_2-equivalent)	555

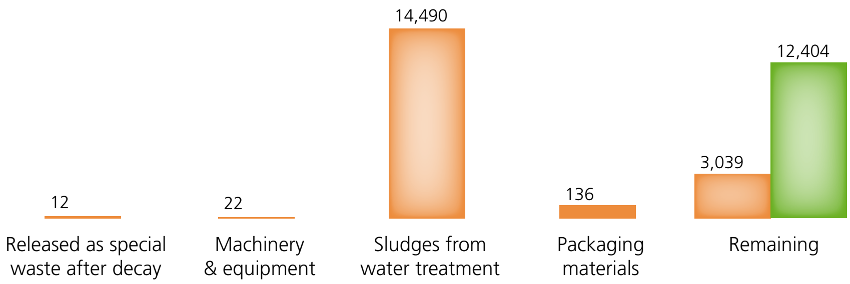
Radionuclides in discharged waste waters (GBq)



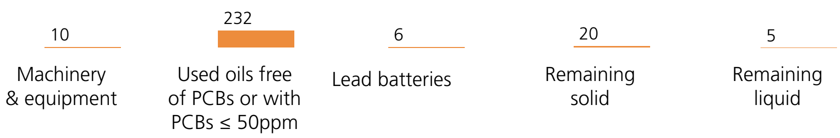
Corrosion and fission products are present in negligible amounts: 0.034 GBq.

Special waste
Total production: 17,972 t
Total delivery to recovery operators: 12,404 t

Non-hazardous
Production: : 17,699 t
Delivery to recovery operators: 12,404 t



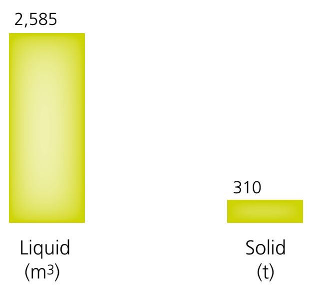
Hazardous
Production: 273 t
Delivery to recovery operators: 0 t



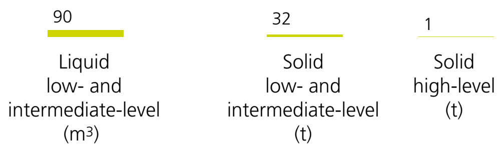
■ Production ■ Delivery to recovery operators

Radioactive waste

Production since the start of operation



Production in the year



Hydro power generation

(Slovenské elektrárne AS)

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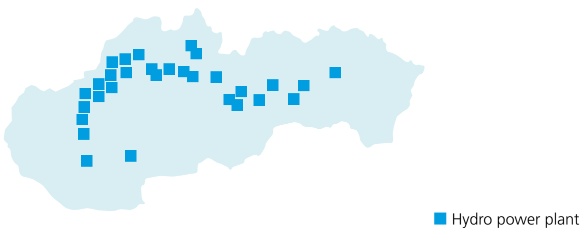


The data do not include those of the Gabcikovo power plant (net maximum electrical capacity: 739 MW – net generation in 2009: 2,376 MWh), which is operated, but not owned, by Enel.

Power installations

	Power plants no.	Head installations no.	Net maximum electrical capacity MW
Run-of-river	12	27	303
Pondage/reservoir	14	31	279
Pure/mixed pumped storage	4	15	1,007
	30	**73**	**1,589**

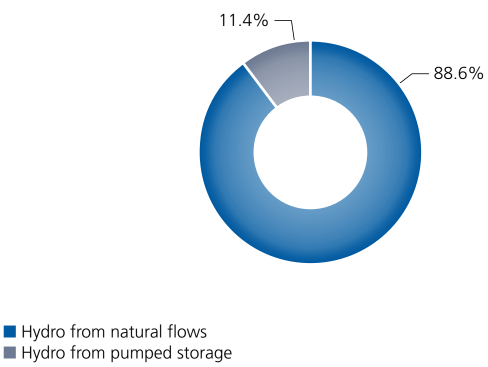
All the power plants have an ISO-certified environmental management system in place.

Equivalent yearly hours of utilization*

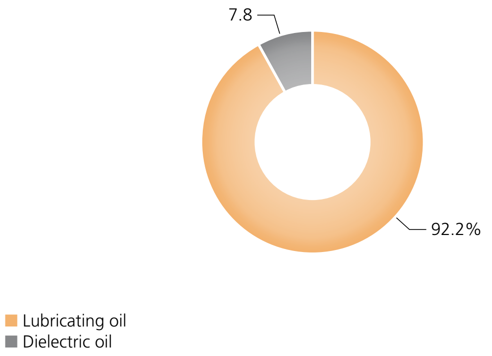
* Yearly generation/capacity ratio.

Net electricity generation

Total: 2,058 million kWh



Expendables
Total: 57 t



Gas-oil

Total consumption (toe)	5

Used for feeding emergency generating sets.

Emissions into the atmosphere

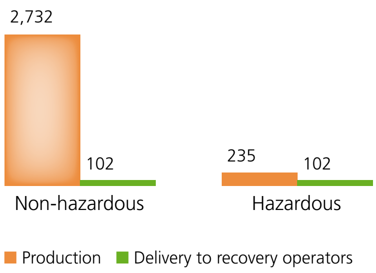
SF_6 (kg)	123
(t of CO_2-equivalent)	2,737

Avoided CO_2 emissions

Due to hydro generation from natural flows (t)	2,129,077

Emissions from the otherwise necessary thermal generation by the Vojany power plant (combined heat & power plant whose fraction of generated heat is negligible).

Special waste
Total production: 2,967 t
Total delivery to recovery operators: 204 t



Other data

Fish ladders (no.)	5

Eco-Balance and Indicators

STATUS DATA

		2006	2007	2008	2009
Power-generating installations (1)					
Power plants (hydro)	no.	30	30	30	30
Net maximum electrical capacity (hydro)	MW	1,606	1,589	1,590	1,590
Combined heat & power installations					
Power plants	no.	5	4	4	4
thermal	no.	3	2	2	2
nuclear	no.	2	2	2	2
Net maximum electrical capacity	MW	3,240	2,894	2,966	3,012
thermal	MW	1,600	1,254	1,254	1,250
nuclear	MW	1,640	1,640	1,712	1,762
Useful thermal capacity	million kcal/h	623	428	787	887
thermal	million kcal/h	262	40	373	423
nuclear	million kcal/h	361	389	413	464
EN29 **Service & real-estate management** (2)					
Vehicle fleet					
service vehicles	no.				395
special vehicles	no.				208

(1) The data do not include those of the Gabcikovo power plant (net maximum electrical capacity: 739 MW – net generation in 2009: 2,376 MWh), which is operated, but not owned, by Enel.
(2) This activity has been carried out since 2009.

			2006	2007	2008	**2009**
EN1 EN3	**Fossil fuels**					
	Combined heat & power generation (including auxiliary boilers and emergency generating sets)					
	fuel oil (LS)	thousand t	6.04	5.17	5.37	5.42
	natural gas	million m^3	29.9	11.8	5.17	3.89
	coal	thousand t	1,093	837	656	363
	brown coal	thousand t	2,036	1,981	2,318	2,308
	Total	thousand toe	1,189	1,021	992	801
	Various activities (1)	thousand toe	0.592	0.564	1.33	1.72
	Grand total	**thousand toe**	**1,189**	**1,022**	**994**	**802**
EN1 EN3	**Biomass and waste**					
	Combined heat & power generation	thousand toe	0	0	0.067	2.19
EN4	**Primary electricity**					
	Various activities (2)	million kWh				1.41
EN8	**Water for industrial uses**					
	From rivers (including meteoric waters from secondary rainfall)	million m^3	109	59.8	58.4	55.4
	Total abstraction from inland waters	million m^3	109	59.8	58.4	55.4
	From waste waters (used inside the plants)	million m^3	0.305	0.291	0.543	0.432
	Total requirements	**million m^3**	**109**	**60.1**	**59**	**55.8**
	for thermal generation (CHP)	million m^3	73.6	23.1	20.5	15.4
	for nuclear generation (CHP)	million m^3	35.3	37	38.5	40.4
EN8 EN21	**Open-cycle cooling water**					
	For thermal generation (CHP)	million m^3	0	0	3.26	0.428
	Water for non-industrial uses					
	Real-estate & service management (3)	million m^3				0.419
EN1	**Expendables** (1)					
	Resins	t	0	0	0	2.50
	Hydrazine	t	0	57.1	12.5	15.3
	Ammonia	t	0	2,357	1,464	835
	Limestone for flue-gas desulfurization	t	95,600	77,568	84,861	85,377
	Sodium hypochlorite	t	0	17.3	28.2	23.8
	Chlorine dioxide	t	0	0	0	0.514
	Trisodium phosphate	t	0	7.19	6.86	7.92
	Lime	t	0	15,832	23,218	18,545
	Ferric chloride	t	0	61.1	119	105
	Sulfuric & hydrochloric acids	t	0	1,386	1,563	1,530
	Caustic soda	t	0	861	470	439
	Lubricating oil	t	1,155	40.5	165	125
	Dielectric oil	t	2,117	9.66	133	4.46
	Printing paper	t	0	0	0	54
	Other	t	192	2.10	3.49	0
	Total	**t**	**99,064**	**98,200**	**112,044**	**107,065**
	for thermal generation (CHP)	t	95,600	92,403	106,077	100,593
	for nuclear generation (CHP)	t	0	5,771	5,738	6,361
	for hydro generation	t	3,464	25.2	229	57

(1) The data do not include those of the Gabcikovo hydro power plant (net maximum electrical capacity: 739 MW – net generation in 2009: 2,376 MWh), which is operated, but not owned, by Enel.
(2) The only activity involved (real-estate & service management) has been carried out since 2009.
(3) This activity has been carried out since 2009.

PROCESSES AND PRODUCTS

		2006	2007	2008	2009
Electricity generation (net)					
From fossil fuels (combined with heat generation)	**million kWh**	**3,633**	**3,123**	**2,996**	**2,400**
fuel oil & gas-oil	million kWh	0	14.5	15.5	15.5
natural gas	million kWh	43.7	-8.08 (1)	-7.57 (1)	10.6
coal	million kWh	2,192	1,693	1,348	734
brown coal	million kWh	1,397	1,424	1,640	1,640
From renewables	**million kWh**	**1,607**	**1,881**	**1,715**	**1,830**
biomass & biodegradable fraction of waste (combined with heat generation)	million kWh	0	0	0	7.31
hydro from natural flows (2)	million kWh	1,607	1,881	1,715	1,823
Hydro from pumped storage	**million kWh**	**132**	**171**	**195**	**235**
Nuclear generation (combined with heat generation)	**million kWh**	**10,902**	**11,395**	**12,164**	**13,055**
Total	**million kWh**	**16,273**	**16,569**	**17,069**	**17,521**
simple	million kWh	1,738	2,051	1,910	2,058
combined with heat generation	million kWh	14,534	14,518	15,159	15,463
Electricity consumption for pumping	million kWh	229	224	275	321
Available generation	million kWh	16,044	16,346	16,794	17,200
Useful heat output (combined with power generation)					
In thermal power plants (fossil fuels)	**million kcal**	**367,364**	**431,998**	**401,871**	**359,842**
In nuclear power plants	**million kcal**	**397,752**	**454,001**	**478,592**	**541,146**
Total	**million kcal**	**765,117**	**885,999**	**880,463**	**900,988**
	million kWh	**890**	**1,030**	**1,024**	**1,048**

(1) Negative values due to electricity consumed by auxiliaries, failing generation.
(2) The data do not include those of the Gabcikovo power plant (net maximum electrical capacity: 739 MW – net generation in 2009: 2,376 MWh), which is operated, but not owned, by Enel.

EMISSIONS, LIQUID RELEASES & WASTE (1/3)

		Source		2006	2007	2008	2009
	Emissions into the atmosphere						
EN20	SO_2	thermal generation (CHP)	thousand t	40.4	33.2	35.9	32.9
EN20	NO_X	thermal generation (CHP)	thousand t	7.80	6.53	5.69	5.21
EN20	Particulates	thermal generation (CHP)	thousand t	7.17	0.748	0.626	0.543
EN16	CO_2	*fossil-fired thermal generation - CHP (from combustion)*	*thousand t*	*4,630*	*4,069*	*4,042*	*3,362*
		fossil-fired thermal generation - CHP (from desulfurization)	*thousand t*	*42.1*	*34.1*	*37.3*	*37.6*
		Total from fossil-fired thermal generation - CHP	thousand t	4,672	4,103	4,079	3,400
		Various activities (1)	thousand t	1.39	1.40	2.23	2.88
		Total	**thousand t**	**4,673**	**4,104**	**4,081**	**3,403**
EN16	SF_6	electricity generation (1)	kg	129	244	246	198
			thousand t of CO_2-equivalent	2.95	5.57	5.62	4.52
	Total greenhouse gases (CO_2, SF_6, CH_4)		thousand t of CO_2-equivalent	4,676	4,110	4,087	3,407
EN18	**Avoided CO_2 emissions**						
	Due to hydro generation from natural flows (1)		thousand t	1,912	2,238	2,003	2,129
	Due to electricity generation from biomass & biodegradable fraction of waste		thousand t	0	0	0	8.54
	Due to generation from renewables		thousand t	1,912	2,238	2,003	2,138
	Due to nuclear generation (CHP)		thousand t	12,975	13,562	14,207	15,248
	Total		**thousand t**	**14,887**	**15,801**	**16,210**	**17,386**
EN20	**Radioactive emissions into the atmosphere**	nuclear generation (CHP)					
	Noble gases		TBq	13.5	9.17	6.52	6.56
	Iodine 131		MBq	20.7	10.6	0.648	0.556
	Aerosol β and γ		MBq	34.5	20.5	18.1	20.8
	Aerosol α		kBq	108	26.8	13.7	22.6
	Strontium 89 and 90		kBq	201	183	133	91.5

(1) The data do not include those of the Gabcikovo power plant (net maximum electrical capacity: 739 MW – net generation in 2009: 2,376 MWh), which is operated, but not owned, by Enel.

(2/3)

		Source		2006	2007	2008	**2009**
EN21	**Waste waters (discharged quantity)**	thermal generation (CHP)	million m^3	63.5	12.6	9.42	5.91
		nuclear generation (CHP)	million m^3	39.6	7.30	8.14	8.22
		Total	**million m^3**	**103**	**19.9**	**17.6**	**14.1**
EN21	**Conventional polluting load of waste waters**						
	Metals and compounds (expressed as metal equivalents)	nuclear generation (CHP)	kg	383	169	168	158
	Total nitrogen (expressed as N)	nuclear generation (CHP)	kg	93,764	86,596	40,295	34,566
	Total phosphorus (expressed as P)	nuclear generation (CHP)	kg	3,608	2,387	2,319	2,213
	COD	thermal generation (CHP)	kg	1,657,206	222,085	117,379	71,867
		nuclear generation (CHP)	kg	149,668	117,003	105,591	111,648
		Total	**kg**	**1,806,874**	**339,088**	**222,970**	**183,515**
	BOD	thermal generation (CHP)	kg	237,619	30,618	12,450	12,405
		nuclear generation (CHP)	kg	17,710	15,290	15,497	17,605
		Total	**kg**	**255,329**	**45,908**	**27,947**	**30,009**
EN21	**Radionuclides in waste waters**						
	Tritium	nuclear generation (CHP)	GBq	14,579	12,970	12,444	21,621
	Corrosion and fission products	nuclear generation (CHP)	GBq	0.067	0.029	0.034	0.032
EN22	**Non-hazardous special waste**						
	Coal bottom ash	thermal generation (CHP)					
	production		t	150,127	134,980	141,754	108,238
	delivery to recovery operators		t	0	0	0	59,087
	Coal flyash	thermal generation (CHP)					
	production		t	370,980	317,066	312,060	316,529
	delivery to recovery operators		t	184,664	185,303	213,436	165,057
	Gypsum from desulfurization	thermal generation (CHP)					
	production		t	24,071	46,013	23,127	7,673
	delivery to recovery operators		t	24,071	27,747	18,359	7,673
	Other						
	production	electricity generation (1)	t	580,518	464,519	513,498	386,088
		various activities (2)	t				149
		Total	**t**	**580,518**	**464,519**	**513,498**	**386,237**
	delivery to recovery operators	electricity generation	t	15,519	4,542	12,160	15,358
	Total						
	production	electricity generation (1)	t	1,125,696	962,578	990,439	818,528
		various activities (2)	t				149
		Total	**t**	**1,125,696**	**962,578**	**990,439**	**818,677**
	delivery to recovery operators	electricity generation	t	224,255	217,593	243,955	247,174

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(2) The only activity involved (real-estate & service management) has been surveyed since 2009.

EMISSIONS, LIQUID RELEASES & WASTE (3/3)

	Source		2006	2007	2008	**2009**
EN22 Hazardous special waste						
production	electricity generation (1)	t	7,208	9,434	769	1,017
	various activities (2)	t				1,017
	Total	**t**	**7,208**	**9,434**	**769**	**2,035**
of which with PCBs	*electricity generation (1)*	*t*	*245*	*235*	*404*	*400*
	various activities (2)	*t*				*400*
	Total	***t***	***245***	***235***	***404***	***801***
delivery to recovery operators	electricity generation (1)	t	2,092	1,542	280	584
of which with PCBs	*electricity generation*	*t*	*177*	*170*	*164*	*397*
EN22 Total special waste						
production	electricity generation (1)	t	1,132,904	972,012	991,208	819,545
	various activities (2)	t				1,166
	Total	**t**	**1,132,904**	**972,012**	**991,208**	**820,711**
delivery to recovery operators	electricity generation (1)	t	226,347	219,135	244,235	247,758
EN22 Radioactive waste						
Low- , intermediate- and high-level: stored inside the plants	nuclear generation (CHP)					
liquid		m^3	3,054	2,923	2,778	2,585
solid		t	441	346	338	310
Low- and intermediate-level: production	nuclear generation (CHP)					
liquid		m^3	161	121	118	90.2
solid		t	44.6	37.9	83.5	31.7
High-level: production	nuclear generation (CHP)					
solid		t	0.901	0.108	4.93	1.01

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(2) The only activity involved (real-estate & service management) has been carried out since 2009.

INDICATORS (1/2)

			2006	2007	2008	**2009**
	Resource conservation and quality					
EN1 EN3	Net heat rate of thermal generation (CHP)	kcal/kWh_{eq}	2,927	2,816	2,866	2,841
EN1 EN3	Net efficiency of hydro generation from pumped storage	%	57.5	76.2	70.7	73.3
EN8	Net specific requirements of water for industrial uses in thermal generation (CHP)	liters/kWh_{eq}	18.1	6.37	5.92	5.47
EN8	Net specific requirements of water for industrial uses in nuclear generation (CHP)	liters/kWh_{eq}	3.11	3.11	3.02	2.95
EN8	Coverage of requirements of water for industrial uses					
	from rivers (including meteoric waters from secondary rainfall)	% of requirements	99.7	99.5	99.1	99.2
EN10	from waste waters (used inside the plants)	% of requirements	0.280	0.484	0.921	0.774
EN1 EN3	Fossil fuel consumption for thermal generation					
	fuel oil	% of total fuel consumption	0.505	0.503	0.538	0.668
	natural gas	% of total fuel consumption	2.07	0.947	0.427	0.398
	coal	% of total fuel consumption	55.3	49.1	40.1	27.7
	brown coal	% of total fuel consumption	42.2	49.4	59	71.3
	LS fuel oil	% of total fuel-oil consumption	100	100	100	100
	natural gas, non-technologically captive use	% of total natural-gas consumption	100	100	100	100
	Specific emissions into the atmosphere					
EN20	SO_2 (thermal generation - CHP)	g/kWh_{eq} thermal net	9.94	9.15	10.4	11.6
EN20	NO_X (thermal generation - CHP)	g/kWh_{eq} thermal net	1.92	1.80	1.64	1.84
EN20	Particulates (thermal generation - CHP)	g/kWh_{eq} thermal net	1.77	0.206	0.181	0.192
EN16	CO_2 (thermal generation - CHP)	g/kWh_{eq} thermal net	1,151	1,132	1,178	1,203
EN16	CO_2 (total from thermal generation - CHP)	g/kWh_{eq} total net	272	233	225	183
EN16	SF_6 (electric activities) (1)	% of SF_6 in equipment or in stock	0.349	0.658	0.696	0.553
EN20	**Specific radioactive emissions into the atmosphere**					
	Nuclear generation (CHP)					
	Noble gases	kBq/kWh_{eq}	1	1	1	0
	Aerosol β and γ	mBq/kWh_{eq}	3	2	1	2
	Aerosol α	µBq/kWh_{eq}	10	2	1	2
	Strontium 89 and 90	µBq/kWh_{eq}	18	15	10	7
EN21	**Net specific conventional polluting load of waste waters (nuclear generation - CHP)**	mg/kWh_{eq}				
	Metals and compounds (expressed as metal equivalents)		0.034	0.014	0.013	0.012
	Total nitrogen (expressed as N)		8.25	7.26	3.17	2.53
	Total phosphorus (expressed as P)		0.317	0.200	0.182	0.162
	COD		13.2	9.81	8.30	8.16
	BOD		1.56	1.28	1.22	1.29

(1) The data do not include those of the Gabcikovo hydro power plant (net maximum electrical capacity: 739 MW – net generation in 2009: 2,376 MWh), which is operated, but not owned by Enel.

INDICATORS (2/2)

			2006	2007	2008	**2009**
EN21	**Specific polluting load of radionuclides in waste waters**					
	Nuclear generation (CHP)					
	Tritium	kBq/kWh_{eq}	1.28	1.09	0.978	1.58
EN22	**Specific production of waste**					
	Coal and brown-coal ash (thermal generation - CHP)	g/kWh_{eq} net from coal and brown coal	130	125	132	153
EN22	**Specific production of radioactive waste**					
	Low- and medium-level					
	liquid	mm^3/kWh_{eq}	14	10	9	7
	solid	mg/kWh_{eq}	4	3	7	2
EN22	**Low-, intermediate- and high-level radioactive waste stored in the plants**					
	liquid	% in volume of production since the start of operation	73.8	92	64.2	57.8
	solid	% in weight of production since the start of operation	55.8	87.9	37.1	32.8
EN22	**Waste recovery**					
	Coal and brown-coal ash	% of production	35.4	41	47	52.8
	bottom ash	*% of production*	*0*	*0*	*0*	*54.6*
	flyash	*% of production*	*49.8*	*58.4*	*68.4*	*52.1*
	Gypsum from desulfurization	% of production	100	60.3	79.4	100
	Other non-hazardous special waste					
	electricity generation (1)	% of production	2.67	0.978	2.37	3.98
	Total non-hazardous special waste					
	electricity generation	% of production	19.9	22.6	24.6	30.2
	Hazardous special waste					
	electricity generation (1)	% of production	29	16.3	36.4	57.4
	Total special waste					
	electricity generation	% of production	20	22.5	24.6	30.2
	Electricity generation from renewables					
	Thermal from biomass & biodegradable fraction of waste	% of total generation	0	0	0	0.042
	Hydro from natural flows (1)	% of total generation	9.87	11.4	10	10.4
	Total	**% of total generation**	**9.87**	**11.4**	**10**	**10.4**

(1) The data do not include those of the Gabcikovo hydro power plant (net maximum electrical capacity: 739 MW – net generation in 2009: 2,376 MWh), which is operated, but not owned, by Enel.

Highlights

In Slovakia, Enel is active in thermal and nuclear (both CHP) and hydro generation (through Slovenské elektrárne).

Thermal power

The project of co-firing of coal and chipped biomass in the thermal plant of Vojany (Michalovce district, eastern Slovakia) was successfully completed.
Co-firing with biomass also improves the operating efficiency of the plant, since it has a positive effect on the combustion process. Finally, co-firing also translates into operational savings connected with consumption of limestone, demineralized water and steam, as well as with production and disposal of ash. Slovenské elektrárne is strongly committed to help develop sustainable projects in line with the Slovak Government's priorities and with the European legislative framework.

In 2009, overall electricity generation was slightly up (about 3%) thanks, above all, to the increase in the contribution of nuclear power (7%).
Thermal power generation combined with heat generation was down by about 20%. Conversely, generation from renewables was up by about 7% thanks to increases in hydro from natural flows and biomass.

Applicable GRI indicators

The introduction of co-firing with biomass, on one hand, and the construction of new nuclear plants, on the other, yield competitive advantages.
By co-firing coal with biomass in its thermal plant of Vojany, Slovenské elektrárne avoids CO_2 emissions (lower consumption of fossil fuel) and provides the opportunity to market the surplus of CO_2 emission allowances with respect to those allocated under the EU-ETS (roughly 2,000,000 t in 2009).

EN1 In 2009, the consumption of limestone for desulfurization was slightly up (+0.6% on 2008), while the production of gypsum (100% recovered, see EN22) was down.
The higher consumption of limestone depends on the upgrades which were made to the system for continuous monitoring of pollutants in the flue gases of the Nováky plant (Prievidza district, western Slovakia). In particular, the CEMS CODEL machinery was replaced with the CEMS FUJI type, which is installed just

before the desulfurizer in units B1, B2 and AFK1. The new system, which measures SO_2 more accurately, made it necessary to increase the use of limestone in the desulfurizers in order to meet the prescribed limit (400 mg/m^3).

EN2 Part of the limestone requirements (in 2009, 13.5% of the total, i.e. about 1.1 Mt) are covered by lime sludge deriving from decarbonatation of water for industrial uses.

EN1
EN3 The decrease of thermal power generation combined with heat generation is related above all to decreased use of imported coal (constant downward trend in the past few years). In contrast, the consumption of brown coal (of local origin) remained unaltered with respect to 2008. The increase in thermal power generation from renewables is directly proportional to the increase in the consumption of biomass (from about 67 toe in 2008 to 2,190 in 2009).
The net heat rate of combined thermal CHP generation dropped from 2,866 kcal/kWh$_{eq}$ (12 GJ/MWh$_{eq}$) in 2008 to 2,841 kcal/kWh$_{eq}$ (11,9 GJ/MWh$_{eq}$) in 2009.
Fuel consumption by offices and services (mostly for heating, canteens and transport vehicles) was equal to about 72 TJ (1.723 toe) in 2009.

EN4 Primary electricity used for real-estate & service management amounted to 1.41 GWh in 2009.

EN5 Net maximum capacity (thermal and nuclear) was up by roughly 1.6% on 2008.
In the Bohunice nuclear plant (Trnava district, western Slovakia): turbines were retrofitted; condensate separators were replaced; steam-pressure measuring nozzles were changed; and a new type of moderator (gadolinium), permitting a better utilization of uranium, was introduced. These measures caused the net maximum capacity of units 3 and 4 to grow by 4% and 5% on 2008, respectively.
As a result of the renovation of the cooling towers and of the retrofitting of condensers (completed in 2008), the overall efficiency of thermal power plants was up by 0.9%; the resulting primary energy saving was 6,842 TJ.
In hydro power generation, the efficiency of the pumping cycles was up by over 3 percentage points.

EN6 In December 2009, the construction of a 9-kW$_p$ photovoltaic installation and the renovation of the power system in the Tery chalet (Tatra mountains) were completed. This initiative, conducted as part of Slovenské's land/landscape projects for local communities, was designed for a hikers' association. Thanks to the initiative, 9,000 kWh/yr of renewable power are generated.

EN7 Slovenské elektrárne applied an internal procedure to minimize travel for duty purposes through the use of conference calls. The effects were fuel savings and lower CO_2 emissions.

EN16 Specific CO_2 emissions from thermal CHP generation vs. total electricity generation fell from 225 to 183 g/kWh$_{eq}$ in 2009 as a result of the higher contribution of nuclear and renewable power generation.

EN18 In July 2009, a project of co-firing of biomass (4% of the total calorific value, i.e. 30,000 t of chipped biomass) in the fluidized-bed boiler of the Vojany plant was launched. The project is expected to finally cut CO_2 by about 21,000 t/yr. In 2009, the plant - although still in the testing stage - displaced 7,329 t of CO_2 (0.8% of the total emissions certified in 2009).
In the same plant, a direct continuous emission monitoring system was installed. The system measured CO_2 more accurately, indicating that CO_2 emissions are 1.6% lower than those determined on the basis of analytical parameters. The initiative demonstrated that the impact of the plant is lower than previously thought.
The increase in the efficiency and net maximum capacity of the Bohunice nuclear plant further decreases fossil-fuel dependence and CO_2 emissions. Considering that the nuclear capacity is up by about 50 MW and that the average specific emissions from thermal generation are about 1,200 g/kWh, a single hour of nuclear generation (50 MWh) in place of the otherwise necessary thermal generation can displace about 60 t of CO_2 emissions. On a year-on-year basis, supposing 7,300 hours of operation, the avoided emissions are equal to 438,000 t.
In 2009, the overall energy (electricity and heat) produced from renewable and nuclear sources displaced 17.4 Mt of CO_2 emissions (over 2 Mt and over 15 Mt, respectively).
The installation of the 9-kW$_p$ photovoltaic installation in the Tery chalet for hikers (see EN6) can displace about 9 t of CO_2 emissions per year.
Also mobility management policies (reduction of travel for duty purposes by using ICT tools, such as conference calls, Communicator software, etc.) helped slash greenhouse gas emissions by an amount which cannot yet be quantified.
Approval for construction of photovoltaic installations at the Mochovce (Nitra district, southern Slovakia) and Vojany power plants is awaited from the distribution grid operator of central Slovakia. If the approval is granted, the installations will be built by February 2011. Each installation will have a capacity of 958 KW$_p$ and a yearly generation of about 980 and about 940 MWh/yr, respectively. This will curb CO_2 emissions by roughly 1,200 and 1,100 t, respectively (considering about 1,200 g/kWh of average specific emissions of CO_2 from the Vojany and Nováky thermal power plants).

EN19 Ozone-depleting substances have long been disposed of.

EN20 Absolute SO_2 emissions from CHP generation dropped from 35,926 t in 2008 to 32,872 t in 2009 as a result of lower thermal generation.
Conversely, specific SO_2 emissions were slightly up (10.4 g/kWh in 2008 vs. 11.6 g/kWh in 2009) owing to higher utilization of the Nováky plant, which uses local brown coal with high sulfur content.
Maintenance jobs on primary equipment during the long shut-down of unit 1 of the Mochovce nuclear plant caused the emissions of α aerosols to practically

double as against 2008; however, the doubling was more than offset by the reduction of strontium 89 and 90 emissions.

EN21 Tritium in waste waters sharply increased (almost twice the value of 2008). The reason mainly lies in the decision to decrease the content of this element in the primary circuit of the Bohunice nuclear plant. Therefore, the related emissions were planned and approved by the Public Health Authority of the Slovak Republic (ÙVZ SR), which set a ceiling equal to 70% of the limit value (14 TBq) established by the Regulator.
The increase was also due to the decision to release the "historical tritium", accumulated and adequately stored in the Mochovce plant in the past two years.

EN22 The lower production of gypsum in 2009 vs. 2008 is to be mainly attributed to the fact that, in the previous year, gypsum was included in the generality of the waste from flue-gas purification.
Recovery of the most part of the waste items sharply improved; in particular, coal and brown-coal ash passed from 47% in 2008 to 52% in 2009, while gypsum climbed from 79% to 100%. As a result, the total percentage of waste recovery mounted from abut 25 to over 30%.

EN23 Oil from the hydro power plant of Nosice was spilled into the Vah river. Prompt measures were instituted under an emergency response procedure, which involves the use of a biodegradation-inducing solution (Bactorol 3000).

EN26 Environmental enhancements in electricity generation were as follows:
> co-firing of biomass with coal;
> installation of a system to continuously monitor CO_2 emissions in the thermal plant of Vojany;
> calibration of flue-gas analyzers (to check their reliability) and measurement of flue-gas volumes;
> installation of a system to continuously measure the flow rate of water discharged by the thermal plant of Vojany into the Laborec river;
> renovation of the waste-water treatment system at Vojany; the new technology yielded clear environmental advantages: lower consumption of reagents (25% saving of $FeCl_3$ and 100% saving of calcium hydroxide, replaced with a polycoagulant), lower production of sludges and 75% abatement of soluble solids;
> installation of a new system to treat waters contaminated by fuel oil (mazut) in the thermal plant of Vojany;
> sale of reusable waste through electronic auction, with a view to increasing the recovery potential of some waste items (for the time being only metal ones); in 2010, sales of flyash and gypsum from desulfurization are expected to go up and conditions are being created for the marketing of sludges from decarbonatation of industrial waters used in nuclear power plants as soil ameliorants ($CaCO_3$ content: >85%);
> soil and groundwater protection by running tightness tests on equipment and tanks containing hazardous substances (to prevent leaks) in all power plants:
> at the Nováky plant:
  – reconstruction of the floor of the flammable liquid storage area;
  – reconstruction of the storage area for chemical substances and installation of a leakage detection system;

- – repair of the largest oil tank of unit 3 of Nováky A and installation of a leakage detection system;
- – construction of double-chamber bottoms for heavy-oil tanks 4 and 5;
- – replacement of the emergency tank and installation of a new pumping station in the mazut handling area of units 3 and 4;
- – reconstruction of the oil conduit between the machine hall and the tower used to replace transformer oil;

> for soil protection at the Vojany plant, installation of a system collecting primary rainfall water, potentially polluted by oils;

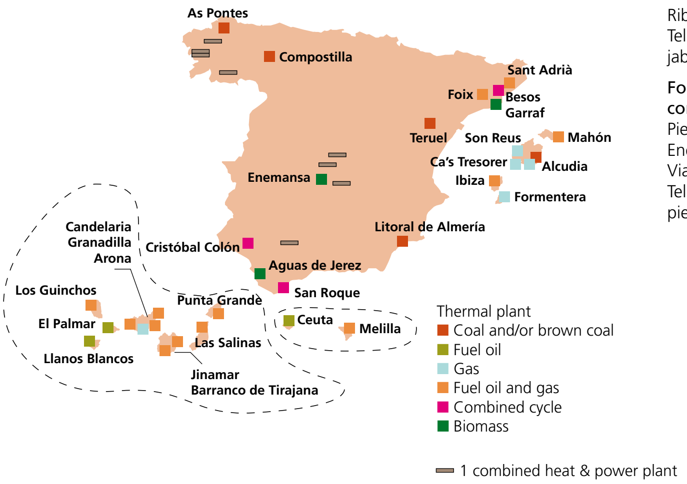
> for soil protection at the Nosice hydro plant, sealing of turbine 3 (to prevent oil leaks, such as the one reported under EN23) and planning of similar jobs on turbines 1 and 2 in the course of 2010.

At the thermal plant of Novaky and the hydro plant of Trencin, a new methodology was applied to assess environmental risks and formulate mitigation plans; the methodology integrates the environmental management system (ISO 14001) in terms of impact assessment and operational control of significant environmental aspects.

Spain

Thermal power generation (simple and CHP)

(Endesa SA, Enel Unión Fenosa Renovables SA)



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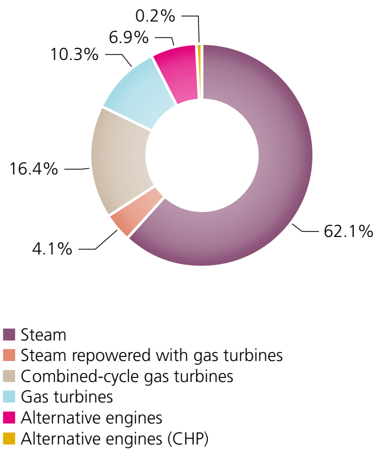
Power installations

	Power plants no.	Units no.	Net maximum electrical capacity MW	Useful thermal capacity 10^6 kcal/h
Steam (condensing)	10	34	7,737	-
Steam (condensing) repowered with gas turbines	0	3	513	-
Combined-cycle gas turbines (including CHP)	8	15	2,040	-
Gas turbines (including CHP)	4	37	1,286	-
Alternative engines	12	112	865	-
Alternative engines (CHP)	8	25	26	14
	42	**226**	**12,467**	**14**

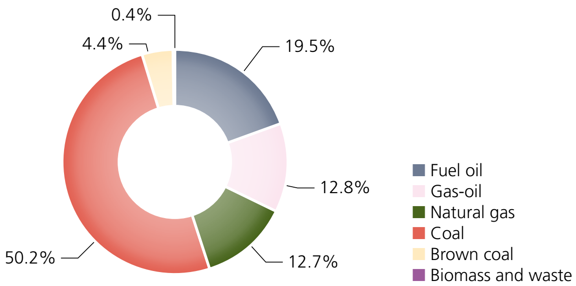
Power plants with a total net maximum capacity of about 9,250 MW are ISO 14001-certified.

Net maximum electrical capacity
Total: 12,467 MW



Fuel consumption

Total: 8,453,981 t of oil-equivalent

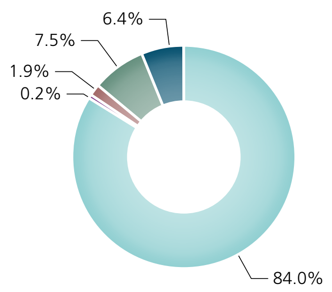


Useful heat output (combined with power generation)

Total: 77.442 million kcal
(equal to 90 million kWh)

Water for industrial uses

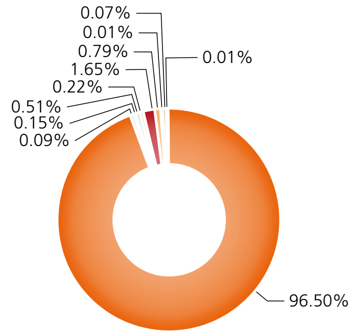
Total requirements: 36,268,687 m³
Total abstraction from inland waters: 31,226,711 m³



- From rivers
- From wells
- From the sea (as-is)
- From the sea (desalinated)

Expendables

Total: 367,431 t



- Resins, hydrazine, carbohydrazide & hydrogen peroxide
- Limestone for flue-gas desulfurization
- Magnesium oxide
- Sodium hypochlorite, chlorine dioxide, ferrous sulfate, ferrous chloride and trisodium phosphate
- Sulfuric & hydrochloric acids
- Caustic soda
- Lime, ferric chloride and polyelectrolyte
- Lubricating oil
- Dielectric oil
- Other

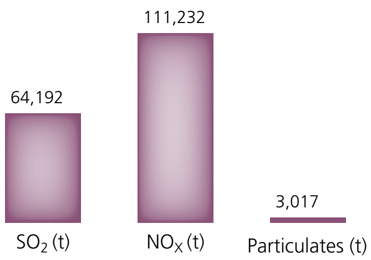
Waste waters

Discharged (m³)	28,824,061

Avoided CO_2 emissions (from biomass)

Due to CHP generation (t)	102,018

Emissions into the atmosphere



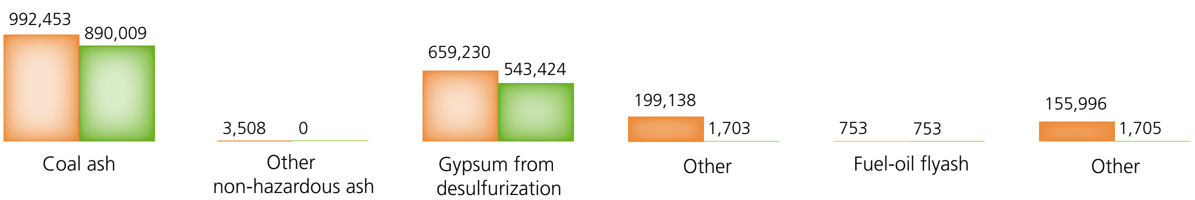
CO_2 (t)	29,888,794
from combustion	*29,863,968*
from desulfurization	*124,826*
SF_6 (kg)	47
(t of CO_2-equivalent)	1,052
Total (t of CO_2-equivalent)	**29,889,846**

Special waste

Total production: 2,011,078 t
Total delivery to recovery operators: 1,437,594 t

Non-hazardous
Production: 1,854,328 t
Delivery to recovery operators: 1,435,135 t

Hazardous
Production: 156,750 t
Delivery to recovery operators: 2,459 t



- Production
- Delivery to recovery operators

Nuclear power generation

(Endesa SA)

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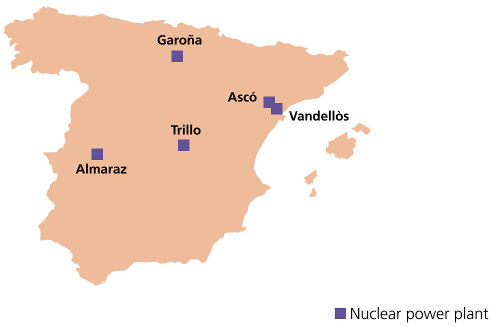


Power installations

	Power plants no.	Units no.	Net maximum electrical capacity MW
Steam (condensing)	**5**	**7**	**3,522**

All the power plants are ISO 14001-certified.

Net electricity generation

Total: 22,630 million kWh

Water for industrial uses

Total requirements 170,807,531 m^3
Total abstraction from inland waters: 170,799,946 m^3

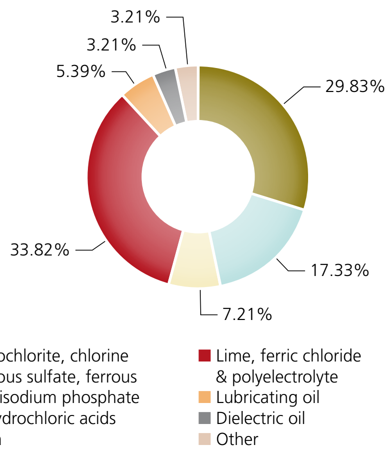
Waste waters

Discharged (m^3)	157,730,032
Used inside the plants (m^3)	7,585

Waste waters include those meteoric waters that are susceptible to pollution and are therefore fed to treatment systems before being discharged or used.

Expendables

Total: 1,047,376 t



Avoided CO_2 emissions

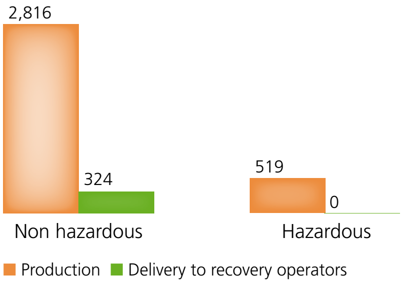
Due to nuclear generation (t)	18,119,321

Radioactive emissions into the atmosphere

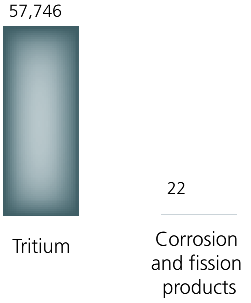
Noble gases (TBq)	24
Iodine 131 (MBq)	258
Aerosols β and γ (MBq)	69
Aerosol α (kBq)	64
Strontium 89 and 90 (kBq)	8,482

Special waste

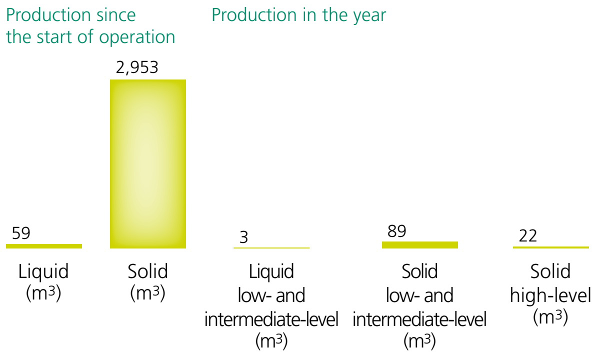
Total production: 3,335 t
Total delivery to recovery operators: 324 t



Radionuclides in discharged waste waters (GBq)

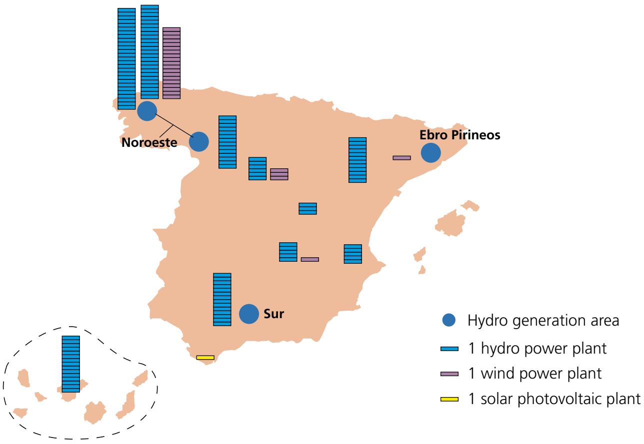


Radioactive waste



Hydro, wind and solar photovoltaic power generation

(Endesa SA, Enel Unión Fenosa Renovables SA)



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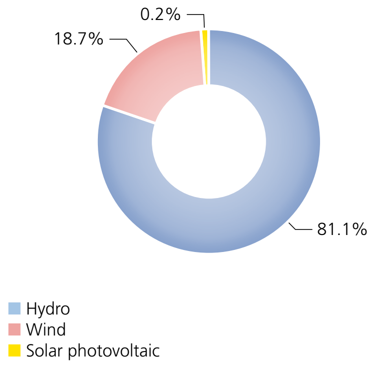
Power installations

HYDRO	Power plants no.	Head installations no.	Net maximum electrical capacity MW
Run-of-river	91	143	608
Pondage/reservoir	82	163	2,815
Pure/mixed pumped storage	6	20	1,265
	179	**326**	**4,688**

WIND	Power plants no.	Net maximum electrical capacity MW
	75	**1,080**

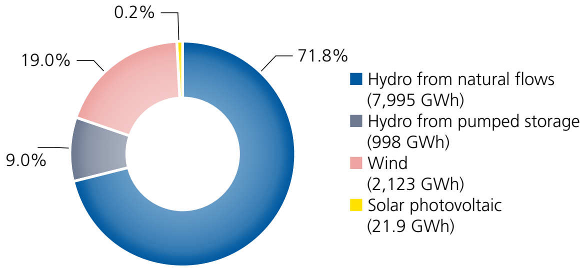
SOLAR PHOTOVOLTAIC	Power plants no.	Net maximum electrical capacity MW
	1	**12**

Net maximum electrical capacity
Total: 5,781 MW

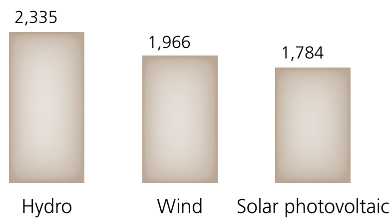


About 5,000 MW of hydro power plants (Endesa + EUFER) and 287 MW of wind power plants are ISO 14001-certified.

Net electricity generation
Total: 11,138 million kWh

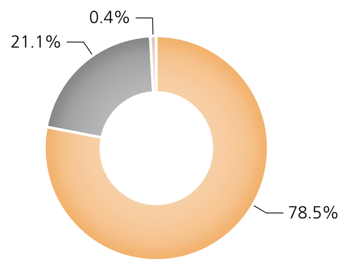


Equivalent yearly hours of utilization*



* On a statistical basis, yearly generation/capacity ratio (excluding hydro generation from pumped storage).

Expendables
Total: 151 t



Gas-oil

Total consumption (toe)	8

Used for feeding emergency generating sets.

Emissions into the atmosphere

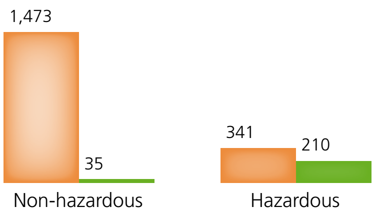
SF_6 - all types of generation (kg)	0.3
(t of CO_2-equivalent)	7
CO_2 (t)	23
Emissions from gas-oil combustion.	
Total (t of CO_2-equivalent)	**30**

Avoided CO_2 emissions

Due to hydro generation from natural flows (t)	6,401,474
Due to wind generation (t)	1,700,027
Due to solar photovoltaic generation (t)	17,567
Total (t)	**8,119,068**

Emissions from the otherwise necessary fossil-fired thermal generation.

Special waste
Total production: 1,814 t
Total delivery to recovery operators: 245 t



Other data

HYDRO GENERATION

Emptied reservoirs	quantity (no.)	9
	alluvial sediments removed by flushing them out through bottom outlets (m^3)	706,811
Fish ladders (no.)		15

WIND AND PHOTOVOLTAIC GENERATION

Wind power plants	Surface area occupied by platforms, service roads and buildings (ha)	61.75
	Total surface area affected by the installations (ha)	20 to 100 times larger
Photovoltaic power plants	Total surface area affected by the installations (ha)	35.00

Electricity distribution

(Endesa SA)

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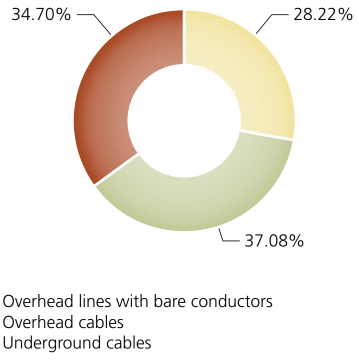
Power installations

SUBSTATIONS	no.	Installed transforming capacity MVA
HV/MV	964	80,411
MV/LV	122,976	55,630
MV/MV	252	2,253
	124,192	**138,294**

LINES (length in km)	Overhead bare conductors	Overhead cables	Underground cables	Total
HV (> 36 kV)	20,277	-	1,076	**21,352**
MV (1-36 kV)	78,940	1,298	37,000	**117,238**
LV (< 1 kV)	55,978	37,940	80,650	**174,568**
	155,195	**39,238**	**118,726**	**313,158**



The organization is ISO 14001-certified.

General data

Municipalities served (no.)	2,760
Surface area served (km2)	196,875

Electricity

Total electricity distributed (million kWh)	104,938
Own consumption for grid operation (million kWh)	15

Resource consumption

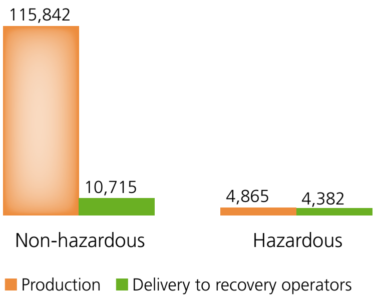
Expendables (t)	103
Gas-oil (t of oil-equivalent)	1,665

Used for feeding emergency generating sets.

Special waste

Total production: 120,707 t

Total delivery to recovery operators: 15,098 t



Emissions into the atmosphere

SF_6 (kg)	196
(t of CO_2-equivalent)	4,361
CO_2 (t)	5,399
Emissions from gas-oil combustion.	
Total (t of CO_2-equivalent)	**9,760**

Natural-gas distribution

(Endesa SA)

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Power installations

STATIONS

	no.
HV/MV	136
MV/LV	231
	367

GAS PIPELINES

HP (p > 5 bar)	1,007
MP (0.04 bar < p ≤ 5 bar)	1,596
LP (p ≤ 0.04 bar)	837
	3,440

General data

Municipalities served (no.)	128
Surface area served (km^2)	41,335
Customers connected to the grid (no.)	329,118

Natural gas

Total natural gas distributed (million m^3)	442

Eco-Balance and Indicators

STATUS DATA

		2005	2006	2007	2008	2009
Power-generating installations						
Power plants	no.	53	54	361	342	294
thermal	no.	6	6	38	32	34
nuclear	no.	-	-	5	5	5
hydro	no.	35	36	214	204	179
wind	no.	12	12	104	101	75
solar (photovoltaic)	no.	-	-	-	-	1
Net maximum electrical capacity	MW	2,606	2,624	17,280	15,690	21,744
thermal	MW	1,592	1,592	9,204	8,040	12,441
nuclear	MW	-	-	2,441	2,442	3,522
hydro	MW	716	728	4,390	3,791	4,688
wind	MW	298	304	1,244	1,417	1,080
solar (photovoltaic)	MW	-	-	-	-	12.3
Combined heat & power installations						
Power plants	no.	7	6	7	8	8
Net maximum electrical capacity	MW	81.5	79.1	79.1	26.0	26.3
Useful thermal capacity	million kcal/h	43	50.5	40.9	13.8	13.5
Power lines (circuit-length)						
Total	km	29,485	30,008	233,586	204,421	313,158
high-voltage	km	1,985	2,049	15,400	14,177	21,352
medium-voltage	km	9,680	9,703	84,981	77,091	117,238
low-voltage	km	17,821	18,257	133,205	113,154	174,568
Gas pipelines (1)						
Total	km					3,440
high-pressure	km					1,007
medium-pressure	km					1,596
low-pressure	km					837
Mining activities (2)						
Mines (coal)	no.				4	5
Areas occupied by excavations and other activities	ha				2,714	5,341
EN29 **Service & real-estate management** (1)						
Vehicle fleet						
service vehicles	no.					1,229
special vehicles	no.					10
vehicles for both private and service use	no.					152
Gross real-estate surface area	thousand m^2					100,777

-: no data due to absence of activities in the year.

(1) These activities have been surveyed since 2009.
(2) These activities have been surveyed since 2008.

RESOURCES (1/2)

		2005	2006	2007	2008	**2009**
EN1 EN3 Fossil fuels						
Thermal generation (including auxiliary boilers and emergency generating sets)						
fuel oil	thousand t	164	45.2	297	1,133	1,660
LS	*thousand t*	*164*	*45.2*	*295*	*1,127*	*1,660*
VLS	*thousand t*	*0*	*0*	*1.81*	*6.37*	*0.242*
gas-oil	thousand t	1.51	2.01	256	751	1,063
natural gas	million m^3	132	38.1	264	1,228	1,190
technologically captive use	*million m^3*	*0*	*0*	*240*	*1,133*	*1,104*
of which in combined-cycle units	million m^3	0	0	240	1,133	1,104
non-technologically captive use	*million m^3*	*132*	*38.1*	*23.5*	*95.4*	*86.3*
coal	thousand t	2,476	1,788	4,985	7,210	7,830
brown coal	thousand t	534	466	577	1,413	1,213
Total	thousand toe	1,646	1,097	3,213	7,228	8,384
Combined heat & power generation (including auxiliary boilers and emergency generating sets)						
fuel oil (LS)	thousand t	52.5	41.1	50.5	17.9	19.3
natural gas	million m^3	58.6	44.8	48	10.7	6.19
technologically captive use	*million m^3*	*31.5*	*18.1*	*21.4*	*0*	*0*
of which in combined-cycle units	million m^3	31.5	0.258	0	0	0
non-technologically captive use	*million m^3*	*27.1*	*26.7*	*26.6*	*10.7*	*6.19*
Total	thousand toe	110	80.7	92.0	28.6	30.2
Various activities	thousand toe	0.001	0.001	0.681	12.0	24.8
Grand total	**thousand toe**	**1,756**	**1,177**	**3,306**	**7,269**	**8,439**
EN1 EN3 Biomass and waste						
Thermal generation	thousand toe	0	0	0	0	39.9
EN4 Primary electricity						
Various activities	million kWh	0	0	0	0	20.4
EN8 Water for industrial uses						
From rivers (including meteoric waters from secondary rainfall)	million m^3	4.32	2.54	36.4	136	202
From wells	million m^3	2.76	3.31	2.45	1.20	1.84
From aqueducts	million m^3	0.340	0.291	0.355	0.158	1.11
Total abstraction from inland waters	million m^3	7.42	6.15	39.2	137	205
From the sea (as-is)	million m^3	0	0	0.126	3.02	2.73
From the sea (desalinated)	million m^3	0	0	0.072	1.39	2.31
From waste waters (used inside the plants)	million m^3	0	0	0	0.005	0.008
Total requirements	**million m^3**	**7.42**	**6.15**	**39.4**	**142**	**210**
for thermal generation	million m^3	7.42	6.15	15.4	33.7	36.3
for nuclear generation	million m^3	-	-	24.0	106	171
for mining activities (1)	million m^3				2.13	3.09

-: no data due to absence of activities in the year.

(1) These activities have been surveyed since 2008.

(2/2)

			2005	2006	2007	2008	2009
EN8 EN21	**Open-cycle cooling water**						
	For thermal generation (simple and CHP)	million m^3	414	241	842	2,518	3,573
	For nuclear generation	million m^3	0	0	433	1,827	2,435
	Total	**million m^3**	**414**	**241**	**1,275**	**4,345**	**6,008**
	Water for non-industrial uses						
	Real-estate & service management (1)	million m^3					33.9
EN1	**Expendables**						
	Resins	t	0.565	0.425	0.119	11.9	18.9
	Hydrazine	t	7.13	16.8	18.3	21.2	43.7
	Carbohydrazide	t	0	0	0	6.98	36.2
	Hydrogen peroxide	t	0	0	0	0.136	0.198
	Ammonia	t	2.07	1.65	0.600	31.3	47.4
	Limestone for flue-gas desulfurization	t	0	0	0	398,825	354,569
	Magnesium oxide	t	0	0	0	136	318
	Sodium hypochlorite	t	578	454	558	2,731	858
	Trisodium phosphate	t	0.610	1.03	1.10	8.48	6.09
	Lime	t	309	209	235	4,258	6,202
	Ferric chloride	t	2.52	2.10	0	172	169
	Polyelectrolyte	t	1.05	0.075	0.200	17.9	18.0
	Sulfuric & hydrochloric acids	t	1,296	1,269	1,228	1,752	2,035
	Caustic soda	t	417	383	291	706	891
	Lubricating oil	t	43.8	56.7	44.4	3,330	3,287
	Dielectric oil	t	11.2	18.5	36.4	294	164
	Printing paper	t	0	0	0	0	17.6
	Other	t	513	423	487	4,392	5,134
	Total	**t**	**3,182**	**2,835**	**2,900**	**416,694**	**373,816**
	for thermal generation	t	3,159	2,800	2,830	410,607	367,401
	for thermal generation (CHP)	t	0	0	0	0	30.0
	for nuclear generation	t	-	-	0	2,433	1,047
	for hydro generation	t	16.9	23.3	28.9	56.2	98.6
	for wind generation	t	0	6.60	15.9	60.1	52.1
	for electricity distribution	t	6.03	5.04	25.4	159	103
EN1	**PCB survey** (2)						
	Equipment & transformers with PCBs >500 ppm (excluding their oil)	t					1,303
	Oil with PCBs >500 ppm contained in equipment & transformers	t					2.61
	Equipment & transformers with PCBs >500 ppm (excluding their oil)	t					7,324
	Oil with PCBs >50 ppm and ≤500 ppm contained in equipment & transformers	t					82.0

-: no data due to absence of activities in the year.

(1) These activities have been surveyed since 2009.
(2) The survey began in 2009.

		2005	2006	2007	2008	2009
Electricity generation (net)						
From fossil fuels	million kWh	6,798	4,549	14,033	33,381	37,446
simple	million kWh	6,319	4,186	13,615	33,245	37,347
fuel oil & gas-oil	*million kWh*	*608*	*164*	*1,945*	*8,191*	*11,291*
natural gas	*million kWh*	*456*	*121*	*1,425*	*7,053*	*6,569*
of which in combined-cycle units	million kWh	0	0	1,353	6,728	6,292
coal	*million kWh*	*4,653*	*3,365*	*10,036*	*16,221*	*17,704*
brown coal	*million kWh*	*602*	*536*	*209*	*1,780*	*1,783*
combined with heat generation	million kWh	479	364	418	136	98.9
fuel oil & gas-oil	*million kWh*	*233*	*180*	*226*	*84.6*	*72.8*
natural gas	*million kWh*	*246*	*184*	*192*	*51.5*	*26.1*
From renewables	million kWh	1,270	1,379	2,830	7,137	10,268
biomass & biodegradable fraction of waste (simple)	million kWh	0	0	0	0	127
hydro from natural flows	million kWh	593	720	1,713	4,858	7,995
wind	million kWh	677	659	1,118	2,279	2,123
solar (photovoltaic)	million kWh	0	0	0	0	21.9
Hydro from pumped storage	million kWh	586	615	801	615	998
Nuclear generation (simple)	million kWh	-	-	4,132	17,508	22,630
Total	**million kWh**	**8,654**	**6,543**	**21,797**	**58,641**	**71,341**
simple	million kWh	8,175	6,180	21,379	58,505	71,242
combined with heat generation	million kWh	479	364	418	136	98.9
Electricity consumption for pumping	million kWh	838	879	1,144	765	1,409
Available generation	million kWh	7,816	5,665	20,653	57,876	69,932
Useful heat output (combined with power generation)						
In thermal power plants (fossil fuels)	million kcal	281,407	248,051	193,510	78,577	77,442
	million kWh	327	288	225	91.4	90.1
Electricity distribution						
Electricity distributed	million kWh	5,627	6,256	24,398	80,144	104,938
Electricity consumption for grid operation	million kWh	6.52	6.94	24.5	11.2	14.6
Natural-gas distribution (1)						
Natural gas distributed	million m^3					442
Mining activities (2)						
Areas restored in the year (geomorphology, hydrogeology and landscape)						
Areas revegetated with plant, shrub and tree species	ha				36.9	23.1
Areas occupied by water bodies	ha				154	234
Areas restored since the start of activities (geomorphology, hydrogeology and landscape)						
Areas revegetated with plant, shrub and tree species	ha				1,165	2,287
Areas of high landscape-cultural value	ha				64.4	132
Areas occupied by water bodies	ha				190	509
Areas occupied by infrastructure (roads, canals, aqueducts, power lines)	ha				65.7	97.9
Areas awaiting final restoration	ha				120	271

-: no data due to absence of activities in the year.

(1) These activities have been surveyed since 2009.
(2) These activities have been surveyed since 2008.

EMISSIONS, LIQUID RELEASES & WASTE (1/5)

		Source		2005	2006	2007	2008	**2009**
	Emissions into the atmosphere							
EN20	SO_2	thermal generation	thousand t	73.1	56.3	126	66.4	64.2
EN20	NO_X	thermal generation	thousand t	20.8	16.2	47	95.4	111
EN20	Particulates	thermal generation	thousand t	4.97	4.26	6.31	3.05	3.02
EN16	CO_2	*fossil-fired thermal generation (from combustion)*	*thousand t*	*6,046*	*4,158*	*12,112*	*26,631*	*29,778*
		fossil-fired thermal generation (from desulfurization)	*thousand t*	*0*	*0*	*0*	*305*	*125*
		Total from fossil-fired thermal generation	thousand t	6,046	4,158	12,112	26,936	29,903
		non-fossil-fired thermal generation (from fossil carbon)	thousand t	0	0	0.263	0	0
		Total from thermal generation	thousand t	6,046	4,158	12,112	26,936	29,903
		Total from fossil-fired thermal generation - CHP (from combustion)	thousand t	279	223	264	80.0	85.8
		Various activities	thousand t	0	0	2	9.87	74.7
		Total	**thousand t**	**6,325**	**4,381**	**12,378**	**27,687**	**30,063**
EN16	SF_6	electricity generation	kg	0	60	40	432	47.7
			thousand t of CO_2-equivalent	0	1.37	0.912	9.84	1.09
		electricity distribution	kg	77.3	44.6	26	228	196
			thousand t of CO_2-equivalent	1.76	1.02	0.593	5.20	4.48
		Total	**kg**	**77.3**	**105**	**66**	**660**	**244**
			thousand t of CO_2-equivalent	**1.76**	**2.38**	**1.51**	**15**	**5.57**
EN16	CH_4	gas distribution and mining activities	thousand t	0	0	0	0.73	1.57
			thousand t of CO_2-equivalent	0	0	0	18.3	39.3
EN16	Total greenhouse gases (CO_2, SF_6, CH_4)		**thousand t of CO_2-equivalent**	**6,327**	**4,383**	**12,379**	**27,059**	**30,108**
EN18	**Avoided CO_2 emissions**							
	Due to hydro generation from natural flows		thousand t	568	715	1,523	3,936	6,401
	Due to wind and solar generation		thousand t	648	655	995	1,846	1,718
	Due to generation from biomass & biodegradable fraction of waste		thousand t	0	0	0	0	102
	Due to generation from renewables		**thousand t**	**1,215**	**1,370**	**2,518**	**5,782**	**8,221**
	Due to nuclear generation		**thousand t**	**0**	**0**	**3,676**	**14,185**	**18,119**
	Total		**thousand t**	**1,215**	**1,370**	**6,194**	**19,967**	**26,340**

EMISSIONS, LIQUID RELEASES & WASTE (2/5)

	Source		2005	2006	2007	2008	**2009**
EN20 Radioactive emissions into the atmosphere	nuclear generation						
Noble gases		TBq	-	-	3.10	24.4	24
Iodine 131		MBq	-	-	2.93	158	258
Aerosol β and γ		MBq	-	-	1.87	37.5	69.1
Aerosol α		kBq	-	-	4.88	35.9	63.7
Strontium 89 and 90		kBq	-	-	681	2,781	8,482
EN21 Waste waters (discharged quantity)	thermal generation	million m^3	1.30	1.04	1.01	22.7	28.8
	nuclear generation	million m^3	-	-	21.7	96.1	158
	Total from electricity generation	**million m^3**	**1.30**	**1.04**	**22.7**	**119**	**187**
EN21 Conventional polluting load of waste waters							
Metals and compounds (expressed as metal equivalents)	thermal generation (only in some large plants)	kg	312	264	11,575	0	58,684
	nuclear generation	kg	-	-	111	49.7	70.3
	Total in electricity generation	**kg**	**312**	**264**	**11,686**	**49.7**	**58,754**
Total nitrogen (expressed as N)	thermal generation (only in some large plants)	kg	87,003	9,426	28,647	10,204	221,409
	nuclear generation	kg	-	-	2,213	7,407	17,612
	Total in electricity generation	**kg**	**87,003**	**9,426**	**30,860**	**17,611**	**239,021**
Total phosphorus (expressed as P)	thermal generation (only in some large plants)	kg	2,313	2,247	9,934	119	10,028
	nuclear generation	kg	-	-	76.6	99.4	118
	Total in electricity generation	**kg**	**2,313**	**2,247**	**10,011**	**218**	**10,146**
COD	thermal generation (only in some large plants)	kg	29,645	24,335	6,153	26,083	77,778
	nuclear generation	kg	-	-	1,734	2,064	2,714
	Total in electricity generation	**kg**	**29,645**	**24,335**	**7,887**	**28,147**	**80,492**
BOD	thermal generation (only in some large plants)	kg	16,473	16,420	1,107	1,882	4,912
	nuclear generation	kg	-	-	297	1,376	1,792
	Total in electricity generation	**kg**	**16,473**	**16,420**	**1,404**	**3,258**	**6,704**
EN21 Radionuclides in waste waters	nuclear generation						
Tritium		GBq	-	-	9,028	58,777	57,746
Corrosion and fission products		GBq	-	-	3.08	4,088	21.7

-: no data due to absence of activities in the year.

(3/5)

	Source		2005	2006	2007	2008	**2009**
EN22 Non-hazardous special waste							
Coal bottom ash	thermal generation (simple and CHP)						
production		t	199,228	108,450	217,529	202,355	145,410
delivery to recovery operators		t	14,397	13,692	58,423	64,754	92,315
Coal flyash	thermal generation (simple and CHP)						
production		t	716,021	581,947	1,116,985	1,055,029	847,043
delivery to recovery operators		t	625,023	474,579	1,064,305	1,026,544	797,694
Other non-hazardous ash	thermal generation (simple and CHP)						
production		t	0	0	0	0	3,508
Gypsum from desulfurization	thermal generation (simple and CHP)						
production		t	0	0	134,358	676,432	659,230
delivery to recovery operators		t	0	0	180	879	543,424
Other							
production	electricity generation	t	823	860	56,698	34,568	203,426
	electricity distribution	t	186	83	7,058	98,615	115,842
	various activities	t	0	0	0	290	1,361
	Total	**t**	**1,009**	**943**	**63,757**	**133,474**	**320,629**
delivery to recovery operators	electricity generation	t	144	785	4,412	3,470	2,062
	electricity distribution	t	0	0	288	5,100	10,715
	various activities	t	0	0	0	1,549	1,360
	Total	**t**	**144**	**785**	**4,700**	**10,119**	**14,137**
Total							
production	electricity generation	t	916,072	691,257	1,525,570	1,968,385	1,858,617
	electricity distribution	t	186	83	7,058	98,615	115,842
	various activities	t	0	0	0	290	1,361
	Total	**t**	**916,258**	**691,340**	**1,532,628**	**2,067,290**	**1,975,820**
delivery to recovery operators	electricity generation	t	639,564	489,056	1,127,319	1,095,647	1,435,494
	electricity distribution	t	0	0	288	5,100	10,715
	various activities	t	0	0	0	1,549	1,360
	Total	**t**	**639,564**	**489,056**	**1,127,607**	**1,102,296**	**1,447,569**

EMISSIONS, LIQUID RELEASES & WASTE (4/5)

	Source		2005	2006	2007	2008	**2009**
EN22 Hazardous special waste							
Oil flyash	thermal generation (simple and CHP)						
production		t	12.7	0	103	535	753
delivery to recovery operators		t	0	0	0	0	753
Other							
production	electricity generation	t	622	396	2,172	5,976	156,856
	electricity distribution	t	262	220	1,426	18,414	4,865
	various activities	t	0	0	0	75.9	312
	Total	**t**	**884**	**616**	**3,599**	**24,466**	**162,034**
of which with PCBs	*electricity generation*	*t*	*81*	*84*	*579*	*1,413*	*1,976*
	electricity distribution	*t*	*46.7*	*80.6*	*137*	*646*	*348*
	Total	***t***	***128***	***165***	***717***	***2,059***	***2,324***
delivery to recovery operators	electricity generation	t	621	389	348	1,920	2,152
	electricity distribution	t	0	0	423	5,212	4,382
	various activities	t	0	0	0	19.8	310
	Total	**t**	**621**	**389**	**771**	**7,152**	**6,845**
of which with PCBs	*electricity generation*	*t*	*80.5*	*81.4*	*85.7*	*1,412*	*1,962*
	electricity distribution	*t*	*0*	*0*	*0*	*641*	*348*
	Total	***t***	***80.5***	***81.4***	***85.7***	***2,052***	***2,310***
Total							
production	electricity generation	t	635	396	2,275	6,511	157,610
	electricity distribution	t	262	220	1,426	18,414	4,865
	various activities	t	0	0	0	75.9	312
	Total	**t**	**897**	**616**	**3,701**	**25,001**	**162,787**
delivery to recovery operators	electricity generation	t	621	389	348	1,920	2,906
	electricity distribution	t	0	0	423	5,212	4,382
	various activities	t	0	0	0	19.8	310
	Total	**t**	**621**	**389**	**771**	**7,152**	**7,598**

(5/5)

		Source		2005	2006	2007	2008	**2009**
EN22	**Total special waste**							
	production	electricity generation	t	916,707	691,653	1,527,845	1,974,896	2,016,227
		electricity distribution	t	448	303	8,485	117,029	120,707
		various activities	t	0	0	0	366	1,673
		Total	**t**	**917,155**	**691,956**	**1,536,330**	**2,092,291**	**2,138,607**
	delivery to recovery operators	electricity generation	t	640,186	489,445	1,127,667	1,097,567	1,438,400
		electricity distribution	t	0	0	711	10,312	15,098
		various activities	t	0	0	0	1,569	1,670
		Total	**t**	**640,186**	**489,445**	**1,128,378**	**1,109,448**	**1,455,168**
EN22	**Radioactive waste**							
	Low- , intermediate- and high-level: stored inside the plants	nuclear generation						
	liquid		m^3	-	-	0	16.6	58.5
	solid		m^3	-	-	0	1,231	2,953
	Low- and intermediate-level: production	nuclear generation						
	liquid		m^3	-	-	3.50	1.25	3.31
	solid		m^3	-	-	39.3	97.2	88.8
			t	-	-	43.3	n.a.	n.a.
	of which fraction not storable in off-site surface or subsurface sites		*m^3*	-	-	*n.a.*	*72.5*	*0*
			t	-	-	*12.8*	*n.a.*	*0*
	High-level: production	nuclear generation						
	solid		m^3	-	-	1.49	0	22.1
			t	-	-	14.3	0	n.a.

-: no data due to absence of activities in the year.
n.a.: not available

INDICATORS (1/3)

			2005	2006	2007	2008	**2009**
	Resource conservation and quality						
EN1 EN3	Net heat rate of thermal generation	kcal/kWh	2,605	2,620	2,360	2,174	2,245
EN1 EN3	Net heat rate of thermal generation (CHP)	kcal/kWh_{eq}	1,367	1,238	1,430	1,258	1,598
EN1 EN3	Net efficiency of hydro generation from pumped storage	%	69.9	70	70	80.4	70.8
EN4	Consumption of electricity for distribution grid operation	% of electricity distributed	0.116	0.111	0.101	0,014	0.014
EN8	Net specific requirements of water for industrial uses in thermal generation						
	including contribution of as-is sea water	liters/kWh	1.17	1.47	1.13	1.01	0.968
	excluding contribution of as-is sea water	liters/kWh	1.17	1.47	1.12	0.924	0.895
EN8	Net specific requirements of water for industrial uses in nuclear generation	liters/kWh	-	-	5.82	6.04	7.55
EN8	Coverage of requirements of water for industrial uses						
	from rivers (including meteoric waters from secondary rainfall)	% of requirements	58.2	41.3	92.4	96.7	97.1
	from wells	% of requirements	37.2	53.9	6.21	0.017	0.032
	from aqueducts	% of requirements	4.58	4.74	0.901	0.113	0.469
	Total from inland waters	**% of requirements**	**100**	**100**	**99.5**	**96.8**	**97.6**
	from the sea (as-is)	% of requirements	0	0	0.320	2.16	1.32
	from the sea (desalinated)	% of requirements	0	0	0.183	0.995	1.12
EN10	from waste waters (used inside the plants)	% of requirements	0	0	0	0.004	0.004
EN1 EN3	Fossil fuel consumption for thermal generation						
	fuel oil	% of total fuel consumption	12	7.12	9.84	15.6	19.6
	gas-oil	% of total fuel consumption	0.087	0.180	5.99	10.6	12.8
	natural gas	% of total fuel consumption	10.4	6.50	8.72	15.7	12.8
	coal	% of total fuel consumption	67.8	72.7	71	52.2	50.4
	brown coal	% of total fuel consumption	9.76	13.5	4.47	5.97	4.39
	LS fuel oil	% of total fuel-oil consumption	100	100	99.6	99.9	100
	VLS fuel oil	% of total fuel-oil consumption	0	0	0.415	0.127	0.014
	natural gas, technologically captive use	% of total natural-gas consumption	17.7	21.8	83.8	91.4	91.6
	of which in combined-cycle units	*% of total natural-gas consumption*	*17.7*	*0.310*	*77*	*91.4*	*91.6*
	natural gas, non-technologically captive use	% of total natural-gas consumption	82.3	78.2	16.2	8.65	8.38

-: no data due to absence of activities in the year.

(2/3)

			2005	2006	2007	2008	**2009**
	Specific emissions into the atmosphere						
EN20	SO_2 (thermal generation)	g/kWh thermal net	11.6	13.5	9.29	2	1.71
EN20	NO_X (thermal generation)	g/kWh thermal net	3.29	3.88	3.45	2.87	2.97
EN20	Particulates (thermal generation)	g/kWh thermal net	0.786	1.02	0.463	0.092	0.081
EN16	CO_2 (thermal generation)	g/kWh thermal net	957	993	890	810	798
EN16	CO_2 (thermal generation - CHP)	g/kWh$_{eq}$ thermal net	347	342	410	352	454
EN16	CO_2 (thermal generation - simple and CHP)	g/kWh$_{eq}$ total net	704	641	562	460	420
EN16	SF_6 (electric activities)	% of SF_6 in equipment or in stock	1.03	1.35	0.419	0.201	0.051
EN20	**Specific radioactive emissions into the atmosphere (nuclear generation)**						
	Noble gases	kBq/kWh	-	-	1	1	1
	Iodine 131	kBq/kWh	-	-	1	9	11
	Aerosol β and γ	mBq/kWh	-	-	0	2	3
	Aerosol α	µBq/kWh	-	-	1	2	3
	Strontium 89 and 90	µBq/kWh	-	-	165	159	375
EN21	**Specific polluting load of radionuclides in waste waters (nuclear generation)**						
	Tritium	kBq/kWh	-	-	2.19	3.36	2.55
EN22	**Specific production of waste**						
	Coal and brown-coal ash (thermal generation)	g/kWh net from coal & brown coal	174	177	130	69.9	50.9
	Other non-hazardous ash (thermal generation)	g/kWh net from fuel oil & gas-oil	0	0	0	0	0.310
	Oil flyash (thermal generation)	g/kWh net from fuel oil & gas-oil	0.021	0	0.053	0.065	0.067
EN22	**Specific production of radioactive waste**						
	low- and intermediate-level						
	liquid	mm^3/kWh	-	-	1	0	0
	solid	mg/kWh	-	-	10	0	0
	high-level						
	solid	mg/kWh	-	-	3	0	0
EN22	**Low-, intermediate- and high-level radioactive waste stored in the plants**						
	liquid	% in volume of production since the start of operation	--	-	0	78.7	89.7

-: no data due to absence of activities in the year.

INDICATORS (3/3)

			2005	2006	2007	2008	**2009**
EN22	**Waste recovery**						
	Coal and brown-coal ash	% of production	69.9	70.7	84.1	86.8	89.7
	bottom ash	*% of production*	*7.23*	*12.6*	*26.9*	*32*	*63.5*
	flyash	*% of production*	*87.3*	*81.6*	*95.3*	*97.3*	*94.2*
	Gypsum from desulfurization	% of production	0	0	0.134	0.130	82.4
	Other non-hazardous special waste	% of production					
	electricity generation		17.5	91.2	7.78	10	0.996
	electricity distribution		0	0	4.08	5.17	9.25
	Total		**14.3**	**83.2**	**7.37**	**6.44**	**3.96**
	Total non-hazardous special waste	% of production					
	electricity generation		69.8	70.7	73.9	55.7	77.2
	electricity distribution		0	0	4.08	5.17	9.25
	Total		**69.8**	**70.7**	**73.6**	**53.3**	**73.2**
	Oil flyash	% of production	0	0	0	0	100
	Other hazardous special waste	% of production					
	electricity generation		99.8	98.4	16	32.1	1.37
	electricity distribution		0	0	29.6	28.3	90.1
	Total		**70.3**	**63.2**	**21.4**	**29.2**	**4.04**
	Total hazardous special waste	% of production					
	electricity generation		97.8	98.4	15.3	29.5	1.84
	electricity distribution		0	0	29.6	28.3	90.1
	Total		**69.3**	**63.2**	**20.8**	**28.6**	**4.49**
	Total special waste	% of production					
	electricity generation		69.8	70.8	73.8	55.6	71.3
	electricity distribution		0	0	8.37	8.81	12.5
	Total		**69.8**	**70.7**	**73.4**	**53**	**68**
EN29	**Land**						
	LV cable lines	% of entire LV grid					
	overhead		90	89.1	71.3	24.2	21.7
	underground		9.98	10.9	27.3	45.2	46.2
	Total cable lines		**100**	**100**	**98.6**	**69.3**	**67.9**
	MV cable lines	% of entire MV grid					
	overhead		0	0	1.02	1.13	1.11
	underground		11.3	12.3	27.5	30.6	31.6
	Total cable lines		**11.3**	**12.3**	**28.5**	**31.7**	**32.7**
	Overhead and underground cables in HV+MV+LV distribution lines	% of total distribution grid	64.2	64.9	66.8	50.7	50.4
	Electricity generation from renewables						
	Thermal from biomass & biodegradable fraction of waste	% of total generation	0	0	0	0	0.179
	Hydro from natural flows	% of total generation	6.86	11	7.86	8.28	11.2
	Wind and solar (photovoltaic)	% of total generation	7.82	10.1	5.13	3.89	3.01
	Total	**% of total generation**	**14.7**	**21.1**	**13**	**12.2**	**14.4**

Highlights

In Spain, Enel operates through Endesa (thermal, nuclear and renewable power generation, electricity distribution and marketing) and its subsidiary (50%) EUFER (thermal CHP and renewable power generation).
The data of Endesa for 2008 have been considered at 67.05% (stake then owned by Enel), whereas the data for 2009 have been consolidated at 100% as a result of the acquisition (in June 2009) of Acciona's holding in Endesa. This explains most of the deviations in the absolute values.

Net nuclear power generation in 2009 amounted to 22.6 TWh, about 5 TWh less than in 2008 (in spite of the acquisition and 100% consolidation of Endesa). The reduction is due to:
> higher number of refueling jobs (all the power plants, except unit 2 of the Ascó plant in Catalonia, were shut down for refueling;
> corrective maintenance jobs at the Vandellòs plant (Catalonia), whose outage was longer than needed for refueling;
> lower availability of the Ascó plant units.

Net electricity generation from renewables was equal to 10.3 TWh, up by over 3 TWh on 2008.
In 2009, the 12.3-MW photovoltaic plant of Guadarranque (Andalusia) became operational.
The number of Endesa's hydro power plants decreased by 25 units, which were transferred to Acciona.
Conversely, the number of hydro power plants managed by EUFER was up by 1 unit thanks to the entry into operation of the run-of-river plant of Rosarito (Castile and León), with a net maximum capacity of 4.5 MW.
Net hydro power generation was up by more than 3 TWh in 2009, reaching about 8 TWh.
Net wind power generation was down by about 160 GWh on 2008, owing to the sale of some wind farms to Acciona. In 2009, solar photovoltaic power generation appears for the first time in Enel's generating mix in Spain, with 22 GWh.

Smart metering

In 2009, Endesa launched its Cervantes' Project, involving the roll-out of an advanced meter management system. Endesa will be the first Spanish company to completely replace traditional electromechanical meters with innovative smart meters in the homes of its 13 million customers. The project will reduce grid losses and represent one of the pillars of smart grids.

Málaga SmartCity

The SmartCity project in the city of Malaga (Andalusia) - one of the six in the world together with those of Stockholm, Malta, Masdar (Abu Dhabi), Boulder (Colorado, USA) and Columbus (Ohio, USA) - is an integrated electricity generation and distribution initiative. The project will concentrate a wide array of sustainable technologies in a city oriented at increasing energy efficiency, slashing CO_2 emissions and enhancing the role of renewables. Within the framework of the project, Endesa coordinates a group of 15 companies and research institutions. The city of Malaga (over 550,000 inhabitants) was selected because it meets some fundamental requirements: growth potential, technological skills,

presence of universities and companies, level of electricity infrastructure and governmental support.
Smartcity is intended to optimally integrate renewables into the power grid by installing photovoltaic panels in public buildings and mini wind farms in the surroundings of the city, using microgeneration in hotels and battery systems for cooling and heating of buildings, adopting more energy-efficient solutions in public lighting and urban mobility. The use of electric cars will be encouraged by installing recharging stations and introducing an experimental vehicle fleet.
Electricity end users will rely on the new smart meters, whereas remote control systems will operate the distribution grid in real time and automatically, thereby improving quality of service.
The end goal of the project is to reach 20% of energy savings and cut CO_2 emissions by over 6,000 t/yr.

Renewables

Wind power

EUFER, already present in the autonomous communities of Asturias, Castile and León, Castile-La Mancha, Extremadura and Galicia, began its activity in the Canary Islands for the first time in 2009, obtaining the concession for building two wind farms of over 32 MW in total. Furthermore, the company was awarded with a contract for the construction of 152 MW in Andalusia.

Mini-hydro power

The mini-hydro plant of Ourol (Galicia), with a net maximum capacity of about 2.8 MW, was commissioned in 2009. Since 2009, EUFER has also been running some leased mini-hydro power plants which are not part of the Group's assets: 31 run-of-river (total net maximum capacity: 63.3 MW) and 2 pondage plants (total net maximum capacity: 26.2 MW).

Solar power

In 2009, a solar photovoltaic plant, built by Endesa Energía at Cantillana (province of Seville), was inaugurated. With an investment of € 43 million, the solar panels will generate electricity to cover the consumption of 5,000 households.

In the course of 2009, some wind and mini-hydro power plants of Endesa were transferred to Acciona as part of the consideration paid by Enel for acquiring Acciona's holding in Endesa.

Applicable GRI indicators

EN2 In Spain, in 2009, about 43 t of PCB-contaminated oil (38.2 t from hydro generation and the remaining amount from electricity distribution) were decontaminated and reused.

EN1
EN3 In the energy mix, biomass accounts for 40 ktoe, which are consumed in three thermal power plants (Energía de la Mancha – Castile-La Mancha, Aguas de Jerez – Andalusia, Garraf - Catalonia), two with alternative engines and one with condensing steam. The first plant uses solid biomass (olive stones); the second one uses biogas from treatment of waste waters; and the third uses landfill gas. In 2009, total net electricity generation from the three power plants amounted to 127 GWh.

EN4 In 2009, the primary electricity consumed for fuel storage & handling, gas distribution, mining activities, real-estate & service management was equal to 73,440 GJ (20.4 GWh).
For grid operation, the distribution grid used 52,452 GJ (14.6 GWh) of electricity.

EN5 Upgrades, new technologies and efficiency gains increased the efficiency of thermal and hydro power plants. In the past five years, Endesa succeeded in saving 2.2 million toe of primary energy (92,109 TJ). Ongoing projects will save another 150,000 toe (6,280 TJ).

EN6 Through its Energy Efficiency Plan (PE3), Endesa Energía promoted value-added services for efficiency enhancement and deployment of renewables. The plan involves:

> development of new products (banks of capacitors for low-cost power-factor correction and variable speed drives to optimize the performance of electric motors, etc.);

> the Plan Ilumina, a service offered to small businesses and offices to assess the renovation or installation of lighting systems with a high saving potential (of up to 80%);

> supply and installation of solar photovoltaic and thermal facilities;

> awareness actions aimed at promoting smart and efficient power usage; these actions include: wide advertising campaign on efficiency; creation of an Internet portal (Twenergy); and use of YouTube as a communication tool.

Endesa encourages the responsible and efficient use of energy by offering a number of applications: solar thermal, solar photovoltaic, air conditioning and heat pumps, radiators with heating control systems, condensing boilers, banks of capacitors (available for business customers only), circuit breakers with pick-up (automatic reset) and voltage stabilizers.

EN16 Specific CO_2 emissions from thermal generation were down by 1.5% (from 810 g/kWh net in 2008 to 798 net in 2009) as a result of investments to increase the efficiency of the generating mix.

EN18 The overall CO_2 emissions avoided in 2009 amounted to 26 million t (8 thanks to electricity generation from renewables and 18 to nuclear power generation). Upgrade projects, use of new technologies and efficiency gains displaced so far 10.7 Mt of CO_2 emissions per year, while ongoing projects will displace another

900,000 t. Endesa holds a portfolio of 52 CDM projects, corresponding to over 82 Mt of reduction of CO_2 emissions.
In line with the Enel Group's guidelines, Endesa is ready to catch the opportunities offered by the fight against climate change under a specific strategy which is outlined in its 2008-2010 strategic sustainability plan. With this plan, the company intends to respond to global challenges and to supply electricity at reasonable costs through a new, environmentally-sustainable, efficient, low-CO_2 generating mix.
One of Endesa's programs is focused on the acquisition of a leadership position in development of technologies to cut down CO_2. With this program, the company expects to meet the requirements of the European Union's energy policy specified in the Climate & Energy Package, to promote a new regulatory framework and develop a project of carbon capture & storage (CCS) at its sites.
Endesa formulated five strategic programs and is engaged in:

> actively participating in development of renewables;
> being in the forefront of technological innovation to reduce CO_2 emissions and change the energy model; this implies the development of one of the twelve European CCS projects by 2015 and, by 2012, the installation of 3,600 MW of combined cycles and high-efficiency technologies capable of covering peak power demand, and 400 MW of pumped-storage hydro power plants (thus increasing the contribution of this source by 30%) and gas-turbine power plants;
> capturing the opportunities offered by energy efficiency and CHP generation in all of its business activities;
> taking the lead in developing a sustainable transport model based on electric vehicles;
> creating a portfolio of CDM projects enabling the company to strengthen its position in this market and also accrue surpluses of emission credits;
> developing the technology of hydrogen as a fuel in thermal power plants.

The following results were achieved:

> in December 2009, the European Commission approved the CIUDEN (Fundación Ciudad de la Energía) - Endesa project of carbon capture & storage through oxy-combustion in circulating fluidized beds (called OXYCFB500); this project will involve the construction of a commercial fossil-fired power plant;
> at the La Pereda power plant (Asturias), an experimental carbonation-calcination project is under way (2008-2011); with this activity, Endesa intends to develop a carbon capture process which may be applied to new or existing power plants at low costs;
> at the Compostilla power plant (León), an experimental project (2006-2009) is under way to capture carbon by chemical absorption; the goals of the project are design, construction, installation, start-up and operation of an experimental facility using this technology, as part of module 4 of the CENIT CO_2 (Consorcio Estratégico Nacional en Investigación Técnica del CO_2) project; development and assessment of new chemical absorbents more resistant to flue-gas pollutants are also planned.

EN19 The only ozone-depleting substance is represented by chlorofluorocarbons, which are used in air heating & conditioning systems. No leaks from these systems were recorded in 2009.
Freon was replaced in the Ascó and Vandellòs nuclear power plants.

EN20 Between 2008 and 2009, specific emissions of SO_2 and particulates were down by 14% and 12%, respectively, thanks to the installation of desulfurizers (which also abate particulates) and, for SO_2, also to utilization of a higher amount of low-sulfur fuel oil.
The trend of radioactive emissions is due to: i) the natural deterioration (started in 2007) of fuel elements in the Garoña power plant (Castile and León); and ii) its BWR technology (Boiling Water Reactor), different from the one of the other power plants (PWR - Pressurized Water Reactor). Indeed, the type of reactor affects the isotope distribution of gaseous effluents and the amount of isotopes produced.

EN21 Specific emissions of tritium in waste waters was down by 24% on 2008, reaching 2.55 kBq/kWh.

EN22 A high percentage of recovery of gypsum from desulfurization (82%) and of coal and brown-coal ash (roughly 90%) was recorded in 2009. Specific production of coal and brown-coal ash fell from 70 to about 51 g/kWh net (from coal) from 2008 to 2009.

EN26 As part of the program of landscape enhancements in hydro power generation sites (large hydro power plants), obsolete structures and buildings were demolished, waste from demolition was separately collected and the recovered space was finally restored. In 2009, these activities were carried out in 17 power plants: 6 belonging to the Ebro Pirineos group of power plants and 11 to the Sur group of power plants. The hydro plants of the latter group renewed their ISO 14001 certification; these plants also use biodegradable oils and greases.
Within the Aigüestortes i Estany de Sant Maurici national park (Catalan Pyrenees), an overhead power line was removed thanks to the installation of a hydraulic microgenerator supplying local consumers. Moreover, the waste water release control systems were improved.

Renewable power and CHP installations of small size are designed with the binding goal of mitigating the environmental impact, by harmonizing them with the local orography and ecosystems and minimizing earth works. Among environmental offsets, mention may be made of reintroduction of vegetable species, reforestation or support for activities of conservation of species of biological interest. In many wind farm sites, environmental surveillance programs help minimize impacts on the avian fauna.
The organizational unit supervising the Alto Casillas wind farms entered into an agreement for the management of the municipal landfill with the municipality of Villahermosa (Castile-La Mancha).

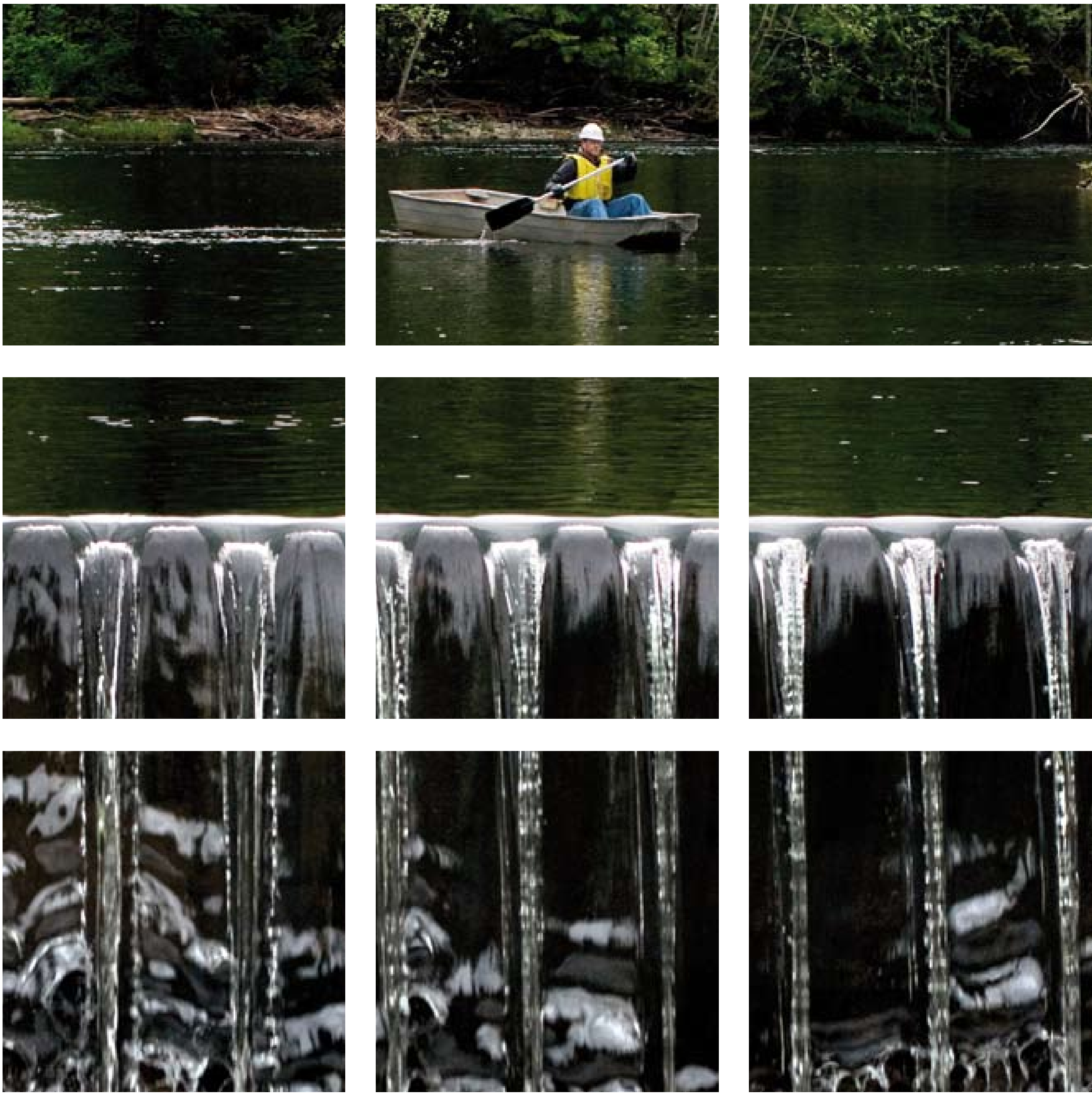
EUFER reduced its consumption of office paper by 43%. It also planned to cut the production of some hazardous special waste items (non-chlorinated mineral oils for hydraulic circuits and packaging materials containing or contaminated by hazardous substances) by 3%. Moreover, it extended the ISO 14001 certification to its wind farms of Belmonte, Viravento, Caldereros, Cabo Vilano, to the CHP plant of Eneralco and to its offices of Madrid, A Coruña, Seville, Extremadura and León.

Many projects of environmental enhancement also concern nuclear electricity generation. The most important ones – at the Ascó and Vandellòs power plants – were the replacement of the main transformers containing PCB-contaminated oil, the elimination of freon and the reduction of the volume of radioactive waste. At Vandellòs, also the radiation monitoring system was replaced.

As regards thermal power generation, the thermal power plant of As Pontes was EMAS registered (the plant is also ISO 14001- and ISO 9001-certified). For this plant, the initial environmental analysis was updated to accommodate the plan of control of the new landfill for flyash & similar waste.
At the Compostilla plant (León), investments were made on reduction of SO_2 and NO_X emissions and landscape integration. The hazardous waste landfill was closed down and analyzers to monitor emissions were purchased.
The Candelaria power plant (Tenerife) went on with its project of mitigation of noise immissions.
The Litoral de Almería power plant (Andalusia) gained the EMAS registration.
In the same plant: the desulfurizer of unit 1 was put into service; the wet ash collection system was replaced with a dry one; and the installation of low-NO_X burners and the upgrade of the turbine were completed.
The Jinamar power plant (Gran Canaria), which gained the ISO 14001 certification, reduced emissions of particulates, SO_2 and NO_X thanks to improvements to electrostatic precipitators, to the use of magnesium oxide as an additive and to the combustion process. A factor which contributed to CO_2 emission reduction was the reduction of the plant's own consumption; this result was obtained by replacing lighting appliances with more efficient ones and by developing a responsible consumption program.

Electricity distribution

In 2009, the cooperation agreement between the Government of Aragon and Endesa Distribución was implemented. The agreement covers the development of power-line projects with a view to mitigating or eliminating collision and electrocution risks to birds. The 2009 share of the investment was equal to about € 188,000.
In Aragon, Endesa Distribución also obtained the confirmation of its ISO 14001 certification.
In the same region, sound pressure levels were measured near six substations installed in urban areas; the results of this activity were reported in documents certifying their compliance with the legislation or identifying noise pollution criticalities.
In Catalonia, Endesa Distribución took other environmental initiatives: installation of an electric arc safety device in the Xirgu substation; cooperation with CTFC (Centre Tecnològic Forestal de Catalunya) to mitigate impacts on the avian fauna in the Els Plans de Sió area; and improvements to hazardous substance storage areas and containers.
In March 2009, Endesa Distribución extended the ISO 14001 certification for its environmental management system to all of its assets.



North America

Canada

Biomass-fired combined heat & power generation

(Enel North America Inc.)

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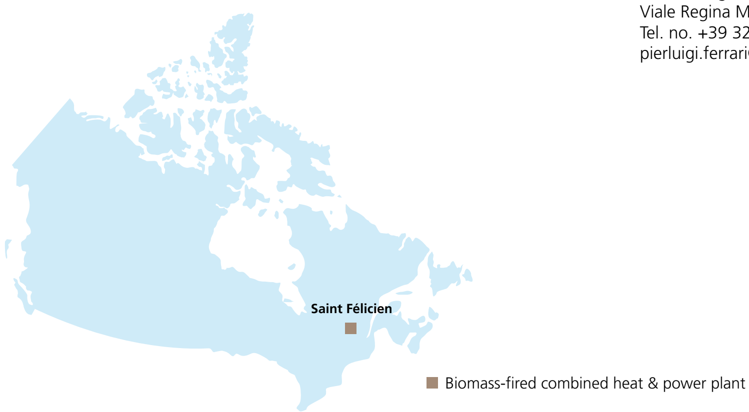


Power installations

	Power plants no.	Units no.	Net maximum electrical capacity MW	Useful thermal capacity 10^6 kcal/h
Steam (condensing)	**1**	**1**	**21**	**6**

Net electricity generation

Total: 149 million kWh

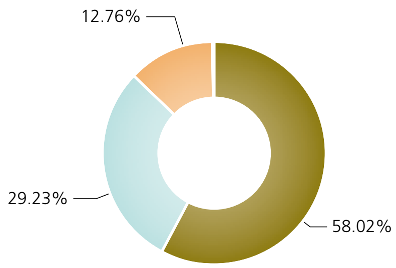
Useful heat output (combined with power generation)

Total: 23,042 million kcal
(equal to 27 million kWh)

Fuel consumption

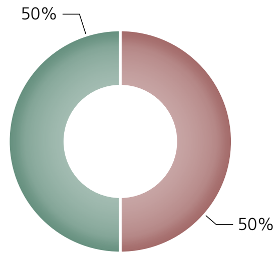
Total: 89,720 t of oil-equivalent
(100% biomass)

Expendables
Total: 17 t



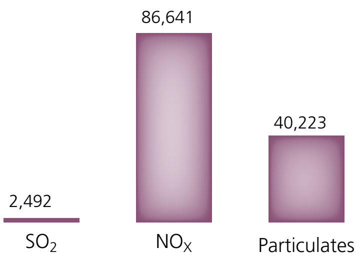
■ Sodium hypochlorite, chlorine dioxide, ferrous sulfate, ferrous chloride and trisodium phosphate
■ Sulfuric & hydrochloric acids
■ Lubricating oil

Water for industrial uses
Total requirements: 1,241,120 m³
Total abstraction from inland waters: 620,560 m³



■ From aqueducts
■ From the sea (as-is)

Emissions into the atmosphere (t)



Waste waters

Discharged (m³)	115,528

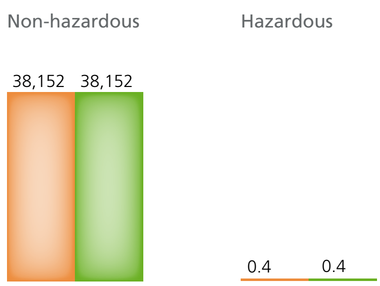
Waste waters include those meteoric waters that are susceptible to pollution and are therefore fed to treatment systems before being discharged or used.

Avoided CO_2 emissions

Due to thermal generation from biomass (t)	106,615

Emissions from the otherwise necessary fossil-fired thermal generation.

Special waste
Total production: 38,153 t
Total delivery to recovery operators: 38,153 t



■ Production ■ Delivery to recovery operators

Wind power generation

(Enel North America Inc.)

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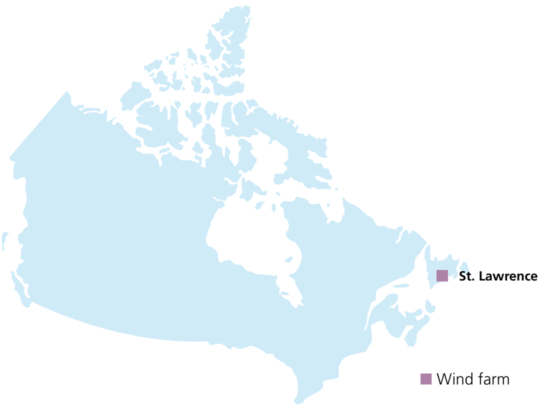


Power plants no.	Net maximum electrical capacity MW
1	**27**

Net electricity generation

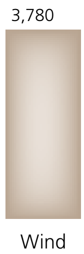
Total: 102 million kWh
(100% wind)

Avoided CO_2 emissions

Due to wind generation (t)	72,850

Emissions from the otherwise necessary fossil-fired thermal generation.

Equivalent yearly hours of utilization*



* On a statistical basis, yearly generation/capacity ratio. Generation is considered to refer to the entire year.

Eco-Balance and Indicators

STATUS DATA

		2005	2006	2007	2008	**2009**
Power-generating installations						
Power plants	no.	-	-	1	1	1
hydro	no.	-	-	1	-	-
wind	no.	-	-	-	1	1
Net maximum electrical capacity	MW	-	-	8.4	27	27
hydro	MW	-	-	8.4	-	-
wind	MW	-	-	-	27	27
Combined heat & power installations						
Power plants	no.	1	1	1	1	1
Net maximum electrical capacity	MW	21.4	21.4	21.4	21.4	21.4
Useful thermal capacity	million kcal/h	0.505	7.36	7.36	5.78	5.78

RESOURCES

			2005	2006	2007	2008	**2009**
EN1 EN3	**Fossil fuels**						
	Combined heat & power generation (including auxiliary boilers and emergency generating sets)						
	gas-oil	thousand t	0.010	0.043	0.031	0	0
EN1 EN3	**Biomass**						
	Combined heat & power generation	thousand toe	66.6	89.9	89.2	100	89.7
EN8	**Water for industrial uses for thermal generation (CHP)**						
	From aqueducts	million m^3	0.599	0.704	0.715	0.638	0.621
	Expendables						
	Resins	t	0.500	0.700	0.350	0.300	0
	Sodium hypochlorite	t	20.4	10.5	12.2	13.2	10.1
	Sulfuric & hydrochloric acids	t	56.8	53.8	56.4	58.4	5.10
	Lubricating oil	t	5.00	1.90	3.55	3.14	2.23
	Total	**t**	**82.7**	**66.9**	**72.5**	**75**	**17.5**
	for thermal generation (CHP)	t	82.7	66.9	72.2	75	17.5
	for hydro generation	t	0	0	0.350	0	0

PROCESSES AND PRODUCTS

		2005	2006	2007	2008	**2009**
Electricity generation (net)						
From renewables	million kWh	162	171	323	180	251
biomass (thermal combined with heat generation)	million kWh	162	171	175	172	149
hydro from natural flows	million kWh	0	0	148	0	0
wind	million kWh	0	0	0	8	102
Total	million kWh	162	171	323	180	251
simple	million kWh	0	0	148	8	102
combined with heat generation	million kWh	162	171	175	172	149
Useful heat output (combined with power generation)						
In thermal power plants (biomass)	million kcal	3,750	32,215	29,626	30,149	23,042
	million kWh	4.36	37.5	34.5	35.1	26.8

EMISSIONS, LIQUID RELEASES & WASTE (1/2)

		Source		2005	2006	2007	2008	**2009**
	Emissions into the atmosphere							
EN20	SO_2	thermal generation (CHP)	thousand t	0.001	0.001	0.001	0.009	0.002
EN20	NO_X	thermal generation (CHP)	thousand t	0.003	0.131	0.017	0.048	0.087
EN20	Particulates	thermal generation (CHP)	thousand t	0.011	0.151	0.080	0.029	0.040
EN16	CO_2	fossil-fired thermal generation - CHP (from combustion)	thousand t	0.033	0.135	0.097	0	0
		various activities	thousand t	0	0	0.004	0	0
		Total	thousand t	0.033	0.135	0.101	0	0
EN18	**Avoided CO_2 emissions**							
	Due to generation from biomass		thousand t	116	123	126	124	107
	Due to hydro generation from natural flows		thousand t	0	0	106	0	0
	Due to wind generation		thousand t	0	0	0	0	72.9
	Due to generation from renewables		thousand t	116	123	232	124	179
EN21	**Waste waters** (discharged quantity)	thermal generation (CHP)	million m^3	0.210	0.281	0.201	0.130	0.116
EN21	**Conventional polluting load of discharged waste waters (CHP)**							
	COD		kg	2,934	10,330	7,368	14,335	439
	BOD		kg	4,291	3,989	2,845	5,717	1,109

(2/2)

		Source		2005	2006	2007	2008	**2009**
EN22	**Non-hazardous special waste**							
	Biomass bottom ash (1)	thermal generation (CHP)						
	production		t	0	0	0	12,350	14,129
	delivery to recovery operators		t	0	0	0	12,350	14,129
	Biomass flyash (1)	thermal generation (CHP)						
	production		t	0	0	0	25,438	24,023
	delivery to recovery operators		t	0	0	0	25,438	24,023
	Other	electricity generation						
	production		t	22,616	31,195	27,471	0.005	0
	delivery to recovery operators		t	18,304	28,058	27,087	0.005	0
	Total	electricity generation						
	production		t	22,616	31,195	27,471	37,788	38,152
	delivery to recovery operators		t	18,304	28,058	27,087	37,788	38,152
EN22	**Hazardous special waste**	electricity generation						
	production		t	5	2	0.959	0	0.408
	of which with PCBs		*t*	*5*	*2*	*0.959*	*0*	*0.387*
	delivery to recovery operators		t	5	0	0.078	0	0.408
	of which with PCBs		*t*	*5*	*0*	*0.009*	*0*	*0.387*
EN22	**Total special waste**	electricity generation						
	production		t	22,621	31,197	27,472	37,788	38,153
	delivery to recovery operators		t	18,309	28,058	27,087	37,788	38,153

(1) Until 2007, this waste was included in the other non-hazardous special waste.

INDICATORS

			2005	2006	2007	2008	**2009**
	Resource conservation and quality						
EN1 EN3	Net heat rate of thermal generation (CHP)	$kcal/kWh_{eq}$	4,010	4,327	4,254	4,845	5,093
EN8	Net specific requirements of water for industrial uses in thermal generation (CHP)	$liters/kWh_{eq}$	3.61	3.39	3.41	3.08	3.53
EN1 EN3	Coverage of requirements of water for industrial uses (from aqueducts)	% of requirements	100	100	100	100	100
	Specific emissions into the atmosphere						
EN20	SO_2 (thermal generation - CHP)	g/kWh_{eq} thermal net	0.006	0.005	0.005	0.043	0.011
EN20	NO_X (thermal generation - CHP)	g/kWh_{eq} thermal net	0.018	0.630	0.081	0.232	0.494
EN20	Particulates (thermal generation - CHP)	g/kWh_{eq} thermal net	0.066	0.726	0.382	0.140	0.227
EN16	CO_2 (thermal generation - CHP)	g/kWh_{eq} thermal net	0.199	0.649	0.463	0	0
		g/kWh_{eq} total net	0.199	0.649	0.271	0	0
EN22	**Waste recovery**						
	Biomass ash (1)	% of production	0	0	0	100	100
	bottom ash	*% of production*	*0*	*0*	*0*	*100*	*100*
	flyash	*% of production*	*0*	*0*	*0*	*100*	*100*
	Other non-hazardous special waste						
	electricity generation	% of production	80.9	89.9	98.6	100	0
	Total non-hazardous special waste						
	electricity generation	% of production	80.9	89.9	98.6	100	100
	Total hazardous special waste						
	electricity generation	% of production	100	0	8.13	0	100
	Total special waste						
	electricity generation	% of production	80.9	89.9	98.6	100	100
	Electricity generation from renewables						
	Thermal from biomass	% of total generation	100	100	54.2	95.7	59.4
	Hydro from natural flows	% of total generation	0	0	45.8	0	0
	Wind	% of total generation	0	0	0	4.34	40.6

(1) Until 2007, this waste was included in the other non-hazardous special waste.

Highlights

In Canada, Enel operates through Enel North America (thermal CHP and wind power generation).

Renewables

A 27-MW wind farm was inaugurated in St. Lawrence, Newfoundland. This is the first commercial-scale wind farm of the island, which offers the best wind resources of the country. The increase in generation is due to the entry into service of this wind farm in December 2008, when it only generated 8 GWh net.

In Canada, Enel North America produced 251 GWh_e net from renewables (149 from biomass and 102 from wind), up by 71 GWh on 2008.

Applicable GRI indicators

In 2009, the Saint Félicien thermal power plant used a total of about 403,000 t of waste from wood manufacturing. The waste consisted of tree bark, possibly mixed with small amounts of sawdust, pieces of wood for construction (defective or of a size not suitable for being processed at a sawmill) and other residues.

EN1 **EN3** The consumption of biomass and the corresponding thermal power generation slightly diminished.

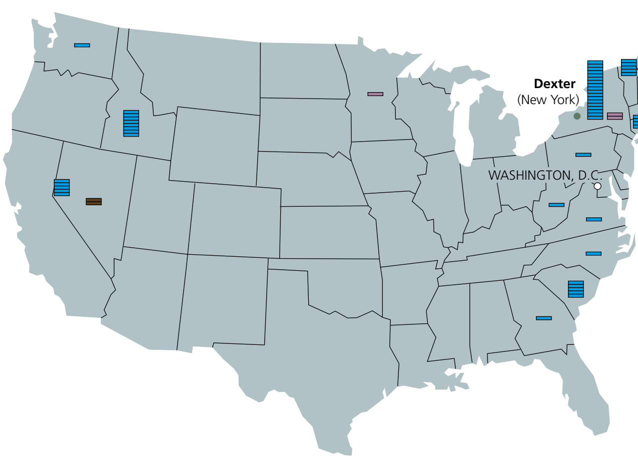
EN18 The overall emissions of CO_2 avoided in 2009 were equal to about 180,000 tonnes.

EN20 The erratic trends of specific and total emissions of NO_X and particulates are due to the lack of a continuous monitoring system.

United States

Hydro and wind power generation & geothermal activities

(Enel North America Inc.)



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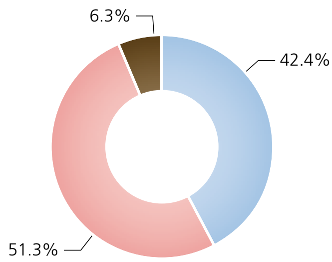
Power installations

HYDRO	Power plants no.	Head installations no.	Net maximum electrical capacity MW
Run-of-river	61	71	205
Pondage/reservoir	4	5	109
	65	**76**	**314**

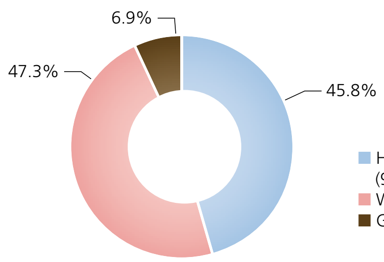
WIND	Power plants no.	Net maximum electrical capacity MW
	21	**379**

GEOTHERMAL	Power plants no.	Generating units no.	Net maximum electrical capacity MW
Binary cycle	**2**	**6**	**47**

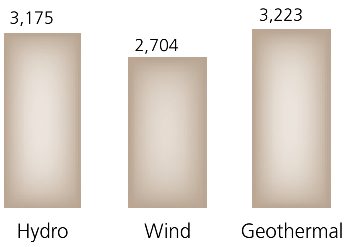
Net maximum electrical capacity
Total: 740 MW



Net electricity generation
Total: 2,172 million kWh



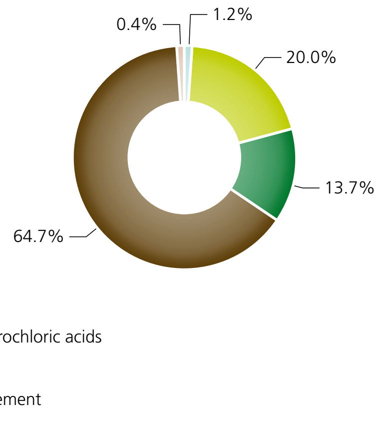
Equivalent yearly hours of utilization*



* On a statistical basis, yearly generation/capacity ratio.

Expendables

Total: 1,901 t



Geothermal fluid

Total fluid extracted, entirely used for electricity generation (t)	29,596,900

Avoided CO_2 emissions (t)

Due to hydro generation from natural flows	876,960
Due to wind generation	131,886
Due to geothermal generation	902,429
Total	**1,911,275**

Emissions from the otherwise necessary fossil-fired thermal generation.

Gas-oil

Total consumption (toe)	32

Used for feeding emergency generating sets.

Emissions into the atmosphere

CO_2 (t)	63,200

Emissions from gas-oil combustion.

SF_6 - all types of generation (kg)	1.46
(t of CO_2-equivalent)	32

Other data

HYDRO GENERATION

Fish ladders (no.)		10
Fish restocking campaigns	quantity (no.)	7
	restocked fish	
	individuals	1,152,600
	in addition to kg	712

WIND GENERATION

Wind sistems	Surface area occupied by platforms, service roads and buildings (ha)	127
	Total surface area affected by the installations (ha)	20 to 100 times larger

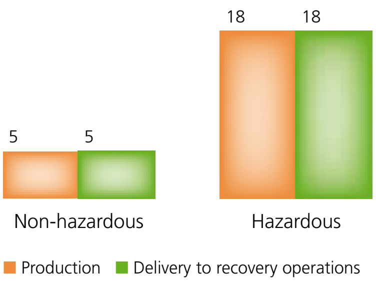
GEOTHERMAL ACTIVITIES

Drilled wells	new (no.)	12
Extent of drilling	(m)	12,992
In-service wells	for steam production (no.)	15
	for reinjection (no.)	12
	Total (no.)	**27**

Special waste

Total production: 23 t

Total delivery to recovery operations: 23 t



Eco-Balance and Indicators

STATUS DATA

		2005	2006	2007	2008	2009
Power-generating installations						
Power plants	no.	67	67	70	72	88
hydro	no.	64	64	65	65	65
wind	no.	3	3	4	6	21
geothermal	no.	-	-	1	1	2
Net maximum electrical capacity	MW	379	372	443	701	740
hydro	MW	312	305	306	306	314
wind	MW	67	67	130	379	379
geothermal	MW	-	-	7	16	46.5

RESOURCES

			2005	2006	2007	2008	2009
EN1 EN3	**Fossil fuels**						
	Various activities	thousand toe	0	0	0.002	0.015	0.033
EN1 EN3	**Geothermal fluid**						
	Total fluid extracted	thousand t	-	-	11,597	9,199	29,597
	Used for electricity generation	thousand t	-	-	11,597	9,199	29,597
EN8	**Water for industrial uses (geothermal drilling)**						
	From wells	million m^3	-	-	0	0	0.136
	From aqueducts	million m^3	-	-	0	0	0.006
	Total abstraction from inland waters	**million m^3**	**-**	**-**	**0**	**0**	**0.142**
	Total requirements	**million m^3**	**-**	**-**	**0**	**0**	**0.142**
EN1	**Expendables**						
	Sulfuric & hydrochloric acids	t	0	0	-	-	22.0
	Caustic soda	t	0	0	-	-	0.400
	Bentonite	t	-	-	-	-	380
	Barite	t	-	-	-	-	260
	Geothermal cement	t	-	-	-	0	1,230
	Lubricating oil	t	0	0	22.8	9.18	8.01
	Dielectric oil	t	0	0	0	2.69	0
	Other	t	0	0	0	0.217	0.115
	Total	**t**	**0**	**0**	**22.8**	**12.1**	**1,901**
	for hydro generation	t	0	0	9.85	11.1	7.47
	for wind generation	t	0	0	0	0	0.653
	for geothermal activities	t	-	-	13.0	1.00	1,892

-: no data due to absence of activities in the year.

PROCESSES AND PRODUCTS

		2005	2006	2007	2008	**2009**
Electricity generation (net)						
From renewables	million kWh	1,122	1,161	1,046	1,651	2,172
hydro from natural flows	million kWh	955	981	810	926	997
wind	million kWh	167	180	187	689	1,025
geothermal	million kWh	0	0	49.4	36.6	150
Geothermal drilling						
Extent	m	-	-	0	1,588	12,992

EMISSIONS, LIQUID RELEASES & WASTE

		Source		2005	2006	2007	2008	**2009**
	Emissions into the atmosphere							
EN16	CO_2	various activities	thousand t	0	0	0.006	0	0
EN16	SF_6	electricity generation	kg	0	0	0	0.005	1.46
			thousand t of CO_2-equivalent	0	0	0	0	0.033
EN16	Total greenhouse gases (CO_2, SF_6, CH_4)		thousand t of CO_2-equivalent	0	0	0.006	0	0.033
EN18	**Avoided CO_2 emissions**							
	Due to hydro generation from natural flows		thousand t	830	853	704	815	877
	Due to wind generation		thousand t	145	157	163	606	902
	Due to geothermal generation		thousand t	0	0	42.9	32.2	132
	Due to generation from renewables		thousand t	976	1,010	910	1,453	1,911
EN22	**Non-hazardous special waste**							
	production	electricity generation & geothermal drilling	t	0	0	0	3	5.01
	delivery to recovery operators		t	0	0	0	3	5.01
EN22	**Hazardous special waste**							
	production	electricity generation & geothermal drilling	t	0	0	33.9	19.7	17.8
	of which with PCBs:		*t*	*0*	*0*	*17.9*	*19.1*	*10.7*
	delivery to recovery operators	electricity generation & geothermal drilling	t	0	0	33.9	12.4	18.2
	of which with PCBs:		*t*	*0*	*0*	*17.9*	*11.8*	*11.3*
EN22	**Total special waste**	electricity generation & geothermal drilling						
	production		t	0	0	33.9	22.7	22.9
	delivery to recovery operators		t	0	0	33.9	15.4	23.2

-: no data due to absence of activities in the year.

INDICATORS

			2005	2006	2007	2008	**2009**
	Resource conservation and quality						
EN1 EN3	Net heat rate of geothermal generation	kcal/kWh	-	-	39,083	41,313	28,651
EN8	Coverage of requirements of water for industrial uses						
	from wells	% of requirements	-	-	0	0	95.8
	from aqueducts	% of requirements	-	-	0	0	4.23
	Geothermal steam for electricity generation	% of total geothermal fluid extracted	0	0	100	100	100
	Specific emissions into the atmosphere						
EN16	SF_6 (electric activities)	% of SF_6 in equipment or in stock	0	0	0	0.006	0.298
EN22	**Waste recovery**						
	Non-hazardous special waste						
	electricity generation & geothermal drilling	% of production	0	0	0	100	100
	Hazardous special waste						
	electricity generation & geothermal drilling	% of production	0	0	100	63.2	102
	Total special waste						
	electricity generation & geothermal drilling	% of production	0	0	100	68.1	102
	Electricity generation from renewables						
	Hydro from natural flows	% of total generation	85.1	84.5	77.4	56.1	45.9
	Wind	% of total generation	14.9	15.5	17.9	41.7	47.2
	Geothermal	% of total generation	0	0	4.72	2.21	6.90

-: no data due to absence of activities in the year.

Highlights

In the United States, Enel operates through Enel North America, which owns small hydro power plants, as well as wind and geothermal power plants.

Wind power

The second stage of the Smoky Hills (Kansas) wind farm project was completed. The wind farm now has a net maximum capacity of 250 MW. It is Enel's largest wind farm in the world.
Enel North America signed an agreement with Geronimo Wind Energy to acquire a holding in the company and make a strategic partnership for development of wind power projects of up to 4,000 MW in the upper Midwest and, potentially, in other regions of the United States.

Geothermal power

In 2009, the Enel Group inaugurated two innovative geothermal power plants, Stillwater and Salt Wells, in Nevada. The yearly generation by these plants (overall net maximum capacity: 46.5 MW) will cover the consumption of about 40,000 households, displacing over 300,000 t of CO_2 emissions into the atmosphere every year. The plants, which use medium-enthalpy endogenous fluid (temperature of 130 to 150 °C), are based on the binary-cycle technology. This technology exploits two fluids: the hot water extracted from the subsoil yields its heat to a fluid (isobutane), which is contained in a closed circuit; this fluid, which is brought to very high pressures and temperatures, expands in the turbines producing electricity. Then, the water is reinjected into the subsoil and the isobutane remains inside the closed circuit, without causing greenhouse gas emissions or negative impacts on local resources.

Enel North America acquired five geothermal parcels in Millard County (Utah) from the Bureau of Land Management (the agency within the US Department of the Interior which administers public lands).

In 2009, net maximum capacity was up by 39 MW thanks, above all, to the commissioning of the two new geothermal power plants of Stillwater and Salt Wells (overall capacity: 46.5 MW) and to the concurrent decommissioning of a previous 16-MW geothermal power plant (30.5 MW more in 2009).
In the US, Enel North America generated in 2009 about 997 GWh net in hydro power plants, about 1 TWh net in wind farms and 150 GWh net in geothermal power plants, totaling about 2.2 TWh from renewables.
With respect to 2008, overall electricity generation grew by about 521 GWh thanks, above all, to wind power generation (336 GWh more) and geothermal power generation (113 GWh more).

Applicable GRI indicators

EN5 The heat rate of geothermal power generation significantly improved, passing from 41,313 kcal/kWh in 2008 to 28,651 in 2009 as a result of the entry into operation of the two new, more efficient, low-enthalpy power plants.
The installation of an inflatable crest gate on the dam of the Lawrence hydroelectric project (Merrimack river, Massachusetts) increased yearly generation by about 4.5 GWh. Improved water management translates into higher energy efficiency but also facilitates the upstream migration of fish and a wider use of the dam waters for recreational activities and fishing.
Moreover, with the new authorization granted to the Glendale hydroelectric project (Massachusetts), involving an about ninefold increase in the minimum in-stream flow (exploited by a special turbine), electricity generation will go up by 16%.

EN16 Sulfur hexafluoride emissions from the Dexter hydroelectric project (New York) increased.

EN18 The overall carbon dioxide emissions avoided in 2009 amounted to about 2 million tonnes.

EN26 Visual mitigation efforts included: removal of pipes and supports of the decommissioned Stillwater geothermal plant from the adjoining Duck Club property; camouflage-painting of the pipelines of the new plant and exhaust noise abatement in its four turbines.
In the High Falls and Lower Saranac hydroelectric projects (both in the state of New York), the mineral oil used in the hydraulic system of the trashracks was replaced with eco-friendly oil.
For prevention of spills, oil detectors were installed in the drainage pits of the Dewey's Mill (Vermont) and Mascoma (New Hampshire) hydro power plants.
Environmental audits are conducted to constantly monitor the performance of the various sites.
In Fallon (Nevada), as an environmental offset for construction of the Stillwater power plant, the access road (Lawrence Lane) was paved and the plant's lighting systems were retrofitted to mitigate their light impact.
Numerous voluntary initiatives were organized to remove waste from hydro power impoundments. Finally, under an agreement with regional fishing agencies, new systems to favor upstream migration of fish were put in place near hydro power impoundments (Lawrence - Massachusetts).

Latin America

Argentina

Thermal power generation

(Endesa SA)

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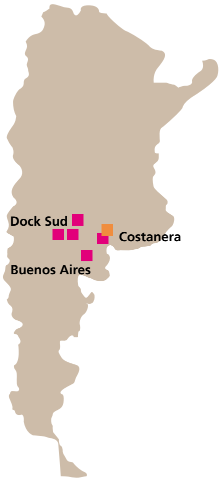


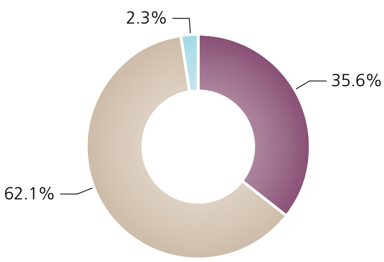
Thermal power plant
Fuel oil and gas
Combined cycles and gas turbines

Power installations

	Power plants no.	Units no.	Net maximum electrical capacity MW
Steam (condensing)	1	6	1,094
Combined-cycle gas turbines	3	7	1,909
Gas turbines	2	2	72
	6	**15**	**3,075**

All the power plants are ISO 14001-certified.

Net maximum electrical capacity
Total: 3,075 MW



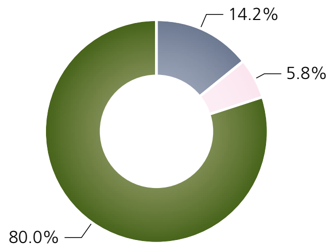
Steam (condensing)
Combined-cycle gas turbines
Gas turbines

Net electricity generation

Total: 12,024 million kWh
(from fossil fuels)

Fuel consumption

Total: 2,312,845 t of oil-equivalent



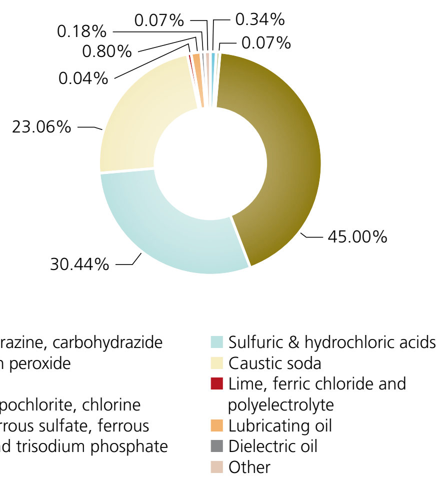
Fuel oil
Gas-oil
Natural gas

Water for industrial uses

Total requirements: 2,676,802 m³
Total abstraction from inland waters: 2,676,802 m³

Expendables

Total: 6,187 t

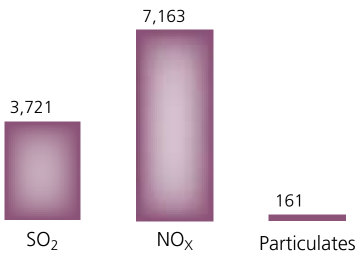


Waste waters

Discharged (m³)	922,544

Waste waters include those meteoric waters that are susceptible to pollution and are therefore fed to treatment systems before being discharged or used.

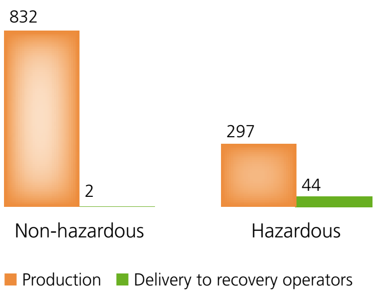
Emissions into the atmosphere (t)



CO_2	5,816,920

Special waste

Total production: 1,129 t
Total delivery to recovery operators: 46 t



Hydro power generation

(Endesa SA)

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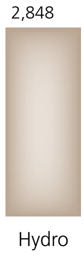
Hydro power plant

Power installations

	Power plants no.	Head installations no.	Net maximum electrical capacity MW
Pondage/reservoir	**2**	**2**	**1,328**

Both plants are ISO 14001-certified.

Equivalent yearly hours of utilization*



* Yearly generation/capacity ratio. Generation is considered to refer to the entire year.

Expendables

Total: 0.82 t

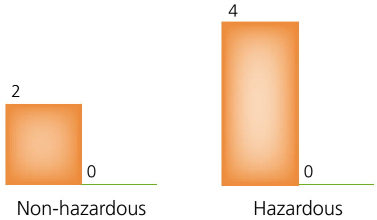
Lubricating oil (t)	0.7
Dielectric oil (t)	0.1

Net electricity generation

Total: 3,782 million kWh

Special waste

Total production: 6 t
Total delivery to recovery operators: 0 t



Avoided CO_2 emissions

Due to hydro generation from natural flows (t)	1,829,827

Emissions from the otherwise necessary fossil-fired thermal generation.

Electricity distribution

(Endesa SA)

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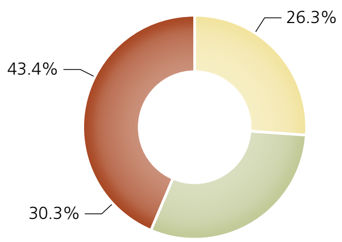
● Headquarters of the company of the Group carrying out the activity (Edesur)

Power installations

SUBSTATIONS	no.	Installed transforming capacity MVA
HV/MV	173	11,481
MV/LV	23,474	5,339
	23,647	**16,820**

LINES (length in km)	Overhead bare conductors	Overhead cables	Underground cables	Total
HV	546	-	616	**1,162**
MV	3,165	122	3,936	**7,223**
LV	2,670	7,227	5,974	**15,871**
	6,381	**7,349**	**10,526**	**24,256**



The organization has an ISO 14001-certified environmental management system in place.

General data

Municipalities served (no.)	13
Surface area served (km^2)	3,309
Customers connected to the company's grid (no.)	2,305,701
supplied (no.)	*2,305,060*

Electricity

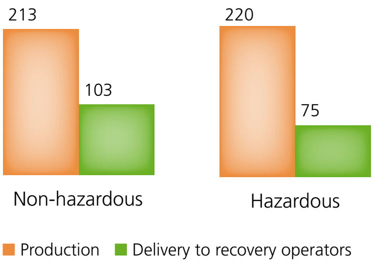
Total electricity distributed (million kWh)	17,899
Own consumption for grid operation (million kWh)	24

Resource consumption

Expendables (t)	3

Special waste

Total production: 433 t
Total delivery to recovery operators: 178 t



Emissions into the atmosphere

SF_6 (kg)	117
(t of CO_2-equivalent)	2,597

Eco-Balance and Indicators

STATUS DATA

		2007	2008	**2009**
Power-generating installations				
Power plants	no.	8	8	8
thermal	no.	6	6	6
hydro	no.	2	2	2
Net maximum electrical capacity	MW	3,026	3,032	4,403
thermal	MW	2,141	2,141	3,075
hydro	MW	885	890	1,328
Power lines (circuit-length)				
Total	km	15,867	16,124	24,256
high-voltage	km	795	779	1,162
medium-voltage	km	4,587	4,774	7,223
low-voltage	km	10,486	10,570	15,871

RESOURCES (1/2)

			2007	2008	**2009**
EN1 EN3	**Fossil fuels**				
	Thermal generation (including auxiliary boilers and emergency generating sets)				
	LS fuel oil	thousand t	79.4	287	333
	gas-oil	thousand t	47.3	169	131
	natural gas	million m^3	354	1,391	2,208
	technologically captive use	*million m^3*	*292*	*1,120*	*1,771*
	of which in combined-cycle units	million m^3	291	1,093	1,753
	non-technologically captive use	*million m^3*	*62.4*	*271*	*437*
	Total	thousand toe	454	1,623	2,313
	Various activities	thousand toe	0.072	0	0
	Grand total	**thousand toe**	**454**	**1,623**	**2,313**
EN8	**Water for industrial uses**				
	From rivers (including meteoric waters from secondary rainfall)	million m^3	0.304	0	0
	From aqueducts	million m^3	0.024	1.57	2.68
	Total abstraction from inland waters	million m^3	0.328	1.57	2.68
EN8 EN21	**Open-cycle cooling water** (thermal generation)	million m^3	292	1,368	1,348

RESOURCES (2/2)

			2007	2008	**2009**
EN1	**Expendables**				
	Resins	t	0	6.66	7.50
	Hydrazine	t	0	12.4	13.4
	Carbohydrazide	t	0	0.229	0
	Ammonia	t	0	0.786	4.18
	Sodium hypochlorite	t	0	1,652	2,781
	Trisodium phosphate	t	0	1.67	3.50
	Ferric chloride	t	0	2.29	2.54
	Sulfuric & hydrochloric acids	t	0	1,202	1,886
	Caustic soda	t	0	991	1,428
	Lubricating oil	t	0.369	50.9	50.2
	Dielectric oil	t	3.20	211	14.3
	Other	t	0	1.48	0.520
	Total	**t**	**3.57**	**4,132**	**6,191**
	for thermal generation	t	0	4,129	6,187
	for hydro generation	t	0.325	1.45	0.818
	for electricity distribution	t	3.24	1.61	3

PROCESSES AND PRODUCTS

			2007	2008	**2009**
	Electricity generation (net)				
	From fossil fuels	**million kWh**	**2,165**	**8,321**	**12,024**
	fuel oil & gas-oil	million kWh	1,138	2,047	1,926
	natural gas	million kWh	1,027	6,275	10,098
	of which in combined-cycle units	*million kWh*	*828*	*5,378*	*8,695*
	From renewables (hydro from natural flows)	**million kWh**	**620**	**1,300**	**3,782**
	Total	**million kWh**	**2,785**	**9,622**	**15,806**
	Electricity distribution				
	Electricity distributed	million kWh	2,658	12,125	17,899
EN4	Electricity consumption for grid operation	million kWh	3.69	14.1	24.4

EMISSIONS, LIQUID RELEASES & WASTE (1/2)

		Source		2007	2008	2009
	Emissions into the atmosphere					
EN20	SO_2	thermal generation	thousand t	0.884	3.84	3.72
EN20	NO_X	thermal generation	thousand t	0.943	5.30	7.16
EN20	Particulates	thermal generation	thousand t	0.091	0.231	0.161
EN16	CO_2	fossil-fired thermal generation (from combustion)	thousand t	1,116	4,185	5,817
		various activities	thousand t	0.219	0	0
		Total	**thousand t**	**1,116**	**4,185**	**5,817**
EN16	SF_6	electricity distribution	kg	3.16	15.4	117
			thousand t of CO_2-equivalent	0.072	0.352	2.67
EN16	Total greenhouse gases (CO_2, SF_6, CH_4)		thousand t of CO_2-equivalent	1,116	4,186	5,820
EN18	**Avoided CO_2 emissions**					
	Due to hydro generation from natural flows		thousand t	319	654	1,830
EN21	**Waste waters** (discharged quantity)	thermal generation	million m3	0	0.537	0.923
EN21	**Conventional polluting load of waste waters** (thermal generation - only in some large plants) (1)					
	Metals and compounds (expressed as metal equivalents)		kg			169
	Total nitrogen (expressed as N)		kg			536
	Total phosphorus (expressed as P)		kg			117
	COD		kg			9,000
	BOD		kg			1,815
EN22	**Non-hazardous special waste**					
	production	electricity generation	t	146	670	834
		electricity distribution	t	78.1	1,401	213
		Total	**t**	**224**	**2,071**	**1,048**
	delivery to recovery operators	electricity generation	t	0	1.12	2.15
		electricity distribution	t	44.8	763	103
		Total	**t**	**44.8**	**764**	**105**

(1) The survey began in 2009.

EMISSIONS, LIQUID RELEASES & WASTE (2/2)

		Source		2007	2008	**2009**
EN22	**Hazardous special waste**					
	Other					
	production	electricity generation	t	170	679	300
		electricity distribution	t	14.1	537	220
		Total	**t**	**184**	**1,216**	**520**
	of which with PCBs	*electricity generation*	*t*	*0*	*35.9*	*49.6*
		electricity distribution	*t*	*0*	*316*	*194*
		Total	***t***	***0***	***352***	***243***
	delivery to recovery operators	electricity generation	t	0	36.2	43.6
		electricity distribution	t	0	128	75
		Total	**t**	**0**	**164**	**119**
	of which with PCBs	*electricity generation*	*t*	*0*	*35.9*	*43.4*
		electricity distribution	*t*	*0*	*125*	*73*
		Total	***t***	***0***	***161***	***116***
EN22	**Total special waste**					
	production	electricity generation	t	316	1,349	1,135
		electricity distribution	t	92.2	1,938	433
		Total	**t**	**408**	**3,287**	**1,568**
	delivery to recovery operators	electricity generation	t	0	37.3	45.8
		electricity distribution	t	44.8	891	178
		Total	**t**	**44.8**	**928**	**224**

INDICATORS (1/2)

			2007	2008	**2009**
	Resource conservation and quality				
EN1 EN3	Net heat rate of thermal generation	kcal/kWh	2,097	1,951	1,924
EN4	Consumption of electricity for distribution grid operation	% of electricity distributed	0.139	0.117	0.136
EN8	Net specific requirements of water for industrial uses in thermal generation				
	including contribution of as-is sea water	liters/kWh	0.151	0.189	0.223
	excluding contribution of as-is sea water	liters/kWh	0.151	0.189	0.223
EN8	Coverage of requirements of water for industrial uses				
	from rivers (including meteoric waters from secondary rainfall)	% of requirements	92.7	0	0
	from aqueducts	% of requirements	7.32	100	100
EN1 EN3	Fossil fuel consumption for thermal generation				
	fuel oil	% of total fuel consumption	16.8	17.5	14.2
	gas-oil	% of total fuel consumption	10.6	10.7	5.77
	natural gas	% of total fuel consumption	72.7	71.8	80
	LS fuel oil	% of total fuel-oil consumption	100	100	100
	natural gas, technologically captive use	% of total natural-gas consumption	82.4	80.5	80.2
	of which in combined-cycle units	*% of total natural-gas consumption*	*82*	*78.6*	*79.4*
	natural gas, non-technologically captive use	% of total natural-gas consumption	17.6	19.5	19.8

INDICATORS (2/2)

			2007	2008	**2009**
	Specific emissions into the atmosphere				
EN20	SO_2 (thermal generation)	g/kWh thermal net	0.408	0.462	0.309
EN20	NO_X (thermal generation)	g/kWh thermal net	0.436	0.636	0.596
EN20	Particulates (thermal generation)	g/kWh thermal net	0.042	0.028	0.013
EN16	CO_2 (thermal generation)	g/kWh thermal net	515	503	484
		g/kWh total net	401	435	368
EN16	SF_6 (electric activities)	% of SF_6 in equipment or in stock	0.056	0.200	0.729
EN22	**Waste recovery**				
	Non-hazardous special waste				
	electricity generation	% of production	0	0.167	0.257
	electricity distribution	% of production	57.3	54.5	48.3
	Total	**% of production**	**20**	**36.9**	**10**
	Hazardous special waste				
	electricity generation	% of production	0	5.33	14.5
	electricity distribution	% of production	0	23.8	34.1
	Total	**% of production**	**0**	**13.5**	**22.8**
	Total special waste				
	electricity generation	% of production	0	2.77	4.03
	electricity distribution	% of production	48.5	46	41.1
	Total	**% of production**	**11**	**28.2**	**14.3**
EN29	**Land**				
	LV cable lines				
	overhead	% of entire LV grid	45.1	44.9	45.5
	underground	% of entire LV grid	37.5	37.6	37.6
	Total cable lines	**% of entire LV grid**	**82.7**	**82.5**	**83.2**
	MV cable lines				
	overhead	% of entire MV grid	0.687	1.37	1.69
	underground	% of entire MV grid	54.7	54.2	54.5
	Total cable lines	**% of entire MV grid**	**55.4**	**55.6**	**56.2**
	Overhead and underground cables in HV+MV+LV distribution lines	% of total distribution grid	73.3	73.1	73.7
	Electricity generation from renewables				
	Hydro from natural flows	% of total generation	22.2	13.5	23.9

Highlights

In Argentina, Enel operates through Endesa (thermal and hydro power generation, electricity distribution and marketing). All the thermal power plants have ISO 14001-certified environmental management systems in place.
As to electricity distribution, Endesa's subsidiary serving the southern area of Buenos Aires has an integrated quality, safety & environment system.
The data for 2008 have been considered at 67.05% (stake then owned by Enel), whereas the data for 2009 have been consolidated at 100% as a result of the acquisition (in June 2009) of Acciona's holding in Endesa. This explains most of the deviations in the absolute values.
Electricity generation from renewables passed from about 14% to about 24% of total generation between 2008 and 2009.

Applicable GRI indicators

EN1
EN3 In the fuel mix, the contribution of natural gas was up by 8 percentage points, whereas those of gas-oil and fuel oil were down by roughly 5 and over 3 percentage points, respectively.

EN4 In 2009, the consumption of electricity for fuel storage & handling in Argentina was 87.9 TJ (24.4 GWh), whereas the one for the operation of the grid was 88 TJ (24 GWh).

EN16 Specific emissions of CO_2 from thermal power generation vs. total generation were down by about 15% from 2008 thanks to the increase of electricity generation from renewables.

EN18 In 2009, the Enel Group generated 3.8 TWh net in hydro power plants in Argentina, displacing more than 1.8 million tonnes of CO_2 emissions.

EN19 In the course of the year, cooling systems using freon were replaced.

EN20 Specific emissions of macro-pollutants into the atmosphere were generally down (SO_2 -33%, NO_X -6%, particulates -54%) thanks to enhanced efficiency and greater reliance on natural gas than on other fuels.

EN26 Vegetation maintenance jobs were carried out near distribution lines, some bare conductors were replaced with cable conductors and some lines were undergrounded. In the CBA (Costanera de Buenos Aires) combined-cycle power plant, the system for collecting industrial liquid releases is being improved by conveying the same releases to a single point, thus improving their monitoring & control. In the same plant, a system of water injection into the gas-turbine unit burners is being adopted as a method to abate NO_X upon gas-oil burning.
In the other Costanera combined-cycle power plant, noise inside the plant and in

the adjoining areas was mapped, by assessing sound emissions from the main sources and sound propagation under international standards, so as to plan initiatives for gradually lowering noise pollution. In compliance with the applicable legislation, noise-sensitive areas were identified and correlated with the zoning plan of the city of Buenos Aires. A prototypal silencer is scheduled to be installed in 2010; then, the noise mitigation system will be extended to the remaining units.
Also the Dock Sud power plant is implementing a plan to continuously monitor and control noise in the industrial area. Results are forwarded to the Ente Nacional Regulador de la Electricidad.

Brazil

Thermal power generation

(Endesa SA)

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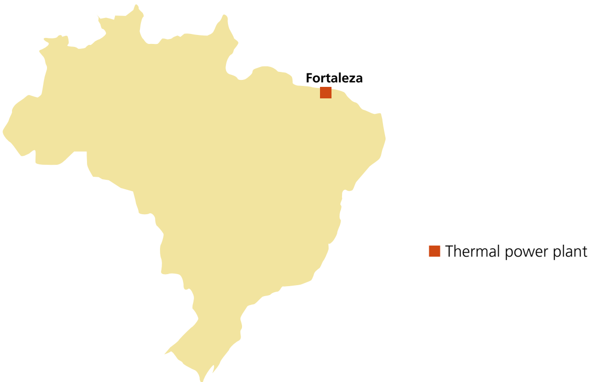


Power installations

	Power plants no.	Units no.	Net maximum electrical capacity MW
Combined-cycle gas turbines	**1**	**3**	**313**

The Fortaleza power plant has an ISO 14001-certified environmental management system.

Net electricity generation

Total: 500 million kWh

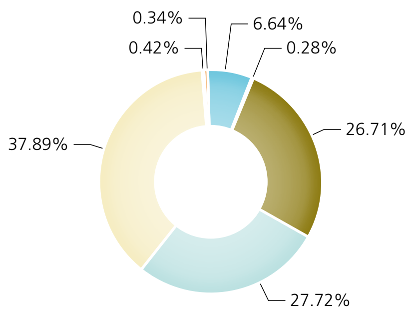
Fuel consumption

Total: 91.1 t of oil-equivalent

Water for industrial uses

Total requirements: 665,000 m³
Total abstraction from inland waters: 665,000 m³

Expendables
Total: 61 t



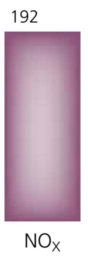
- Resins, hydrazine, carbohydrazide & hydrogen peroxide
- Ammonia
- Sodium hypochlorite, chlorine dioxide, ferrous sulfate, ferrous chloride and trisodium phosphate
- Sulfuric & hydrochloric acids
- Caustic soda
- Lime, ferric chloride and polyelectrolyte
- Lubricating oil

Waste waters

Discharged (m^3)	175,000

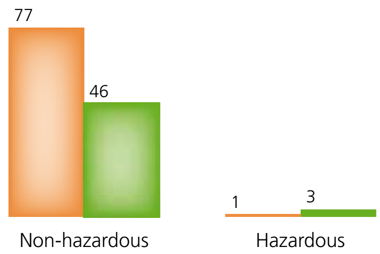
Waste waters include those meteoric waters that are susceptible to pollution and are therefore fed to treatment systems before being discharged or used.

Emissions into the atmosphere (t)



CO_2	177,000

Special waste
Total production: 78 t
Total delivery to recovery operators: 49 t



Production ■ Delivery to recovery operators

Hydro power generation

(Endesa SA, Enel Latin America LLC)

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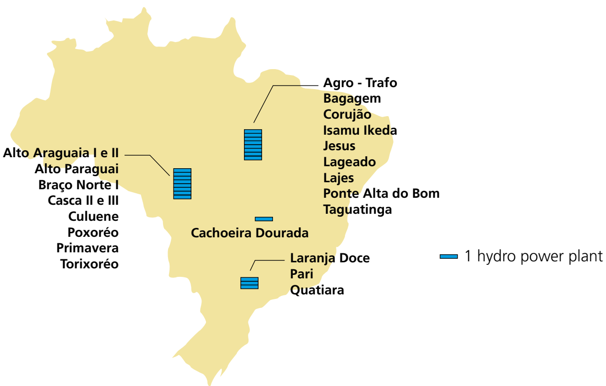


Power installations

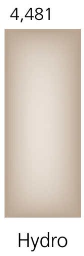
	Power plants no.	Head installations no.	Net maximum electrical capacity MW
Run-of-river	20	20	87
Pondage/reservoir	1	1	665
	21	**21**	**752**

The hydro power plant of Cachoeira Dourada is ISO 14001-certified.

Net electricity generation

Total: 3,369 million kWh

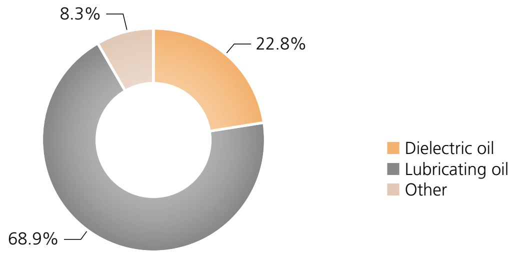
Equivalent yearly hours of utilization*



* Yearly generation/capacity ratio. Endesa's generation is considered to refer to the entire year.

Expendables

Total: 23.99 t



Gas-oil

Total consumption (toe)	1

Avoided CO_2 emissions

Due to hydro generation from natural flows (t)	1,193,238

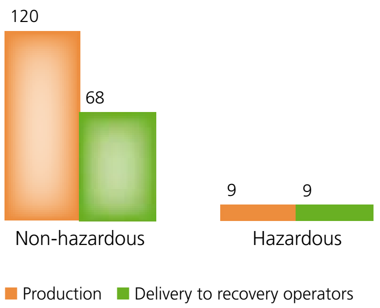
Emissions from the otherwise necessary fossil-fired thermal generation.

Emissions into the atmosphere

SF_6 (kg)	4
(t of CO_2-equivalent)	89

Special waste

Total production: 129 t
Total delivery to recovery operators: 77 t



Electricity distribution

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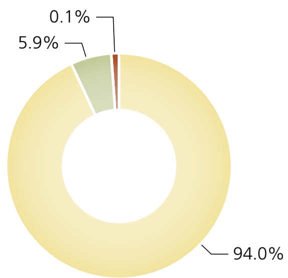
Headquarters of the companies
of the Group which carry out the activity

- Ampla
- Coelce

Power installations

SUBSTATIONS	no.	Installed transforming capacity MVA
HV/MV	214	6,636
MV/LV	105,308	3,701
	105,522	**10,337**

LINES (length in km)	Overhead bare conductors	Overhead cables	Underground cables	Total
HV	8,028	-	53	**8,081**
MV	105,805	1,016	59	**106,881**
LV	51,981	9,404	57	**61,443**
	165,815	**10,420**	**169**	**176,405**



The organization has an ISO 14001-certified environmental management system in place.

General data

Municipalities served (no.)	250
Surface area served (km2)	181,433
Customers connected to the grids of the companies (no.)	5,487,080
supplied (no.)	*5,487,066*

Electricity

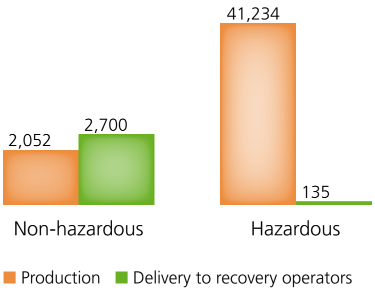
Total electricity distributed (million kWh)	17,254
Own consumption for grid operation (million kWh)	11

Resource consumption

Expendables (t)	216

Special waste

Total production: 43,286 t
Total delivery to recovery operators: 2,836 t



Emissions into the atmosphere

SF_6 (kg)	95
(t of CO_2-equivalent)	2,105

Eco-Balance and Indicators

STATUS DATA

		2007	2008	2009
Power-generating installations				
Power plants	no.	22	22	22
thermal	no.	1	1	1
hydro	no.	21	21	21
Net maximum electrical capacity	MW	751	754	1,064
thermal	MW	216	216	313
hydro	MW	535	539	752
Power lines (circuit-length)				
Total	km	111,137	111,137	176,404
high-voltage	km	4,410	4,410	8,081
medium-voltage	km	67,032	67,032	106,881
low-voltage	km	39,695	39,695	61,443

RESOURCES

			2007	2008	2009
EN1 EN3	**Fossil fuels**				
	Thermal generation (including auxiliary boilers and emergency generating sets)				
	gas-oil	thousand t	0	0.001	0.001
	natural gas (technologically captive use)	million m^3	0.513	11.7	108
	Total	thousand toe	0.478	10.1	91.1
	Various activities	thousand toe	0.357	0.001	0.001
	Grand total	**thousand toe**	**0.835**	**10.1**	**91.1**
EN8	**Water for industrial uses**				
	From rivers (including meteoric waters from secondary rainfall)	million m^3	0.003	0.138	0.665
EN1	**Expendables**				
	Resins	t	0	0	3.80
	Hydrazine	t	0	0	0.232
	Carbohydrazide	t	0	0	0.050
	Ammonia	t	0	0	0.170
	Sodium hypochlorite	t	0	27.5	16.1
	Trisodium phosphate	t	0	0.050	0.292
	Polyelectrolyte	t	0	0.166	0.260
	Sulfuric & hydrochloric acids	t	0	23.6	17
	Caustic soda	t	0	20.3	23.3
	Lubricating oil	t	11.4	42.6	20.8
	Dielectric oil	t	22.9	89.4	217
	Other	t	0	3.16	2
	Total	**t**	**34.3**	**207**	**301**
	for thermal generation	t	0	72.1	61.5
	for hydro generation	t	21.4	26.6	24
	for electricity distribution	t	12.9	108	216

PROCESSES AND PRODUCTS

		2007	2008	2009
Electricity generation (net)				
From fossil fuels	million kWh	2.4	54.3	500
From renewables (hydro from natural flows)	million kWh	1,128	2,726	3,369
Total	**million kWh**	**1,131**	**2,781**	**3,869**
Electricity distribution				
Electricity distributed	million kWh	3,000	13,413	17,254
Electricity consumption for grid operation	million kWh	3.19	8.55	11

EMISSIONS, LIQUID RELEASES & WASTE (1/2)

		Source		2007	2008	2009
	Emissions into the atmosphere					
EN20	NO_X	thermal generation	thousand t	0	0.011	0.192
EN16	CO_2	fossil-fired thermal generation (from combustion)	thousand t	0.986	18.9	177
		various activities	thousand t	1.09	0.763	0
		Total	**thousand t**	**2.08**	**19.6**	**177**
EN16	SF_6	electricity generation	kg	0	0	4
			thousand t of CO_2-equivalent	0	0	0.091
		electricity distribution	kg	21.8	60.9	94.8
			thousand t of CO_2-equivalent	0.497	1.39	2.16
		Total	**kg**	**21.8**	**60.9**	**98.8**
			thousand t of CO_2-equivalent	**0.497**	**1.39**	**2.25**
EN16	**Total greenhouse gases (CO_2, SF_6, CH_4)**		**thousand t of CO_2-equivalent**	**2.57**	**21**	**179**
EN18	**Avoided CO_2 emissions**					
	Due to hydro generation from natural flows		thousand t	463	947	1,193
EN21	**Waste waters** (discharged quantity)	thermal generation	million m^3	0	0.053	0.175
EN21	**Conventional polluting load of waste waters** (thermal generation - only in some large plants) (1)					
	Total nitrogen (expressed as N)		kg			75.3
	COD		kg			68.8
	BOD		kg			55.3

(1) The survey began in 2009.

(2/2)

		Source		2007	2008	**2009**
EN22	**Non-hazardous special waste**					
	production	electricity generation	t	149	153	196
		electricity distribution	t	896	431	2,052
		Total	**t**	**1,046**	**584**	**2,248**
	delivery to recovery operators	electricity generation	t	7.65	6.47	114
		electricity distribution	t	0	318	2,700
		Total	**t**	**7.65**	**325**	**2,814**
EN22	**Hazardous special waste**					
	production	electricity generation	t	9.26	33.3	9.21
		electricity distribution	t	54.1	173	41,234
		Total	**t**	**63.3**	**207**	**41,244**
	of which with PCBs	*electricity generation*	*t*	*0*	*6.16*	*6.35*
		electricity distribution	*t*	*18.8*	*82.2*	*204*
		Total	***t***	***18.8***	***88.4***	***210***
	delivery to recovery operators	electricity generation	t	4.10	17.2	11.3
		electricity distribution	t	18.8	82.2	135
		Total	**t**	**22.9**	**99.4**	**147**
	of which with PCBs	*electricity generation*	*t*	*0*	*6.16*	*2.92*
		electricity distribution	*t*	*18.8*	*82.2*	*3.86*
		Total	***t***	***18.8***	***88.4***	***6.78***
EN22	**Total special waste**					
	production	electricity generation	t	159	187	205
		electricity distribution	t	951	604	43,286
		Total	**t**	**1,109**	**790**	**43,492**
	delivery to recovery operators	electricity generation	t	11.8	23.7	125
		electricity distribution	t	18.8	400	2,836
		Total	**t**	**30.5**	**424**	**2,961**

INDICATORS (1/2)

			2007	2008	**2009**
	Resource conservation and quality				
EN1 EN3	Net heat rate of thermal generation	kcal/kWh	1,988	1,855	1,823
EN4	Consumption of electricity for distribution grid operation	% of electricity distributed	0.106	0.064	0.064
EN8	Net specific requirements of water for industrial uses in thermal generation				
	including contribution of as-is sea water	liters/kWh	1.25	2.54	1.33
	excluding contribution of as-is sea water	liters/kWh	1.25	2.54	1.33
EN1 EN3	Coverage of requirements of water for industrial uses (from rivers)	% of requirements	100	100	100
EN1 EN3	Fossil fuel consumption for thermal generation				
	gas-oil	% of total fuel consumption	0	0	0.001
	natural gas, technologically captive use	% of total natural-gas consumption	100	100	100
	of which in combined-cycle units	*% of total natural-gas consumption*	*100*	*100*	*100*
	Specific emissions into the atmosphere				
EN20	NO_X (thermal generation)	g/kWh thermal net	0	0.203	0.384
EN16	CO_2 (thermal generation)	g/kWh thermal net	410	347	354
		g/kWh total net	0.872	6.78	45.7
EN16	SF_6 (electric activities)	% of SF_6 in equipment or in stock	2.53	4.56	3.05

(2/2)

		2007	2008	**2009**
EN22 Waste recovery				
Non-hazardous special waste	% of production			
electricity generation		5.12	4.23	58.1
electricity distribution		0	73.9	132
Total		0.732	55.6	125
Hazardous special waste	% of production			
electricity generation		44.3	51.7	123
electricity distribution		34.7	47.5	0.328
Total		**36.1**	**48.1**	**0.355**
Total special waste	% of production			
electricity generation		7.40	12.7	61
electricity distribution		1.98	66.3	6.55
Total		**2.75**	**53.6**	**6.81**
EN29 Land				
LV cable lines	% of entire LV grid			
overhead		15.1	15.1	15.3
underground		0.043	0.043	0.093
Total cable lines		**15.2**	**15.2**	**15.4**
MV cable lines	% of entire MV grid			
overhead		0.965	0.965	0.951
underground		0.052	0.052	0.055
Total cable lines		**1.02**	**1.02**	**1.01**
Overhead and underground cables in HV+MV+LV distribution lines	% of total distribution grid	6.04	6.04	6
Electricity generation from renewables				
Hydro from natural flows	% of total generation	99.8	98	87.1

Highlights

In Brazil, Enel operates through Endesa (thermal and hydro power generation, electricity distribution and marketing) and Enel Latin America (hydro power generation).
The data of Endesa for 2008 have been considered at 67.05% (stake then owned by Enel), whereas the data for 2009 have been consolidated at 100% as a result of the acquisition (in June 2009) of Acciona's holding in Endesa. This explains most of the deviations in the absolute values.
The energy source mix shows a high percentage (87%) of renewables. In 2009, the Enel Group produced about 3.9 TWh of electricity in Brazil (this amount is slightly higher than the reproportioned one of 2008). Net thermal power generation in 2009 was 500 GWh (54 GWh in 2008). Electricity generation from renewables (hydro) was equal to 3.4 TWh in 2009 (+24% on 2008).

Applicable GRI indicators

EN1
EN3 Natural gas consumption mounted to 91 ktoe in 2009.

EN4 Electricity consumption for fuel storage & handling was 117.2 TJ (about 32.5 GWh), while the one for grid operation was 39.5 TJ (about 11 GWh).

EN8 Specific consumption of water for thermal power generation fell from about 2.5 liters/kWh net in 2008 to about 1.3 in 2009.

EN18 The CO_2 emissions avoided in 2009 thanks to electricity generation from renewables amounted to about 1.2 million tonnes.

EN23 During a fire in the transforming station of Santa Cruz da Serra (state of Rio de Janeiro), some welds of the main tank broke, causing dielectric oil leakage. 40.7 t of oil-contaminated soil and about 46 m^3 of polluted water were promptly removed. Consequently, the spill had no significant environmental impact.

EN26 Distribution

Environmental enhancements included:
> installation of a system to collect condensed water from the air conditioning system and rainwater from water-proofed and contaminant-free plant areas;
> training of the personnel on the management of tree species; the program was intended to avoid useless trimming and deforestation and to introduce a monitoring system based on an appropriate register, where data on the pruned species, amount of waste produced and person in charge of the job are entered;
> discounts on electricity bills to promote recycling of municipal solid waste after delivery to appropriate collection centers (Ecoelce/Ecoampla program of the Coelce and Ampla distribution companies);
> research on reuse of waste from fluorescent lamps as raw materials in brick manufacturing;

> development of a project to reuse disused power cables;
> setting-up of a suppliers' work group with the task of analyzing the lifecycle of installations and products and developing environmentally-beneficial actions;
> half-yearly monitoring of emissions from vehicles and machinery with diesel engines (based on Ringelmann's scale);
> day-time and night-time substation noise monitoring surveys to ensure compliance with legislative parameters and avoid disturbances to local communities.

At the hydro power plant of Cachoeira Dourada (and in its service area – state of Minas Gerais), various public actions and initiatives of environmental enhancement were taken within the framework of the ISO 14001-certified environmental management system:

> sulfur hexafluoride emission control in the disconnect switches of the substation;
> improvement of the efficiency of generating units through technological innovations;
> restoration of the riparian vegetation of the basin (Minas Gerais) under a specific program.

Agreements were signed with universities for developing environmental research and programs.

At the combined-cycle power plant of Fortaleza (state of Ceará), noise levels are monthly monitored in five predetermined points around the plant. Vibrations of rotating machinery are monthly monitored under a maintenance contract.

Chile

Thermal power generation

(Endesa SA)

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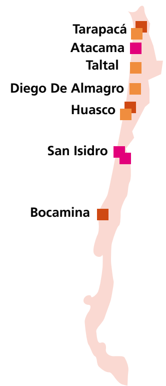


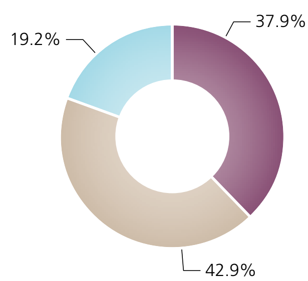
Thermal power plant
- Coal
- Fuel oil and gas
- Combined cycles and gas turbines

Power installations

	Power plants no.	Units no.	Net maximum electrical capacity MW
Steam (condensing)	3	11	701
Combined-cycle gas turbines	3	8	793
Gas turbines	4	8	356
	10	**27**	**1,850**

The thermal power plants of Atacama, Bocamina, San Isidro, Taltal, Tarapacá Vapor and Tarapacá, totaling 2,067 MW, are ISO 14001-certified.

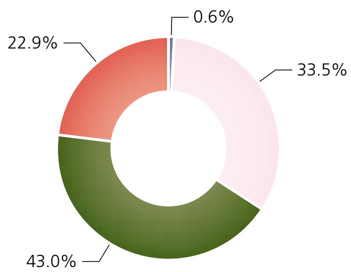
Net maximum electrical capacity
Total: 1,850 MW



- Steam (condensing)
- Combined-cycle gas turbines
- Gas turbines

Net electricity generation
Total: 7,297 million kWh

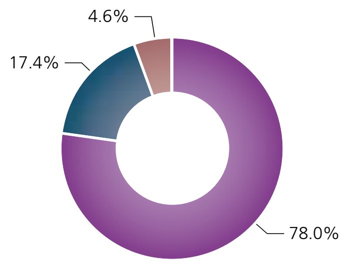
Fuel consumption
Total: 1,897,065 t of oil-equivalent



- Fuel oil
- Gas-oil
- Natural gas
- Coal

Water for industrial uses

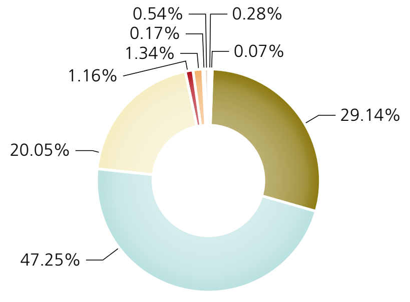
Total requirements: 3,379,794 m³
Total abstraction from inland waters: 2,793,080 m³



- From wells
- From the sea (desalinated)
- From aqueducts

Expendables

Total: 1,260 t



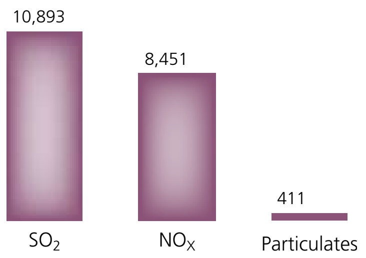
- Resins, hydrazine, carbohydrazide & hydrogen peroxide
- Ammonia
- Sodium hypochlorite, chlorine dioxide, ferrous sulfate, ferrous chloride and trisodium phosphate
- Sulfuric & hydrochloric acids
- Caustic soda
- Lime, ferric chloride and polyelectrolyte
- Lubricating oil
- Dielectric oil
- Other

Waste waters

Discharged (m³)	1,490,598

Waste waters include those meteoric waters that are susceptible to pollution and are therefore fed to treatment systems before being discharged or used.

Emissions into the atmosphere (t)



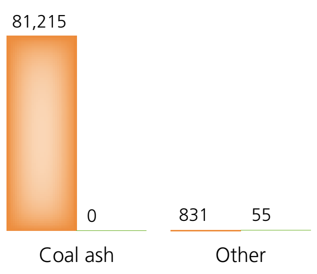
CO_2	4,662,909

Special waste

Total production: 82,313 t
Total delivery to recovery operators: 67 t

Non-hazardous
Production: 82,046 t
Delivery to recovery operators: 55 t

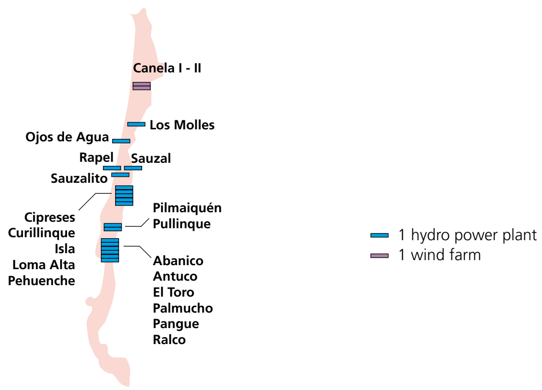
Hazardous
Production: 267 t
Delivery to recovery operators: 12 t



- Production
- Delivery to recovery operators

Hydro and wind power generation

(Endesa SA, Enel Latin America LLC)



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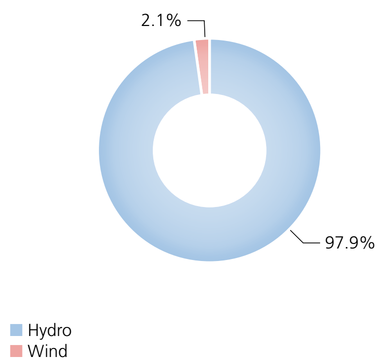
Power installations

HYDRO	Power plants no.	Head installations no.	Net maximum electrical capacity MW
Run-of-river	11	16	835
Pondage/reservoir	7	14	2,699
	18	**30**	**3,534**

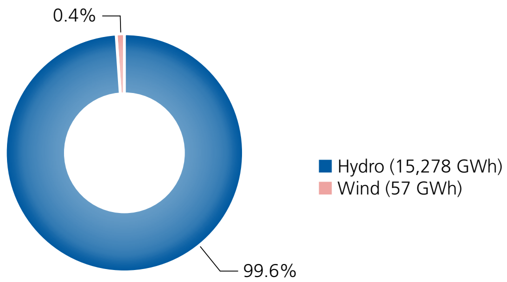
WIND	Power plants no.	Net maximum electrical capacity MW
	2	**77**

Net maximum electrical capacity
Total: 3,611 MW

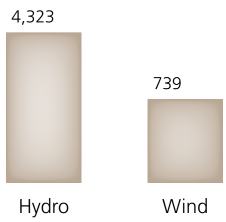


The power plants of Abanico, Antuco, Canela I, Cipreses, Curillinque, El Toro, Isla, Loma Alta, Los Molles, Ojos de Agua, Palmucho, Pangue, Pehuenche, Ralco, Rapel, Sauzal and Sauzalito (3,479 MW) are ISO 14001-certified.

Net electricity generation
Total: 15,335 million kWh

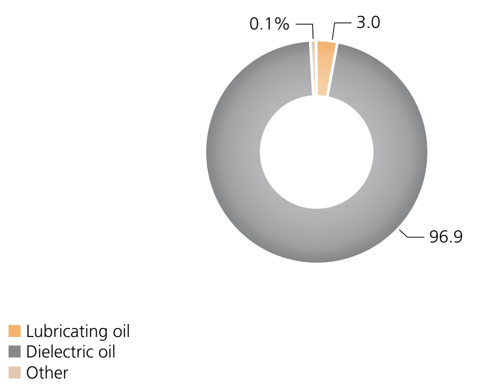


Equivalent yearly hours of utilization*



* On a statistical basis, yearly generation/capacity ratio.

Expendables
Total: 366 t



Gas-oil

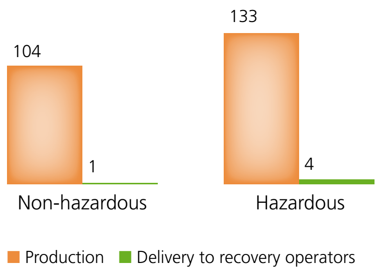
Total consumption (toe)	10

Emissions into the atmosphere

CO_2 (t)	1,975

Emissions from gas-oil combustion.

Special waste
Total production: 237 t
Total delivery to recovery operators: 5 t



Avoided CO_2 emissions (t)

Due to hydro generation from natural flows	9,761,089
Due to wind generation	36,429
Total	**9,797,518**

Emissions from the otherwise necessary fossil-fired thermal generation.

Electricity distribution

(Endesa SA)

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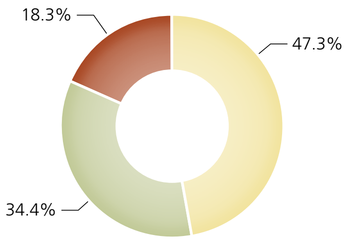
● Headquarters of the company of the Group which carries out the activity (Chilectra)

Power installations

SUBSTATIONS	no.	Installed transforming capacity MVA
HV/MV	50	6,699
MV/LV	22,256	3,511
MV/MV	3	30
	22,309	**10,240**

LINES (length in km)	Overhead bare conductors	Overhead cables	Underground cables	Total
HV	344	-	11	**355**
MV	2,935	924	969	**4,828**
LV	3,885	4,291	1,796	**9,972**
	7,164	**5,215**	**2,776**	**15,155**



The organization has an ISO 14001 certification for its environmental management system.

General data

Municipalities served (no.)	33
Surface area served (km2)	2,118
Customers connected to the grid of the company (no.)	1,579,072
supplied (no.)	*1,579,069*

Electricity

Total electricity distributed (million kWh)	12,585
Own consumption for grid operation (million kWh)	12

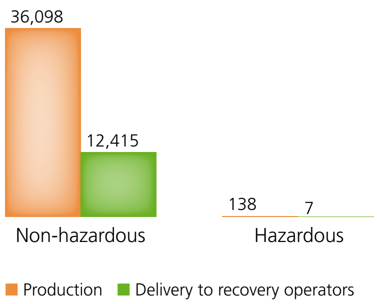
Emissions into the atmosphere

SF_6 (kg)	7
(t of CO_2-equivalent)	149

Special waste

Total production: 36,236 t

otal delivery to recovery operators: 12,422 t



Eco-Balance and Indicators

STATUS DATA

		2005	2006	2007	2008	**2009**
Power-generating installations						
Power plants	no.	2	2	26	13	30
thermal	no.	-	-	10	10	10
hydro	no.	2	2	16	2	18
wind	no.	-	-	-	1	2
Net maximum electrical capacity	MW	87.6	87.7	3,614	3,632	5,461
thermal	MW	-	-	1,210	1,210	1,850
hydro	MW	87.6	87.7	2,404	2,410	3,534
wind	MW	-	-	-	12.2	77.2
Power lines (circuit-length)						
Total	km	-	-	10,206	5,270	15,155
high-voltage	km	-	-	246	238	355
medium-voltage	km	-	-	3,280	1,163	4,828
low-voltage	km	-	-	6,680	3,869	9,972

RESOURCES (1/2)

			2005	2006	2007	2008	**2009**
EN1 EN3	**Fossil fuels**						
	Thermal generation (including auxiliary boilers and emergency generating sets)						
	fuel oil	thousand t	-	-	0.103	42.6	11.2
	MS	*thousand t*	-	-	*0*	*0*	*0.004*
	LS	*thousand t*	-	-	*0.103*	*42.6*	*9.69*
	VLS	*thousand t*	-	-	*0*	*0*	*1.51*
	gas-oil	thousand t	-	-	177	615	608
	natural gas	million m3	-	-	48.4	140	976
	of which in combined-cycle units	*million m3*	-	-	*36.1*	*121*	*899*
	coal	thousand t	-	-	131	510	756
	Total	thousand toe	-	-	308	1,007	1,897
	Various activities	thousand toe	-	-	0.004	0	0.002
	Grand total	**thousand toe**	**-**	**-**	**308**	**1,007**	**1,897**
EN8	**Water for industrial uses (for thermal generation)**						
	From wells	million m3	-	-	0.116	3.01	2.64
	From aqueducts	million m3	-	-	0.020	0	0.157
	Total abstraction from inland waters	million m3	-	-	0.136	3.01	2.79
	From the sea (desalinated)	million m3	-	-	0	0.373	0.587
	Total requirements	**million m3**	**-**	**-**	**0.136**	**3.39**	**3.38**
EN8 EN21	**Open-cycle cooling water** (thermal generation)	million m3	-	-	125	327	928

-: no data due to absence of activities in the year.

(2/2)

		2005	2006	2007	2008	**2009**
EN1 Expendables						
Resins	t	-	-	0	3.89	0.208
Hydrazine	t	-	-	0.366	5.56	3.31
Ammonia	t	-	-	0.017	1.81	0.827
Sodium hypochlorite	t	-	-	94.5	287	301
Ferrous sulfate	t	-	-	10.2	42.0	65.1
Trisodium phosphate	t	-	-	0.162	1.37	1.65
Lime	t	-	-	0.201	0.778	3.64
Ferric chloride	t	-	-	1.34	15.4	10.4
Polyelectrolyte	t	-	-	0	0.304	0.678
Sulfuric & hydrochloric acids	t	-	-	86.7	499	596
Caustic soda	t	-	-	32.7	212	253
Lubricating oil	t	0	0.016	0.365	10.7	27.7
Dielectric oil	t	0	0	0.073	3.49	357
Other	t	0	0	0.220	22.4	7.23
Total	**t**	**0**	**0.016**	**227**	**1,105**	**1,626**
for thermal generation	t	-	-	226	1,095	1,260
for hydro generation	t	0	0.016	0.501	9.70	365
for wind generation	t	-	-	-	0	0.465
for electricity distribution	t	-	-	0	1.17	0
EN1 PCB survey (1)						
Equipment & transformers with PCBs >500 ppm (excluding their oil)	t			0	0	0.060
Equipment & transformers with PCBs>50 ppm and ≤500 ppm (excluding their oil)	t			0	0	5.79
Oil with PCBs >50 ppm and ≤500 ppm contained in equipment & transformers	t			0	0	5.21

-: no data due to absence of activities in the year.

(1) The survey began in 2009.

PROCESSES AND PRODUCTS

		2005	2006	2007	2008	**2009**
Electricity generation (net)						
From fossil fuels	million kWh	0	0	1,230	4,997	7,297
fuel oil & gas-oil	million kWh	0	0	726	3,114	3,282
natural gas	million kWh	0	0	202	687	2,189
of which in combined-cycle units	*million kWh*	*0*	*0*	*167*	*619*	*2,016*
coal	million kWh	0	0	302	1,196	1,826
From renewables	million kWh	490	531	2,411	9,712	15,332
hydro from natural flows	million kWh	490	531	2,411	9,691	15,275
wind	million kWh	0	0	0	20.4	57
Hydro from pumped storage	million kWh	0	0	0	0	2.26
Total	**million kWh**	**490**	**531**	**3,640**	**14,708**	**22,632**
Electricity distribution						
Electricity distributed	million kWh	-	-	2,076	8,937	12,585

EMISSIONS, LIQUID RELEASES & WASTE (1/3)

		Source		2005	2006	2007	2008	**2009**
	Emissions into the atmosphere							
EN20	SO_2	thermal generation	thousand t	-	-	2.60	10.5	10.9
EN20	NO_X	thermal generation	thousand t	-	-	1.67	7.49	8.45
EN20	Particulates	thermal generation	thousand t	-	-	0.974	0.531	0.411
EN16	CO_2	fossil-fired thermal generation (from combustion)	thousand t	-	-	1,044	3,595	4,663
		various activities	thousand t	0	0	0.012	0.395	0
		Total	**thousand t**	**0**	**0**	**1,044**	**3,596**	**4,663**
EN16	SF_6	electricity distribution	kg	-	-	1.34	0.335	6.70
			thousand t of CO_2-equivalent	-	-	0.031	0.008	0.153
EN16	Total greenhouse gases (CO_2, SF_6, CH_4)		**thousand t of CO_2-equivalent**	**0**	**0**	**1,044**	**3,596**	**4,663**
EN18	**Avoided CO_2 emissions**							
	Due to hydro generation from natural flows		thousand t	300	325	2,046	6,973	9,761
	Due to wind generation		thousand t	-	-	-	14.7	36.4
	Due to generation from renewables		**thousand t**	**300**	**325**	**2,046**	**6,988**	**9,798**
EN21	**Waste waters (discharged quantity)**	thermal generation	million m^3	-	-	0	0.980	1.49

-: no data due to absence of activities in the year.

EMISSIONS, LIQUID RELEASES & WASTE (2/3)

		Source		2005	2006	2007	2008	**2009**
EN21	**Conventional polluting load of waste waters discharged by the installations** (thermal generation - only in some large plants) (1)							
	Metals and compounds (expressed as metal equivalents)		kg					2,968
	Total nitrogen (expressed as N)		kg					266
	Total phosphorus (expressed as P)		kg					476
	BOD		kg					6,085
EN22	**Non-hazardous special waste**							
	Coal bottom ash	thermal generation						
	production		t	-	-	0	0	14,550
	Coal flyash	thermal generation						
	production		t	-	-	17,538	70,501	66,665
	Other							
	production	electricity generation	t	0	4.75	211	356	935
		electricity distribution	t	-	-	1,819	49	36,098
		Total	**t**	**0**	**4.75**	**2,029**	**405**	**37,033**
	delivery to recovery operators	electricity generation	t	0	0	0	2.74	56.5
		electricity distribution	t	-	-	0	14.1	12,415
		Total	**t**	**0**	**0**	**0**	**16.9**	**12,472**
	Total							
	production	electricity generation	t	0	4.75	17,749	70,857	82,150
		electricity distribution	t	-	-	1,819	49	36,098
		Total	**t**	**0**	**4.75**	**19,568**	**70,906**	**118,248**
	delivery to recovery operators	electricity generation	t	0	0	0	2.74	56.5
		electricity distribution	t	-	-	0	14.1	12,415
		Total	**t**	**0**	**0**	**0**	**16.9**	**12,472**

-: no data due to absence of activities in the year.
(1) The survey began in 2009.

EMISSIONS, LIQUID RELEASES & WASTE (3/3)

		Source		2005	2006	2007	2008	2009
EN22	**Hazardous special waste**							
	production	electricity generation	t	0	0	47.7	375	400
		electricity distribution	t	-	-	2.55	106	138
		Total	**t**	**0**	**0**	**50.2**	**481**	**538**
	of which with PCBs	*electricity generation*	*t*	*0*	*0*	*0*	*63.1*	*135*
		electricity distribution	*t*	*-*	*-*	*0*	*4.56*	*5.63*
		Total	***t***	***0***	***0***	***0***	***67.7***	***140***
	delivery to recovery operators	electricity generation	t	0	0	0	65.7	16.3
		electricity distribution	t	-	-	0	6.34	6.71
		Total	**t**	**0**	**0**	**0**	**72**	**23**
	of which with PCBs	*electricity generation*	*t*	*0*	*0*	*0*	*62*	*0.384*
		electricity distribution	*t*	*-*	*-*	*0*	*2.39*	*0.800*
		Total	***t***	***0***	***0***	***0***	***64.4***	***1.18***
EN22	**Total special waste**							
	production	electricity generation	t	0	4.75	17,797	71,232	82,550
		electricity distribution	t	-	-	1,821	155	36,236
		Total	**t**	**0**	**4.75**	**19,618**	**71,387**	**118,785**
	delivery to recovery operators	electricity generation	t	0	0	0	68.4	72.8
		electricity distribution	t	-	-	0	20.5	12,422
		Total	**t**	**0**	**0**	**0**	**88.9**	**12,495**

-: no data due to absence of activities in the year.

INDICATORS (1/2)

			2005	2006	2007	2008	**2009**
	Resource conservation and quality						
EN1 EN3	Net heat rate of thermal generation	kcal/kWh	-	-	2,509	2,016	2,600
EN4	Consumption of electricity for distribution grid operation	% of electricity distributed	-	-	0.097	0.096	0.095
EN8	Net specific requirements of water for industrial uses in thermal generation						
	including contribution of as-is sea water	liters/kWh	-	-	0.111	0.678	0.463
	excluding contribution of as-is sea water	liters/kWh	-	-	0.111	0.678	0.463
EN8	Coverage of requirements of water for industrial uses (for thermal generation)						
	From wells	% of requirements	-	-	85.3	89	78
	From aqueducts	% of requirements	-	-	14.7	0	4.65
	Total from inland waters	% of requirements	-	-	100	89	82.6
	From the sea (desalinated)	% of requirements	-	-	0	11	17.4
EN1 EN3	Fossil fuel consumption for thermal generation						
	fuel oil	% of total fuel consumption	-	-	0.032	3.95	0.575
	gas-oil	% of total fuel consumption	-	-	58.2	55.6	33.5
	natural gas	% of total fuel consumption	-	-	14.6	11.4	43
	coal	% of total fuel consumption	-	-	27.2	29.1	22.9
	MS fuel oil	% of total fuel-oil consumption	-	-	0	0	0.037
	LS fuel oil	% of total fuel-oil consumption	-	-	100	100	86.2
	VLS fuel oil	% of total fuel-oil consumption	-	-	0	0	13.7
	natural gas, technologically captive use	% of total natural-gas consumption	-	-	100	100	100
	of which in combined-cycle units	*% of total natural-gas consumption*	-	-	*74.6*	*86.4*	*92.2*
	Specific emissions into the atmosphere						
EN20	SO_2 (thermal generation)	g/kWh thermal net	-	-	2.12	2.09	1.49
EN20	NO_X (thermal generation)	g/kWh thermal net	-	-	1.36	1.50	1.16
EN20	Particulates (thermal generation)	g/kWh thermal net	-	-	0.792	0.106	0.056
EN16	CO_2 (thermal generation)	g/kWh thermal net	-	-	849	720	639
		g/kWh total net	-	-	287	244	206
EN16	SF_6 (electric activities)	% of SF_6 in equipment or in stock	0	0	0.036	0.009	0.037
EN22	**Specific production of waste**						
	Coal ash (thermal generation)	g/kWh net from coal	-	-	58.1	59	44.5

-: no data due to absence of activities in the year.

INDICATORS (2/2)

			2005	2006	2007	2008	**2009**
EN22	**Waste recovery**						
	Non-hazardous special waste	% of production					
	electricity generation				0	0.004	0.069
	electricity distribution				0	28.9	34.4
	Total				**0**	**0.024**	**10.5**
	Hazardous special waste	% of production					
	electricity generation				0	17.5	4.08
	electricity distribution				0	5.98	4.88
	Total				**0**	**15**	**4.28**
	Total special waste						
	electricity generation	% of production			0	0.096	0.088
	electricity distribution	% of production			0	13.2	34.3
	Total	**% of production**			**0**	**0.125**	**10.5**
EN29	**Land**						
	LV cable lines	% of entire LV grid					
	overhead				38.9	41.1	43.0
	underground				16.8	17.5	18.0
	Total cable lines				**55.8**	**58.5**	**61.0**
	MV cable lines	% of entire MV grid					
	overhead				15.7	18.0	19.1
	underground				18.4	18.3	20.1
	Total cable lines				**34.1**	**36.3**	**39.2**
	Overhead and underground cables in HV+MV+LV distribution lines	% of total distribution grid			47.5	50.1	52.7
	Electricity generation from renewables						
	Hydro from natural flows	% of total generation			66.2	65.9	67.5
	Wind	% of total generation			0	0.139	0.252
	Total	**% of total generation**			**66.2**	**66**	**67.7**

Highlights

In Chile, Enel operates through Endesa (thermal, wind and hydro power generation, electricity distribution and marketing) and Enel Latin America (hydro power generation).
The data for 2008 have been considered at 67.05% (stake then owned by Enel), whereas the data for 2009 have been consolidated at 100% as a result of the acquisition (in June 2009) of Acciona's holding in Endesa. This explains most of the deviations in the absolute values.
In 2009, the Enel Group generated 15.3 TWh net of hydro power from natural flows and 57 GWh net of wind power.
Electricity generation from renewables accounted for 68% of total generation.
As regards land and landscape conservation, the percentage of overhead and underground cables in power lines continued to grow (about 3 percentage points more in 2009 than in 2008), with the consequent reduction of the percentage of bare conductors.

Renewables

Wind power

In 2009, Enel Latin America made a cooperation agreement with SoWiTec Energías Renovables de Chile Ltda (branch of the German SoWiTec international GmbH) on development of some wind power projects in Chile with a total net maximum capacity which might reach 850 MW.
In 2009, Endesa Eco (100%-owned by Endesa Chile) obtained approval from the United Nations to verify and market the CO_2 emissions displaced by its Canela I wind farm (18.15 MW in the Coquimbo region), which were equal to 21,300 t in 2009.
Endesa's Canela II wind farm, the largest one in Chile, also went into commercial operation. This wind farm adds about 60 MW of capacity to the Canela I wind farm, which has been operating since 2007. The construction of the wind farm started in February 2009. Forty 1.5-MW wind turbines were installed over a surface area of 1,080 hectares. The new wind farm will displace about 90 million t of CO_2 emissions per year.

Mini-hydro power

Endesa Eco submitted an environmental impact study to Comisión Nacional del Medio Ambiente (CONAMA) for the project of its mini-hydro facility of Piruquina, to be built on the island of Chiloé (Los Lagos region). The facility will have a net maximum capacity of 7.6 MW and generate 30.4 GWh/yr on average by using the water of the Carihueico river.

Thermal power

In 2009, Endesa Chile submitted the environmental impact study for its Central Termoeléctrica Punta Alcalde project (Atacama region). The initiative involves an investment of about € 1,050 million for construction and operation of a thermal power plant with two 370-MW units.
The study indicates that the plant will use sub-bituminous coal as the main fuel. Both units will be equipped with particulate collection, NO_X and SO_X abatement systems.

Applicable GRI indicators

EN1
EN3
The net heat rate of thermal power generation was up owing to higher generation by gas-fired power plants with higher heat-rate.
The 2009 fossil-fuel mix evidences that gas (over 43% in 2009) was up, gas-oil and fuel oil were down (from 60% in 2008 to 34%) and coal was also down.

EN4 In 2009, the consumption of electricity for fuel storage & handling was 28.6 TJ (7.9 GWh), while the one for grid operation was 43.2 TJ (about 12 GWh).

EN8 Net specific requirements of water for industrial uses in thermal power generation diminished in 2009 thanks to an appropriate fuel mix, which reduced the need for clean-up jobs.

EN16 Specific CO_2 emissions from thermal power generation were down by 11%, thanks, above all, to higher reliance on natural gas than on fuel oil, gas-oil and coal.

EN18 In 2009, electricity generation from renewables displaced approximately 10 million t of CO_2 emissions.
The hydro power plant of Ojos de Agua (Maule region), a CDM project registered in 2008, passed the audit to gain CERs (Certified Emission Reductions).
The Canela I wind farm (18.15 MW), in the Coquimbo region, was entered into the international registry of CDM projects. It is the first Chilean wind farm connected to the national grid and, with the commissioning of another 60 MW, it will reach a capacity of about 78.2 MW.

EN20 Specific emissions of macro-pollutants generally decreased from 2008 to 2009 (SO_2 -29%, NO_X -23% and particulates -47%) thanks, above all, to a different fuel mix.
The thermal power plants of Diego De Almagro and Huasco (Atacama region), of Taltal (Antofagasta) and of Tarapacá (homonymous region) are not equipped with emission monitoring systems. As a result, NO_X and particulates have been estimated on the basis of emission factors from plants with similar combustion technologies and fuels.

EN22 Specific production of coal ash was down thanks to the change of the characteristics of the fuel.

EN23 A leak occurred from a 35,000-liter oil tank in a 220/110 kV substation of the distribution grid (managed by Chilectra) owing to detachment of the upper valve of the level measuring system.
50 liters of oil were spilled at the thermal power plant of Huasco.
At the thermal power plant of San Isidro (Valparaíso region), an about 1-m^2 surface became contaminated owing to sinking of the tank which collects the drainage from clean-up of filters and other oily waters.
At the same plant, during collection of waste upon routine maintenance, oil was spilled owing to the breakage of a container.
At the hydro power plant of Sauzal (Libertador General Bernardo O'Higgins region), the breakage of the heat exchanger of stage 3 of the main transformer caused the slow spilling of about 2,000 liters of oil.
In all cases, the necessary measures for rehabilitating the sites were taken.

EN26 In electricity distribution, environmental impacts are related to the activities which are needed to provide adequate service in the concession areas. Therefore, solutions are adopted to mitigate these impacts.

As regards prevention of soil contamination, internal environmental emergencies are managed under specific procedures. This is not possible, however, upon uncontrollable external events, such as dielectric oil spills caused by collisions of vehicles with transformer supports. These events, although being the most common cause of environmental emergencies, are independent of the company's activities.

A new methodology for assessing environmental risks and formulating mitigation plans was adopted for the thermal power plant of San Isidro and the distribution substation of El Salto. The methodology integrates the environmental management system (ISO 14001) in terms of impact assessment and operational control of significant environmental aspects.

Colombia

Thermal power generation

(Endesa SA)

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Thermal power plant
- Coal
- Fuel oil and gas

Power installations

	Power plants no.	Units no.	Net maximum electrical capacity MW
Steam (condensing)	**2**	**7**	**411**

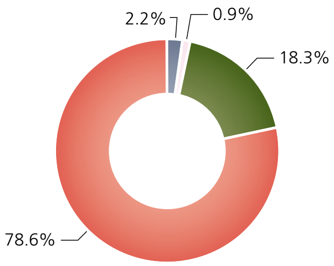
The thermal power plants of Cartagena and Termozipa are both ISO 14001-certified.

Net electricity generation

Total: 973 million kWh

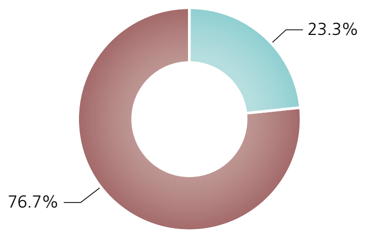
Fuel consumption

Total: 331,608 t of oil-equivalent



Water for industrial uses

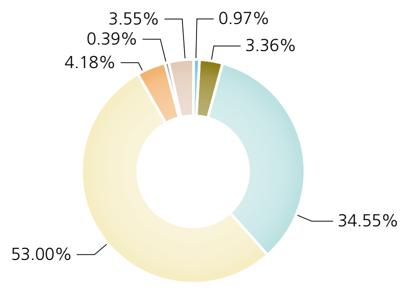
Total requirements: 434,984 m³
Total abstraction from inland waters: 434,984 m³



- From acqueducts
- From rivers

Expendables

Total: 299 t



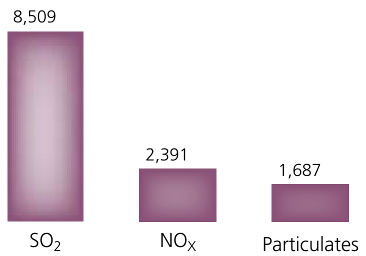
- Resins, hydrazine, carbohydrazide & hydrogen peroxide
- Sodium hypochlorite, chlorine dioxide, ferrous sulfate, ferrous chloride and trisodium phosphate
- Sulfuric & hydrochloric acids
- Caustic soda
- Lubricating oil
- Dielectric oil
- Other

Waste waters

Discharged (m³)	86,811

Waste waters include those meteoric waters that are susceptible to pollution and are therefore fed to treatment systems before being discharged or used.

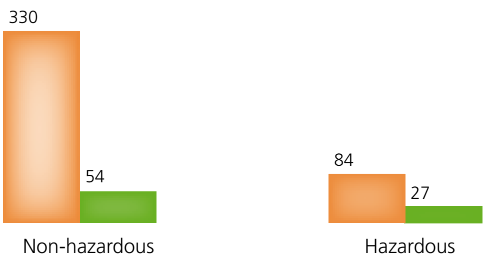
Emissions into the atmosphere



CO_2	1,123,930

Special waste

Total production: 414 t
Total delivery to recovery operators: 81 t



- Production
- Delivery to recovery operators

Hydro and wind power generation

(Endesa SA)

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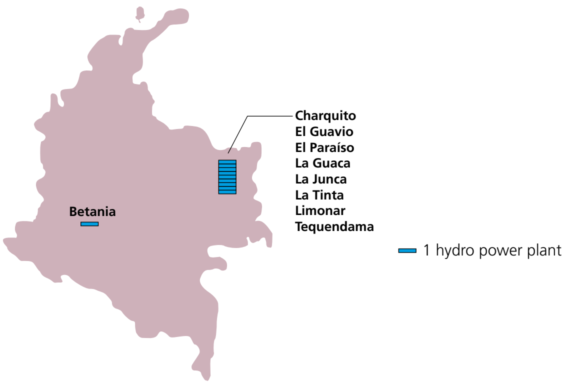


Power installations

	Power plants no.	Head installations no.	Net maximum electrical capacity MW
Run-of-river	7	7	697
Pondage/reservoir	2	2	1,739
	9	**9**	**2,436**

All the power plants are ISO 14001-certified.

Net electricity generation

Total: 11,701 million kWh
(100% hydro from natural flows)

Equivalent yearly hours of utilization*

* On a statistical basis, yearly generation/capacity ratio.

Expendables

Total: 7 t
(lubricating oil)

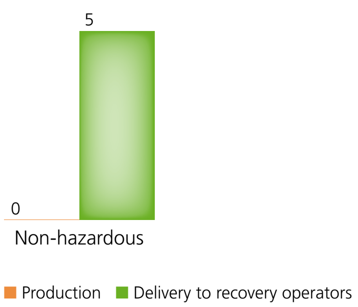
Avoided CO_2 emissions

Due to hydro generation from natural flows (t)	13,512,579

Emissions from the otherwise necessary fossil-fired thermal generation.

Special waste

Total production: **0 t**
Total delivery to recovery operators: **5 t**



Electricity distribution

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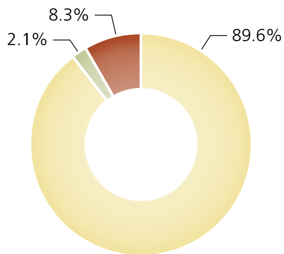
● Headquarters of the company of the Group which carries out the activity (Codensa)

Power installations

SUBSTATIONS	no.	Installed transforming capacity MVA
HV/MV	54	4,240
MV/LV	63,989	7,820
MV/MV	59	304
	64,102	**12,364**

LINES (length in km)	Overhead bare conductors	Overhead cables	Underground cables	Total
HV	1,240	-	0	**1,240**
MV	15,918	166	2,797	**18,881**
LV	20,775	735	691	**22,201**
	37,933	**901**	**3,488**	**42,322**



The organization has an ISO 14001-certified environmental management system in place.

General data

Municipalities served (no.)	103
Surface area served (km2)	14,087
Customers connected to the grid of the company (no.)	2,360,562
supplied (no.)	*2,360,544*

Electricity

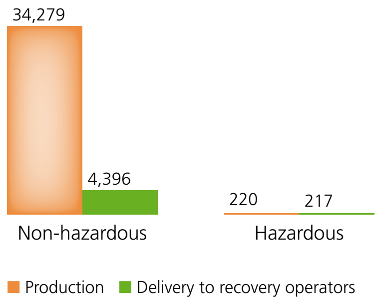
Total electricity distributed (million kWh)	4,418
Own consumption for grid operation (million kWh)	7

Emissions into the atmosphere

SF_6 (kg)	83
(t of CO_2-equivalent)	1,843

Special waste

Total production: 34,499 t
Total delivery to recovery operators: 4,613 t



Eco-Balance and Indicators

STATUS DATA

		2007	2008	2009
Power-generating installations				
Power plants	no.	10	10	11
thermal	no.	2	2	2
hydro	no.	8	8	9
Net maximum electrical capacity	MW	1,897	1,941	2,847
thermal	MW	253	297	411
hydro	MW	1,644	1,644	2,436
Power lines (circuit-length)				
Total	km	27,666	27,987	42,322
high-voltage	km	846	823	1,240
medium-voltage	km	12,078	12,349	18,881
low-voltage	km	14,742	14,815	22,201

RESOURCES (1/2)

			2007	2008	2009
EN1 EN3	**Fossil fuels**				
	Thermal generation (including auxiliary boilers and emergency generating sets)				
	fuel oil	thousand t	0.135	2.57	7.33
	MS	*thousand t*	*0.135*	*2.28*	*7.33*
	LS	*thousand t*	*0*	*0.290*	*0*
	gas-oil	thousand t	0.561	3.08	2.81
	natural gas	million m^3	2.06	5.58	76.2
	coal	thousand t	44.8	198	428
	Total	thousand toe	31.2	130	332
	Various activities	thousand toe	0.087	0	0
	Grand total	**thousand toe**	**31.3**	**130**	**332**
EN8	**Water for industrial uses**				
	From rivers (including meteoric waters from secondary rainfall)	million m^3	0.034	0.093	0.338
	From aqueducts	million m^3	0.014	0.039	0.097
	Total requirements	**million m^3**	**0.048**	**0.132**	**0.435**
EN8 EN21	**Open-cycle cooling water** (thermal generation)	million m^3	18.3	87.4	211

(2/2)

		2007	2008	**2009**
EN1 Expendables				
Hydrazine	t	0	0.952	2.89
Sodium hypochlorite	t	0	4.50	10.0
Ferrous sulfate	t	0	0.168	0
Trisodium phosphate	t	0	0.270	0.034
Sulfuric & hydrochloric acids	t	0	58.5	103
Caustic soda	t	0	27.4	158
Lubricating oil	t	2.60	9.50	19.3
Dielectric oil	t	14.4	44.9	1.18
Other	t	0	5,762	10.6
Total	**t**	**17.0**	**5,908**	**306**
for thermal generation	t	0	5,856	299
for hydro generation	t	1.79	7.60	6.80
for electricity distribution	t	15.2	44.9	0
EN1 PCB survey (1)				
Equipment & transformers with PCBs >500 ppm (excluding their oil)	t	0	0	33.0
Equipment & transformers with PCBs>50 ppm and ≤500 ppm (excluding their oil)	t	0	0	54.5
Oil with PCBs >50 ppm and ≤500 ppm contained in equipment & transformers	t	0	0	46.0

(1) The survey began in 2009.

PROCESSES AND PRODUCTS

		2007	2008	**2009**
Electricity generation (net)				
From fossil fuels	million kWh	86.3	337	973
fuel oil & gas-oil	million kWh	1.73	14.8	31.7
natural gas	million kWh	5.16	14.1	202
coal	million kWh	79.4	308	740
From renewables	million kWh	1,914	8,316	11,701
hydro from natural flows	million kWh	1,914	8,316	11,701
Total	**million kWh**	**2,000**	**8,653**	**12,674**
Electricity distribution				
Electricity distributed	million kWh	1,918	7,927	4,418

EMISSIONS, LIQUID RELEASES & WASTE (1/3)

		Source		2007	2008	2009
	Emissions into the atmosphere					
EN20	SO_2	thermal generation	thousand t	0.812	4.39	8.51
EN20	NO_X	thermal generation	thousand t	0.140	0.404	2.39
EN20	Particulates	thermal generation	thousand t	0.138	0.859	1.69
EN16	CO_2	fossil-fired thermal generation (from combustion)	thousand t	82.2	472	1,124
		various activities	thousand t	0.007	0	0
		Total	**thousand t**	**82.2**	**472**	**1,124**
EN16	SF_6	electricity distribution	kg	52.3	139	83
			thousand t of CO_2-equivalent	1.19	3.18	1.89
EN16	Total greenhouse gases (CO_2, SF_6, CH_4)		thousand t of CO_2-equivalent	83.4	475	1,126
EN18	**Avoided CO_2 emissions**					
	Due to hydro generation from natural flows		thousand t	1,825	11,646	13,513
EN21	**Waste waters** (discharged quantity)	thermal generation	million m^3	0	0.034	0.087
EN21	**Conventional polluting load of waste waters** (thermal generation - only in some large plants) (1)					
	Total nitrogen (expressed as N)		kg			2.62
	Total phosphorus (expressed as P)		kg			0.040
	COD		kg			1,622
	BOD		kg			885

(1) The survey began in 2009.

(2/3)

		Source		2007	2008	**2009**
EN22	**Non-hazardous special waste**					
	Coal bottom ash	thermal generation				
	production		t	0	60.5	53.1
	Coal flyash	thermal generation				
	production		t	8,964	0	0
	Other					
	production	electricity generation	t	210	427	277
		electricity distribution	t	381	1,910	34,279
		Total	**t**	**591**	**2,337**	**34,556**
	delivery to recovery operators	electricity generation	t	25.9	1.79	59.3
		electricity distribution	t	381	1,453	4,396
		Total	**t**	**407**	**1,455**	**4,456**
	Total					
	production	electricity generation	t	9,174	487	330
		electricity distribution	t	381	1,910	34,279
		Total	**t**	**9,555**	**2,397**	**34,610**
	delivery to recovery operators	electricity generation	t	25.9	1.79	59.3
		electricity distribution	t	381	1,453	4,396
		Total	**t**	**407**	**1,455**	**4,456**

EMISSIONS, LIQUID RELEASES & WASTE (3/3)

		Source		2007	2008	**2009**
EN22	**Hazardous special waste**					
	production	electricity generation	t	11.7	30.3	84.3
		electricity distribution	t	23.9	115	220
		Total	**t**	**35.5**	**145**	**304**
	of which with PCBs	*electricity generation*	*t*	*0*	*22.8*	*55.2*
		electricity distribution	*t*	*22.6*	*91.9*	*170*
		Total	***t***	***22.6***	***115***	***225***
	delivery to recovery operators	electricity generation	t	0.962	27.3	26.7
		electricity distribution	t	15.9	101	216
		Total	**t**	**16.9**	**128**	**243**
	of which with PCBs	*electricity generation*	*t*	*0*	*26.6*	*22.3*
		electricity distribution	*t*	*15.9*	*91.9*	*170*
		Total	***t***	***15.9***	***118***	***192***
EN22	**Total special waste**					
	production	electricity generation	t	9,185	518	415
		electricity distribution	t	405	2,024	34,499
		Total	**t**	**9,590**	**2,542**	**34,914**
	delivery to recovery operators	electricity generation	t	26.9	29.1	86
		electricity distribution	t	397	1,554	4,613
		Total	**t**	**424**	**1,583**	**4,699**

INDICATORS (1/2)

			2007	2008	**2009**
	Resource conservation and quality				
EN1 EN3	Net heat rate of thermal generation	kcal/kWh	3,616	3,862	3,407
EN8	Net specific requirements of water for industrial uses in thermal generation				
	including contribution of as-is sea water	liters/kWh	0.557	0.392	0.427
	excluding contribution of as-is sea water	liters/kWh	0.557	0.392	0.427
EN8	Coverage of requirements of water for industrial uses				
	From rivers (including meteoric waters from secondary rainfall)	% of requirements	70.8	70.5	76.7
	From aqueducts	% of requirements	29.2	29.5	23.3
EN1 EN3	Fossil fuel consumption for thermal generation				
	fuel oil	% of total fuel consumption	0.414	1.84	2.23
	gas-oil	% of total fuel consumption	1.82	2.19	0.928
	natural gas	% of total fuel consumption	6.14	3.43	18.4
	coal	% of total fuel consumption	91.6	92.5	78.5
	MS fuel oil	% of total fuel-oil consumption	100	90.7	100
	LS fuel oil	% of total fuel-oil consumption	0	9.32	0
	natural gas non-technologically captive use	% of total natural-gas consumption	100	100	100
	Specific emissions into the atmosphere				
EN20	SO_2 (thermal generation)	g/kWh thermal net	9.41	13	8.74
EN20	NO_X (thermal generation)	g/kWh thermal net	1.62	1.20	2.46
EN20	Particulates (thermal generation)	g/kWh thermal net	1.60	2.55	1.73
EN16	CO_2 (thermal generation)	g/kWh thermal net	953	1,400	1,155
		g/kWh total net	41.1	54.5	88.7
EN16	SF_6 (electric activities)	% of SF_6 in equipment or in stock	2.25	4.60	0.297
EN22	**Specific production of waste**				
	Coal ash (thermal generation)	g/kWh net from coal	113	4.08	0.072

INDICATORS (2/2)

			2007	2008	**2009**
EN22	**Waste recovery**				
	Non-hazardous special waste				
	electricity generation	% of production	0.283	0.367	18
	electricity distribution	% of production	100	76.1	12.8
	Total	**% of production**	**4.26**	**60.7**	**12.9**
	Hazardous special waste				
	electricity generation	% of production	8.25	90.1	31.7
	electricity distribution	% of production	66.7	87.7	98.3
	Total	**% of production**	**47.5**	**88.2**	**79.9**
	Total special waste				
	electricity generation	% of production	0.293	5.62	20.8
	electricity distribution	% of production	98	76.8	13.4
	Total	**% of production**	**4.42**	**62.3**	**13.5**
EN29	**Land**				
	LV cable lines	% of entire LV grid			
	overhead		2.80	2.86	3.31
	underground		2.92	3.02	3.11
	Total cable lines		**5.72**	**5.88**	**6.42**
	MV cable lines	% of entire MV grid			
	overhead		0.855	0.869	0.879
	underground		14.4	14.7	14.8
	Total cable lines		**15.3**	**15.6**	**15.7**
	Overhead and underground cables in HV+MV+LV distribution lines	% of total distribution grid	9.71	10	10.4
	Electricity generation from renewables				
	Hydro from natural flows	% of total generation	95.7	96.1	92.3

Highlights

Enel operates in Colombia through Endesa (thermal and hydro power generation, electricity distribution and marketing).
The data for 2008 have been considered at 67.05% (stake then owned by Enel), whereas the data for 2009 have been consolidated at 100% as a result of the acquisition (in June 2009) of Acciona's holding in Endesa. This explains most of the deviations in the absolute values.
In 2009, the Enel Group generated 11.7 TWh net in hydro power plants in Colombia. Electricity generation from renewables accounted for 92% of total generation.

Applicable GRI indicators

EN1
EN3 The net heat rate of thermal generation in 2009 was the lowest value in the past three years (-12% on 2008).
In the fuel mix, natural gas grew from 3% in 2008 to 18% in 2009, whereas the percentage of coal dropped by 14 points.

EN4 In 2009, electricity consumption for fuel storage & handling was 35.9 TJ (about 10 GWh) and the one for grid operation was equal to 25.2 TJ (7 GWh).
Offices consumed 15.5 TJ (about 4.3 GWh) of electricity.

EN16 Specific emissions of CO_2 from thermal generation were down by roughly 18% on 2008.

EN18 Electricity generation from renewables displaced about 13.5 million t of CO_2 emissions in 2009.
A CDM project is being evaluated for the hydro power plant of Quimbo (net maximum capacity: 400 MW), located on the Magdalena river (province of Huila).

EN20 Specific emissions of macro-pollutants fell from 2008 to 2009 by about 33% (SO_2) and by over 32% (particulates) as a result of a different fuel mix.

EN22 Usually, reusable non-hazardous waste (paper, packaging materials, cardboard, iron scrap, etc.) is given to charitable institutions, which may take advantage from its recovery.
Under the strategic PCB disposal plan, all the pieces of equipment contaminated by PCBs in concentrations above 50 ppm are delivered to European facilities authorized to treat these substances. The local waste management companies have the required authorizations for transport and temporary storage.

EN23 Owing to uncontrollable external factors, three emergencies arose in three different distribution substations, with the spill of a total of 830 liters of dielectric oil. Timely response avoided significant impacts.

EN26 Electricity distribution

The following environmental enhancements were made:

> monitoring of SF_6 emissions;
> reduction of PCB-contaminated oil and cooperation for actions to remove PCBs outside the company;
> reuse of waste waters and waste recycling campaign;
> separate collection and reuse of waste;
> offsets of vegetation cuts (required for construction and maintenance of power lines) by planting tree species in degraded zones.

Electricity generation

The thermal power plant of Termozipa and the hydro power plant of El Paraíso applied a new methodology of environmental risk assessment and formulated mitigation plans. The methodology integrates the environmental management system (ISO 14001) in terms of impact assessment and operational control of significant environmental aspects.

The Cartagena thermal power plant had received complaints by neighboring companies about the noise produced by the plant upon its start-up stages. In 2009, based on these complaints and with a view to systematically complying with the 75-dB limit mandated for industrial areas, four silencers were installed on the induced- and forced-draft fans of unit 1 and 2 boilers (expenditure: € 31,150).

Costa Rica

Hydro and wind power generation

(Enel Latin America LLC)

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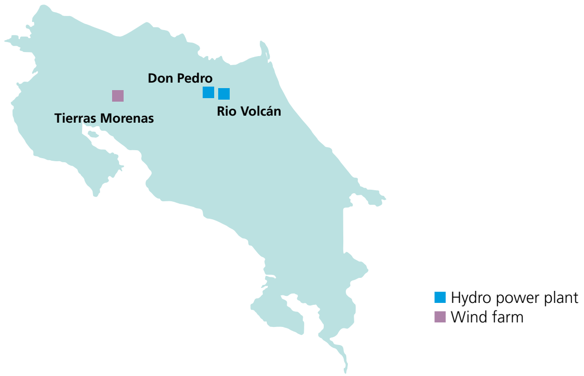


Power installations

HYDRO

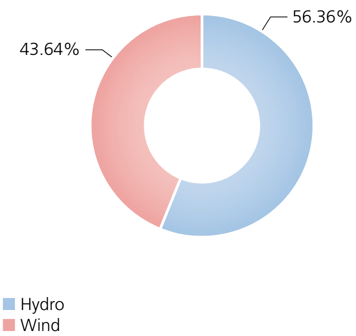
	Power plants no.	Head installations no.	Net maximum electrical capacity MW
Run-of-river	**2**	**2**	**31**

WIND

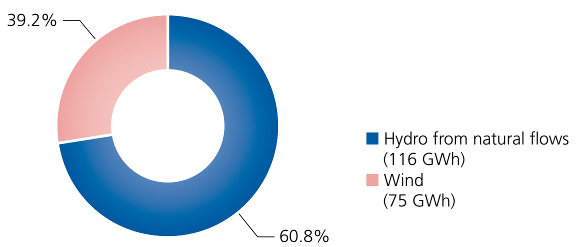
	Power plants no.	Net maximum electrical capacity MW
	1	**24**

All the power plants are ISO 14001-certified.

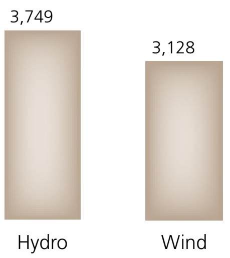
Net maximum electrical capacity
Total: 55 MW



Net electricity generation
Total: 191 million kWh



Equivalent yearly hours of utilization*



* Yearly generation/capacity ratio.

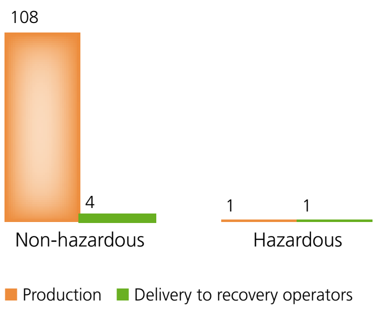
Expendables
Total: 0.23 t

Avoided CO_2 emissions (t)

Due to hydro generation from natural flows (t)	71,234
Due to wind generation (t)	46,025
Total	**117,259**

Emissions from the otherwise necessary fossil-fired thermal generation.

Special waste
Total production: 109 t
Total delivery to recovery operators: 5 t



Other data

WIND GENERATION

Wind systems	surface area occupied by platforms, service roads and buildings (ha)	35
	total surface area affected by the installations (ha)	20 to 100 times larger

HYDRO GENERATION

Emptied reservoirs	quantity (no.)	24
	alluvial sediments removed by flushing them out through bottom outlets (m^3)	63,960
	alluvial sediments removed by mechanical equipment (m^3)	86,400
	of which reused locally (m^3)	*86,336*

Eco-Balance and Indicators

STATUS DATA

		2005	2006	2007	2008	2009
Power-generating installations						
Power plants	no.	3	3	3	3	3
hydro	no.	2	2	2	2	2
wind	no.	1	1	1	1	1
Net maximum electrical capacity	MW	55	55	55	55	55
hydro	MW	31	31	31	31	31
wind	MW	24	24	24	24	24

RESOURCES

			2005	2006	2007	2008	2009
EN1	**Expendables**						
	Lubricating oil	t	0.335	0.990	1.77	0.337	0.229
	Dielectric oil	t	6.00	7.62	0	0	0
	Other	t	0	0.035	0	0	0
	Total	**t**	**6.34**	**8.64**	**1.77**	**0.337**	**0.229**
	for hydro generation	t	6.27	7.50	0.792	0.156	0.119
	for wind generation	t	0.063	1.14	0.975	0.181	0.110

PROCESSES AND PRODUCTS

		2005	2006	2007	2008	2009
Electricity generation (net)						
From renewables	million kWh	187	210	207	181	191
hydro from natural flows	million kWh	132	135	136	134	116
wind	million kWh	55.7	74.5	70.8	47.4	75.1

EMISSIONS & WASTE

		Source		2005	2006	2007	2008	**2009**
	Emissions into the atmosphere							
EN16	CO_2	various activities	thousand t	0	0.004	0	0	0
EN18	**Avoided CO_2 emissions**							
	Due to hydro generation from natural flows		thousand t	80.6	82.9	83.2	81.9	71.2
	Due to wind generation		thousand t	34.1	45.6	43.4	29	46
	Due to generation from renewables		**thousand t**	**115**	**129**	**127**	**111**	**117**
EN22	**Non-hazardous special waste**	electricity generation						
	production		t	2.18	8.20	115	40.7	108
	delivery to recovery operators		t	0	4.80	109	0	4.48
EN22	**Hazardous special waste**	electricity generation						
	production		t	0.140	0	0.051	700	0.664
	delivery to recovery operators		t	0.050	0	0.014	0	0.664
EN22	**Total special waste**	electricity generation						
	production		t	2.32	8.20	115	741	109
	delivery to recovery operators		t	0.050	4.80	109	0	5.15

INDICATORS

			2005	2006	2007	2008	**2009**
EN22	**Waste recovery**						
	Non-hazardous special waste electricity generation	% of production	0	58.5	94.8	0	4.15
	Hazardous special waste electricity generation	% of production	35.7	0	27.5	0	100
	Total special waste electricity generation	% of production	2.16	58.5	94.8	0	4.73
	Electricity generation from renewables						
	Hydro from natural flows	% of total generation	70.2	64.5	65.7	73.8	60.7
	Wind	% of total generation	29.8	35.5	34.3	26.2	39.3

Highlights

Enel operates in Costa Rica through Enel Latin America (hydro and wind power generation).
Wind power generation (75 GWh net, i.e. 39% of total electricity generation) was up by over 58% and hydro generation (116 GWh net, i.e. 61%) was down by 13% on 2008.

Applicable GRI indicators

EN18 In 2009, electricity generation from renewables displaced roughly 117,000 t of CO_2 emissions.

EN23 A minor oil spill (5 liters) occurred at the wind farm of Tierras Morenas.

EN26 The materials collected from the trashracks of the hydro power plant of Don Pedro are used as fertilizers in reforestation projects.
In the Tierras Morenas wind farm, temperature sensors were installed on wind turbines to prevent fires and a deposit for hazardous and flammable waste was built.
To mitigate the risk of groundwater and surface water pollution, the hydro power plants of Don Pedro and Rio Volcán introduced the use of hydraulic fluids of vegetal origin and of fully biodegradable greases.

Guatemala

Hydro power generation

(Enel Latin America LLC)

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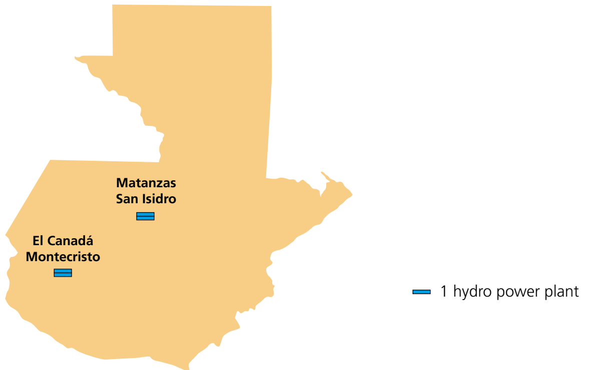


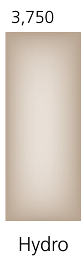
Power installations

	Power plants no.	Head installations no.	Net maximum electrical capacity MW
Run-of-river	1	1	4
Pondage/reservoir	3	3	72
	4	**4**	**76**

Net electricity generation

Total: 287 million kWh
(100% hydro from natural flows)

Equivalent yearly hours of utilization*



* Yearly generation/capacity ratio.

Expendables

Total: 1.1 t

Gas-oil

Total consumption (t of oil-equivalent)	1

Emissions into the atmosphere

CO_2 (t)	198

Emissions from the otherwise necessary fossil-fired thermal generation.

Avoided CO_2 emissions

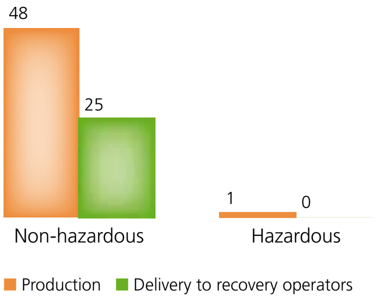
Due to hydro generation from natural flows (t)	175,798

Emissions from the otherwise necessary fossil-fired thermal generation.

Special waste

Total production: 49 t

Total delivery to recovery operators: 25 t



Other data

Emptied reservoirs	quantity (no.)	3
	alluvial sediments removed by flushing them out through bottom outlets (m^3)	90,920
	alluvial sediments removed by mechanical equipment (m^3)	53,500
	of which reused locally (m^3)	*53,500*

Eco-Balance and Indicators

STATUS DATA

		2005	2006	2007	2008	2009
Power-generating installations						
Power plants (hydro)	no.	3	3	4	4	4
Net maximum electrical capacity	MW	63	63	74	75.7	76

RESOURCES

			2005	2006	2007	2008	2009
EN1 EN3	**Fossil fuels**						
	Various activities	thousand toe	0	0.002	0.002	0.004	0.001
EN1	**Expendables**						
	Lubricating oil	t	0.416	1.20	1.79	1.49	1.10
	Dielectric oil	t	0	0	0	8.64	0
	Other	t	0	0	1.42	0.131	0
	Total	**t**	**0.416**	**1.20**	**3.21**	**10.3**	**1.10**

PROCESSES AND PRODUCTS

		2005	2006	2007	2008	2009
Electricity generation (net)						
Hydro from natural flows	million kWh	206	205	274	343	287

EMISSIONS & WASTE

		Source		2005	2006	2007	2008	**2009**
	Emissions into the atmosphere							
EN16	CO_2	various activities	thousand t	0	0.005	0.004	0.011	0
EN16	SF_6	electricity generation	kg	0	15	0	0	0
			thousand t of CO_2-equivalent	0	0.342	0	0	0
EN16	Total greenhouse gases (CO_2, SF_6, CH_4)		**thousand t of CO_2-equivalent**	**0**	**0.347**	**0.004**	**0.011**	**0**
EN18	**Avoided CO_2 emissions**							
	Due to hydro generation from natural flows		thousand t	126	126	168	210	176
EN22	**Non-hazardous special waste**	electricity generation						
	production		t	2.22	32,096	21,501	29,765	48.2
	delivery to recovery operators		t	0	0.470	0	24.5	25.2
EN22	**Hazardous special waste**	electricity generation						
	production		t	0	0.072	0.083	0.240	0.895
	of which with PCBs		*t*	*0*	*0*	*0*	*0.206*	*0.825*
	delivery to recovery operators		t	0	0.036	0.083	0.017	0
EN22	**Total special waste**	electricity generation						
	production		t	2.22	32,096	21,501	29,765	49.1
	delivery to recovery operators		t	0	0.506	0.083	24.5	25.2

INDICATORS

			2005	2006	2007	2008	2009
EN22	**Waste recovery**						
	Non-hazardous special waste electricity generation	% of production	0	0.001	0	0.082	52.4
	Hazardous special waste electricity generation	% of production	0	50	100	7.08	0
	Total special waste electricity generation	% of production	0	0.002	0	0.082	51.5
	Electricity generation from renewables						
	Hydro from natural flows	% of total generation	100	100	100	100	100

Highlights

Enel operates in Guatemala through Enel Latin America (hydro power generation).
In 2009, hydro power generation was equal to 287 GWh net.

Applicable GRI indicators

EN18 Hydro power generation (all from natural flows) displaced 176,000 tonnes of CO_2 emissions in 2009.

EU13 The tropical forest surrounding the four hydro power plants is subject to major deforestation by the local population. Enel Latin America is engaged in countering the effects of deforestation by conducting activities of conservation and replanting of the various local tree species.

Mexico

Hydro power generation

(Enel Latin America LLC)

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Power installations

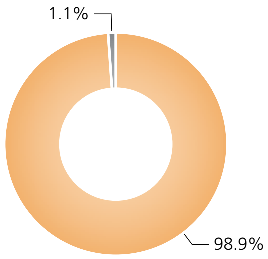
	Power plants no.	Head installations no.	Net maximum electrical capacity MW
Pondage/reservoir	**3**	**3**	**52**

Net electricity generation

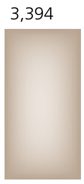
Total: 178 million kWh
(100% hydro from natural flows)

Expendables

Total: 0.55 t



Equivalent yearly hours of utilization*



* Yearly generation/capacity ratio.

Avoided CO_2 emissions

Due to hydro generation from natural flows (t)	109,034

Emissions from the otherwise necessary fossil-fired thermal generation.

Eco-Balance and Indicators

STATUS DATA

		2007	2008	2009
Power-generating installations				
Power plants (hydro)	no.	3	3	3
Net maximum electrical capacity	MW	56.3	52.5	52.4

RESOURCES

			2007	2008	2009
EN1	**Expendables**				
	Lubricating oil	t	0.280	0.424	0.541
	Dielectric oil	t	0.017	0.006	0
	Other	t	0	0	0.006
	Total	**t**	**0.297**	**0.430**	**0.547**

PROCESSES AND PRODUCTS

		2007	2008	2009
Electricity generation (net)				
Hydro from natural flows	million kWh	229	235	178

EMISSIONS & WASTE

		Source		2007	2008	2009
	Emissions into the atmosphere					
EN16	CO_2	various activities	thousand t	0.001	0	0
EN18	**Avoided CO_2 emissions**					
	Due to hydro generation from natural flows		thousand t	140	144	109
EN22	**Non-hazardous special waste**	electricity generation				
	production		t	4.80	0.269	0
	delivery to recovery operators		t	0	0.199	0.002
EN22	**Hazardous special waste**	electricity generation				
	production		t	0.492	0.596	0
	of which with PCBs		*t*	*0.297*	*0.402*	*0*
	delivery to recovery operators		t	0.331	0.507	0
	of which with PCBs		*t*	*0.208*	*0.339*	*0*
EN22	**Total special waste**	electricity generation				
	production		t	5.29	0.865	0
	delivery to recovery operators		t	0.331	0.706	0.002

INDICATORS

			2007	2008	**2009**
EN22	**Waste recovery**				
	Non-hazardous special waste				
	electricity generation	% of production	0	74	0
	Hazardous special waste				
	electricity generation	% of production	67.3	85.1	0
	Total special waste				
	electricity generation	% of production	6.26	81.6	0
	Electricity generation from renewables				
	Hydro from natural flows	% of total generation	100	100	100

Highlights

Enel operates in Mexico through Enel Latin America, producing hydro power in the three plants of Chilatàn, El Gallo and Trojes, located in the states of Jalisco, Guerrero and Michoacán, respectively (all in central Mexico).
2009 was one of the driest years in the latest decades. The low availability of water had a negative impact on hydro power generation, which was down by over 24%, passing from 235 GWh in 2008 to 178 GWh.
The three hydro power plants are well accepted by local communities, as the volumes of water stored in the impoundments also meet the irrigation requirements of local farms

Wind power

In Mexico, Enel Latin America entered into wind power project agreements with Energías Renovables, Térmica e Hidráulica de México (belonging to the Spanish group ENERTHI) and with SoWiTec de México Energías Renovables (branch of the German operator SoWiTec international). The net maximum capacity which is expected to be generated in each case may reach 1,000 MW. Under the agreements, Enel shall have exclusive access to the different projects that these companies are developing or will develop and, after the granting of all the required authorizations, the right to acquire them.

Applicable GRI indicators

EN18 Hydro power generation (all from natural flows) displaced 109,000 t of CO_2 emissions.
CDM projects are being implemented in all the three hydro power plants.

Panama

Hydro power generation

(Enel Latin America LLC)

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Power installations

	Power plants no.	Head installations no.	Net maximum electrical capacity MW
Pondage/reservoir	**1**	**1**	**300**

The Fortuna power plant is ISO 14001-certified.

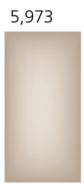
Net electricity generation

Total: 1,792 million kWh
(100% hydro from natural flows)

Expendables

Total: 4 t
(lubricating oil)

Equivalent yearly hours of utilization*



* Yearly generation/capacity ratio.

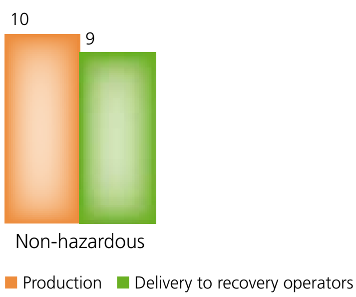
Avoided CO_2 emissions

Due to hydro generation from natural flows (t)	1,098,478

Emissions from the otherwise necessary fossil-fired thermal generation.

Special waste

Total production: 10 t
Total delivery to recovery operators: 9 t



Eco-Balance and Indicators

STATUS DATA

		2007	2008	2009
Power-generating installations				
Power plants (hydro)	no.	1	1	1
Net maximum electrical capacity	MW	300	300	300

RESOURCES

			2007	2008	2009
EN1 EN3	**Expendables**				
	Lubricating oil	t	8.86	8.86	4.07

PROCESSES AND PRODUCTS

		2007	2008	2009
Electricity generation (net)				
Hydro from natural flows	million kWh	1,438	1,754	1,792

EMISSIONS & WASTE

		Source		2007	2008	2009
	Emissions into the atmosphere					
EN16	CO_2	various activities	thousand t	0.002	0.002	0
EN18	**Avoided CO_2 emissions**					
	Due to hydro generation from natural flows		thousand t	881	1,075	1,098
EN22	**Non-hazardous special waste**	electricity generation				
	production		t	0	0	10.4
	delivery to recovery operators		t	0	0	8.75
EN22	**Hazardous special waste**	electricity generation				
	production		t	1.50	12	0
	delivery to recovery operators		t	1.50	12	0
EN22	**Total special waste**	electricity generation				
	production		t	1.50	12	10.4
	delivery to recovery operators		t	1.50	12	8.75

INDICATORS

			2007	2008	2009
EN22	**Waste recovery**				
	Non-hazardous special waste				
	electricity generation	% of production	0	0	84.1
	Hazardous special waste				
	electricity generation	% of production	100	100	0
	Total special waste				
	electricity generation	% of production	100	100	84.1
	Electricity generation from renewables				
	Hydro from natural flows	% of total generation	100	100	100

Highlights

Enel operates in Panama through Enel Latin America (hydro power generation), managing the Fortuna power plant, which is located in the Valle del Sierpe (Chiriquí province).
The plant has a capacity of 300 MW and uses a very large impoundment (12 km^2). In 2009, it generated about 1,792 GWh net.

Applicable GRI indicators

EN5 The installation of fluorescent lamps in all offices and of automatic lighting switch-off sensors in common areas saved 4.62 GJ (0.128 GWh) in 2009.

EN6 The above consumption reduction initiatives are part of the strategy pursued under the ISO 14001-certified environmental management system.

EN18 Hydro power generation displaced over 1 million t of CO_2 emissions in 2009.

EN26 As part of environmental management programs, initiatives were taken to separately collect and maximize the recovery of waste and to install waste water treatment systems. Meters are also planned to be installed at all the points of water withdrawal in the plant, to determine consumption at the individual points.

Peru

Thermal power generation

(Endesa SA)

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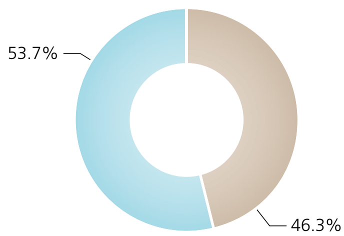
Power installations

	Power plants no.	Units no.	Net maximum electrical capacity MW
Combined-cycle gas turbines	1	3	481
Gas turbines	2	7	556
	3	**10**	**1,037**

All the power plants are ISO 14001-certified.

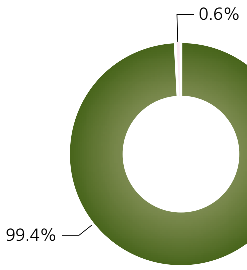
Net maximum electrical capacity
Total: 1,037 MW



Net electricity generation
Total: 4,164 million kWh

Fuel consumption

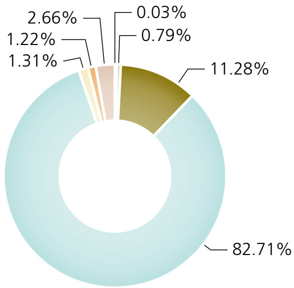
Total: 826,740 t of oil-equivalent



- Gas-oil
- Natural gas

Expendables

Total: 804 t

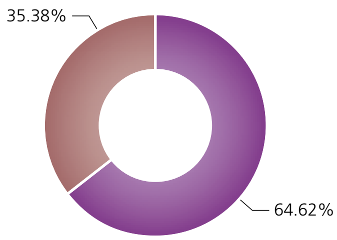


- Resins, hydrazine, carbohydrazide & hydrogen peroxide
- Ammonia
- Sodium hypochlorite, chlorine dioxide, ferrous sulfate, ferrous chloride and trisodium phosphate
- Sulfuric & hydrochloric acids
- Caustic soda
- Lubricating oil
- Other

Water for industrial uses

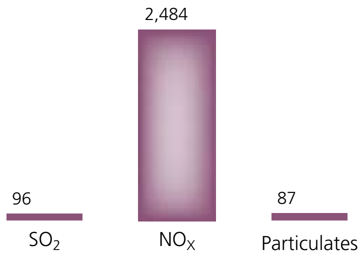
Total requirements: 203,284 m³

Total abstraction from inland waters: 203,284 m³



- From wells
- From aqueducts

Emissions into the atmosphere (t)



CO_2	1,671,325

Waste waters

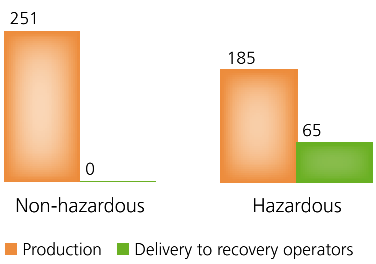
Discharged (m^3)	39,410

Waste waters include those meteoric waters that are susceptible to pollution and are therefore fed to treatment systems before being discharged or used.

Special waste

Total production: 436 t

Total delivery to recovery operators: 65 t



Hydro power generation

(Endesa SA)

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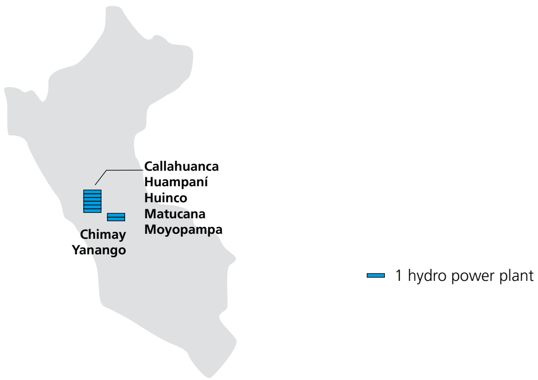


Power installations

	Power plants no.	Head installations no.	Potenza efficiente netta MW
Run-of-river	5	5	346
Pondage/reservoir	2	2	390
	7	**7**	**736**

All the power plants have ISO 14001-certified environmental management systems in place.

Net electricity generation

Total: 4,564 million kWh
(100% hydro from natural flows)

Equivalent yearly hours of utilization*

* On a statistical basis, yearly generation/capacity ratio.

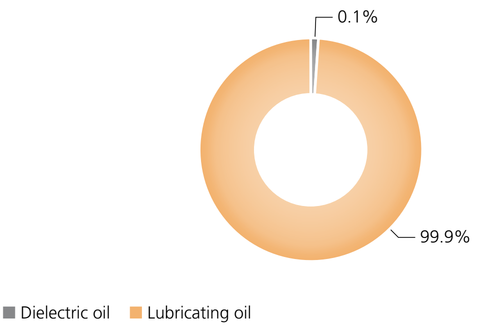
Avoided CO_2 emissions

Due to hydro generation from natural flows	1,832,169

Emissions from the otherwise necessary fossil-fired thermal generation.

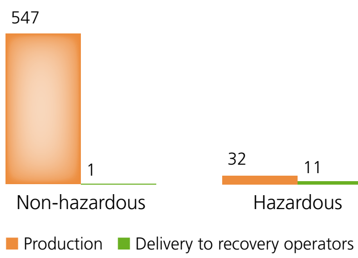
Expendables

Total: 7 t



Special waste

Total production: 579 t
Total delivery to recovery operators:12 t



Electricity distribution

(Endesa SA)

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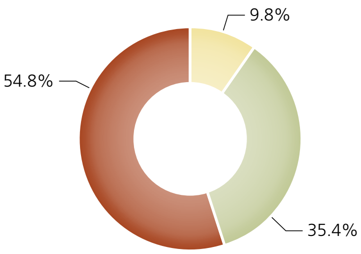
Headquarters of the company of the Group which carries out the activity (Edelnor)

Power installations

SUBSTATIONS	no.	Installed transforming capacity MVA
HV/MV	25	1,332
MV/LV	8,188	1,305
MV/MV	4	35
	8,217	**2,672**

LINES (length in km)	Overhead bare conductors	Overhead cables	Underground cables	Total
HV	404	-	32	**436**
MV	1,821	67	1,709	**3,597**
LV	0	7,976	10,732	**18,708**
	2,225	**8,043**	**12,473**	**22,741**



The organization has an ISO 14001-certified environmental management system in place.

General data

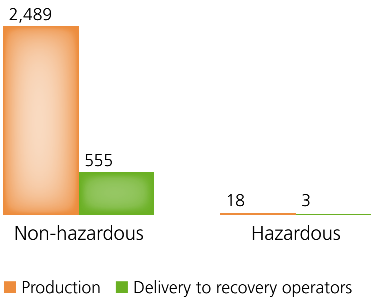
Municipalities served (no.)	57
Surface area served (km^2)	2,440
Customers connected to the grid of the company (no.)	1,060,600
supplied (no.)	*1,060,508*

Electricity

Total electricity distributed (million kWh)	5,716
Own consumption for grid operation (million kWh)	10

Special waste

Total production: 2,507 t
Total delivery to recovery operators: 558 t



Resource consumption

Expendables (t)	1

Emissions into the atmosphere

SF_6 (kg)	6
(t of CO_2-equivalent)	122

Eco-Balance and Indicators

STATUS DATA

		2007	2008	**2009**
Power-generating installations				
Power plants	no.	7	10	10
thermal	no.	2	2	3
hydro	no.	5	8	7
Net maximum electrical capacity	MW	1,082	1,071	1,774
thermal	MW	583	572	1,037
hydro	MW	499	499	737
Power lines (circuit-length)				
Total	km	14,338	14,723	22,741
high-voltage	km	281	285	436
medium-voltage	km	2,249	2,333	3,597
low-voltage	km	11,808	12,104	18,708

RESOURCES (1/2)

			2007	2008	**2009**
EN1 EN3	**Fossil fuels**				
	Thermal generation (including auxiliary boilers and emergency generating sets)				
	gas-oil	thousand t	0.344	20.0	4.81
	natural gas	million m^3	151	701	942
	of which in combined-cycle units	*million m^3*	*0*	*454*	*609*
	Total	thousand toe	141	634	827
EN8	**Water for industrial uses**				
	From wells	million m^3	0.062	0.160	0.131
	From aqueducts	million m^3	0	0	0.072
	Total requirements	**million m^3**	**0.062**	**0.160**	**0.203**
EN8 EN21	**Open-cycle cooling water** (thermal generation)	million m^3	0.494	2.07	3.17

RESOURCES (2/2)

			2007	2008	2009
EN1	**Expendables**				
	Hydrazine	t	0	0.198	0.220
	Ammonia	t	0	4.94	6.37
	Sodium hypochlorite	t	0	42.3	90.6
	Sulfuric & hydrochloric acids	t	0	455	665
	Caustic soda	t	0	2.29	10.5
	Lubricating oil	t	0.300	8.75	17.0
	Dielectric oil	t	0.707	1.11	1.33
	Other	t	0	3.45	21.4
	Total	**t**	**1.01**	**519**	**812**
	for thermal generation	t	0	516	804
	for hydro generation	t	0.300	1.62	7.21
	for electricity distribution	t	0.707	0.925	1.33

PROCESSES AND PRODUCTS

		2007	2008	2009
Electricity generation (net)				
From fossil fuels	million kWh	644	3,078	4,164
fuel oil & gas-oil	million kWh	1.37	87.7	15.9
natural gas	million kWh	643	2,991	4,148
of which in combined-cycle units	*million kWh*	*0*	*2,242*	*3,179*
From renewables (hydro from natural flows)	million kWh	630	2,809	4,564
Total	**million kWh**	**1,274**	**5,887**	**8,728**
Electricity distribution				
Electricity distributed	million kWh	773	4,090	5,716

EMISSIONS, LIQUID RELEASES & WASTE (1/2)

		Source		2007	2008	2009
	Emissions into the atmosphere					
EN20	SO_2	thermal generation	thousand t	0.009	0.136	0.096
EN20	NO_X	thermal generation	thousand t	0.420	1.88	2.48
EN20	Particulates	thermal generation	thousand t	0.014	0.069	0.087
EN16	CO_2	fossil-fired thermal generation (from combustion)	thousand t	287	1,473	1,671
		various activities	thousand t	0	0.056	0
		Total	**thousand t**	**287**	**1,473**	**1,671**
EN16	SF_6	electricity distribution	kg	0.335	0	5.50
			thousand t of CO_2-equivalent	0.008	0	0.125
EN16	Total greenhouse gases (CO_2, SF_6, CH_4)		thousand t of CO_2-equivalent	287	1,473	1,671
EN18	**Avoided CO_2 emissions**					
	Due to hydro generation from natural flows		thousand t	280	1,343	1,832
EN21	**Waste waters (discharged quantity)**	thermal generation	million m^3	0	0.065	0.039
EN22	**Non-hazardous special waste**					
	production	electricity generation	t	49.9	164	798
		electricity distribution	t	88.1	307	2,489
		Total	**t**	**138**	**471**	**3,287**
	delivery to recovery operators	electricity generation	t	0.180	0.020	0.762
		electricity distribution	t	84.8	291	555
		Total	**t**	**85**	**291**	**556**

EMISSIONS, LIQUID RELEASES & WASTE (2/2)

		Source		2007	2008	2009
EN22	**Hazardous special waste**					
	production	electricity generation	t	37.6	72.3	217
		electricity distribution	t	6.13	7.35	17.8
		Total	**t**	**43.7**	**79.7**	**235**
	of which with PCBs	*electricity generation*	*t*	*0*	*12.3*	*5.57*
		electricity distribution	*t*	*0*	*2.73*	*2.91*
		Total	***t***	***0***	***15.1***	***8.48***
	delivery to recovery operators	electricity generation	t	1	12.4	76.5
		electricity distribution	t	0.671	2.73	2.91
		Total	**t**	**1.67**	**15.2**	**79.4**
	of which with PCBs	*electricity generation*	*t*	*0*	*12.3*	*5.06*
		electricity distribution	*t*	*0*	*2.73*	*2.91*
		Total	***t***	***0***	***15.1***	***7.97***
EN22	**Total special waste**					
	production	electricity generation	t	87.5	236	1,015
		electricity distribution	t	94.2	314	2,507
		Total	**t**	**182**	**550**	**3,522**
	delivery to recovery operators	electricity generation	t	1.18	12.4	77.3
		electricity distribution	t	85.5	294	558
		Total	**t**	**86.7**	**306**	**635**

INDICATORS (1/2)

			2007	2008	**2009**
	Resource conservation and quality				
EN1 EN3	Net heat rate of thermal generation	kcal/kWh	2,183	2,059	1,986
EN4	Consumption of electricity for distribution grid operation	% of electricity distributed	0.163	0.142	0.175
EN8	Net specific requirements of water for industrial uses in thermal generation				
	including contribution of as-is sea water	liters/kWh	0.096	0.052	0.049
	excluding contribution of as-is sea water	liters/kWh	0.096	0.052	0.049
EN8	Coverage of requirements of water for industrial uses				
	from wells	% of requirements	100	100	64.5
	from aqueducts	% of requirements	0	0	35.5
EN1 EN3	Fossil fuel consumption for thermal generation				
	gas-oil	% of total fuel consumption	0.247	3.25	0.572
	natural gas	% of total fuel consumption	99.8	96.8	99.4
	natural gas, technologically captive use	% of total natural-gas consumption	100	100	100
	of which in combined-cycle units	*% of total natural-gas consumption*	*0*	*64.7*	*64.9*
	Total	**% of total natural-gas consumption**	**100**	**100**	**100**
	Specific emissions into the atmosphere				
EN20	SO_2 (thermal generation)	g/kWh thermal net	0.014	0.044	0.023
EN20	NO_X (thermal generation)	g/kWh thermal net	0.652	0.609	0.597
EN20	Particulates (thermal generation)	g/kWh thermal net	0.022	0.022	0.021
EN16	CO_2 (thermal generation)	g/kWh thermal net	445	478	401
		g/kWh total net	225	250	191
EN16	SF_6 (electric activities)	% of SF_6 in equipment or in stock	0.035	0	0.297

INDICATORS (2/2)

		2007	2008	**2009**
EN22 Waste recovery				
Non-hazardous special waste	% of production			
electricity generation		0.360	0.012	0.095
electricity distribution		96.3	94.7	22.3
Total		**61.6**	**61.8**	**16.9**
Hazardous special waste	% of production			
electricity generation		2.66	17.2	35.3
electricity distribution		10.9	37.1	16.4
Total		**3.82**	**19**	**33.9**
Total special waste	% of production			
electricity generation		1.35	5.27	7.62
electricity distribution		90.7	93.4	22.3
Total		**47.7**	**55.6**	**18**
EN29 Land				
LV cable lines	% of entire LV grid			
overhead		40.9	41.9	42.6
underground		59.1	58.1	57.4
Total cable lines		**100**	**100**	**100**
MV cable lines	% of entire MV grid			
overhead		2.21	1.86	1.86
underground		46.1	46.7	47.5
Total cable lines		**48.4**	**48.6**	**49.4**
Overhead and underground cables in HV+MV+LV distribution lines	% of total distribution grid	90.1	90	90.2
Electricity generation from renewables				
Hydro from natural flows	**% of total generation**	**49.4**	**47.7**	**52.3**

Highlights

Enel operates in Peru through Endesa (hydro and thermal power generation, electricity distribution and marketing).
Both the generation and distribution business activities have an ISO 14001-certified environmental management system.
The data for 2008 have been considered at 67.05% (stake then owned by Enel), whereas the data for 2009 have been consolidated at 100% as a result of the acquisition (in June 2009) of Acciona's holding in Endesa. This explains most of the deviations in the absolute values.
In 2009, the Enel Group produced 4.6 TWh net in hydro power plants in Peru.
Electricity generation from renewables accounted for 52% of total generation.

Applicable GRI indicators

EN1
EN3 The net heat rate of thermal power generation was down by about 4% on 2008 (from 2,059 to 1,986 kcal/kWh).

EN4 Consumption of electricity for fuel handling was 19 TJ (5 GWh), the one for offices was equal to 36 TJ (10 GWh) and the one for grid operation amounted to about 36 TJ (about 10 GWh).

EN16 Net specific emissions of CO_2 vs. total generation were down by about 24% on 2008 (from 250 to 191 g/kWh).

EN18 In 2009, hydro power generation displaced approximately 1.8 million t of CO_2.
At the Callahuanca power plant (department of Lima), a CDM project is being implemented. The project, registered in 2008, passed the audit for receiving CERs (Certified Emission Reductions).
Another CDM project is expected to be implemented at the 490-MW combined-cycle (natural gas) thermal power plant of Ventanilla (department of Lima), resulting from the conversion of two 160-MW single-cycle gas turbines. The project, which passed the audit, is awaiting registration with the appropriate international registry.

EN20 Specific emissions of macro-pollutants from 2008 to 2009 were down as follows: SO_2 by about 48%, NO_X by about 2% and particulates by about 4.5%.

EN22 Usually, reusable non-hazardous waste (paper, packaging materials, cardboard, iron scrap, etc.) is given to charitable institutions, which may take advantage from its recovery.
Under the strategic PCB disposal plan, all the pieces of equipment contaminated by PCBs in concentrations above 50 ppm are delivered to European facilities authorized to treat these substances. The local waste management companies have the required authorizations for transport and temporary storage.
An up-to-date inventory of asbestos-containing materials is held for all the hydro and thermal power plants. At the thermal power plant of Malacas (Department of Piura), asbestos was completely eliminated as part of an improvement plan included in the ISO 14001-certified environmental management system. In 2004, all the asbestos contained in machinery, installations and buildings was censused

and a plan of replacement and disposal was completed in 2007. Asbestos-containing materials were confined in sites approved by the competent authority.

EN26 In the electricity distribution business, the yearly environmental enhancement program is aimed at mitigating or eliminating environmental impacts by:

> supervising maintenance jobs and other jobs carried out in construction sites located in public areas; this activity is aimed above all at more appropriately disposing of the waste produced (in particular the waste from demolition work);

> conducting environmental audits of the most important contractors;

> monitoring water quality, noise levels and electromagnetic fields in order to ensure compliance with legislative limits;

> checking whether emissions from contractors' vehicles meet the legislative limits;

> harmonizing environmental training and waste management with internal procedures and the national legislation.

Additionally, to prevent soil contamination by spills, collection tanks were placed in the area where the oil from the new power transformers is sampled.

Verifier's statement

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(Translation from the Italian original which remains the definitive version)

Independent limited assurance report on the environmental report

To the board of directors of
Enel S.p.A.

1 We have reviewed the 2009 environmental report of the Enel Group (the "Group"), exclusively in relation to the indicators summarised in the "GRI Content Index" section. The parent's directors are responsible for the preparation of the environmental report in accordance with the qualitative and quantitative environmental performance disclosures required by the "Sustainability Reporting Guidelines & Electric Utility Sector Supplement" issued in 2009 by GRI - Global Reporting Initiative, as set out in the "Methodological note" section. They are also responsible for determining the Group's objectives in respect of environmental development performance and reporting, including the identification of stakeholders and material issues, and for establishing and maintaining appropriate performance management and internal control systems from which the reported performance information is derived. Our responsibility is to issue this report based on our review.

2 We carried out our work in accordance with the criteria established for review engagements by "International Standard on Assurance Engagements 3000 - Assurance Engagements other than Audits or Reviews of Historical Financial Information (ISAE 3000)", issued by the International Auditing and Assurance Standards Board (IAASB). That Standard requires that we comply with applicable ethical requirements (the Code of Ethics for Professional Accountants issued by the International Federation of Accountants, IFAC), including independence requirements, and that we plan and perform the engagement to obtain limited assurance, which is less than that obtainable through an audit, about whether the report is free from material misstatement. A limited assurance engagement on an environmental report consists of making inquiries, primarily of persons responsible for the preparation of information presented in the environmental report, and applying analytical and other evidence gathering procedures, as appropriate. These procedures included:

- analysing how the processes underlying the generation, recording and management of quantitative data included in the environmental report operate. In particular, we have performed the following procedures:
  - interviews and discussions with management personnel of Enel S.p.A. and personnel of other group companies (Endesa SA, Enel Distributie Banat SA, Enel Distribuzione S.p.A., Enel Energie SA, Enel Maritza East 3 AD, Enel Produzione S.p.A., Enel Servicii Comune SA, Enel Servizi S.r.l., Enel Servizio Elettrico S.p.A., Enel OGK-5 OJSC, Sfera S.r.l. and Slovenské elektrárne AS), to gather

information on the IT, accounting and reporting systems used in preparing the environmental report, and on the processes and internal control procedures used to gather, combine, process and transmit data and information to the office that prepares the environmental report;

- sample-based analysis of documentation supporting the preparation of the environmental report to confirm the effectiveness of processes, their adequacy in relation to the objectives described, and that the internal control system correctly manages data and information;

- analysing the compliance of the qualitative information included in the environmental report in relation to the qualitative and quantitative environmental performance disclosures required by the guidelines referred to in paragraph 1 and its overall consistency, in particular with reference to the environmental strategy and policies;
- obtaining the representation letter signed by the legal representative of Enel S.p.A. on the compliance of the environmental report with the qualitative and quantitative environmental performance disclosures required by the guidelines indicated in paragraph 1 and on the reliability and completeness of the information and data contained therein.

A review is less in scope than an audit carried out in accordance with ISAE 3000, and, therefore, it does not enable us to obtain assurance that we would become aware of all significant matters that might be identified in an audit. Therefore, we do not express an audit opinion on the environmental report.

The environmental report includes prior year information and data for comparative purposes, which we have not examined. Accordingly, our conclusions do not extend to such information and data.

3 Based on the procedures performed, nothing has come to our attention that causes us to believe that the 2009 environmental report of the Enel Group, exclusively in relation to the indicators summarised in the "GRI Content Index" section, is not prepared, in all material respects, in accordance with the qualitative and quantitative environmental performance disclosures required by the Sustainability Reporting Guidelines & Electric Utility Sector Supplement issued in 2009 by GRI - Global Reporting Initiative, as set out in the "Methodological note" section.

Rome, 26 April 2010

KPMG S.p.A.

(signed on the original)

Marco Maffei
Director of Audit

Contents developed by the Regulatory, Environment
and Carbon Strategy Department
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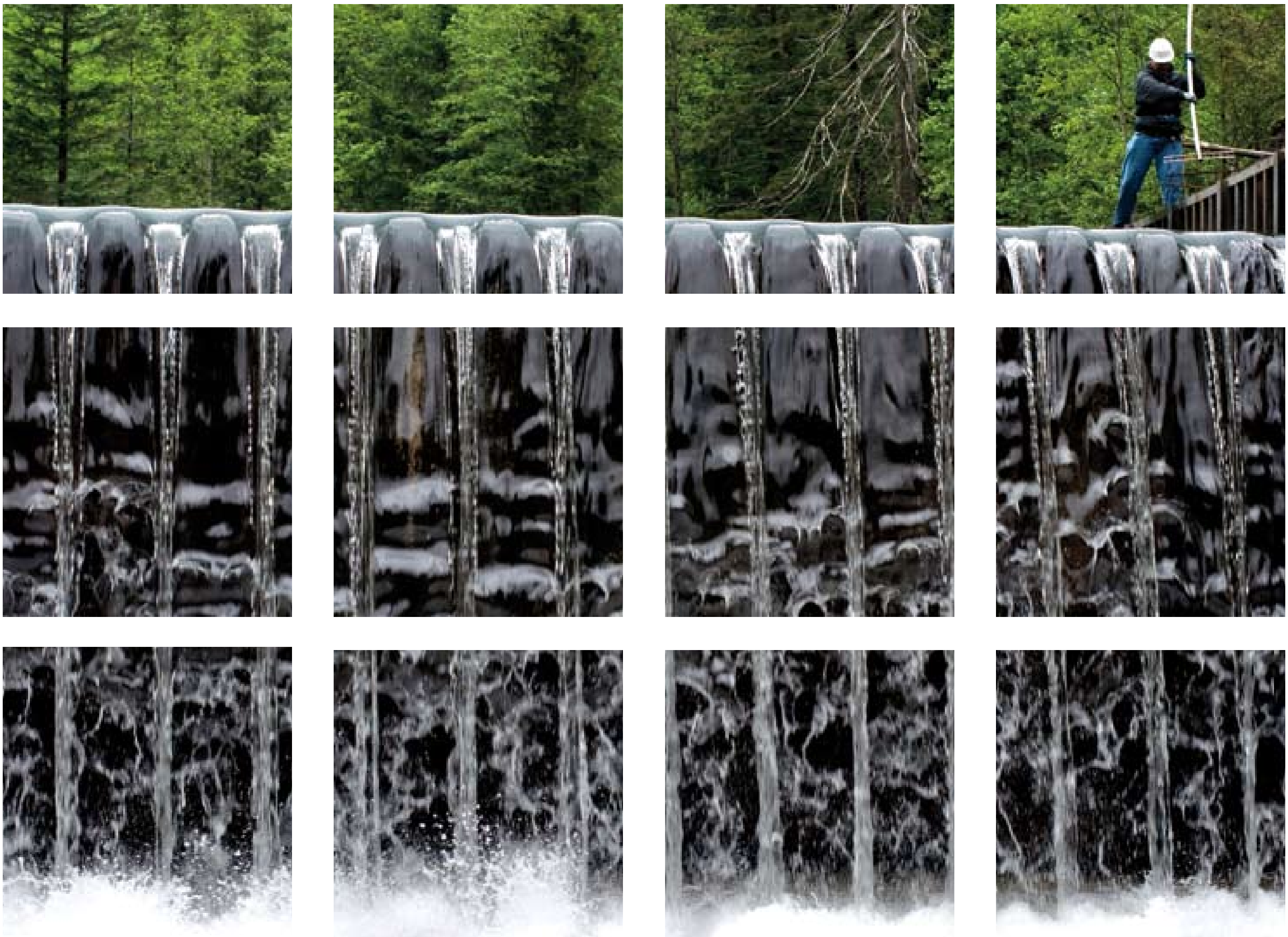

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