

ENVIRONMENTAL COMMITMENT 2014

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INFORMATION MAY
BE ACCESSED**
by using the symbol



**MORE INFORMATION
IN THE CORPORATE
RESPONSIBILITY
REPORT 2014**

THIS DOCUMENT IS A SUMMARY OF RED ELÉCTRICA'S ENVIRONMENTAL PERFORMANCE AND COMMITMENT DURING 2014

In order to make its environmental commitment known, Red Eléctrica drafts an annual Corporate Responsibility Report as a means to disseminate the Company's performance and results regarding corporate responsibility in the economic, social and environmental aspects.

Moreover, every year, Red Eléctrica publishes an annual Environmental Statement in which the Company discloses information regarding its environmental performance, and the ongoing improvement of its actions and activities related to the environment, in accordance with the requirements of the Community Eco-Management and Audit Scheme (EMAS).

This publication contains a summary of the main environmental aspects included in both the aforementioned documents.

This English version is a translation of the original and authentic Spanish text found in the "COMPROMISO AMBIENTAL 2014", originally issued in Spanish. In the event of any discrepancy, the Spanish-language version shall prevail.



**MORE INFORMATION
ENVIRONMENTAL
STATEMENT EMAS 2014**



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OUR ENVIRONMENTAL RESPONSIBILITY

01

Respect for the natural environment, biodiversity conservation and the implementation of best environmental practices are key elements of our business management.

Cornerstones of our environmental commitment

Environmental management

Carrying out all activities in accordance with strict environmental criteria, according to the principles adopted in our environmental policy.

ISO 14001 Certification and EMAS registration.

Environmental integration

Making facilities compatible with the environment, dialogue with stakeholders and implementing preventive and corrective actions to minimise impacts on the environment.

Assessment of an environmental nature of all projects.

Biodiversity

Undertaking biodiversity conservation as a substantial part of the business strategy, promoting actions and projects that ensure the protection of natural capital.

European Environment Award 2014.

Climate change

Contributing to the fight against climate change, and to the promotion of energy efficiency, by providing solutions in the execution of business activities, and through the commitment to reducing the carbon footprint.

43% of annual demand covered by renewables. External verification of carbon footprint.



MORE INFORMATION
IN THE 'ENVIRONMENT'
SECTION OF THE
CORPORATE WEBSITE



KEY ENVIRONMENTAL PERFORMANCE INDICATORS

	2012	2013	2014
Km of line in Red Natura/total km of line (%)	15.0	15.2	15.1
Km of line marked with bird-saving devices	2,330	2,585	2,776
Km of line marked in SPAs marked with bird-saving devices	548	564	578
Average SF ₆ emission rate (%)	1.08	1.06	1.05
Direct emissions (t of CO ₂ equivalent)	71,367	74,980	83,125
Indirect emissions (t of CO ₂ equivalent)	880,011	735,590	771,774
Non-hazardous waste (t)	1,531.0	2,180.2	2,111.0
Hazardous waste (t)	2,052.3	2,170.3	2,375.0
Environmental expenditure (€ million)	21.5	23.4	22.4
Fulfilment of the environmental programme (%)	77.8	84.5	78.0

Awards and Recognitions 2014

› European Business Awards for the Environment 2014 (EBAE)

in the special category 'Business and Biodiversity', for the project 'Birds and Power Lines: mapping of bird flight paths'. Red Eléctrica also was the winner of the award in the Spanish section within the same category.

- › Red Eléctrica has been granted the **MEMBER distinction in the Sustainability Yearbook 2014**, ranking among the 15 best companies in the electricity sector in the assessment performed by RobecoSAM (Sustainable Asset Management).

ENVIRONMENTAL MANAGEMENT

02

RED ELÉCTRICA has an environmental management system certified according to ISO 14001 and registered in the Community Eco-Management and Audit Scheme (EMAS).

Environmental Management System

THE MAIN OBJECTIVE of Red Eléctrica's environmental management is to integrate and blend its electricity facilities and infrastructure into the landscape, with particular attention to the protection and conservation of biodiversity. Furthermore, in line with its firm commitment to move towards a more sustainable energy future, Red Eléctrica has decided to undertake a specific commitment to the fight against climate change and for the promotion of energy efficiency.



In order to carry out the ongoing improvement of the environmental performance, a programme of environmental activities is defined annually that outlines the different objectives derived from the Company's strategies and establishes the specific courses of action to be undertaken.

FULFILMENT OF THE ENVIRONMENTAL PROGRAMME (%)



ENVIRONMENTAL EXPENDITURE (Millions of euros)



ENVIRONMENTAL INTEGRATION

03

ALL PROJECTS for new facilities are assessed environmentally and work is carried out in consensus with all affected parties so that the facilities have minimal impact on the territory.

THE MAIN EFFECTS of the electricity infrastructure are related to the presence of the facilities in the territory. Therefore, all projects for new facilities are environmentally assessed and work is carried out, in consensus with all affected parties, so that the siting of substations and power line routes have minimal impact on the territory, local communities and the landscape.

Once projects are defined, the preventive and corrective measures to be applied are established in order to reduce or avoid the possible impacts. Subsequently an environmental supervision and monitoring of the construction and maintenance work is carried to ensure that the defined measures are implemented, which in turn allows their effectiveness to be evaluated.

Environmental supervision

allows the effectiveness of the preventive and corrective measures defined in the project phase to be verified.

Most relevant data during 2014

- **Project phase:** environmental permitting process initiated for 10 projects, additionally environmental authorisation was obtained for another 31 projects.
- **Construction phase** environmental monitoring was carried out regarding the works of 94% of the substations (30) and 100% of lines (698 km).
- **Maintenance phase:** Of the substations in service in 2014, 143 were visited for environmental monitoring purposes. Of the remainder, over the last 6 years, at least one environmental monitoring visit has been carried out for over 81% of them.



Minimising impacts on the socio-economic environment

THE PRESENCE of electricity infrastructure may have some impacts of a social nature, but in no case represent a significant alteration in the way of life of the affected communities.

Of all the infrastructure constructed and managed by Red Eléctrica, only substations represent a total and irreversible occupation of land, since it is not possible to make their presence compatible with other uses. Nonetheless, farming and livestock activities are compatible with the overhead lines allowing all types of agricultural activities to be carried out beneath them. In any case, the socio-economic aspects are taken into account during the design phase; the resulting analysis is integrated into the environmental impact study, and the suitable measures to minimise the impact on the affected land is defined.

Protection of archaeological and ethnological heritage

BEFORE performing any earthworks linked to the construction of facilities, an archaeological survey is carried out. In 2014, archaeological supervision was carried out in the construction of 12 lines and 5 substations, with the permanent presence of an archaeologist in 70% of the cases.

Among them, noteworthy is the archaeological work arising from the construction of the new 132 kV switchyard in the Torrent electricity substation which is the connection point in Ibiza for the submarine interconnection with Majorca.

In order to protect archaeological heritage

Red Eléctrica launched the 'ArqueoRED' project, which aims to provide digital mapping of information regarding catalogued heritage sites, so that this data can be consulted prior to the planning of works.

Blending facilities into the landscape

TO **REDUCE** the visual impact of electricity facilities it is essential to apply different measures for blending facilities into the landscape.

Main actions for landscape integration of facilities

- Adapting embankments and worksites, and sowing seeds and planting vegetation in areas affected by construction works.
- Creating vegetative barriers and green areas in substations.
- Blending substation buildings into the landscape.

In order to achieve the integration of substation buildings into the landscape,

Red Eléctrica has 13 different models defined depending on the environment in which the facility is to be located, pursuant to the criteria set out in the European Landscape Agreement.

Electric and magnetic fields

THANKS to the preventive measures applied by Red Eléctrica in the design of facilities, the levels of electric and magnetic fields stay below those recommended by the Council of the European Union (OJEC 1999/519/EC: limit exposure values 5kV/m for electric fields and 100µT for magnetic fields).

Preventive measures implemented in the design of facilities

- Construction of double circuits and transposition of phases in lines.
- Increasing the height of towers, thus increasing the safety distances.
- Establishing the minimum distance of electricity lines from population nuclei and isolated houses.



MORE INFORMATION
IN THE 'ENVIRONMENT'
SECTION OF THE
CORPORATE WEBSITE

04

BIODIVERSITY

RED ELÉCTRICA has a biodiversity strategy and a specific plan of action that encompasses all the activities regarding the development and maintenance of facilities.

THE COMMITMENT of the Company to biodiversity has always been a key principle of its environmental policy and its biodiversity strategy.

In 2014, a new biodiversity strategy was updated and approved, and a new action plan was drafted to be undertaken as of 2015. Red Eléctrica is part of the Spanish Business and Biodiversity Initiative promoted by the Ministry of Agriculture, Food and Environment.

Cornerstones of the Biodiversity Strategy



Foster a framework for communication and collaboration with stakeholders, increasing the visibility of the Company's commitment to biodiversity conservation.



Establish mechanisms to ensure the protection and conservation of environmental values in the activities carried out by the Company, especially in sensitive natural environments.



Integrate conservation and the sustainable use of biodiversity in the development of the transmission grid.



Contribute and promote the development of applied research projects aimed at blending the transmission grid into the environment.

Electricity grids and biodiversity

THE INTERACTION of electricity facilities with biodiversity is mainly associated with their presence in the territory and to the work required for their construction and maintenance. In this regard, the most effective measure to minimise possible effects is to avoid siting infrastructure in areas rich in biodiversity.



Due to the large number of protected spaces existing in Spain (about 25% of the territory is protected) in some cases it is inevitable that infrastructure cross, or be sited, in protected areas, or in areas with species of interest. In these cases, preventive and corrective measures are put in place to minimise the impacts and environmental improvement actions are established to boost biodiversity in those areas where facilities are located. Of all existing Red Eléctrica infrastructure, only 15% of the total kilometres of line and 6% of substations are located in protected areas (Red Natura).

Protection of habitats and species

THE MAIN impacts to be avoided in works for the construction of lines, or the modification of facilities, are the alteration of the habitat of certain species of fauna and flora, and also the effect on vegetation due to the opening up of safety corridors, underneath the overhead lines, which are necessary to prevent fires during the operation of the line.

To this end, numerous actions are carried out; noteworthy in 2014 were the following:

- Modifications in the design of facilities to minimise their impact on flora.
- Signage and protection of habitats and species of ecological value.
- Hoisting towers with a boom crane, or helicopter, and hanging lines by hand.
- Biological stoppages (halting works in specific periods to reduce impacts on fauna).
- Recovery of affected areas: restoration of embankments, sowing of seed and the planting of trees.

Currently,
**Red Eléctrica's
facilities**

occupy only 0.09%
of Red
Natura Española.

**In 2014,
a drone was
used**

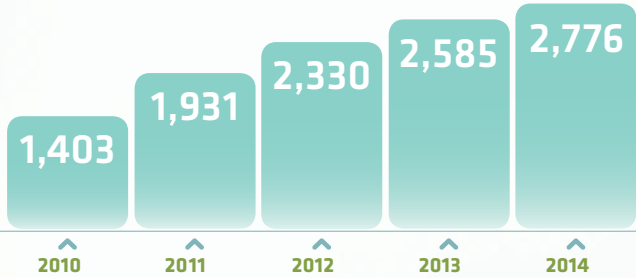
for the first time for hanging two sections of cable of an electricity line. This technology improves the safety of personnel and is a major fuel saving when compared to the use of a helicopter.

Birdlife protection

THE MAIN impact on fauna due to Red Eléctrica's facilities is the risk of birds colliding with grounding cables that protect the lines from electrical discharges during storms. The main measure to reduce that risk is marking the grounding cables with devices that increase their visibility.

MARKING OF LINES WITH BIRD-SAVING DEVICES

(km)



Mapping of bird flight routes and paths

WITH THE AIM of establishing the most suitable line marking plans and prioritise corrective actions on existing lines, the Company continues to work on the project for the mapping of flight routes and paths of birds that interact with high-voltage transmission lines.

The purpose of the project is to develop a tool based on geographic information systems which integrates data regarding areas with the presence of birds and the main flight paths of 45 threatened species.

The tool allows sensitivity maps to be drafted at a national level (Spanish peninsula and islands) that identify areas with the greatest potential risk of collision, which in turn facilitates a more efficient and sustainable decision-making process in the planning, development and maintenance phases of high-voltage electricity lines.

Thanks to this project Red Eléctrica

was recognised with the European Environment Award for Business 2014 (EBAE).



MORE INFORMATION
IN THE 'SUSTAINABILITY'
SECTION OF THE
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Fire prevention

TO MINIMISE the risk of fire associated with the presence of transmission lines, strict compliance with the safety distances between flora and the facilities is critical. Therefore, as part of the management of safety corridors, all facilities are reviewed annually and the necessary pruning and felling work is carried out regularly.

Moreover, given the importance of this matter, the Company is working to strengthen the active collaboration with the government administrations involved in forestry management, through the signing of specific agreements in which the commitment to fight forest fires is set out. Since 2007, 11 agreements have been signed (1 in 2014). The total budget associated with agreements in force is 1,100,000 euros.

Contribution to biodiversity conservation

RED ELÉCTRICA actively contributes to the conservation of biodiversity in Spain. To this end, it spearheads or participates in various projects and conducts awareness activities and training on environmental matters nationwide, which are geared towards contributing to the sustainable development of the communities in which the Company's facilities are located.

In this area, noteworthy are the projects for the conservation of threatened bird species carried out with the participation of different organisations and environmental associations, as well as other projects aimed at restoring degraded habitats.

Birdlife conservation projects carried out during 2014

- › **Reintroduction** of the Bonelli's Eagle in Majorca.
- › **Nesting platforms** for the Osprey in Andalusia.
- › **Recovery** of the Bonelli's Eagle in Aragón.
- › **Programme for the reintroduction** of the Black Vulture in Catalonia.
- › **Conservation** of the Lesser Grey Shrike in Spain.
- › **Monitoring and analysis** of the factors that favour the increase in population of the Egyptian Vulture in Catalonia.
- › **Recovery** of the Golden Eagle population in Galicia.
- › **Reintroduction** of the Lesser Kestrel in Valencia.
- › **Improvement of the habitat** of the Soprano Pipistrelle bat in Valencia.

The 'Red Eléctrica Forest'

THIS PROJECT, which began in 2009, contributes to the fight against climate change through the planting of trees and, at the same time, favours the conservation of a biodiversity-rich area, or the recovery of a degraded natural area.

In 2014, the following works were carried out:



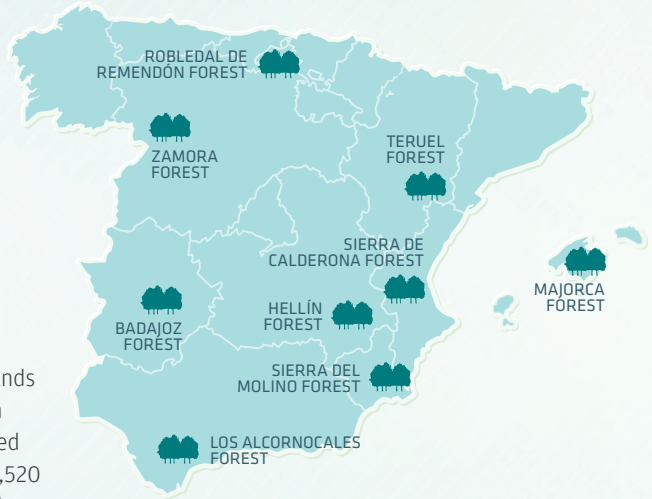
ZAMORA FOREST

Planting of 51 ha of pine in public highlands in the municipality of Puebla de Sanabria (Zamora). The area is included in the Sierra de la Culebra SCI (Site of Community Interest).



MAJORCA FOREST

Recovery of 36 ha of burned lands in the Sa Duaia public common land (Artá municipality) included in the Muntanyes d'Artá SCI. 11,520 trees were planted including Pines, Holm Oak and Olive.



The 'Red Eléctrica Forest' figures (2009-2014)

361,494

Trees and shrubs planted



604
hectares

Surface area recovered



100,487
t of CO₂ eq

Emissions offset



1,245,107
euros

Investment



5,364
working days

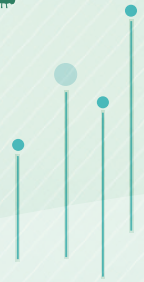
Impact on local employment



MAP OF SUSTAINABILITY PROJECTS



MORE INFORMATION
IN THE 'SUSTAINABILITY'
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- | | | |
|---|---|--|
|  BIRDLIFE |  OTHER FAUNA |  PREVENTION OF FOREST FIRES |
|  VEGETATION |  REE FOREST |  ENVIRONMENTAL AWARENESS |
|  LOCAL DEVELOPMENT |  CULTURE AND HERITAGE |  SOCIAL PROJECTS |
|  UNIVERSITIES |  DISSEMINATING KNOWLEDGE ON THE ELECTRICITY SYSTEM |  'A HIGHWAY BEHIND THE WALL SOCKET' EXHIBITION |





R&D+i Projects

RED ELÉCTRICA carries out diverse research projects geared towards the conservation of the natural environment. In 2014, the following are noteworthy:



BIRDLIFE

- **Bird-nesting deterrent system based on ultrasound:** The project consists of the testing, both laboratory and field, of an experimental method using ultrasound applied to the White Stork. Carried out in collaboration with the Forestry and Natural Environment School of Engineers of the Polytechnic University of Madrid.



BIODIVERSITY

- **The use of seeds and fragments of Posidonia oceanica for its recovery in areas affected by the activity of Red Eléctrica:** The project, which is carried out in collaboration with the Mediterranean Institute for Advanced Studies, consists of the replanting of laboratory-germinated seeds of Posidonia oceanica, and fragments of this species obtained as a result of natural fragmentation.
- **System and methodology for the timely inspection of overhead electricity lines through the use of multicopters:** The objective of this project is to deepen the knowledge of Unmanned Aerial Vehicle technology based on multirotor systems that allows us to take advantage of these devices for inspections carried out on electricity lines.



FORESTRY MANAGEMENT

- **Monitoring system for forest fires in electricity lines:** The aim is to develop an autonomous system for forest fire detection in the vicinity of overhead high-voltage electricity lines.

05

CLIMATE CHANGE AND ENERGY EFFICIENCY

RED ELÉCTRICA, as transmission agent and operator of the electricity system (TSO) is a key player in the progress towards a more sustainable energy model.

IN 2011, the Company decided to formalise its commitment to the fight against climate change by approving a specific strategy, which was reviewed in 2014.

The climate change strategy is associated with an action plan that encompasses all the Company's activities. The plan sets out not only the actions related to its activity as transmission agent and operator of the electricity system, but also those actions related to reducing its carbon footprint.

Cornerstones of the climate change strategy



➤ **Integration** of renewable energy.



➤ **Protection** of wooded areas. Prevention of fires and promotion of reforestation projects.



➤ **Development** of climate change adaptation projects.



➤ **Commitment** towards energy efficiency at all levels.



➤ **Reduction** of greenhouse gas emissions.



➤ **Extend** the commitment to stakeholders, mainly suppliers.

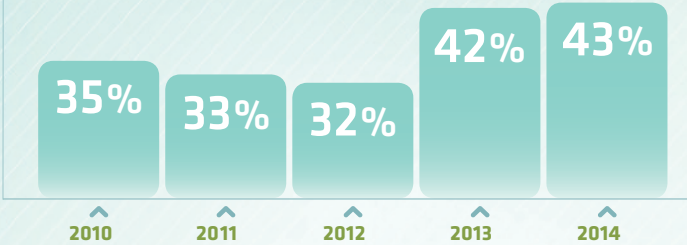
Adhesion to the Spanish Green Growth Group

In 2014, Red Eléctrica signed the Pact for adhesion to the Spanish Green Growth Group. The signatory companies recognise the importance of evaluating their own carbon footprint, setting targets to reduce emissions, publicly report on their achievements and consider the risks and opportunities linked to climate change as part of their business strategy.



ANNUAL DEMAND COVERED USING RENEWABLE ENERGY

(%)



Integration of renewable energy

RED ELÉCTRICA through its Control Centre of Renewable Energies (CECRE) is committed to the goal of safely integrating the highest amount possible of renewable energy into the system. In 2014, 43% of the annual electricity demand was covered by renewable energy sources.

Carbon footprint

THE COMPANY continues working on calculating the carbon footprint and making a significant effort to quantify its emissions. In this regard, in 2014 the emissions inventory, which is performed based on the methodology of the GHG Protocol, has been submitted to an independent review in accordance with the ISAE 3410 "Assurance Engagements on Greenhouse Gas Statements". In addition, work continues on the calculation of the carbon footprint associated with the value chain (suppliers).

AVERAGE SF₆ EMISSION RATE (%)



Control of emissions

THE MAIN direct emissions derived from the Company's activities are those coming from sulphur hexafluoride (SF₆). Red Eléctrica works in collaboration with the government administration and other entities in order to find solutions aimed at controlling and reducing emissions of this gas. The main measures are associated to the implementation of best practices regarding the handling of SF₆ and the maintenance of equipment containing SF₆.

Energy efficiency

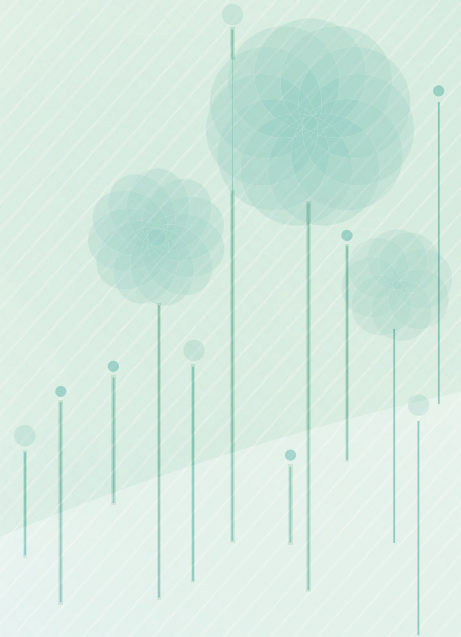
IN THIS AREA, in addition to the various demand-side management initiatives that the Company carries out aimed at achieving greater efficiency of the electricity system, the Company also works on other areas such as the reduction of electricity consumption in the work centres, the application of efficiency criteria in new buildings, the sustainable mobility plan and awareness raising activities associated to these initiatives, among others.

Offsetting emissions

WITHIN THE CLIMATE CHANGE ACTION PLAN, Red Eléctrica has established a goal to offset at least 20% of its direct emissions. Additionally, the Company has offset, for the first time, 2,324 tonnes of CO₂ emissions derived from the commuting of employees to and from work through the purchase of CERs [Certified Emission Reductions on the basis of projects derived from the Clean Development Mechanism (CDM) under the Kyoto Protocol].



Red Eléctrica works on selecting the most legible typographical font for their publications. The typographical font Amplitude and Klavika have been used for the texts and graphics in this report.



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