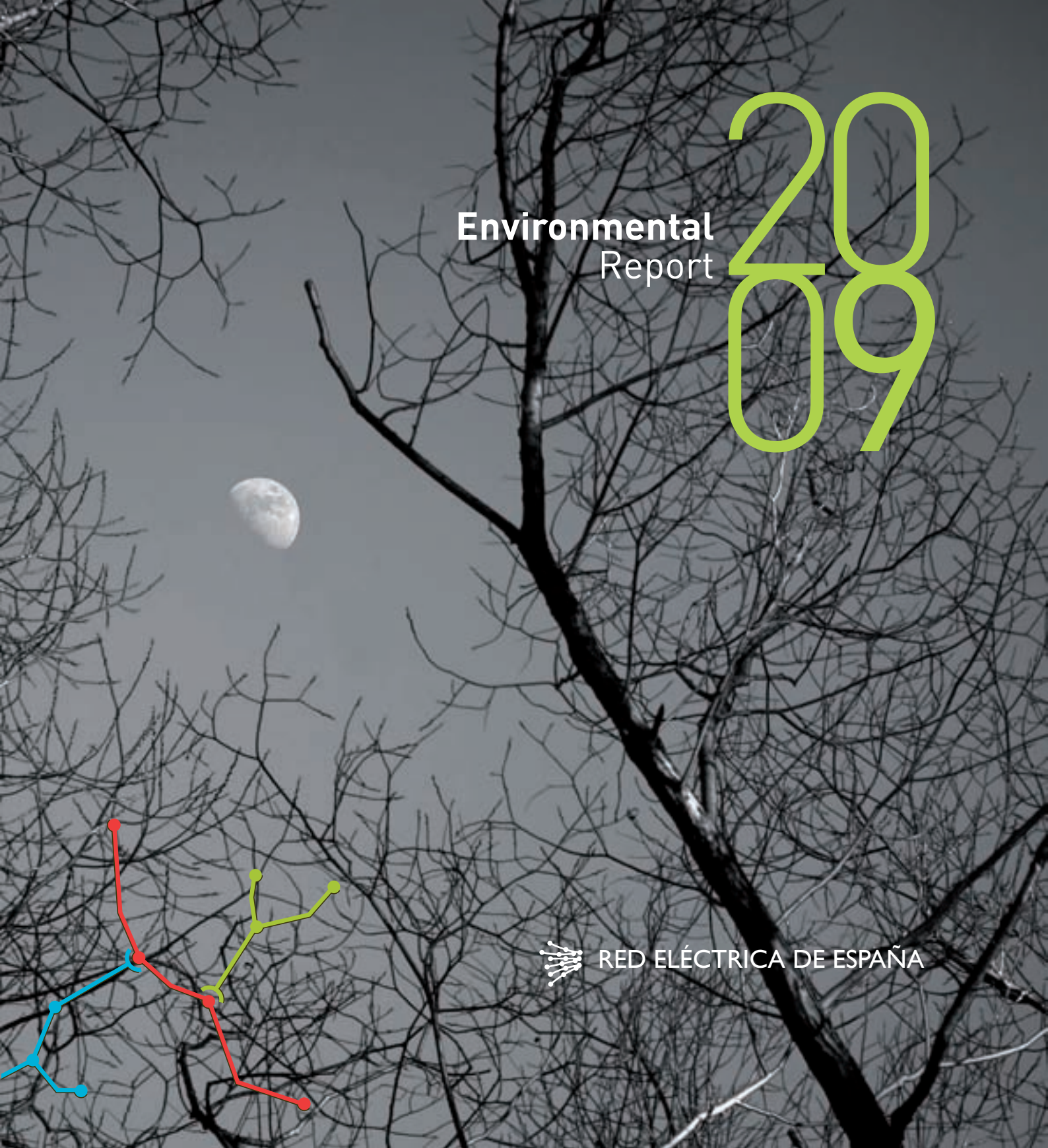


Environmental Report 2009

RED ELÉCTRICA DE ESPAÑA

Table of Contents

Presentation

In Red Eléctrica we work continually to contribute towards an energy model that is more sustainable, has an increased presence of renewable energies, is more energy efficient and more reliable in terms of security of supply. Clearly, we work towards a cleaner energy model which produces low carbon emissions and contributes towards reducing the evermore apparent effects of climate change.

With this conviction, we are creating a network of electricity infrastructures which is increasingly reliable, robust and meshed, that facilitates the evacuation of the new generation from renewable sources, and which above all allows energy flows to be managed which, due to the extraordinary nature of renewable energies regarding meteorological conditions, are highly changeable in both their origin and final destination. At the same time, we are developing system operation solutions and demand side management strategies to realise the objectives regarding renewable matters, integrating into the system the maximum production of clean energies and, consequently, reducing CO_2 emissions into the atmosphere.

This firm environmental commitment leads us to approaching the development of the transmission grid in a sustainable way and being respectful towards ecosystems and the richness of the biodiversity that our territory has. For this reason, we carry out an environmental evaluation on all projects for new facilities, in which the alternative of least impact is defined and which avoids or reduces the effects upon both society and the natural surroundings.

Additionally, within the scope of caring for the environment in which our facilities are located, we are carrying out, in collaboration with specialised organisations, numerous projects oriented to the conservation of biodiversity.

In this way, in 2009 we have finalised the design of a new model of bird safety device for the signalling of lines and have worked on several projects related to the conservation of native species, such as the one for the reintroduction of the Black Vulture in Catalonia or the one for the improvement of Steppe bird habitats.

In 2009, we have also intensified environmental supervision works during the construction of facilities, so as to avoid the effects that could be derived from these works and to verify the effectiveness of the preventive and corrective measures applied. At the same time, in order to reduce the risks associated to our facilities, we are working on those areas which are susceptible to improvement, for example, fire prevention.

Also, I would like to emphasise our backing for energy efficiency as a fundamental pillar in the fight against climate change. We have created the branding Red Eléctrica eficiente under the motto "Use energy responsibly" that highlights all those actions that promote a better use of energy and resources.

This report which we present for yet another year, includes all these activities and reflects our environmental responsibility and the commitment that we maintain every day to reach the efficient balance between our business activity and sustainability. This is our objective in which we are putting all our effort.

Luis Atienza Serna
Chairman

01 Who is Red Eléctrica

We are responsible for the technical operation and management of the Spanish electricity system. We own 99% of the Spanish high voltage electricity transmission grid and are the only company in Spain specialised in the activity of electrical energy transmission.

As the Spanish electricity system operator (peninsular and extrapeninsular), our main function is to guarantee the continuity and security of the electricity supply and the correct coordination of the generation and transmission systems, working in cooperation with the operators and agents of the Iberian Market for electrical energy, under the principles of transparency, objectivity and independence.

As the manager of the transmission grid, we perform our function as sole transmission agent guaranteeing the expansion and development of the facilities, we carry out their maintenance and improvement following homogeneous and coherent criteria; managing the flow of electricity between exterior systems which is carried out using the Spanish electricity transmission grid; providing the operator of any other interconnected grid with sufficient information to guarantee a secure functioning and guaranteeing access to the grid by third parties under a regime of equality.

Our transmission infrastructure is comprised of: electricity control systems which manage and supervise the system operation, a circuit of 34,754 kilometres of high voltage transmission lines and 3,385 busbars in substations with a transformation capacity of 66,259 MVA.

Evolution of the facilities		2007	2008	2009
Lines	**Kilometres of circuit**	**33,669**	**34,322**	**34,754**
	400 kV	17,134	17,686	17,977
	220 kV and less	16,535	16,636	16,777
Substations	**Number of busbars**	**3,043**	**3,162**	**3,385**
	400 kV	1,004	1,055	1,114
	220 kV and less	2,039	2,108	2,271
	Transformation capacity (MVA)	**58,459 ***	**62,859 ***	**66,259**

** Data modified after a revision carried out in 2009*

All the activities we carry out are done so in accordance with a strict environmental policy, based on an ethical commitment to society and by integrating environmental protection into our business management with the objective of creating value on an ongoing basis. In order to do this, we hold the Environmental Management Systems UNE-EN ISO 14.001:2004 certified in May 1999 and registered in the EU Eco-Management and Audit Scheme (EMAS) under registration number ES-SB-000013, held since October 2001.

We are the first business group in the Spanish energy sector to hold the comprehensive triple certification: quality, environmental and occupational health and safety for all its companies.

All the activities we carry out are done so in accordance with a strict environmental policy and from a position of ethical commitment towards society

S.E. Mequinenza

In December 2009, our Environmental department was comprised of 17 professionals, with widely varying educational backgrounds and who are experts in environmental matters, and that actively support all the organisational units in the performance of their daily activities. Additionally, the different territorial areas count on 19 new technical professionals whose function is to control, on-site, all the environmental aspects which every Red Eléctrica facility undergoes during each phase: planning, construction and maintenance.

Respect for the environment is the task of all our employees and collaborators in the development and execution of our daily activities, and hence contributes to the conservation of the habitat, correct waste management and minimises the consumption of natural resources.

The determined effort of Red Eléctrica to become a responsible, efficient and sustainable business model has been recognised by the main rating agencies regarding sustainability. During this year, we have obtained recognition from the main sustainability indices due to the results obtained in the environmental, social, economic and corporate governance scope. Amongst these the following are noteworthy:

- Permanence in the Dow Jones Sustainability World Index with a score of 74 points out of 100, bringing it closer to global leader in its sector, with a score of 84 points.
- Distinction of SAM Bronze Class of the *Sustainability Yearbook 2010* which places REE amongst the top 15 best companies in the *Utilities* sector.
- Distinction of Best in Class awarded by the Scandinavian entity Storebrand Investments SRI.

(More information on www.ree.es, Corporate Responsibility section).

02

Environmental **Policy**

The Red Eléctrica Group expresses its commitment to protect the natural environment and undertakes to promote and ensure that each employee in the Group performs their daily work with the maximum respect for the environment, through ongoing improvement in the fulfilment of their responsibilities and functions.

The principles of our environmental policy are as follows:

- Guide the Group towards **sustainable development**, seeking to commensurate the balance between respect for the environment, the promotion of progress, social well-being and economic interests, with the objective of creating value on an ongoing basis.
- Seek **leadership** in environmental issues in all the companies in the Group in their areas of activities.
- Ensure **compliance with the environmental legislation, regulations and laws** applicable to the activities they carry out.
- Guarantee **ongoing improvement** and **prevention of environmental contamination** through the updating and monitoring of the environmental management systems, as well as the environmental objectives and goals.
- Promote **research, development** and use of new technologies and processes with the objective of preventing or minimising environmental impacts.
- **Integrate the environmental variable** in the design and development of new plans and projects for facilities and activities or in the modification of existing ones.
- Incorporate environmental requirements into the selection and evaluation process of **suppliers and contractors**.
- Develop and provide ongoing **training, awareness and motivation** actions regarding environmental protection in order to achieve a more active involvement from employees.
- Develop means and channels of **communication** for informing and communicating with all interested parties on activities related to the environment.

** This document, approved by the Presidents Office in May 2007, shall be reviewed in 2010 following a Management proposal and as a result of the revision of this year's Environmental Management System.*

03 Indicators

By way of introduction, the following is a numerical representation of the information that is deemed most relevant, and which is expanded on throughout the *Environmental Report* on the pages indicated in the final column.

Objectives	2007	2008	2009	Page
Compliance with the Environmental Programme				
Environmental objectives fulfilled / Total No. environmental objectives (%)	54.84	53.08	56.10	17
Affecting Natura 2000 network	**2007**	**2008**	**2009**	**Page**
Land surface area located in biodiversity-rich habitats				
km of lines in SAC/ total km of lines (%)	14.28	13.5	13.7	45
Surface area of lines in SAC/ Total surface in SAC in Spain (%)	0.12	0.12	0.12	45
km of lines in SPAs / total km of lines (%)	11.6	10.8	10.9	45
Surface area of lines in SPAs/ Total surface in SPAs in Spain (%)	0.14	0.12	0.12	45
No. of substations in SAC/ Total No. of substations (%)	8.98	11.8	11.7	45
No. of substations in SPAs/ Total No. of substations (%)	7.3	9.6	9.5	45
Impacts on biodiversity				
km of lines built in SAC in the year/ km of lines built in the year (%)	5	10.48	3.67	—-
km of lines built in SPAs in the year/ km of lines built in the year (%)	0	0.25	1.08	—-
No. of substations built in SAC in the year/ No. of substations built in the year (%)	0	0	4.1	—-
No. of substations built in SPAs in the year/ No. of substations built in the year (%)	0	0	4.1	—-

Restoration and protection of habitats and species	2007	2008	2009	Page
Habitat restored				
No. of new facilities constructed in the year including the restoring of landscapes*/ No. of new facilities constructed in the year* (%)	54	(1)	(1)	33
No. of new facilities in which archaeological surveys in the year during construction has been conducted/ No. of new facilities built in the year (%)	75	(1)	(1)	34
Objectives and programmes to protect and restore eco-systems and indigenous species				
km of lines marked with bird-saving devices	779	923 (2)	1,174.8	45
km of lines marked with bird-saving devices/ km of existing lines (%)	3	3.46 (2)	4.37	45
km of lines marked in SPAs/ total km of lines installed in or that cross SPAs (%)	7.1	8.8	12.74	45

** New facilities built, whose construction was completed within the year.*
(1) In 2008 and 2009, as part of the construction analysis process the convenience of keeping this indicator is being evaluated.
(2) 33 km have added to date in 2008 (The total amount has been modified due to the updating process of the inventory of the georeferencing of facilities).

Consumption of natural resources	2007	2008	2009	Page
Electricity consumption (kWh)				
Control Centres (*)	2,931,339	3,028,521	3,090,109	51
Work Centres (*)	10,985,124	10,872,067	10,825,378	51
Water consumption (m^3/employee)				
Head Offices	12.46	19.89	26.36	52
Work Centres	27.52	25.18	37.71	52
Paper consumption (kg/employee)				
All work centres	48	37.5	46	53
Fuel consumption of fleet vehicles (litres/100 km)				
Off-Road vehicles/Lorries	19.81	19.74	12.25	55
Cars	6.89	7.28	8.33	55

(*) As a result of the energy audit carried out in 2007 in the Head Office, the consumption of CECOEL was estimated at 30% of the global consumption of the Head Office buildings. This percentage can be extended to the rest of buildings with control centres: Tres Cantos and the Extrapeninsular Systems.

Waste generation	2007	2008	2009	Page
Total waste generated				
kg of non-hazardous waste	2,195,127	3,286,559	952,685	59
kg of hazardous waste	764,746 (*)	605,181 (*)	1,149,305	59

(*) Data updated to include gasses in pressurized containers.

Accidents	2007	2008	2009	Page
Oil and fuel spillages				
No. of accidents involving oil and fuel spills in the year, arising from maintenance activities	14	4	13	62
No. of accidents involving oil and fuel spills in the year, derived from construction activities	2	1	2	62

Research and Development	2007	2008	2009	Page
Environmental R&D&i				
Expenditure on Environmental/Total Expenditure (%)	6.10	7.07	8.85	65

Training and Awareness	2007	2008	2009	Page
Environmental Training				
Employees who have received environmental training in the year / Total employees (%)	3.34	8.66	15.39	69

Communication with interested parties	2007	2008	2009	Page
Environmental Communication				
No. of visits to the environment section of the corporate website (extranet)	89,039	98,164	85,627	73
No. of downloads of environmental publications from the corporate website (extranet)	244,242	290,208	248,650	77

Collaborators	2007	2008	2009	Page
Supplier behaviour in environmental matters				
Suppliers with USG certificate (ISO 14.001 or EMAS) (%)	40	41	50	79

Sanctions and Fines	2007	2008	2009	Page
Incidents and fines for non-compliance with environmental norms				
No. of sanctions resolved with a fine in the year	7	18	3	85
Total amount of fines in the year (euros)	822	10,321	3,455	85

Regarding the annual reports of previous years, data has no traceability since it incorporates information from sanctions resolved with a fine and the amount of these once resolved. There are still unresolved cases from 2006, 2007 and 2008.

Environmental Expenditure	2007	2008	2009	Page
Environmental Investment				
Environmental investment (€)	2,086,624.86	5,078,780.39	4,427,759.53	87
Environmental investment /Total investment (%)	0.35	0.82	0.60	88
Environmental Expenditure				
Environmental expenditure (€)	15,359,789.82	17,150,041.92	13,651,980.00	87
Environmental expenditure / Total expenditure (%)	2.11	2.76	2.13	88
Environmental taxes (€)	1,102,378.74	1,097,240.05	1,088,964.30	88

Nota: The information contained in this Report makes reference to a management period in which EMAS II Regulation was in force. During 2010, the convenience of adjusting these indicators to the requirements of the new EMAS III Regulation shall be analysed.

04

Objectives

The Environmental Programme of Red Eléctrica contains the set of environmental improvements which we intend to carry out throughout the period of one year. This Programme describes the environmental objectives which may be annual or multi-year, and includes the targets throughout the year for achieving each of these objectives.

Due to the degree of complexity of the activity carried out by Red Eléctrica, the geographical distribution and the multiplicity of actions, the Environmental Programme defines targets which are directly tied in to various environmental and other objectives which contribute to environmental improvement of the processes. In the various chapters of the Report, information is provided on how environmental issues are associated to the various activities, as well as on the contribution of the objectives to environmental improvement.

The overall compliance of the Environmental Programme 2009 was 56.1%, representing an increase of 3.02 percentage points with respect to the previous year.

The following is a table which summarises the objectives addressed during 2009 indicating their weighting within the Programme and their level of fulfilment for the year.

The global fulfilment of the 2009 Environmental programme was 56.1%, representing an increase of 3.02 percentage points with respect to the previous year

Outward lines from Sentmenat in the direction of Ascó Vandellós and Bescanó.

Aspect group/ Associated processes	Objectives	Character/ term	Weighting	Fulfilment	%	Page
Improvement activities associated to the prevention of possible effects on the environment						
Construction process	Revision of the environmental criteria in the construction process	Multi-year (2008-2009)	5	2.5	50[1]	29
Presence of facilities	Integration of the substations in service into the environment: Nature school.	Annual	5	5	100	39
Accident aspect in the maintenance process	Update of information regarding the environmental state of the Red Eléctrica assets: 108 substations and the incorporation of environmental criteria in blueprint for lines.	Multi-year (2007-2010)	12	10.2	85[2]	39,43
Biodiversity	R&D&i Projects for nature conservation: experimental application of a prototype detector for collisions of birdlife with electricity lines.	Multi-year (2007-2010)	5	0	0[2]	66
Improvement activities associated to the emission of greenhouse gases						
Emissions	Control and compensation of emission in Red Eléctrica: Improvement regarding the integral management of SF6 and the creation of the project "Red Eléctrica Forest".	Multi-year (2008-2010)	10	7.5	75[2]	44,45
Improvement activities associated to significant environmental aspects						
Risk of leaks or spills of hydrocarbons	Improvement activities in substations for the prevention of soil contamination from oil from power transformers, auxiliary transformers, expansion tanks and the inadequate storage of waste.	Multi-year (2007-2010)	30	13.4	44.67[2]	42
Consumptions	Improvement in efficiency regarding natural resources: electricity, water and fuel consumption.	Annual	17	9	52.9[2]	52,53,55
Improvement activities associated to indirect and other aspects						
Suppliers	Environmental awareness of suppliers: training of works supervisors and project and site managers.	Multi-year (2008-2009)	5	0	0[3]	80
Interested parties	Environmental awareness of interested parties: Generalitat of Catalonia	Annual	5	2.5	50[4]	75
Communication and awareness process	Fostering best environmental practices.	Annual	6	6	100	46,70
TOTAL			**100**	**56.10**		

(1) Will continue in 2010 outside of the Environmental programme.
(2) Will continue in 2010 as an objective of the Environmental programme.
(3)Will continue in 2010 integrated in an objective associated to the development of a specific environmental training plan.
(4) Will be completed in 2010, outside of the Environmental Programme exclusively due to being pending signing.

The total fulfilment with the Environmental Programme is the sum of the fulfilment of the different objectives.

The contribution of each objective to the Environmental Programme is weighted according to its importance and is scored out of 100.

In order to achieve each objective, a set of goals are defined. The fulfilment of each objective is the sum of the fulfilment of the goals due to be carried out during the year.

The reason for some objectives not achieving 100% fulfilment is largely due to the changes in planning and/or budget.


L/220 Guardo-Cillamayor.

Below is a scorecard which summarises the environmental objectives approved by the Management for 2010.

Aspect group/ Associated processes	Objectives	Character/ term	Weighting
Improvement activities associated to the prevention of possible effects on the environment			
Presence of facilities	Integrating into the environment of 10% of the newly planned buildings of Red Eléctrica	Annual	5
Accidental aspects in the maintenance process	Environmental risk analysis of 180 substations of Red Eléctrica	Multi-year (2007-2011)	15
Biodiversity	Implementation of a Biodiversity Strategy of Red Eléctrica	Annual	15
	Control of maintenance activities in the areas designated as of fire risk in the electricity line safety corridors.	Annual	10
	R&D&i Projects regarding nature conservation: (two)	Multi-year (2008-2010)	5
Improvement activities associated to the emission of greenhouse gases			
Emissions	Control and compensation of 20% of the emissions of Red Eléctrica	Multi-year (2008-2010)	10
Improvement activities associated to significant environmental aspects			
Risk of leaks or spills of hydrocarbons	Execution of 31 improvement activities in substations for the prevention of soil contamination	Multi-year (2007-2010)	15
Consumptions	Improvement in efficiency regarding natural resources: electricity and water consumption and the development of the Red Eléctrica sustainable mobility plan.	Multi-year (2009-2010)	10
Improvement activities associated to indirect and other aspects			
Training	Development of Red Eléctrica's environmental training plan.	Annual	5
Communication/Awareness	Execution of two communication activities directed towards society.	Annual	10
TOTAL			**100**

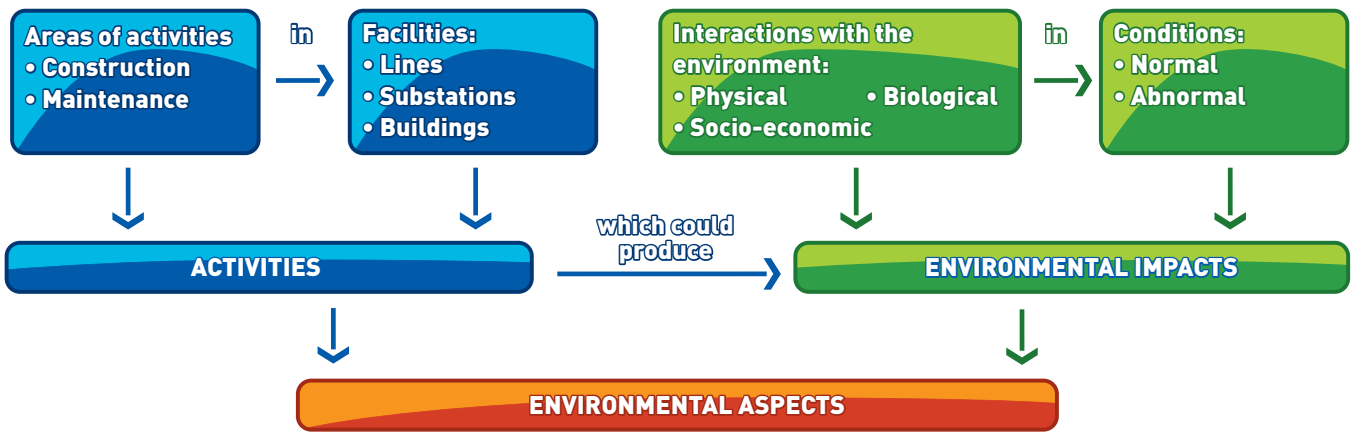
05 Environmental Activities

We work with the commitment to integrate environmental protection in the execution of our day to day tasks and activities.

During **the planning phase** we perform environmental studies on all our facilities and define the alternatives, which are technically and economically feasible and have the least possible impact on the environment and society.

During the **construction phase** we conduct comprehensive environmental monitoring of all the works being executed, both for new facilities as well as for modifications to existing ones.

During the **maintenance phase** we carry out systematic, periodic reviews and audits on the facilities in service which allow us to define and implement preventive and corrective measures, detect potential environmental incidents and verify the effectiveness of the measures put in place during the construction phase.



In all the planning and construction activities, as well as the maintenance activities, conducted on facilities in service, we identify and assess the direct and indirect environmental aspects that could interact with the environment, and which could lead to any kind of negative impact, both in normal and abnormal operating conditions.

Environmental Activities Regarding Facilities in Planning Phase

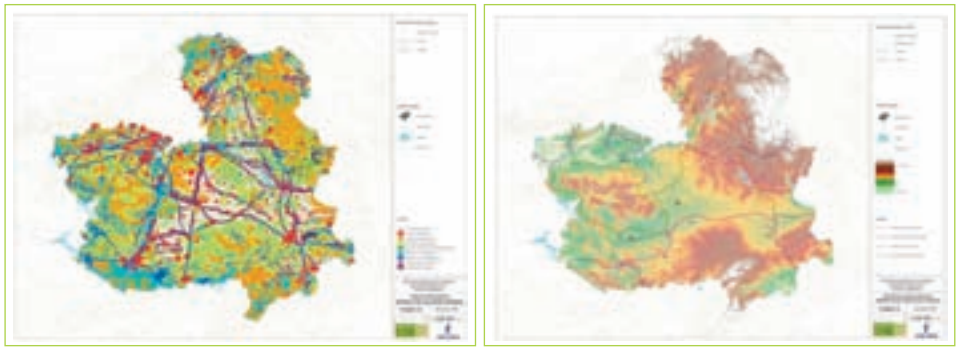
Planning

We continue to actively collaborate with the Ministry of Industry, Tourism and Trade (MITYC) in the Strategic Environmental Evaluation Process regarding the planning of the electricity sector. One of the priority objectives of this planning is to reconcile the preservation of environmental quality with the principles of efficiency, security and diversification of the generation, transformation, transmission activities and use of energy.

During 2009, work has continued on the definition and calculation of indicators that allow the evaluation of environmental effects (positive and negative) derived from the execution of the planning.

In addition, we are collaborating with several autonomous communities in the development of Regional Electricity Infrastructure Plans that allow the planning of the electricity sector, approved by the Ministry, to be shaped and articulated upon the territory. To achieve this, it shall be transposed into the Urban Development Organisation by means of its inclusion into the Territorial Organisation Plans or its authorisation thereof as General Plans of Infrastructures, both to be submitted to the autonomous community for its corresponding Strategic Environmental Assessment procedure.

These collaboration projects, which presently are underway in Madrid and Castilla-La Mancha, have as their objective to reserve the corridors necessary to develop not only the electricity infrastructures approved in the present 2008-2016 horizon planning and those arising as basic needs for the 2030 horizon, but also the enlargement of existing facilities which, on many occasions, enter into conflict with urban development.



Viability hypothesis study of electricity corridors in Castilla-La Mancha.

Taking this high voltage grid planning into consideration, Red Eléctrica is going to extend its electricity system by almost 50%, with respect to that already existing, in the mentioned horizon.

This fact involves different players and interests, not only regarding the technical scope but also regarding a social and legislative one, which leads to the

necessity to have a tool, that makes it possible to access geographic information concerning the high voltage electricity lines and their affect on the territory, within common standards.

From an environmental point of view, the knowledge of the territory is also a fundamental task when defining projects, where the smallest possible impact is sought in those protected areas defined by the Ministry of the Environment and Rural and Marine Affairs and its counterparts in the Autonomous Communities.

For these reasons, we have initiated the development of a specific Spatial Data Infrastructure (IdeREE) that will resolve the necessity of easy, comfortable and efficient access, to the existing geographic data (the Geographic Information has been, until now, a resource which is expensive to produce and difficult to access for several reasons: formats, models, distribution policies, lack of information) and will allow the geographic Information generated in a project to be reused for different purposes, given the high cost of its production.

An SDI (Spatial Data Infrastructure) is an IT system integrated by a set of resources (catalogues, servers, programs, data, applications, webpages, etc.) dedicated to manage Geographic Information (maps, orthophotos, satellite imagery, place names, etc.), available via Internet, that fulfil a series of con-

ditions of interoperability (regulations, specifications, protocols, interfaces, etc.) which allow a user, using a simple web navigator, to be able to use them and combine them according to their needs.

The Spatial Data Infrastructure of Red Eléctrica (IdeREE) has, as an objective, the integration via Internet the data, metadata, geographic services and information that take place in the company at a national level, facilitating, to all the potential users, the location, identification, selection and access to said resources.

The IdeREE will comply with the objectives of access, reusability and interoperability that will be common to all players, managing the geographic information as a unique data set of the high voltage grid at national level.

Projects

In 2009, we carried out studies, of an environmental nature, of the projects regarding new facilities whether or not they are subjected to an Environmental Impact Assessment process.

During the preparation of the studies, we consult with the environmental agencies of the corresponding autonomous communities and agree on the alternative of lesser impact for each project.

In 2009, the environmental processing of 62 projects began:

Processing initiated

	2007	2008	2009
Initial document	21	116	33
Environmental document	2	52	29
Total initiated	**23**	**168**	**62**

The authorisation of 34 projects regarding lines and substations was obtained from the Ministry of the Environment and Rural and Marine Affairs:

Positive Environmental Impact Declaration [1]
Bit Substation 66 kV L/66 kV Bit-L/Son Reus-Polígono
Accesses L/400 kV Sentmenat-Vic-Bescanó
L/400 kV Trives-Aparecida
L/400 kV Cartuja-Puerto Real
L/400 kV Soto de Ribera-Penagos (Piloña branch line)
L/220 kV Morvedre-Santa Ponça E.C. Morvedre 220 kV E.C. Santa Ponça 220 kV
Udalla Substation 400/55 kV L/400 kV Udalla-L/Penagos-Abanto
Modification of sectionL/400 kV Villaviciosa de Odón-Moraleja de Enmedio Modification of section L/400 kV Galapagar-Moraleja de Enmedio
1 Extension+Renovation Rojales Substation 220 kV
Galera Substation 400/25 (ADIF) L/400 kV Galera-Romica
Avenas Substation 400/25 kV (ADIF) L/400 kV Avenas-Requena
Brazatortas Substation 400/220 kV L/400 kV Brazatortas-L/Valdecaballeros-Guadalquivir Medio Manzanares Substation 400/220 kV L/400 kV Brazatortas-Manzanares (L/220 kV Brazatortas-Puertollano - Not included) (L/220 kV Manzanares-La Paloma – Not included)
(1) Authorisation resulting from the complete process of the Environmental Impact Assessment (Environmental Impact Study)

Environmental Resolution [2]
Torrente Substation (ADIF) 400/25 kV C/400 kV Torrente (ADIF)-Torrente
Dephaser San Miguel de Salinas 220 kV
Lugo Substation 400 kV L/400 kV Lugo-L/Puentes de García Rodríguez-Montearenas
L/220 kV Palencia-Villalbilla
L/220 kV Palencia-Vallejera
Nueva Aluminio Substation 400 kV L/400 kV Nueva Aluminio-L/As Pontes-Aluminio 1 L/400 kV Nueva Aluminio-L/As Pontes-Aluminio 2
Carril Substation 400 kV L/400 kV Carril-L/Asomada-Litoral L/400 kV Carril-L/Totana-Litoral L/400 kV Carril-L/El Palmar-La Ribina

Peñarrubia Substation 400 kV L/400 kV Peñarrubia-L/Pinilla-Rocamora
Power capacity increase L/400 kV Almaraz-Bienvenida
Alange Substation 400 kV L/400 kV Alange-L/Almaraz-Bienvenida
Valdeconejos Substation renovation 220 kV L/220 kV Valdeconejos-Escucha L/220 kV Mezquitra-L/Sierra Costera Fase II-Valdeconejos
Sax Substation 400/25 kV (ADIF) L/400 kV Saz-L/Benejama-Rocamora
Montesa Substation 400/25 kV (ADIF) L/400 kV Montesa-L/Benejama-Catadau
L/220 kV Santa Engracia-El Sequero
L/220 kV Plaza-L/Entrerríos-Montetorrero
Modification of L/220 kV Casa de Campo-Villaviciosa
Buniel Substation 400/25 kV (ADIF) L/400 kV Buniel-L/Barcina-Grijota
Cañaveral Substation 400 kV L/400 kV Cañaveral-L/Arañuelo-Jose María Oriol
L/220 kV Manzanares-L/La Paloma-Madridejos L/220 kV Manzanares-L/La Paloma-Alarcos
EPIA accesses L/400 kV Soto de Ribera-Penagos (variante de Nava)
EPIA accesses L/400 kV Soto de Ribera-Penagos (variante de Siero)
EPIA accesses L/400 kV Soto de Ribera-Penagos (variante de Piloña)

(2) Authorisation resulting from the processing of an Environmental Document (Environmental Impact Study summary)

The evolution of the finalisation of the environmental processing of the projects regarding new facilities over the last three years is the following:

Processing ended			
	2007	**2008**	**2009**
Positive Environmental Impact Declaration	6	6	12
Administrative Resolution	1	5	22
Total	**7**	**11**	**34**
Finalised Environmental Impact Studies			
Total	**12**	**14**	**33**

We continue revising the basic requirements for the engineering of substations, initiated last year and as a result gives way to the incorporation into its design of environmental criteria not previously considered.

Environmental activities in facilities under construction

We carry out environmental monitoring of the construction of new electricity lines and substations as well as extensions, renovations and upgrading of those facilities already in service. This supervision consists mainly of checking the implementation of preventive and corrective measures defined in the project and verifying their effectiveness.

Following the line of work of 2008, in 2009 reinforcing the environmental supervision has continued of the construction activities, which presently cover 100% of the works, with the aim of ensuring the suitable fulfilment of the environmental requirements and verifying the effectiveness of the implemented preventive and corrective measures.

The biggest effort has been made regarding the supervision of new lines and substations, increasing the contracting of companies specialised in works supervision, which provide field support for the Red Eléctrica technicians.

Environmental supervision (new facilities)

		2008	2009
SUBSTATIONS			
	Total works supervised	17	36
	Ongoing environmental supervision (contracted)	2	7
	%	**11.76**	**19.44**
LINES			
	Total works supervised (km)	1,154.50	990.05
	Ongoing environmental supervision (contracted) (km)	753.76	607.83
	%	**65.28**	**61.39**
	Total works supervised	27	33
	Ongoing environmental supervision (contracted)	11	17
	%	**40.74**	**51.51**

Hoisting of a support with a boom crane and hanging of line by helicopter in Sentmenat-Vic-Bescanó line.

Similarly, during this year the revision of the environmental criteria of the construction process has continued. The revision of documentation to be included in the projects and handed into the contractors has been reviewed. Also reviewed has been the internal documentation associated to the process, although the incorporation of the information into the internal regulation is pending. (*Objective nº5 on revision of the environmental criteria in the construction process included in the Environmental Programme, 50% fulfilled*).

The activities regarding the construction of new lines and substations susceptible to generating environmental aspects are the following:

Activities generating environmental aspects
Storage and transfer of oils and fuels
Storage and waste management
Work camps (substations)
Land compacting
Clearing, pruning and felling
Excavation and filling work
Concreting and cleaning containers
Hanging/laying of conductor and grounding cables (lines)
Equipment assembly (substations)
Use of machinery

The environmental aspects which are significant in the construction of new lines and substations are those detailed in the following table:

Significant environmental aspects in the construction of lines and substations	Environmental aspect susceptible to impact	Impact
Affecting fauna [1]	Biological	Altering population behaviour
Affecting flora	Biological	Eliminating vegetation
Affecting soil	Physical	Possible modification of physical characteristics of soil, erosion etc.
Affecting historical and cultural heritage	Socioeconomic	Potential landscaping impact, affecting sites, crops, etc.
Risk of fire [1]	Physical/Biological/Socioeconomic	Potential degradation
Risk of oil and fuel spillage during use of machinery [1]	Physical	Potential contamination of soil and water sources
Risk of oil and fuel spillage during storage and transfer of oils and fuels [1]	Physical	Potential contamination of soil and water sources
Risk of oil spillage during assembly of equipment [1]	Physical	Potential contamination of soil and water sources
Risk of affecting water during land movements [1]	Physical	Potential contamination of soil and water sources
Risk of affecting birdlife [1]	Biological	Potential collisions
Non-hazardous waste	Physical	Generation of waste
Hazardous waste	Physical	Generation of waste

(1) Significant aspects in less than 50% of works.

As in previous years, we have applied preventive and corrective measures regarding new lines and substations trying to reduce the effect that the construction of this installation causes to the environment.

In general, we commit ourselves to carrying out all the preventive and corrective measures covered by the Environmental Impact Studies and we assume as requirements those new measures that are included in the Environmental Impact Declarations.

Preventive Measures	Corrective Measures
Storage of topsoil	Landscaping actions
Hoisting of towers with boom crane	Resiting of flora
Installation of bird-saving spirals	Regeneration of paths/walkways
Archaeological survey	Forest repopulation
Resiting of nests	Restoration of slopes via hydro-sowing and topsoil
Biological stoppage	
Signage/marking off of habitats	
Hanging of lines by hand/helicopter	
Increasing height of towers	

Below the most noteworthy preventive and corrective measures carried out during 2009 are described:

Protection of flora, fauna and the landscape

Noteworthy measures during the year have been the following:

PROTECTION FLORA

L/Sentmenat-Vic-Bescanó

Measures carried out on 95% of the line, including in the protected natural areas: PEIN Gallifa-Cingles Bertí and PEIN Guilleries-Savassona. The felling of the following species has been avoided: English Oak (*Quercus humilis*), Holm Oak (*Quercus ilex*), Cork Oak (*Quercus suber*), Sweet Chestnut (*Castanea sativa*), Common Beech (*Fagus sylvatica*), Allepo Pine (*Pinus halepensis*), Maritime Pine (*Pinus pinaster*), as well as riverbank flora and vegetation: Black Poplar (*Populus nigra*), White Poplar (*Populus alba*), Common Ash (*Fraxinus excelsior*).

Minimizing the need of building new access routes	The access routes have been agreed on with the forestry services of the autonomous community, and full use is made of the existing network of paths. Some sections have been submitted to environmental assessment. It is not possible to determine the reduction of the environmental impact.
Reduction of the clearance area required for work sites Hoisting with boom crane (39)	Reduction of the work clearance area (from 40x40 to 16x20 m). These measures have avoided the felling of approximately 3,300 trees, in their majority located in protected areas.
Increasing height of towers	Increase in the height of 96% of the towers to avoid the need to open a safety corridor (67 in 2009); avoiding the felling of approximately 60,300 trees.
Hanging of cable using helicopter	The need to open a corridor (46.84 km) for the hanging of cable was avoided, therefore avoiding the felling of 15,000 trees.
Transplanting of holly trees and gathering of seeds	Transplanting of 20 Holly trees (*Ilex aquifolium*) affected by the works to an area in the vicinity. Gathering of seeds to be sown in forest greenhouse for their subsequent relocating to their original habitat.

L/Zierbena-Abanto

Construction of access route using helicopter	Opening of a corridor for the hanging of cables was avoided, therefore avoiding the need to fell 190 trees: Monterey Pine (*Pinus radiata*) and Common Beech (*Fagus sylvatica*).

L/E-S en Udalla	
Signage for the protection of priority habitats	Priority habitats that are protected: Quercus Ilex and Quercus Rotundifolia; Gorse-heathland vegetation endemic to the Mediterranean area; acidophil beech endemic to the Atlantic area with ilex and taxus scrubland.
L/Penagos-Güeñes	
Hanging of cable using helicopter	The need to open a corridor (26.7 km) for the hanging of cable was avoided, therefore avoiding the need to fell 5,300 trees: eucaliptus (Eucalyptus), Holly Oak (*Quercus ilex*) *English Oak* (*Quercus robur*), *Common Beech* (*Fagus Sylvática*) and protecting the flora of the SAC protected Asón River.
Manual hanging of cable	The need to open a corridor (4 km) for the hanging of cable was avoided, therefore avoiding the need to fell 800 trees (species mentioned immediately above).
L/Soto-Penagos	
Hanging of cable using helicopter	The need to open a corridor (9.5 km) for the hanging of cable was avoided, therefore avoiding the need to fell 1900 trees (species mentioned immediately above).
L/Arcos-La Roda	
Manual hanging of cable	Avoided the need for a corridor for cable hanging in SACs. Reduced the effect on the flora (deciduous plants, Oleander, olive groves, Rush, evergreen shrub, White Poplar, Willow, etc) of the riverbanks of the following rivers: Guadalete River, Salado de Lebrija-Las Cabezas, Arroyo de Santiago, Salado de Morón y Matabueyes / Garrapata, Guadaira River and Corbones River.
L/Pesoz-Salas	
Hanging of cable using helicopter	The need to open a corridor (7.7 km) for the hanging of cable was avoided, therefore avoiding the need to fell approximately 2,400 sweet chestnut trees (*Castanea sativa*) and to a lesser degree English Oak (*Quercus robur*).
L/Galera-Romica	
Marking off of work areas	To avoid any kind of effect on the protected habitat «Oaks (*Quercus ilex* and *Quercus rotundifolia*)».
Manual hanging of cable	Span of 0.436 km, avoiding the felling of around 1.800 of replanted pine trees.
L/Almaraz-Bienvenida (increase of power capacity)	
Clean-up pruning of damaged Holm Oaks and applying of cicatrizing substance	The risk of damage to trees pruned is reduced.
Transformer Station Sta. Ponsa	
Transplanting of carobs	Transplanting of more than 20 carob trees with crowns of more than 3 metres in diameter from the area of land movements to surrounding areas for their subsequent use in landscaping activities.

TRelocating of carob trees of the Santa Ponsa transformer /converter station.

Transplanting of holly in the Sentmenat-Vic-Bescanó line.

PROTECTION OF FAUNA	
L/Penagos-Güeñes	Biological stoppage from February to August due to the presence of the Egyptian Vulture (*Neophron percnopterus*).
Peninsula-Balearics Interconnection: Santa Ponsa Transformer Station and cable	Prior removal of species of the Spur-thighed Tortoise (*Testudo graeca*) and fencing off work areas.
L/400 Galera-Romica	Biological stoppage from April to June 2010 due to the presence of Steep birds.
Segovia-Galapagar	Biological stoppage from February to August in an area of 1.3 km critical to the Golden Eagle (*Aquila chrysaetos*).
Peninsula-Balearics Interconnection: Morverdre Transformer Station	Execution of a light pollution study to prevent the effect on the fauna of the "Marjal dels Moros" wetlands.

Similarly, 251.85 km of lines have been fitted with bird flight diverter devices during 2009, of them, 156.56 km corresponded to newly constructed lines.

PROTECTION OF THE ENVIRONMENT: RESTORATION OF AREAS AFFECTED	
L/E-S Salas with Narcea-Soto	Final restoration and restitution of walkways and work areas. Manual sowing.
L/Pesoz-Salas	Construction of a jetty wall, to stabilise the forest walkway in its upper reaches.
SE Salas	Restoration of slopes (manual sowing) and ditches.
SE Pesoz	Restoration of slopes using erosion netting.

LANDSCAPE PROTECTION	
Minimización del impacto visual	
L/Soto-Penagos	Compacting of two stretches of parallel lines (12 km).
L/Pesoz-Salas	Excavated by hand, hoisting and removal of wastes by helicopter to avoid impact on the landscape of an access path to a tower located at a viewpoint.
Landscaping restorations	
SE Pesoz	Restoration of a dumping site. Hydrosowing and planting of small forested areas of oaks and birch.
SE Morvedre (extension)	Planting of Junipers and olive trees. Laying of coloured gravel.
SE Requena	Planting of olive trees. Reinforcement of slope with coconut netting.
SE Minglanilla	Planting of olive trees (replanted from land occupied by the substation) and almond trees. Reinforcement of slopes with coconut netting and planting of herbaceous and bush-like plants.
SE Abanto	Applying concrete to slope and aging of the same for its colour integration. Planting of climbing plants and installation of small flora screen in corner.
Landscape integration of buildings	
SE Bit	Tinting of the building with an ochre colour in order to adapt it to the colour of other construction in the area. Fitting of vents in accordance to typical Majorcan design.
SE Requena	Adaptation of the control building and out buildings to the architectonic characteristics of the rural constructions of the zone.
Restoration of water well/cistern adjacent to the substation	
SE Minglanilla	Adaptation of the control building and out buildings to the architectonic characteristics of the rural constructions of the zone.

Protection of archaeological heritage

Water well/cistern restoration adjacent to Requena substation.

Before

After

During 2009, archaeological supervision during works involving the movement of earth was carried out in the construction of the following facilities:

- 10 Substations: Pesoz, Pujalt, Zal, Villanueva de los Escuderos, Belinchón, Carmona, Cártama, Minglanilla, Torrejón de Velasco and Requena.
- 23 Lines (in 3 of them supervision was only performed regarding the towers and at specific points): L/Zal-Zona Franca, L/Soto-Penagos, L/Penagos-Gueñes, L/E-S in Abanto, L/E-S in Udalla, L/Villanueva-SE AVE Villanueva, E/S in Villanueva, L/Belinchón - SE ADIF, L/ES in Belinchón, L- E/S in Cártama, Ls/E/S in Cártama, Ls E/S in Carmona, L/Galera-Romica, Ls/ E-S Minglanilla, L/Sentmenat-Vic-Bescanó, L/Ziérbena-Abanto, L/E-S Muruarte, L/Aparecida-Tordesillas, L/Segovia-Galapagar, L/Cabra-Guadame, L/Arcos - La Roda de Andalucía, L/Trives-Aparecida and L/Pesoz-Salas.

As special actions the following are noteworthy:

PROTECTION OF ARCHAEOLOGICAL HERITAGE	
L/Ziérbena-Abanto	The entrance to a catalogued cave is marked off to prevent any type of effect on it.
L/Aparecida-Tordesillas	Four manual probings are carried out in the vicinity of catalogued site, with no findings.
L/Segovia-Galapagar	The area is marked-off to protect a civil war shelter.
L/Cabra-Guadame	Following the discovery of small common roman construction and pottery fragments in the initial prospecting, a probing is carried out with no findings.
L/Arcos - La Roda de Andalucía	An archaeological probing is carried out at 8 tower sites. Remains of roman necropolis are discovered at one of them, therefore the area of the construction of the tower was protected with geo-textile fabric. The remains were moved to the archaeological museum of Seville. Additionally, one of the remaining supports is relocated.
L/Trives-Aparecida	As a result of surface probing, a different route (of a span) and the resiting of a tower is being studied.
SE Requena	A water well/cistern was marked off, and subsequently restored.

Programmes of social and environmental integration of the new facilities:

REMO Project: Second interconnection cable Spain-Morocco

Practically all works regarding the compensatory measures initiated in 2006 of the second Spain-Morocco interconnection have been completed. The project, declared of Communitarian interest by the European Union and financed by the EIB (European Investment Bank) and by the ABD (African Bank for Development), which crosses a protected area categorised as SAC, denominated El Estrecho Natural Park (Tarifa), and which is included in the Natura 2000 network.

Compensatory Measure	Development state and forecasted conclusion
Assessment of the influence of the underwater activities on the seabed of El Estrecho National Park.	The installation of anchorages has been completed and are already in operation.
Protection and regeneration of coastal areas with threatened flora: elimination of invading species and restoration by means of sowing or plantation of native species: junipers (Juniperus communis macrocarp), wild olives, (Olea europaea) etc. In addition, it will include the complementary measures for their protection: fencing, adjusting cattle trails, beach paths, signage, etc.	The restoration works of the Lances beach have been finalised, in the Estrecho National Park, by means of preservation works of protected flora, repopulation of zones with native species and the fencing of planted areas for the control of damage caused by the cattle in special areas of conservation.
Activities for the conservation of rivers and coastal streams in the southern half of the province of Cadiz.	The study of saltwater fish (Aphanius baeticus) -species in danger of extinction according to the IUCN red list - was completed and specific measures for the preservation of the species in the area were established. Protection of seasonal pools with the presence of species of interest was completed following the signing of agreements with those councils concerned.
Study of the incidence of the marine electricity interconnection between Spain and Morocco in the biological communities linked to the seabed.	Completed.
Studies on the fishing of the Blackspot Sea Bream (Pagellus bogaraveo) in the Strait of Gibraltar.	Study of the Blackspot Sea Bream, with the determination of measures for the recovery of the fishing ground in the zone.
Study on the migration of the Atlantic tuna (Thunnus thymus) in relation to sexual maturity and spawning in the Mediterranean.	Study of the species completed.
Acquisition and management of lands of ecological importance. Analysis, results and economic balance of the said lands.	Pending consensus with the Autonomous Government of Andalusia in the face of the difficulty of acquiring lands which meet the required conditions.

Environmental activities in facilities in operation

The following lists the activities carried out in facilities in service capable of generating environmental issues.

Activities generating environmental aspects
Presence of the building
Presence of the line
Presence of the substation
Energy transmission and transformation
Maintenance of gardens/green areas and electricity facilities
Maintenance of safety corridors
Maintenance of towers
Use of machinery in line maintenance
Use and maintenance of equipment:
Generators
Fuel tanks
Evaporative condensers
Air conditioning equipment
Intensity transformers and capacitor banks
Power transformers
Auxiliary transformers
Oil collection pits
Equipment with sulphur hexafluoride
Transfer of oil for equipment maintenance
Collection and/or storage of contaminating material
Consumption of natural resources
Waste

Of all the environmental aspects identified, those which proved most significant after the assessment in 2009 are detailed below. Regarding these aspects, measures were taken which are described throughout the publication.

Significant environmental aspects [1]	Environmental aspects susceptible to impact	Impact
Environmental impact by clearing, pruning and felling	Biological	Elimination of vegetation
Environmental impact due to consumption of electricity, water and paper	Physical	Reduction of natural resources
Risk of affecting the environment due to leaks or spillage of oil from power transformers	Physical	Potential contamination of soil and water
Storage and disposal of hazardous waste	Physical	Waste generation

Significant environmental aspects occasionally detected [2]	Environmental aspects susceptible to impact	Impact
Effect on birdlife due to the removal of bird nests	Biological	Alteration of species behaviour
Emissions from generator groups	Physical	Atmospheric contamination
Risk of affects to the physical environment by fire and/or explosion of power transformers	Physical	Potential contamination of soil and water

(1) Significant aspects in the majority of work centres
(2) Significant aspects in less than 3 work centres

Of all of the environmental activities carried out during the maintenance of facilities in 2009, the following are noteworthy:

Activities directed to the protection of biodiversity

Vegetation/flora

During 2009, action plans for felling of trees and pruning of vegetation in Andalusia and Castilla-La Mancha have continued to be drawn up, as established in the relevant collaboration agreements. With these plans it has been possible to expedite the administrative authorisations, identify fire risk zones and approach the personnel of the autonomous communities.

Using spatial analysis technology, a theoretical study has been performed on all lines in order to identify surface susceptible to requiring forest maintenance actions. The study consists of creating a spatial intersection of the areas that potentially may require a safety corridor with the spatial distribution of species not compatible with electricity lines, this then provides the theoretical surface susceptible to requiring forest maintenance actions for all Red Eléctrica's lines.

The theoretical surface susceptible to requiring forest maintenance for all the lines of Red Eléctrica is 17,379 ha. This surface represents 13.7% of the total area which could potentially be affected by all Red Eléctrica's lines.

Type of vegetation		Area affected (ha)	% with respect to the total potentially affected area by all REE lines(126,922 ha)
Treed area	total	15,745	12.4
	riverbank vegetation	287	0.2
Scrubland		762	0.6
Mixed (treed and scrubland)		585	0.5
Total		**17,379**	**13.7**

Of this total surface, less than half (8,197 ha) is occupied by a dominant species (in a proportion higher than 70%).

Type of vegetation		Area that may be affected in areas with > 70% (ha) occupation	% of occupation > 70% with respect to the total potentially affected area by all REE lines (126,922 ha)
Treed area	total	7,898	6.2
	riverbank vegetation	174	0.1
Scrubland		80	0.1
Mixed (treed and scrubland)		44	0.0
Total		**8,196**	**6.4**

During 2010 the continuation of this project is scheduled, therefore an objective for this has been included within the Environmental Programme.

Other noteworthy measures regarding environmental supervision are the works to increase line capacity carried out on 7 lines, (a total of 174.18 km).

Continuing with the actions initiated in 2008, during this year the incorporation of the environmental criteria in the maintenance blueprint for electricity lines has been finalized. (*One of the two aims of objective No. 2 included in the Environmental Programme, on the update of information on the environmental state of the assets of Red Eléctrica, was 100% fulfilled. The total fulfilment of the objective was 85%*).

With the aim of integrating in-service substations into the surroundings, in 2009 the Mudarra substation, the Nature School of the Red Eléctrica Group was created. This is a botanical garden of native fruit and ornamental trees indigenous to the zone. In order to help with their identification, each species has an identification plaque with its common and scientific name. As an innovative idea, an area was planned at the point where all the lateral walkways converge: composed of 1,170 plants that are noteworthy for their flowering during the different seasons, in this way anyone in that precise area can know exactly in which season of the year they are. This project has been carried out by workers with disabilities from the Parks and Gardens section of the ASPRONA Association, Group Lynx. (*Objective No. 4 included in the Environmental Programme 100% fulfilled*).

Similarly, landscaping adjustments to the Morella substation have been carried out with the planting of: pines (*P.Halepensis*) and Holm oaks (*Q.coccifera*) to screen the visual impact of this area considered as Property of Cultural Interest (PCI) of Freiximeno; planting of evergreen and deciduous trees in the area next to the Calders River to screen out view from the main

Nature School.
Mudarra substation.

Relandscaping project.
Morella substation.

road and the planting of oaks and shrubs and strengthening of the slope by laying natural net, sowing or hydrosowing and planting.

Fauna

In addition to the R&D&i programmes associated with the protection of birdlife (see chapter 6), the following actions are worth highlighting:

- **Programme of re-introduction of the black vulture (*Aegypius monachus*) in Catalonia**. Coordinated by the Native Fauna and its Habitat Rehabilitation Group (GREFA) and the Autonomous government of Catalonia (in collaboration with the Autonomous Government of Extremadura, the Community of Madrid and Caixa Catalunya). The project is developed in the pre-Pyrenean area of Lerida and considers not only carrying out actions in the field (ringing and monitoring, surveillance cameras etc.) but also actions of dissemination and education (November 2008-September 2012). This originated from the programme for the recovery of vultures in Europe, which began in France with Spanish tawny vultures and continued with the development of recovery programmes with several administrations of Italy, France and Spain. The aim of the reintroduction in Catalonia is to create new colonies forming natural corridors in the Mediterranean basin. Until now the reintroduction programme of the 27 specimens released has been effective, of which 16 have established themselves in the zone; the mor-

tality of the released specimens has been reduced; the monitoring capacity has improved; reproductive pairs have been formed and the aerial communication corridor between colonies of Black vultures in Spain and France has been consolidated.

- **Brown Bear (*Ursus arctos*) and Wood Grouse (*Tetrao urogallus*)**. Project managed through the Sustainability Laboratory of Red Eléctrica, with the collaboration of the fund for the protection of the wild animals (FAPAS). The main objective is to support the feeding of these animals, by means of the planting of fruit trees and positioning of beehives, thus contributing to the conservation of the biodiversity and increasing the services given to the ecosystem: the promotion of new sources of green employment and support to the local community with the positioning of the association of young Asturian beekeepers and the reduction of the risk of wildfire through the planting of semi or quasi-abandoned property. The project began in 2008, to date 987 fruit trees have been planted, 28 pollinating stations and 102 beehives have been put in place.

- **Monitoring of collisions with lines:**

  The collision of birds with transmission lines usually occurs with grounding cables (which protect the lines from electrical discharges during storms), and as they are of less diameter than the conductors they are less visible. Therefore, actions aimed at reducing the risk of collision are based on the marking of these cables with devices that increase their visibility.

  251.8 km of lines have been marked with spiral bird flight diverter devices during 2009.

  The marking of lines is a result of the work carried out in collaboration with the different administrations. They carry out a study of the lines present in their territory, identifying the risk points and requesting the lines be made suitable. This year, lines have been marked in Andalusia, Aragon - Life-Nature Project *"Adapting electricity lines in the SPAs of Aragon"* - La Rioja, Navarra, Extremadura and Madrid.

Installation of bird flight diverters. Laguardia-Logroño.

To date a total of 1,174.8 kilometres of line have been marked of which 119.85 are located in special protection areas for wild birds (SPA) and the rest in areas close to nesting or feeding sites of sensitive species, migratory routes, ultimately in those spaces where species likely to collide are detected.

Activities regarding the prevention of pollution:

During 2009 the following improvements to facilities were carried out (*Objective No. 6 on substation improvement activities for the prevention of soil contamination included in the Environmental Programme, 44.67% fulfilled*).

- Adjustments to oil spillage containment systems for power transformers in seven substations.
- Adjustments to oil spillage containment systems for auxiliary machines in four substations.
- Repair of two pieces of equipment which showed oil leaks in three substations.
- Cleaning activities of gravel and soil contaminated with hydrocarbons in one substation.
- Improving waste storage in one substation.
- The Plan for the decontamination/elimination of equipment contaminated with PCBs is being executed. At present Red Eléctrica has inventoried 17 pieces of equipment (power transformers and auxiliary transformers with more than 50 ppm).

Containment systems. SE Güeñes.

These improvement activities are set out on the basis of the data obtained through the analyses of the environmental state of substations which began in 2007 and of the environmental supervision visits carried out by the environmental technicians of the territorial areas. 187 supervisory visits were made in 2009 to 144 substations (additional to those already visited). (*One of*

the two aims of objective No. 2 included in the Environmental Programme, on the update of information on the environmental state of the assets of Red Eléctrica, was 80% fulfilled. The total fulfilment of the objective was 85%).

The results of these supervisions have proved determining in the identification of the activities of environmental improvement to be considered in the planning of activities in 2010, not only in the plans of renovation and improvement, but also in the maintenance programmes of facilities.

Containment receptacles. SE Itxaso

Activities regarding noise contamination

During 2009, only one measurement of noise in the 400 kV Begues-Vandellós line and the Garraf substation was carried out, at the request of the Canyelles Town Council. The measured levels complied with the legislation.

Activities regarding electromagnetic fields

Over recent years, electric and magnetic fields have generated an enormous amount of social unrest and Red Eléctrica is fully conscious of this. Although it is certain that this unrest has been calmed considerably (thanks to the dissemination of information and investigation by the scientific community and international organisations), Red Eléctrica remains fully alert to the new innovations which appear on this matter at a world-wide level. It is also participating in various working groups and is maintaining a high commitment to the population, dealing with public concern and collaborating with both the Administration and Institutions.

During 2009, Red Eléctrica was asked to perform measurements of electric and magnetic fields on the following lines: L/Galapagar-Tordesillas; L/Aguayo-Penagos; L/Grela-Sabón; L/Mesón-Boimente; L/Cartelle-Puentes;

L/Centenario-Gillena; L/Louizán-Pazos; L/Louizán-Tibo; L/Fuencarral-Mirasierra y L/Mirasierra-Ventas, having obtained results below those stipulated by the EU.

More information regarding this environmental issue can be found in chapter 6.

Activities associated to the emission of greenhouse effect gasses

In March 2008, REE signed a Voluntary Agreement with the Ministry of the Environment for the reduction of sulphur hexafluoride (SF_6) emissions in the electricity sector, along with the Grouping of Manufacturers of Electrical Equipment Goods (SERCOBE) and the Spanish Electric Industry Association (UNESA).

The Agreement is included within the activities covered in the "Plan of Urgent Measures contemplated in the Spanish Climate Change and Clean Energy Strategy, Horizon 2007-2012-2020" proposed by the National Climate Committee, whose objective is to achieve the reduction in greenhouse gas emissions allowing Spain to fulfil the commitments derived from the Kyoto Protocol for the period 2008-2012.

The work of REE in relation to SF_6 is carried out within the framework of this Voluntary Agreement and is oriented towards satisfying all the agreed points.

During 2009 various works concerning the fulfilment of the requirements contemplated in said agreement were carried out: definition of processes and application of the criteria stipulated in the Voluntary Agreement for the calculation of emissions. (*One of the two aims of objective No. 3 on the control and compensation of emissions in Red Eléctrica included in the Environmental Programme, 50% fulfilled. The total fulfilment of the objective was 75%*).

Within this same objective of control and compensation of emissions, we have carried out the definition of the project called "Red Eléctrica Forest" developing a pilot test in collaboration with the Forestry Commission of Extremadura for the planting of 5,300 oaks on common land in this autonomous community. This planting activity allows the restoration or recovery of natural spaces and the compensation of 20% of the emissions associated to the electricity consumption and fleet vehicles. (*Aim of the objective mentioned in the previous paragraph, 100% fulfilled*).

Other indicators

Environmental behaviour indicators	2007	2008	2009
Surface area situated in areas with a rich biodiversity (*)			
km of line in SAC / km of total lines (%)	14.28	13.5	13.7
Area of line in SAC / total area of SAC in Spain (%)	0.12	0.12	0.12
km of line in SPA / km of total lines (%)	11.6	10.8	10.9
Area of line in SPA / total area of SPA in Spain (%)	0.14	0.12	0.12
No. of substations in SAC / total No. of substations (%)	8.98	11.8	11.7
No. of substations in SPA / total No. of substations (%)	7.3	9.6	9.5
Objectives and programmes to protect and restore ecosystems and indigenous species in degraded areas			
km of lines marked with bird-saving devices	779	923	1,174.8
km of lines marked with bird-saving devices / km of existing line	3	3.46	4.37
km of lines marked with bird-saving devices in SPA / total km of line crossing SPA	7.1	8.8	12.74

(*) Work has continued regarding the update of the georeferenced inventory of facilities. Many of the variations in the presented indicators are related to the increase of inventoried facilities.

Efficiency in the use of natural resources

In our daily work we consume natural resources which form part of our environment and the excessive consumption will lead to depletion. We are aware of this fact, and therefore try to work with a focus on reducing consumption of basic consumables such as water, electricity, paper, fuel, etc.

"Red Eléctrica eficiente"

With the aim of raising awareness regarding the efficient use of natural resources, we have created the brand "Red Eléctrica eficiente" that distinguish projects and initiatives developed by the different areas from our company whose execution implies an efficient use of electricity or any other resource (fuel, water, paper, etc.) and whose impact is measurable in kWh and/or reduction of CO_2 emissions or whose application induces a measurable later impact. (One of the two aims of objective No. 7 on the promotion of good environmental practices included in the Environmental Programme, 100% fulfilled. The total fulfilment of the objective was also 100%).

The projects and initiatives shall be encompassed in different areas: communication and awareness; research/new technologies and improvement projects:

Demand in real time at www.ree.es.

Communication and awareness

Their objective is to seek provide information regarding how to make a more suitable use of energy and to raise awareness about the importance the efficient use of this limited resource:

- **Publication on the website of the electrical energy demand** curve in real time, its generation structure and CO_2 emissions.

- **Installation of recharging points** and the experience of driving an "electric vehicle", allowing the workers to become acquainted with the vehicles that are currently available and test its benefits (electric car, motorcycle and bicycle) and being made aware of the three recharging points installed at the Head Office.
- **Awareness campaign** (posters, messages and news articles on the intranet) aimed at the employees of Red Eléctrica regarding the efficient use of natural resources.
- **Survey on the power consumption habits** in the workplace and at home for the promotion of energy saving measures.
- **Support for the teaching** staff with the development of didactic support units on energy efficiency and the sustainable use of energy. The pilot presentation to ascertain the viability of the implementation of the project was carried out in the region of Arribes del Duero in Salamanca.
- **Creation of the interactive game** for secondary school students of "**CONTROLA, electricity control simulator**".
- Creation of the "**Red Eléctrica efficiente**" area on the intranet as a channel of communication with employees.

«CONTROLA» electricity control simulator game.

Recharging points for electric vehicles.

Innovation and new technologies:

The objective is the development of new ideas to secure a more efficient use of energy, linked on numerous occasions to the development of new technologies:

- **ADM - Active Demand Side Management** (*GAD – Gestion Activa de la Demanda*): research regarding the conditions under which it would be possible to achieve a greater and more active involvement of residential consumers in demand management. Specifically this deals with research regarding Active Demand Side Management that consists of the set of measures which affect the trends of electricity consumption by means of active collaboration of the consumers. This impact on the consumption trends is translated into a flattening of the demand curve, in supplying services for the operation of grids and in regulating demand considering the distributed generation.
- **Analysis of consumption behaviours** in the residential sector in collaboration with the autonomous communities: the project Dissemination of consumption behaviours in the residential sector consists of the development of a simulator that allows consumption behaviours of the residential sector to be analysed under different hypotheses and the effects that the demand management actions oriented to the residential sector have on the system's aggregate demand.
- **Projects of the International Energy Agency**: In the scope of the "Demand Side Management" agreement of the International Energy Agency, Red Eléctrica participates in a research project whose objective is the analysis of the interrelations between the policies that back "Demand Management and Mitigation of Climate Change" as well as in specific research projects: "the supply of energy efficiency and associated branding strategies", "Standardisation of energy efficiency saving calculations" and "Analysis of the implementation strategies of power services at a national level".
- **Participation in the Spanish Technological Platforms regarding energy efficiency** and the Digital Home: Red Eléctrica participates in these two sectorial platforms whose objective is to bring together the knowledge regarding energy efficiency and the digital home from a wide range of companies.

Improvement projects

Regarding the implementation of measures, the initiatives oriented to the search of an improvement in the facilities and processes of Red Eléctrica

are contemplated so as to secure a more efficient power consumption in the workplace:

- **Implementation of efficiency measures** in work centres:
  - Integral energy audit in the Head Office.
  - Installation of interrupters, timers and electronic ballast in the Head Office, with an estimated saving of 14,500 kWh/year (equivalent to 4 tCO_2)
  - Substitution of halogen lights for those using LED technology in the Head Office. Estimated saving of 81,065 kWh/year (equivalent to 22.6 tCO_2)

  The following shows the evolution of the electricity consumption in the Head Office, showing an evolution of the reduction thanks to the improvements implemented.

	2007	2008	2009
kWh	5,190,161	5,252,226	5,307,597
kWh/employees	7,310	6,366	6,215

- **Installation of LED fluorescents**, down light, electronic ballasts, interrupters, timers, movement sensors and regulators of natural light in La Eliana work centre, with an estimated saving of 25,315 kWh/year (equivalent to 7 tCO_2). *This action corresponds to two of the five aims defined for objective No. 1 on improvement in efficiency in the consumption of natural resources included in the Environmental Programme that reached a fulfilment of 100% (the total fulfilment of the objective was 52.9%)*
- **Analysis of light pollution** and energy efficiency in the lighting systems in substations, whose objective is the reduction of light pollution in substations and the installation of more efficient systems.
- **Beginning of the "Action CO_2" programme**. This deals with a voluntary business commitment to: show the interested parties the acquired commitment (beyond a legislative obligation) of a voluntary reduction of CO_2 emissions; to value products and services developed in order to improve energy efficiency and to fight climate change; to exchange experiences and knowledge with

La Eliana work centre.

other companies and to reinforce the internal commitment of the company with its employees through online training/awareness.

- **" Lets share a car" initiative**. This deals with a platform accessible through the intranet to find out and take advantage of common commuter routes of employees, with the aim of reducing the number of vehicles used to come to work, signifying a saving of indirect emissions and fuel consumption.
- **More efficient fleet vehicles** which has meant the development of a technical specification that defines the consumption of fuels, CO_2 emissions and engine efficiency, of the fleet vehicles of Red Eléctrica.
- **Redesigning** of the Annual **Reports in electronic format** to reduce paper consumption.
- **Creation of the Paperless Classroom** destined to training which uses the PC Tablet as the only work tool, with an estimated saving of 445 kg of paper in 2009 and an average saving per course of 7 kg.

Paperless classroom.

Electricity consumption

Electricity consumption at the Head Office, the building in Tres Cantos and the extrapeninsular systems (Canary Islands and Balearic Islands), are not comparable to that of an average office. The Head Office comprises of a four-building complex dedicated to standard office activity. One of them houses the Electricity Control Centre (CECOEL) - where the coordinated operation and supervision in real-time of the generation and transmission facilities of the Spanish electricity system are conducted and also the Control Centre for Renewable Energy (CECRE) - to control special regime facilities (renewable energies and co-generation). Tres Cantos houses the Grid Control Centre (CECORE), a back-up system to the CECOEL system at the Head Office. The three control centres require electronic equipment and air conditioning which continuously operates 24 hours a day, seven days a week. The extrapeninsular systems are comparable to that of CECORE (Tres Cantos).

As a result of the energy audit carried out in 2007 at the Head Office, it was estimated that the consumption of the CECOEL is 30% of the Head Office's global consumption. This percentage can also be extended to the centres in Tres Cantos and to the extrapeninsular systems.

The following table shows the evolution of the electricity consumption during the period 2007-2009:

	2007	2008	2009
Control centres (kWh)	2,931,339	3,028,521	3,090,109
Work centres (kWh)	10,985,124	10,872,067	10,825,378
TOTAL	13,916,463	13,900,588	13,915,487

Emissions associated to the consumption of electrical energy* (tonne of CO_2 equivalent)			
	2007	2008	2009
	5,487.2	5,481	3,881.3 (*)

** **Source used for the calculation**: Until 2008 the conversion factor provided by the International Energy Agency (corresponding to Spain year, mixed generation). Since 2009 the conversion factor used is calculated by Red Eléctrica which considers the generation mix of each year and associates, to each generation technology, an emission factor in accordance with the values presented in the 2005-2010 Renewable Energies Plan in Spain. The resulting emissions are lower as in the new factor the incorporation of the renewable energies is better reflected.*

In addition to the initiatives already mentioned in the section Red Eléctrica eficiente, in 2009 and as part of the objective regarding the improvement of efficiency in the consumption of natural resources of the Environmental Programme, the installation of electricity consumption meters was promoted in those work centres that still did not have them, so as to have realistic data which would allow consumption reduction initiatives to be established. This aim was not fulfilled, nevertheless this shall be carried out over the next year. (*The total fulfilment of objective No. 1 was 52.9%*).

Water consumption

The table below shows the evolution of water consumption in the period 2007-2009. The water consumed at the premises of Red Eléctrica comes from diverse sources; municipal water mains, wells, and cisterns.

	2007	2008	2009
Head Office (m^3)	8,240 (1)	18,161	22,508
Head Office (m^3/employee)	12.46	19.89	26.36
Work centres (m^3)	10,846	10,351	16,253
Work centres (m^3/employee)	27.52	25.18	37.71

(1) The deviation of the data with regard to other years was due to a problem in the meter

Withdrawal by source (%)	2007	2008	2009
Cisterns	1.17	0.62	1.05
Wells	7.25	30.73	65.16
Municipal water mains	91.58	68.65	33.79

In addition to the initiatives already mentioned in the section Red Eléctrica eficiente, in 2009 and as part of the objective regarding the improvement of efficiency in the consumption of natural resources of the Environmental Programme, the installation of water reducing anti-splash nozzles on the taps of all facilities of the Levante regional offices was promoted. This aim was not

fulfilled, even though the corresponding supply was available, these were not installed throughout the year. Their installation is foreseen for the coming year. (*The total fulfilment of objective No. 1 was 52.9%*).

Consumo de papel

The following table shows the evolution of the consumption of paper used to photocopy and print documents in all the work centres during the period 2007-2009. Red Eléctrica implemented a system based on a pay-per-use service, where the company contracted takes full care of the photocopiers installed in all the work centres and guarantees a more efficient use of them. Additionally, Red Eléctrica also has a document management system which provides easy access to information stored and reduces the number of paper copies.

	2007	2008	2009
kg	67,745	67,086	85,091
kg/employee	48	37.5	46

The following table shows the evolution of the consumption of paper used for publications during the period 2006-2008.

	2007	2008	2009
kg	73,173	78,478	49,961
% FSC *	44.3	46	25

** Paper certified in accordance with the Forest Stewardship Council standards*

In addition to the initiatives already mentioned in the section Red Eléctrica eficiente, in 2009 the following actions were noteworthy:

- Use of 100% environmentally friendly paper
- Use of 100% FSC certified paper (A4 and A3) used in printers and for envelopes and letterhead products
- Use of USB pen-drives for the delivery and distribution, in electronic format, of the Annual, Corporate Governance and Corporate Responsibility Reports, equating to a **saving of 24,885.94 kg of paper**.

Fuel consumption of fleet vehicles

The following table shows the evolution of the fleet vehicle fuel consumption during the period 2007-2009.

	2007	2008	2009
Off-Road vehicles/lorries (litres/100 km)	19.81	19.74	12.25
Cars (litres/100 km)	6.89	7.28	8.33

	2007	2008	2009
Emissions associated to the use of fleet vehicles (tCO_2 equivalent)	1,932	1,995	2,437 (*)

** 2,120,771 km driven more than last year*

In 2009 and also as part of the objective regarding the improvement in the efficiency of the consumption of natural resources included in the Environmental Programme, a more efficient use of fuel was promoted by means of the commitment to incorporate into the Red Eléctrica fleet of vehicles, cars with an A rating for energy efficiency. (*This aim was 100% fulfilled. The total fulfilment of objective No. 1 was 52.9%*).

Also, during 2009 the system of video conferencing for holding meetings has been promoted, which has meant an estimated saving of 27,926 litres of fuel, which represented avoiding the equivalent emissions of 75 tCO_2 .

As part of the "Mobility Week" campaign and coinciding with the European mobility week, a competition regarding stories related to "your biking experiences" was held, those with the best stories were awarded a bicycle.

In the Head Office a transport service for employees is available, this is used daily by 21.55% of the workforce, avoiding emissions equivalent to 76 tCO_2 per year.

Lomba substation.

Waste

All the facility maintenance activities, as well as the construction of new facilities, generate different types of waste which are separated, stored and managed in the most suitable manner.

During **maintenance**, waste is derived from repairs, replacements, oil refilling, felling and pruning, accidents, etc. Given these different sources, it is very difficult to establish generation guidelines and therefore, reduction measures.

It is worth noting that the amount of waste generated in maintenance is proportional to the number of installations in service and given that this number has increased over the last few years, increases have also been reflected in the quantity of waste generated. During 2009, the most significant growth in the amount of waste, hazardous and non-hazardous, is associated to the increase in the maintenance of facilities and to the important campaign of refurbishment of assets that has been carried out.

We try, as far as possible, to reduce the quantity of waste we generate. This is done through the improvement of our processes and extending the useful life, where viable, as can be done with transformer oil regeneration.

Additionally we work to constantly improve waste management, trying to separate to the utmost, looking for the best options from our suppliers and encouraging best practices through training and awareness actions.

Therefore, since the ruling regarding Waste Electrical & Electronic Equipment (WEEE) and its environmental management, we have worked to be able to use the services of the Integrated Management Systems (IMS) which are starting up in Spain. Thus, from 2009 all the Nickel-cadmium (Ni-Cd) batteries are col-

lected free in each of their generating points by the company Ecopilas. In this way, Red Eléctrica becomes the user of the product until the end of its useful life, by stopping being the producer of this type of waste. These same actions are beginning to be initiated, by means of a pilot test, for the collection of fluorescent tubes by the company Ambilamp.

This has meant the carrying out of collection campaigns with the consequent increase of the amounts managed.

In general terms, the generation of non-hazardous waste has fallen with respect to 2008. This situation is especially remarkable in the case of metallic, inert and wood waste, due to the conclusion of many of the activities of the Programme for the integration of assets acquired in the last few years from the electricity companies.

The particular cases of increases are fundamentally due to:

- Sludge from septic tanks: campaign initiated at the end of 2008 for the cleaning, adjustment and adaptation to the standardised criteria of Red Eléctrica and in some cases, to the current legislation.
- Non-hazardous electrical and electronic waste and plastic: substitution of equipment by improvements in the communication systems and control and

Bottles of SF_6

Removal of oil filled equipment.

improvement in the systems of segregation and classification, as in the past a large amount was attributed to scrap or solid urban residues.

In the case of the generation of hazardous waste, the increase with respect to the previous year is largely due to the collection campaign of obsolete equipment, collected up in the facilities after the activities associated to the Plan for the integration of assets and Renovation and Improvement Programmes in previous years.

This year also noteworthy are:

- The reduction of oil with PCB: by the improvement of management processes of equipment containing dielectric oil and in which handling is not carried out as long as they remain airtight, that is to say, they are not drained prior to being processed by the waste manager, which in turn has produced an increase in electrical and electronic waste with hazardous components.
- The increase of water-oil mixtures and soils impregnated with hydrocarbons: adjustment campaign regarding the containment systems for leaks and spillage from power transformers.
- The increase of presurized containers due to the collection campaign of bottles of SF_6 outside of the specification which remained stored in the facilities, carried out during this year.
- The increase of silica gel. This is due to the progressive substitution of silica gel impregnated with cobalt chloride when reaching the end of its useful life for silica gel without hazardous components.
- The increase of containers, mainly metallic, due to the cleaning out of storage areas and detanking warehouses from which empty oil drums were removed which had been stored for their possible use in transfers.
- The increase of contaminated absorbent materials due to the improvement in maintenance practices in which preventive measures in the use of this type of materials are applied.

Waste generated during maintenance activities	Amounts managed (kg)		
Non-hazardous Waste	**2007**	**2008**	**2009**
Sludge from septic tanks	177,148	73,149	230,000
Scrap metal	1,876,311 [1]	1,372,185 [1]	312,226
Inert waste	No data	1,634,100	321,298
Paper and cardboard	78,652	76,565	68,061
Toner [2]	186	311	81
Wood	58,380	124,688	12,129
Vegetable waste [3]	8,801,300	15,520	6,550
Non-hazardous electrical and electronic waste	230	542	2,965
Plastics	0	0	2,245
Vegetable cooking oils	4,220	5,020	3,680
Total non-hazardous waste	**2,195,127**	**3,286,559**	**952,685**
Hazardous Waste			
Used oil	95,470	156,978	174,538
Oil water mix	110,960 [4]	41,694	60,140
Transformers with PCBs	2,413	46,834 [5]	33,960
Oils with PCBs	520	82,874 [5]	5,674
Lead batteries	338	582	378
Nikel/Cadmium accumulators	10,960	2,548	20,946
Batteries	114	34	95
Hazardous electrical and electronic waste	269	108,169	355,317
Florescent tubes	410	388	818
Soil impregnated with hydrocarbons	161,151 [4]	161,127	480,322
Containers containing hazardous substances	1,604	985	9,251
Absorbent matter, filtering materials, cleaning rags, protection clothes contaminated with hazardous substances	371,184 [4]	2,235	5,980
Silica gel	285	444	570
Non-halogenated solvents	325	0	0
Halogenated solvents	0	0	0
Water based cleaning liquids	50	200	0
Paint waste	0	0	53
Insulation material (with or without asbestos)	8,680	0	80
Laboratory chemical products containing hazardous products	8	75	420
Gasses in pressurized containers	5	14	762
Total hazardous waste	**764,746** [6]	**605,181** [6]	**1,149,305**

(1) The majority of scrap generation is directly related with the campaign for the refurbishment of facilities.

(2) Since July 2006 the maintenance and replacement of equipment has been carried out by an external company, who is responsible for its correct waste management. Only toner not included in the contract has been accounted for.

(3) The majority of this waste was delivered to the owner, or incorporated into the soil. In addition, other vegetable waste has been generated to the same end and has not been included nor taken into account in the calculation of the total non-hazardous waste.

(4) It can be observed that most of the waste generation corresponds to that associated to accidents: oil water mix, contaminated soil and absorbent matter.

(5) Increase associated to the execution of the Plan for decontamination/elimination of equipment with PCB's.

(6) Data updated to include gasses in pressurized containers.

Types of Waste Management

Non-hazardous Waste	
Sludge from septic tanks	Treatment / Elimination
Scrap metal	Recycling
Paper and cardboard	Recycling
Wood	Valuation / Elimination
Vegetable waste	Incorporation into land /Valuation / Elimination
Vegetable cooking oils	Valuation
Non-hazardous electrical and electronic waste	Recycling
Hazardous Waste	
Used oil	Regeneration / Valuation
Lead batteries	Recuperation of lead / Elimination
Nikel/Cadmium accumulators	Recuperation / Elimination
Batteries	Recycling / Elimination
Florescent tubes	Recycling
Earth impregnated with hydrocarbons	Elimination
Recipients containing hazardous substances	Recycling / Elimination
Absorbent matter, filtering materials, cleaning rags, protection clothes contaminated with hazardous substances	Valuation / Elimination
Silica gel	Elimination
Non-halogenated solvents	Regeneration
Paint waste	Valuation
Insulation material (with or without asbestos)	Elimination
Laboratory chemical products	Elimination

During **construction** of a new facility or the modification of an already existing one, the waste generated is managed by the contractor. As part of the environmental specifications of the project, they are provided with requirements regarding how to proceed in the final separation, storage and management of the waste. The compliance with these requirements is reviewed during the works supervision process and through control of documentation.

Waste generated by construction activities

Non-hazardous Waste		Residuos peligrosos
Excess earth from excavation	Plastics	Paint waste
Forest waste	Wood	Absorbent matter and rags contaminated with hazardous substances
Rubble	Scrap	Earth impregnated with hydrocarbons
Paper and cardboard	Solid urban waste	Containers which have contained hazardous substances

Environmental Accidents

We are well aware of the consequences that an accident may have on the environment, and for this reason, we apply preventive measures to reduce the likelihood of them happening, or in the event they might occur, minimize the impact on the environment. Thanks to the application of these measures, the consequences of the accidents which have occurred in our facilities have only been of minor importance.

Fire prevention measures

- Selective felling and pruning of trees and vegetation to clear paths and to maintain safety distances (in 2009, this has represented a cost totalling 10,054,013 euros).
- During the whole of 2009, contact has continued to be established with different regional authorities to emphasize the importance of exchanging information, identifying preferential areas in which to act (depending on the fire risk) and coordinating the fire fighting actions in the event of a fire. (*See chapter 8*)

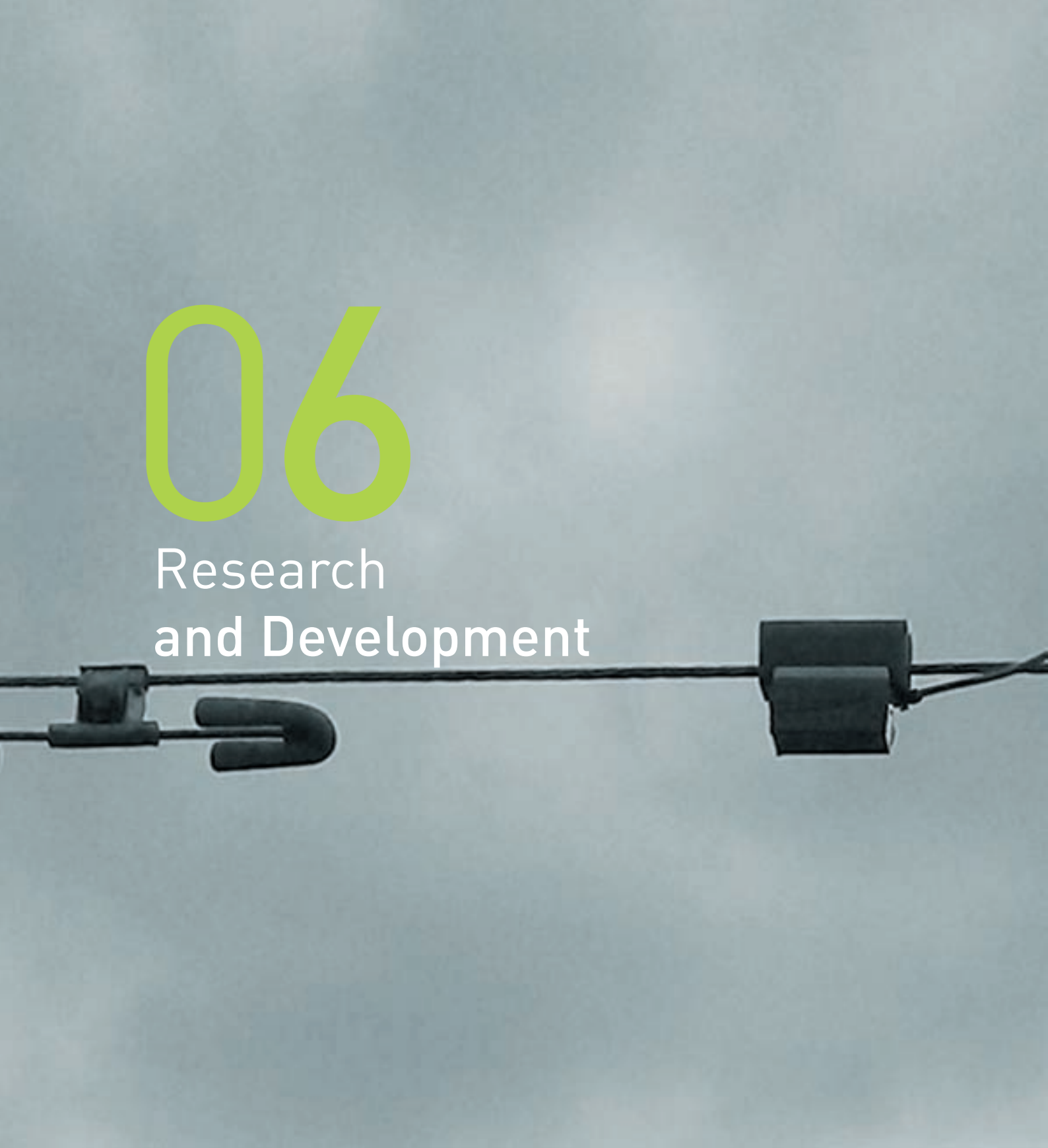
Preventive measures for leaks and spillages

- Preventive maintenance of equipment containing oil.
- Adaptation of pits and/or trays below the equipment and/or storage of potentially contaminating substances.
- Manipulation of the equipment and contaminating substances on impermeable surfaces.
- Revision of the status of the spillage preventive measures applied to power transformers and auxiliary transformers.
- In the case of equipment containing dielectric oil and which has reached the end of its useful life, to restrict the need to drain the equipment only to those cases where it is absolutely necessary, hence maintaining the equipment airtight until the arrival on site of the authorised waste management company.

The following table is a summary of the nature of the accidents and the number of times they occurred during the last three years.

Accidents occurred	2007	2008	2009
Construction activities	**1**	**1**	**3**
Fires due to failure in substations	0	0	1 (1)
Leaks and spillages of oil during filling of transformer	0	0	0
Leaks and spillages of oils and hydrocarbons due to minor failures during the use of machinery for construction	1	1	2 (2)
Maintenance activities	**24**	**7**	**23**
Fires due to line failure	7	1	2 (3)
Fires due to failure in substations	2	1	0
Towers brought down as a consequence of heavy storms	-	-	4
Leaks and spillages of oils and hydrocarbons during the use and maintenance of substation equipment	14	4	13 (2)
Oil Leaks in lines	1	0	1 (2)
Floods	0	0	0
SF_6 leaks due to explosion of equipment or diverse accidents	1	1	3 (4)

(1) Incipient fire extinguished with own means and with limited area affected.
(2) In all cases, the volumes of spillage were less than 500 litres.
(3) Incipient fire extinguished with own means, with limited area affected, and one fire that affected an area of 14 ha of pine and scrubland.
(4) Total volume of leaks was 64 kg of SF_6 (the average annual volume of SF_6 is approximately 2000 Kg).



06

Research and Development

In regard to research, development and innovation, we work with prestigious research teams and achieve objectives and results that add value to our business activities.

8.85% of the total budget invested in R&D&i projects was dedicated to environmental projects, which represents an increase of over one percentage point with regard to the previous year.

During 2009 the following R&D&i projects were carried out:

Birdlife

Bird flight diverter project

Carried out in collaboration with the Biological Station of Doñana (CSIC). Begun in 2004, it was forecasted to finish in April 2009, but testing will continue during 2010. It consists of the design of a new bird flight diverter device and the analysis of the effectiveness as compared to the spiral device (yellow, white and orange). According to the preliminary results obtained from field tests (lines in Huelva and Seville), the new model - registered for public use - would prove more effective than the devices traditionally used (reduction in the bird death rate by 3.3 fold) and owing to its semi-automatic installation and removal it does not require the disconnection of the line.

New style of bird flight diverter.

Collision detector

Collision detector.

Carried out in collaboration with the Migres Foundation and the Research Foundation of the University of Seville. Begun in September 2008, its finalisation is anticipated for September 2010. Its objective is the design of a detection system for possible impacts, to be installed on grounding cables and that would allow real-time detection of possible collisions and their location in order to act swiftly in the event of accidents. To date, laboratory tests have been carried out on various components and the IT programs, using a stretch of line of 15 metres in Andalucia. (*Objective No.8 of the Environmental Programme on R&D&i projects for nature conservation: Birdlife, 0% fulfilled, due to the fact that at year end the critical level regarding the existence of a prototype detector was not achieved, only the elements it is comprised of had been defined).*

Protection of Great Bustard.

Steppe birds

Developed in collaboration with the Department of Biology of Doñana's Biological research station (CSIC) together with the Gypaetus Foundation. This began in July 2008, and its forecasted conclusion date is March 2012. Its aim is to design and test measures to minimize the impact of the lines on these birds, especially on the Great Bustard, *Otis tarda* (vulnerable species according to the IUCN red list) and to improve their habitat.

Vegetation

Posidonia (Posidonia sp.)

Developed in collaboration with the company TECNOAMBIENTE and includes the scientific supervision by the Centre for Advanced Studies in

Blanes (Council for the Spanish National Research Council and with the Ecology Department of the University of Barcelona). The project studies the viability of the temporary removal of small portions of meadows of oceanic posidonia to be subsequently replanted in its original site after a period of time, in an attempt to minimize the impact derived from the works on the coastline. The final tests carried out in the Santa Ponça cove provided highly satisfactory results.

Project Vulcano

Carried out in collaboration with Iberdrola, ADIF and INECO, began at the end of 2008 and its forecasted duration is until 2011. Its objective is the prevention of forest fires, by means of the development of an assessment methodology and the prevention of conflict between electricity lines and railway networks with their surroundings, throughout their life cycle. In 2009, studies were carried out on facilities and the environment; a risk and conflict analysis was performed between both, and the development of the technical methodology for the risk assessment and prevention has commenced.

Electromagnetic fields

The R&D&i project **Currents induced in the human body by electromagnetic fields of Industrial Frequency** was concluded. The project was carried out jointly with the Institute of Applied Magnetism "Salvador Velayos". In 2009, the calculation model was applied to employees of Red Eléctrica in actual working conditions in the proximity of live elements, such as live working situations while on the tower or in contact with conductor cables and the inspection of the gallery of Barajas. The results have been satisfactory, as they do not exceed the maximum permissable values established by the European Union legislation.

07

Training and Awareness

We consider environmental training a strategic line in order to create a team which is increasingly concerned with protecting the environment. Training goes even further than the mere professional area, with the aim being to contribute to improving environmental habits in daily work and family life of every employee.

The percentage of Red Eléctrica staff that has received environmental training during 2009 was 15.39%, which represents an increase of 6.73% with regard to 2008.

During 2009, a total of 3,109 hours of internal training were provided, distributed across the following training areas:

Environmental training areas
Environmental Education, Sustainable Development and Corporate Responsibility
The environment and the electricity sector
Agrarian and tree assessments
The environment and the construction of facilities
Iberian flora and fauna
Waste management
Energy efficiency and Environmental Responsibility
Public Administration – Business relations

The task of awareness carried out during the year was done through the following communication channels:

"Know your consumption, use your energy sensibly" campaign. REE gave out an intelligent electricity meter as a corporate gift to its employees and interested parties. This meter provides data in real time regarding electricity consumption at any moment of the day, as well as its cost and associated CO_2

emissions (in kilogrammes). In addition, thanks to the consumption management programme that is included in the meter, it is possible to know the consumption profile. ("Red Eléctrica eficiente" action).

Birdlife course in Valdelateja, Pesuquera del Ebro (Burgos) given by SEO BIRDLIFE.

Green Suggestion Box. Collects proposals from employees regarding sustainable practices at work and at home, with the aim of making each employee more environmentally aware. The best proposal received throughout the year is implemented the following year and is awarded a prize of a weekend for two in rural accommodation situated in a protected natural area. During 2009, employees voted the Stone Curlew as the species to be sponsored as part of the "Sponsor a species" initiative selected in 2008 as the winning proposal. During the 2010-2011 period, the actions defined in the conservation project for this species (analysis of its integration with electricity lines; identification of wintering localities, and ringing and biological monitoring), shall be carried out with the objective of ascertaining the conservation state of the species in Las Palmas de Gran Canaria. (*One of the two aims of the No.7 objective on fostering good environmental practices included in the Environmental Programme, fulfilled 100%. The objective was 100% fulfilled*).

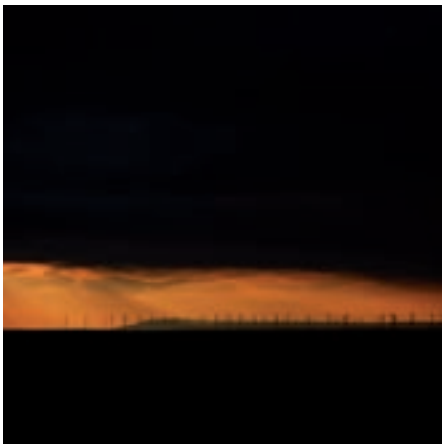
Ecoconsejos Campaign. This campaign for the awareness of the efficient use of natural resources is aimed at Red Eléctrica employees. Started in the last quarter of 2008 and was extended to the last quarter of 2009. It consisted of:

- Publishing on the intranet the news regarding the campaign kick-off.
- Design, publishing and distribution of ecoconsejos (eco-advice) posters at all Red Eléctrica work centres. These posters are also available in the education area of the Red Eléctrica website (www.ree.es)
- Monthly publishing in the agenda section of the intranet of the messages disseminated by means of the ecoconsejos posters.
- Publishing of environmental articles in the reports section of the intranet.

Halfway into 2009, a survey was carried out to evaluate the impact and influence of this campaign. The results were favourable regarding the campaign itself, the

level of consciousness of informative posters and the awareness of employees towards matters regarding the reduction in the consumption of energy and the optimisation of the means of transport. ("Red Eléctrica eficiente" action)

Internal portal "miRed". Presents user friendly information for our employees on environmental activities carried out by the company, and best practices for putting them into effect in both at home and at work, external events of an environmental nature, as well as publications or articles on environmental topics promoted by the company, and that include the following sections ("Red Eléctrica eficiente" action):



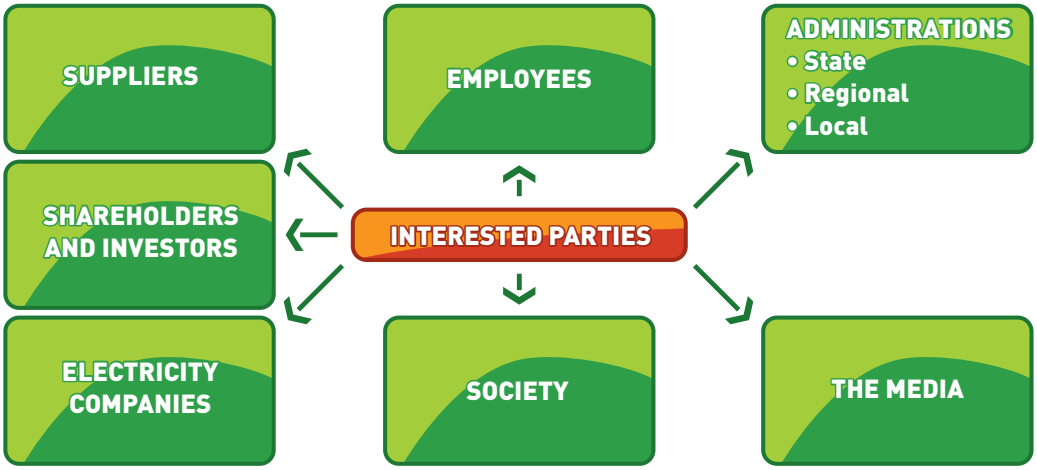
- On the Agenda:
  - Financial aid and grants: The employee can obtain information regarding financial aid and grants, per autonomous community, on matters of energy efficiency relative to the purchase of new appliances, vehicles or in the case of opting for the installation of equipment for harnessing renewable energy at their home.
  - Day to day in Red Eléctrica. Information regarding actions being carried out at our facilities (buildings and substations) for the implementation of more efficient measures.
  - Sessions and events: Information regarding sessions and events held at a national or international level during the month and that are related to energy efficiency.
- Do you want to be efficient? Provides employees with advice on how to improve their energy consumption habits at home, in the office and in their day to day transport. It also provides information regarding the most efficient equipment available on the market.

Entre Líneas. A magazine which includes; important company events, news and activities and articles regarding the environment.

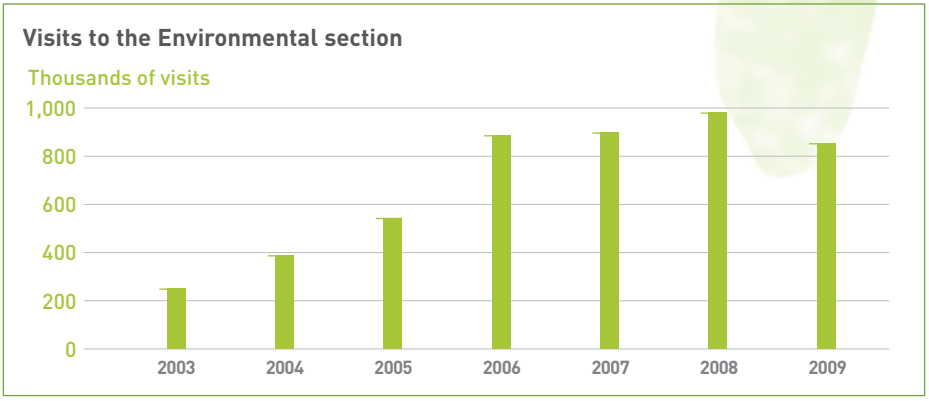
Red Eléctrica Press Dossier: Creation of a new section for news under the heading of "Energy efficiency and sustainability" ("Red Eléctrica eficiente" action).

08 Communication

Conscious of the social interest in the activities we carry out, we provide constant information to, and maintain dialogue with, all interested parties.



To do so, we make different environmental communication channels available to society. Noteworthy, is the annual publication of our Environmental Report and our website www.ree.es which contains a special section on the different environmental aspects of the company. During 2009, this section received 85,627 visits from numerous countries, representing a 12.77% decrease with respect to 2008.



We attend and monitor all enquiries and claims of an environmental nature which reach us via electronic mail or the DÍGAME service (Shareholder Attention Centre) specifically provided for this purpose on our website www.ree.es.

During 2009, a total of 12 claims and 20 enquiries classified as of an environmental nature were received thyrough the DÍGAME service.

Through **collaboration agreements,** we work with institutions to carry out R&D&i projects or activities related to the environment and sustainable development, of interest to both parties.

Collaborations with Public Administration

Collaboration Agreements	Action areas
Government of Canarias (*Regional Ministry for Environment and Territorial Organization*)	Signing of the Declaration of association to the LIFE Project « Reduction of unnatural mortality in threatened populations of birds in SPA in Fuerteventura and Lanzarote». The project, which is currently in the proposal phase, consists on a series of actions on present and future transmission lines within these islands for the protection of certain endemic and emblematic birds of Lanzarote and Fuerteventura (Hubara Bustard, Egyptian Vulture).
Generalitat de Catalunya (*Environmental Departament*)	Definition of corridors or areas of lesser impact for the location of future electricity facilities.
Autonomous Government of Andalusia (*Environmental Department*)	Prevention and tackling of forest fires.
Autonomous Government of Castilla-La Mancha (*Department of Industry and Employment*)	Development of electricity infrastructures during the period 2002-2011.
Autonomous Government of Castilla La Mancha (*Department of Environment and Rural Development*)	Prevention and tackling of forest fires.

As a continuation to the initiative started in 2008 for the improvement of communication in matters regarding the prevention of forest fires and fire fighting, training has continued to be imparted to forest agents, personnel of the Envi-

ronmental Protection Service (SEPRONA) and to technical personnel of the regional administrations/office in: Toledo, Guadalajara, Cuenca, Cáceres, Badajoz, Soria, Ávila, Palencia, Salamanca, Murcia, Albacete and Valencia, with an approximate total of 570 participants.

During these informative sessions several subjects were addressed, such as the identification of electricity facilities, Red Eléctrica actions regarding fire prevention and procedures for tackling a forest fire in the vicinity of an electricity facility, as well as basic knowledge on the activities which Red Eléctrica carries out regarding environmental conservation.

As one of the environmental awareness actions of interested parties, in 2009 an collaboration agreement was developed with the Generalitat of Catalonia for the prevention of forest fires and which is pending signing (*Objective No.9 on environmental awareness of interested parties included in the Environmental Programme, fulfilled 50%*).

Course given by REE to Seprona in Soria.

Course given by REE to environmental agents from Murcia.

Collaborations with research centres

Organisation	Action Areas
CSIC. Biological Station of Doñana	Framework Agreement for Collaboration.
	Analysis of the useful life efficiency of anti-collision "bird-saving" devices and markers on electrical energy transmission lines.
	Testing of measures on electricity transmission lines to minimize the possible impact on pseudo-Steppe birdlife. Pilot project.
	Environmental assessment regarding the location of pylons within the route selected for the Lada-Velilla line.
University of La Laguna	Framework agreement for the development of joint action programmes in academic and research areas. As core element of this agreement, Red Eléctrica collaborated in 2009 in the definition of the University Master's regarding Renewable Energies, developed as a specific degree of the University of La Laguna with the aim of preparing professionals in the scope of renewable energies, not only from the scientific-technological but also from economic-business point of view.

Collaborations with other organisations

Collaboration agreements	Action Areas
APIA	Environmental information
FAPAS (Fund for the protection of wildlife)	Environmental assessment regarding the route of the Lada-Velilla line
Entorno Foundation	Agreement by which Red Eléctrica forms part of the companies that collaborate with the Entorno Foundation, Sustainable Development and Business
Gypaetus Foundation	Project for the selection, creation and management of improved habitat areas for the Great Bustard and other Steppe species
Migres Foundation	Framework agreement for the execution of works in research, development and innovation projects and technical support within the environmental scope
	Bird collision detector on electricity lines. Pilot project
GREFA (Group for the rehabilitation of the indigenous fauna and its habitat)	Collaboration agreement
SEO (Spanish Ornithological Society)	Framework agreement

As part of the framework agreement with GREFA, during 2009 the "Throw them a line, plug them in to life" Campaign was carried out. This project promotes the elaboration of toy animals by people with psychic disabilities, and that are subsequently offered by this Group in their campaigns oriented to obtaining new members.

Colaborations with education and communication centres

Collaboration agreements	Action areas
Association to the Red Life magazine	Sponsorship of the Great Bustard and the Mediterranean Dolphin
Official School of Physicists	Electromagnetic Fields: informative leaflet
Environmental Journalists VII Congress	Sponsorship

In addition, in 2009 we actively participated in **working groups, congresses and debates** organised by entities, bodies and associations of recognised prestige.

Working Groups	Organised By
WG C3.06: "Environmental assessment of plans and programmes"	CIGRÉ
WG C3.04: "Communication strategies within the sustainable development framework"	
WG C3.09 : "Corridor Management"	
Environmental committee	AEC
Sustainability Excellence Club	Excellence Club
Working group on electromagnetic fields	UNESA
Distribution environment working group	
Working group on climate change and energy. CO_2 action programme.	Entorno Foundation
Working group: Demand side management and climate change	Anternational Energy Agency
Working group: Investigation of energy efficiency offers and associated branding strategies	
Working group: Standardisation of indicators for measuring energy efficiency	
Working group: Spanish platform for energy efficiency	Ministry of Science and Innovation
Working group: Spanish platform for the digital home	Multisectorial Association of Spanish Companies within the Electronic and Communication sector (ASIMELEC)
Working group on Regional Electricity Infrastructure Corridors in Castilla La Mancha	Autonomous Government of Castilla La Mancha
Working group on Regional Electricity Infrastructure Corridors in Madrid	Autonomous Community of Madrid

Finally, and keeping in line with previous years, we do a great deal of work with respect to editing and distributing publications.

The distribution of publications in e-format through the website www.ree.es, which enables information to be made widely available to all interested parties and represents a very significant saving in natural resources, has registered a total of 248,650 downloads.

The main publications in 2009 were:

- Environmental Report 2008
- Corporate Responsibility Report 2008

We continue to collaborate with the Publication "Red Life" - a magazine dedicated to nature in Andalusia which contains news articles and reports on endangered species- and have sponsored two species: the Mediterranean Dolphin and the Great Bustard.

09 Collaborators

We consider our suppliers and contractors to be an essential link in the development of our activities, and therefore our commitment to the environment extends to each and every one of them as an integral part of our work team.

Our collaborators also assume our commitment to respect the environment in their daily work. Proof of this is shown in the increase in the number of suppliers having an environmental management system in place, which is certified by an external entity or those who are beginning to implement one.

Supplier behaviour regarding environmental issues	2007	2008	2009
No. of suppliers with environmental certification [1]	195	188	115
% of suppliers with certified environmental management systems (UNE-EN ISO 14001:2004 or EMAS registered) of those qualified	40	41	50

(1) Includes suppliers qualified and authorised by Red Eléctrica and whose services rendered or products supplied have some environmental consideration to take into account.

On 31 December, 115 suppliers were identified who carried out a service or supplied a product with environmental connotations. Of these 115 suppliers, 50% (58 suppliers) have an environmental management system in place that is either certified under UNE-EN ISO 14001 or registered in EMAS.

From 2009, all companies wishing to be qualified for services which, from an environmental point of view, are deemed to have a high impact risk (in accordance with Red Eléctrica's environmental qualification criteria of suppli-

ers) are obliged to provide their employees with basic environmental training and to have a civil liability insurance that includes coverage of damage to the environment.

Servicios considerados como de riesgo de afección alto
Assembly and hoisting of line towers
Construction to increase capacity
Construction of underground lines
Construction/modification of lines with lengths less than 15 km
Lines - Turn-key projects
Substations - Turn-key projects
Telecommunication facilities - Turn-key projects
Electro-mechanical assembly of substations
Land movements in substations
Civil engineering on lines
Civil engineering on substations
Other minor civil engineering on lines
Other minor civil engineering on substations
Felling and pruning of trees
Hanging of second line circuit in the proximity of live facilities
Hanging and clamping of grounding cables or compound cables
Hanging and clamping of conductors

Villanueva de los Escuderos under construction.

In order to promote the environmental awareness of suppliers, a special initiative was planned at Red Eléctrica for the training of works supervisors in addition to project and site managers. It was not possible to carry out this training due to the non-availability of certain proposed attendees due to engagements. Nonetheless, it is planned to be included within the next Environmental Training Plan. (*Objective No.10 on supplier environmental awareness included in the Environmental Programme, 0% fulfilled*).

10 Legal Compliance Evaluation

The legal compliance evaluation carried out, has highlighted the existence of legal requirements that must be worked on in order to comply with them. These requirements are associated to the standardisation of underground water extraction and the disposal of waste from filtering septic tanks, all currently in the process of obtaining the corresponding authorisation.

In 2009, no regulation has come into effect which impacts upon Red Eléctrica's activity or its environmental processes.

In order to identify and evaluate the relevant legal requirements, Red Eléctrica has in place a process that systematically covers all the phases of the activity; planning, construction and maintenance, and considers not only the requirements originating from European, national, autonomous and local regulations but also those obligations derived from the Environmental Impact Declaration and other administrative authorisations.

The actions carried out for the fulfilment of these requirements, are set forth throughout the different chapters of the Annual Report, particularly in those sections regarding the protection and conservation of flora, fauna and the landscape.

11 Sanctions and Fines

The following table details the type of infringement committed and the total cost of the same in sanctions requiring the payment of fines in the 2007-2009 period.

Infringement committed	2007 (€)	2008 (€)	2009 (€)
Unauthorised construction of a path	100	-	-
Lack of maintenance of vegetation	91	1,805 (1)	-
Unauthorised felling and pruning	100	6,367 (2)	720
Unauthorised occupation of common land	200	-	-
Fire due to line discharge	91	-	-
Unauthorised spanning of a waterway	240	-	-
Abandoned material / fire risk	-	91	2,735 (4)
Unauthorised spanning of Protected Natural Areas	-	200	-
Obstruction of waterway	-	1,858 (3)	-
Total Cost	**822**	**10,321**	**3,455**

(1) The amount corresponds to 10 cases
(2) The amount corresponds to 4 cases
(3) The amount corresponds to 2 cases
(4) The amount corresponds to 2 cases

As there are nine proceedings pending resolution for cases filed in 2009 and in prior years, consequently the above figures are modified yearly as the proceedings are concluded.

12

Environmental **Expenditure**

During 2009, we have made environmental investments in new facilities valued at 4,427,759.53 euros, equating to 0.6% of the total investments carried out in the transmission grid.

These investments correspond to the execution of Environmental Impact Studies of all projects, implementation of preventive and corrective measures, environmental supervision of electricity facilities under construction and the application of compensatory measures related to environmental aspects.

Similarly, during 2009 we have incurred expenses for environmental protection and improvement totalling 13,651,980 euros, which corresponds to 2.13% of the total operating costs.

The evolution of environmental expenditure over the last three years can be seen in the following table:

	2007 (€)	2008 (€)	2009 (€)
INVESTMENTS	**2,086,624.86**	**5,078,780.39**	**4,427,759.53**
Engineering and construction of new facilities	2,086,624.86	5,078,780.39	4,427,759.53
EXPENDITURE	**15,359,789.82**	**17,150,041.92**	**13,651,980.00**
Environmental Management System	**12,131.82**	**10,775.00**	**10,028.00**
Preventive and corrective measures for facilities in service	**13,791,959.98**	**14,782,548.01**	**11,666,852.73**
Contamination Prevention	430,610.98	428,203.75	296,616.18
Fire Prevention	12,654,662.30	12,712,352.85	10,054,013.00
Protection of birdlife	194,255.84	682,533.20	385,638.12
Environmental improvement of facilities	403,132,54	402,414.24	343,528.69
Electromagnetic field and noise management	3,095.16	2,163.97	2,166.00
Waste Management	106,203.16	554,880.00	584,890.74
Research and Development	**283,641.08**	**496,108.42**	**600,471.56**
Training and Communication	**408,741.33**	**711,919.10**	**281,765.68**
Training and environmental awareness programmes	19,476.16	41,814.95	38,941.00
Communication	389,265.17	670,104.15	242,824.68
Environmental taxes and levies	**37,232.61**	**207,719.39**	**17,084.47**
Expenses for personnel dedicated to environmental activities	**826,083.00**	**940,972.00**	**1,075,778.00**

The following table shows the evolution of the environmental expenditure and investments in environmental aspects as a percentage of the total expenditure and the investment in the transmission grid, respectively.

Percentage of investment and expenditure on the environment	2007	2008	2009
% of investment in environmental matters			
Environmental investment / Total investment in transmission grid	0.35	0.82	0.60
% of expenditure in environmental matters			
Environmental expenditure / total operating costs	2.11	2.77	2.13

In addition to the costs indicated above, Red Eléctrica pays out a significant amount of money in environmental taxes due to the presence of our electricity transmission facilities in the autonomous regions of Catalonia and Extremadura.

Environmental Taxes (€)			
Autonomous Community	**2007**	**2008**	**2009**
Catalonia	61,663.80	56,525.18	61,663.92
Extremadura	1,040,714.94	1,040,714.87	1,027,300.38
TOTAL	**1,102,378.74**	**1,097,240.05**	**1,088,964.30**

In 2009, an important advance was made in the identification and control of environmental expenditure. Following an analysis of the maintenance activities, the IT system was adapted in order to allow the identification of those work orders that have some type of environmental impact.

13

Frecuency of the **Environmental Impact Declaration**

This Environmental Report has been published with the purpose of providing information to all stakeholders on the environmental activities carried out by Red Eléctrica during 2009.

The Environmental Declaration is published every year in the form of an Environmental Report. However, should it be considered that no important changes have taken place since the last Declaration; it is published as an additional chapter of Red Eléctrica´s Annual Report.

The Spanish Association of Standardisation and Certification (AENOR), with Head Offices at Génova 6 - 28004 Madrid, and Accredited Certifying Body Number E-V-0001, is the entity that certifies that the Red Eléctrica Environmental Declaration complies with the requirements set forth in Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation by organisations in a Community Eco-management and Audit Scheme (EMAS).

The next Declaration will be presented and published during the first half of 2011.

14 Glossary of Terms

ENVIRONMENTAL ASPECT:

An element of the activities, products or services of an organisation having or which may an impact on the environment.
(*Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS)*).

SIGNIFICANT ENVIRONMENTAL ASPECT:

An environmental aspect having or which may have a significant impact on the environment.
(*Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS)*).

ELECTRIC FIELD:

In a point in space, the force exerted on a static load located at that point. Expressed in volts per metre (V/m).
(*50 Hz. Electrical and Magnetic fields REE and UNESA, 1998*)

MAGNETIC FIELD:

In a point in space, the force exerted on a live element located at that point. Expressed in amps per metre (A/m). The international measuring unit is Tesla (T) or any fraction thereof, and in particular the microtesla (μT).
(*50 Hz. Electrical and Magnetic fields. REE and UNESA, 1998*).

NESTING DETERRENT:

A device comprised of several elements made of galvanised steel, and of different sizes, that deters birds from nesting or perching in the places where it is installed or on the device itself.
(*Own definition of REE*).

ENVIRONMENTAL IMPACT:

Any change in the environment, either adverse or beneficial, that is caused in full or in part by the activity, products or services of any organisation.
(*Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS)*).

ENVIRONMENTAL BEHAVIOUR INDICATOR:

Specific performance indicators providing information on an organisation's environmental behaviour.
(*Standard UNE-EN ISO 14031 Environmental management. General Guidelines*).

SPECIAL AREA OF CONSERVATION (SAC):

An area which, based on the biogeographic region or regions where it is located, contributes greatly to maintaining or restoring a type of natural habitat (...) in a favourable state of conservation so that it can help considerably in establishing the cohesion of Natura 2000 (...) and/or contributes noticeably to maintaining biological diversity in the biogeographic region or regions in question. For the animal species occupying large areas, the special areas of conservation will usually correspond to specific locations inside the area in which that species is naturally distributed, presenting the physical or biological elements that are essential for them to live and reproduce.
(*Directive 92/43/EC, of May 21, on the Conservation of Natural Habitats and Wild Fauna and Flora*).

ENVIRONMENTAL OBJECTIVE:

A general environmental objective, which originates from the Environmental Policy and is set out as a goal to be fulfilled by the organisation and which, insofar as is possible, is measured.
(*Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS)*).

ENVIRONMETAL POLICY:

The general management and intentions of an organisation with respect to its environmental behaviour, put forward officially by its management teams, including the compliance with all the regulatory provisions applicable to environment matters, as well as the commitment to continuously improve environmental behaviour. It constitutes a framework for the company actions and for establishing environmental targets and objectives.
(*Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS)*).

WASTE:

Any substance or object belonging to any of the categories established in the appendix to the Waste Act, in which the owner disposes of or has the intention to dispose of. In all cases, the items listed in the European Waste Catalogue (EWC) will be classified as such.
(*Law 10/1998, 2 April, on Waste*).

BIRD-SAVING DEVICES OR "SPIRALS"

A white or orange device made of polypropylene (PVC) in the shape of a spiral, measuring 30-35 centimetres in diameter and with a length of 1 metre, which is wound onto the ground cable or conductor to mark it and reduce the risk of accident due to birds colliding with them.
(*Own definition REE*).

VISUAL SIMULATION:

An infographic technique (based on computer applications for graphic representation) applied in order to obtain a visual representation of a project, providing an approximate idea of what it will truly look like once completed, and showing the elements that it is comprised of, as well as its integration into its environment.
(*Own definition REE*).

ENVIRONMENTAL MANAGEMENT SYSTEM:

That part of the general management system that includes the organisational structure, planning activities, responsibilities, good practices, procedures, processes and resources to develop, apply, achieve, revise and maintain the environmental policy and manage the environmental aspects.
(*Regulation* (*EC*) *No 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation by organisations in a Community eco-management and audit scheme* (*EMAS*)).

SPECIAL PROTECTION AREA (SPA) FOR BIRDLIFE:

An area of community interest for the protection of bird species listed in Annex I of the Council Directive 79/409/EEC of 2 April 1979, on the conservation of wild birds.

Validation

AENOR Asociación Española de Normalización y Certificación

ESQUEMA EUROPEO DE ECOGESTIÓN Y ECOAUDITORÍA (EMAS)

Eco-Management and audit scheme (EMAS)

VDM-01/004

La Asociación Española de Normalización y Certificación (AENOR) a través de procesos de auditoría acreditados, certifica que:
The Spanish Association for Standarization and Certification (AENOR) through acreditated audit processes certifies that:

RED ELECTRICA DE ESPAÑA, S.A.U.

Tiene implantado un sistema de Gestión Medioambiental que cumple los requisitos del Reglamento (CE) nº 1221/2009
Has implemented an environmental management system that complies with the requirements of the European Regulation (CE) nº 1221/2009

Para las actividades de:
For the activities of:

LA INGENIERÍA, LA CONSTRUCCIÓN Y EL MANTENIMIENTO DE LÍNEAS Y SUBESTACIONES ELÉCTRICAS DE ALTA TENSIÓN, Y DE SISTEMAS DE TELECOMUNICACIONES.
LA OPERACIÓN DE SISTEMAS ELÉCTRICOS.
LA SEGURIDAD FÍSICA DE INSTALACIONES.
LOS PROYECTOS DE INVESTIGACIÓN, DESARROLLO E INNOVACIÓN TECNOLÓGICA.
LA CONSULTORÍA Y LOS SERVICIOS PROFESIONALES EN LAS ACTIVIDADES ANTES DESCRITAS.

THE ENGINEERING, CONSTRUCTION AND MAINTENANCE OF HIGH VOLTAGE, TRANSMISSION LINES AND SUBSTATIONS, AND TELECOMMUNICATION SYSTEMS.
THE TRANSMISSION SYSTEM OPERATION.
THE SECURITY OF PEOPLE, BUILDING AND FACILITIES.
THE RESEARCH, DEVELOPMENT AND TECHNOLOGICAL INNOVATION PROJETCS.
THE CONSULTING AND PROFESSIONAL SERVICES OF ABOVE ACTIVITIES.

que se realiza/n en o desde los establecimientos:
which is/are carried out in or from the establishments:

Sede Social
PO CONDE DE LOS GAITANES, 177
28109 - ALCOBENDAS
(MADRID)

VER DIRECCIONES INDICADAS EN EL ANEXO

y que la información incluida en la declaración medioambiental se ajusta a los requisitos expresados en dicho Reglamento y ha sido validada con fecha 2010-03-10.
and the information included in the environmental declaration complies with the requirement of that European Regulation and has been validated on 2010-03-10.

Fecha de validación: 10 de marzo de 2010
Validation Date

AENOR

Firma D. Ramón NAZ PAJARES
Signature **Director General de AENOR**
General Manager of AENOR

AENOR - Cl Génova, 6 - 28004 MADRID(España) – Teléfono: (+34) 914 326 000 – Telefax: (+34) 913 104 518 – www.aenor.es

Entidad de certificación acreditada por ENAC con acreditación nº ES-V-0001

AENOR Asociación Española de Normalización y Certificación

ANEXO

ESQUEMA EUROPEO DE ECOGESTIÓN Y ECOAUDITORÍA (EMAS)

Eco-Management and audit scheme (EMAS)

VDM-01/004

Los Centros Certificados del Sistema de Gestión Medioambiental de acuerdo con el esquema europeo de Ecogestión y Ecoauditoría (EMAS) de RED ELECTRICA DE ESPAÑA, S.A.U. nº VDM-01/004 son los siguientes: *Activities within the scope of the Environmental Management System according to the Eco-Management and Audit Scheme (EMAS) RED ELECTRICA DE ESPAÑA, S.A.U.* nº VDM-01/004 *include the following:*

Delegación Regional Oeste
CL ZALAETA,, S/N EDF REE
15002 - LA CORUÑA
(A CORUÑA)

Delegación Regional Norte
AV DE ENEKURI, 60 EDF REE
48014 - BILBAO
(VIZCAYA)

Delegación Regional Noreste
AV PARALELO,, 55 EDF REE
08004 - BARCELONA

CECORE
CL ISAAC NEWTON,, 13 EDF REE
28760 - TRES CANTOS
(MADRID)

Delegación Regional Sur
CL INCA GARCILASO,, 1 EDF REE
41092 - ISLA DE LA CARTUJA
(SEVILLA)

Delegación Levante
CL PUEBLA LARGA, 18
46183 - LA ELIANA
(VALENCIA)

Demarcación Duero-Sil (35 Subestaciones)
CR N-601, MADRID-VALLADOLID-LEÓN, KM 210
47630 - LA MUDARRA
(VALLADOLID)

Demarcación Ebro (32 Subestaciones)
CR ZARAGOZA-SARIÑERA, KM 9,2
50162 - VILLAMAYOR
(ZARAGOZA)

Demarcación Mediterráneo (22 Subestaciones)
CR ANTIGUA CASTELLBISBAL-RUBÍ, S/N PI CAN PI DE VILARDC
08191 - RUBÍ
(BARCELONA)

Demarcación Tajo (24 Subestaciones)
CR N-I MADRID-BURGOS, KM 20,7
28700 - SAN SEBASTIÁN DE LOS REYES
(MADRID)

Demarcación Bética (24 Subestaciones)
CR SEVILLA-UTRERA, KM 17
41500 - ALCALÁ DE GUADAIRA
(SEVILLA)

Dirección de Red Eléctrica en Baleares:
CM SON FANGOS, 100 EDF A 2ª PLANTA
07007 - PALMA DE MALLORCA
(ILLES BALEARS)

Dirección de Red Eléctrica en Canarias (Sede Las Palmas de Gran Canaria)
CL LEÓN Y CASTILLO, 1
35003 - LAS PALMAS DE GRAN CANARIA
(LAS PALMAS)

Dirección de Red Eléctrica en Canarias (Sede Tenerife)
NUESTRA SEÑORA DE LA TERNURA (LOS MAJUELOS)
38108 - SAN CRISTOBAL DE LA LAGUNA
(S.C. DE TENERIFE)

Fecha de validación: 10 de marzo de 2010
Validation Date

AENOR
Por AENOR El Director General
On behalf of AENOR, The General Manager

AENOR - Cl Génova, 6 - 28004 MADRID(España) – Teléfono: (+34) 914 326 000 – Telefax: (+34) 913 104 518 – www.aen

Published by:
Red Eléctrica
P.º Conde de los Gaitanes, 177
28109 Alcobendas - Madrid
www.ree.es

Coordination:
Corporate Responsibility Management
and Institutional Relations of Red Eléctrica

Technical Department:
Environmental Department, RED ELÉCTRICA
mambiente@ree.es

Photography:
Red Eléctrica Photographic Archives

Graphic design, image processing and layout
breu comunicación - breu@breu.es

Fecha de la edición:
June de 2010

English Translation by:
Wayman English International · www.waymanenglish.com

This English version is a translation of the original and authentic Spanish text found in the "MEMORIA AMBIENTAL 2009 DE RED ELÉCTRICA", originally issued in Spanish. In the event of discrepancy, the Spanish-language version shall prevail.

The wording of the Spanish version has been reviewed by the Fundación del Español Urgente (Fundéu BBVA)

Red Eléctrica works on selecting the most legible typographical font for their publications. The typographical font DIN has been used for the texts in this report.