

10

THE ENVIRONMENT

CONNECTED
TO THE NATURAL
ENVIRONMENT,
BIODIVERSITY
AND THE FIGHT
AGAINST CLIMATE



CORNERSTONES OF OUR ENVIRONMENTAL COMMITMENT



ENVIRONMENTAL MANAGEMENT

RED ELÉCTRICA carries out all its activities in compliance with strict environmental criteria in accordance with the principles undertaken in its environmental policy, which includes the principle of precaution. [G4-14]

The main objective of Red Eléctrica regarding the environment is to make their facilities compatible with

the environment in which they are located, paying particular attention to the protection and conservation of biodiversity

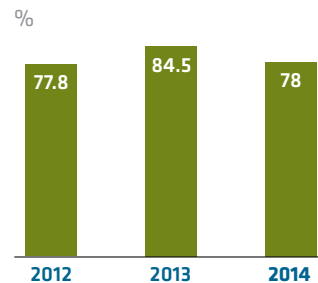
Furthermore, as a company with a direct relationship with the energy sector, Red Eléctrica has decided to take on a specific commitment towards the fight against climate change and to promote energy efficiency.

MANAGEMENT SYSTEM

RED ELÉCTRICA has a certified environmental management system in accordance with ISO 14001 and which has been registered under the Community Eco-management and Audit Scheme (EMAS) since October 2001.

In order to continuously improve its environmental performance and processes, Red Eléctrica annually defines an environmental programme that sets out the various objectives derived from the strategies of the Company and that establishes specific courses of action.

FULFILMENT OF THE ENVIRONMENTAL PROGRAMME



ORGANISATIONAL STRUCTURE

THE COMMITMENT of Red Eléctrica to the environment stems from senior management, which establishes the environmental policy and implements the means for the fulfilment of the environmental requirements. The Chairman, who has maximum

responsibility regarding the environment, has designated the role of the specific representative of the environmental management system to the General Manager for Transmission.

The engagement of all organisational units and the

commitment of all those working in the Company are key to the development of this system. To provide technical support, there is a specific environmental department that has 35 experts located at the head offices and in the areas where the facilities are located.

ENVIRONMENTAL EXPENDITURE

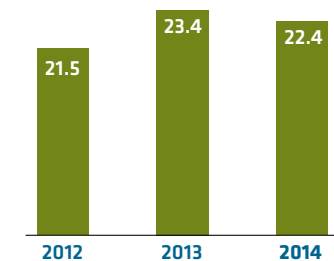
RED ELÉCTRICA devotes important financial resources to the environment. In 2014, a total of 22.4 million euros was earmarked for environmental management. Of this, 2.6 million corresponded to activities associated with the implementation of new projects: environmental impact studies, preventive and corrective measures,

works supervision and environmental improvement measures (investment). The remaining 19.8 million was allocated to environmental expenditure associated with facilities maintenance, biodiversity protection and conservation projects related to climate change and energy efficiency, communication, training activities and other expenses.

RED ELÉCTRICA HAS A CERTIFIED ENVIRONMENTAL MANAGEMENT SYSTEM in accordance with ISO 14001 and which is registered under the Community Eco-management and Audit Scheme (EMAS)

ENVIRONMENTAL EXPENDITURE

Millions of euros



THE SUPPLY CHAIN

RED ELÉCTRICA considers its suppliers as an essential link in the execution of their activities and, therefore, its commitment to the environment extends to each and every one of them. In this regard, suppliers have been identified who are considered to have the greatest environmental impact. These are service providers that can generate a direct impact on the environment (construction activities, forestry works (felling, cutting back vegetation) and the maintenance of

equipment in substations) and those that provide equipment whose manufacturing process is intensive in the use of natural resources.

Red Eléctrica requires all these suppliers to have a documented Management System or one that is certified by a third party. In addition, it is important to note that environmental requirements to be fulfilled (in terms of training and the carrying out of works) are included in the contractual documentation for the undertaking of contracted activities. In this regard, for construction activities (likely to generate an environmental impact), there is a process of environmental work certification, linked

to the fulfilment of environmental requirements, that conditions a part of the payment for the work. This process involves a thorough monitoring of the activities performed to verify compliance with all requirements.

Given that the monitoring of works is primarily carried out by external supervisors, in 2013 a system of personal accreditation of these supervisors was launched which ensures they have the training and knowledge necessary to perform said task in accordance with Red Eléctrica's criteria.

On the other hand, since 2011 work has been carried out on the calculation of the water and carbon footprint of Red Eléctrica's suppliers.

INTEGRATION OF FACILITIES INTO THE ENVIRONMENT

THE MAIN environmental impacts of Red Eléctrica's activities are those linked to the area an countryside where electricity lines pass through. To minimise these effects, it is essential that a detailed study is performed on the area and work is carried out to reach consensus on the location of substations and the routes chosen for the lines.

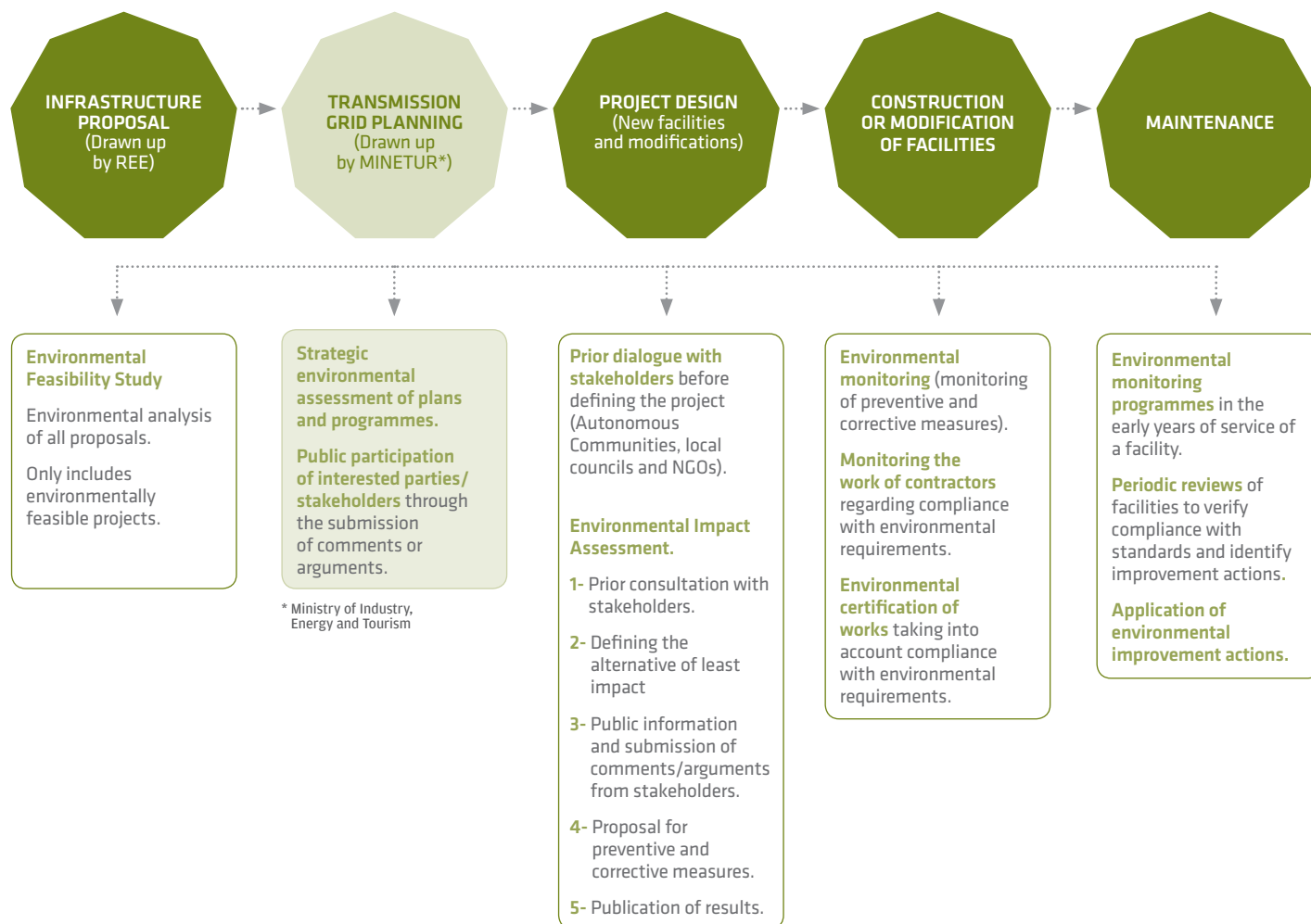
Furthermore, defining appropriate preventive and corrective measures is fundamental in order to avoid or reduce undesirable impacts on the area and on local communities.

The monitoring of construction and maintenance works, through environmental monitoring programmes, ensures the implementation of the measures defined and evaluates their effectiveness, defining new actions if necessary. Coordination with local governments and other stakeholder groups is ongoing and is key throughout this process.

The best tool for developing this process is the Environmental Impact Assessment procedure. Most of the projects carried out by Red Eléctrica de España are bound by law to carry out this procedure. When the law does not require any regulated procedure, Red Eléctrica performs an assessment of an environmental nature by which preventive and corrective measures are defined and applied, and voluntary communication with the competent authority is established.

THE MAJORITY OF PROJECTS undergo an environmental assessment to define the appropriate preventive and corrective measures

DEVELOPMENT AND IMPLEMENTATION PHASES FOR TRANSMISSION GRID INFRASTRUCTURE [G4-S01]



FACILITIES AND BIODIVERSITY

ONE OF THE ASPECTS relevant to the integration of facilities into the environment is related to biodiversity. Hence Red Eléctrica, in addition to minimising the effects derived from its actions, has undertaken a special commitment to biodiver-

sity conservation. Because of its importance, the strategy and the many actions undertaken by the Company in this area are dealt with in detail within this chapter of the report.

MINIMISATION OF SOCIO-ECONOMIC IMPACTS [G4-S02]

THE PRESENCE of electricity infrastructure may have some effects of a social nature, but in no case is there a significant alternation in the way of life of the communities affected.

Of all the infrastructures constructed and managed by Red Eléctrica, lines and substations, only the latter represent a total and irreversible occupation of land, since it is not possible to make their presence compatible with other uses. Regarding the occupation of land resulting from the construction of a line, this is limited to the placement of the feet of the towers and access paths necessary for new

stretches of line. In relation to the land surface with overhead electricity lines, this surface is subject to a right of way easement during the useful life of the infrastructure. Nonetheless, farming and livestock activities are compatible with the lines, allowing all kinds of agricultural crops to be grown under them and the free movement of the machinery necessary for its management.

Although current legislation allows Red Eléctrica to expropriate both the surface to be acquired as well as that in which it needs to establish easements, the Company's policy is to obtain the maximum number of amicable agreements with the owners by agreeing on financial compensation that cover the economic

losses that the installation of a transmission line and its corresponding right of way easement represent. At present, the percentage of amicable agreements is 94%.

The social aspects are taken into account in the design phase when determining the corridors for lines and the locations for substations; this analysis is integrated into the environmental impact study. The main factors to consider are:

- >> Use of grounds not compatible with the facilities.
- >> Tourist and cultural resources, and the landscape.
- >> Areas of high agricultural yields and agroforestry.

Once the corridor of a line is defined, all the necessary preventive and corrective measures are carried out in order to ensure the impacts on the land and the activities carried out on the land are kept to a minimum.

These measures are similar to those used for the protection of habitats and vegetation. Noteworthy amongst these are the location of towers and adequate work techniques to minimise impacts on crops and carrying out restoration work on the land and the elements affected by the works (paths, walls etc.). Sometimes improvement measures requested by the affected parties are added, which often involve the opening of forest tracks and paths and the making good of access routes.

BLENDING FACILITIES INTO THE LANDSCAPE

TO REDUCE the visual impact of its facilities, Red Eléctrica implements diverse measures to blend them into the landscape, among which the following are noteworthy:

- >> Restoration of areas affected by construction or maintenance, adapting slopes and worksites, and sowing seeds and planting vegetation.
- >> Creating vegetative barriers and gardens in substations.

Blending substation buildings into the landscape. In accordance with the criteria of the European Landscape Convention, Red Eléctrica has defined thirteen different models depending on the environment in which the facility is located.

IN ACCORDANCE WITH THE EUROPEAN LANDSCAPE AGREEMENT, Red Eléctrica has defined 13 models for blending substation buildings into the landscape

PROTECTION OF ARCHAEOLOGICAL AND ETHNOLOGICAL HERITAGE

THE PROTECTION of archaeological and ethnological heritage is an important aspect in the design and construction of facilities. In 2014, the Arqueored project was launched, which aims to provide digital mapping of information regarding catalogued heritage sites that can be consulted prior to the planning of works. Being fully aware of the situation in advance, enables potential effects to be avoided and or prior measures can be taken if needed in each case. The project requires close collaboration with the competent authorities and will run throughout 2015 and 2016.

Furthermore, before performing any earthworks, an archaeological survey is carried out whose intensity and scope are based on the probability of any material of interest in the area. The results of this survey determine the need for the ongoing presence of an archaeologist during works. In 2014, archaeological supervision was carried out in the construction of 12 lines and 5 substations, with a permanent presence of an archaeologist in 70% of the cases.

Red Eléctrica also collaborates with the Public Administration in heritage conservation. In 2014, collaboration was carried out on the archaeological assessment of megalithic monuments of Eskatxabel I (Galdames) and Kanpazaulo (Gueñes).

IN ORDER TO PROTECT ARCHAEOLOGICAL HERITAGE Red Eléctrica has launched the 'Arqueored' project which aims to provide digital mapping of information regarding catalogued heritage sites



More information regarding Heritage and Culture in the 'Map of projects' subsection of the 'Sustainability' section of the corporate website.

ARCHAEOLOGICAL WORKS DERIVED FROM THE CONSTRUCTION OF THE NEW 132 KV TORRENT SUBSTATION IN SANTA EULÀRIA DES RIU (IBIZA)



Following the completion of prior surveys on the foundation of the Torrent electricity substation evidence of archaeological remains were found. The excavations confirmed the existence of a vast necropolis of the Byzantine period (VI -VII centuries) consisting of 18 tombs. In addition, a living and working area of about 1,500 m² was found, confirmed by the presence of various walls and roads of a rural settlement of the late Punic period (II-I centuries BC).

The Torrent substation is a facility of general interest, vital to the security of the electricity supply in Ibiza and point of interconnection with Majorca. According to the Energy Sector Roadmap for the Balearic Islands, there are no alternatives to the siting of this substation, making it impossible to change the route to relocate the project.

Red Eléctrica has had to make an effort to redesign the substation (the initial planned siting occupied over 90% of the plot) and also the associated lines to minimise the impact on

the archaeological value of the remains found, ensuring no overall effect on the new archaeological site. It has also undertaken the extraction, relocation and relocating of burial structures as their location in the centre of the plot meant that it was not possible to preserve them in situ. Red Eléctrica has allocated more than 700,000 euros to the archaeological works, as well as the preservation of the remains and the closing off of the archaeological reserve area.

ELECTRIC AND MAGNETIC FIELDS (EMFS)

THANKS TO the preventive measures applied in the design of facilities, the levels of electric and magnetic fields (EMFs) stay below those recommended by the Council of the European Union.

The Official Journal of the European Communities 1999/519/EC: limits exposure values for the general public in sites where they may remain for a period time at 5kV/m for electric fields and 100µT for

magnetic fields. The most important measures are the following:

- >> 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.

In order to verify that the facilities are below exposure limits, between 2004 and 2006 Red Eléctrica carried out an exhaustive measurement plan for

EMFs. From that moment, thanks to the great development of calculating tools, in situ measurement plans are no longer necessary as given the parameters of the lines it is possible to precisely calculate the maximum levels of EMFs that such facilities can generate. Only in the case these parameters are not available would in situ measurements be needed.

This is the case of some facilities acquired by the Company in 2010 in the island systems, for which it has established an action plan which will begin in 2015.

In addition, Red Eléctrica performs some measurements at the request of interested parties. In 2014, five lines were measured, with results in all cases being below those values recommended by the European Union. During 2014, there were no incidents resulting from non-compliance in this area. [G4 - PR2]

On the other hand, Red Eléctrica attaches great importance to remaining abreast of all the new developments in this area; it also participates in various working groups and actively supports research projects on this topic.

Therefore, the Company subscribes to an international information service (ELF Gateway, which keeps its clients informed via email, almost on a daily basis, on the most recent developments regarding EMF that occur at a world-wide level and the Company maintains close contact with different entities and associations in this field.

In order to reflect advances in the scientific community, the latest declarations from international organisations in the field of EMFs and to incorporate information on new electricity tech-

THANKS TO THE PREVENTIVE MEASURES applied in the design of facilities, the levels of electric and magnetic fields stay below those recommended by the Council of the European Union

nologies, Red Eléctrica is working on updating the publication called '*Electric and magnetic fields 50 HZ. Analysis of the current state of knowledge*', which is available on the corporate website.



More information regarding Electromagnetic fields in the 'Environmental' subsection of the 'Sustainability' section of the corporate website.

BIODIVERSITY

THE COMMITMENT of Red Eléctrica to biodiversity has always been a key principle of its environmental policy and specifically it becomes evident in its biodiversity strategy and in a specific action plan covering all the Company's activities.

In 2014, a new biodiversity strategy was updated and signed and a new action plan was drafted to be undertaken as of 2015 (currently under approval) which gives continuity to the 2010-2014 action plan.

Red Eléctrica is part of the Spanish Business and Biodiversity Initiative (IEBB) promoted by the Ministry of Agriculture, Food and Environment.

CORNERSTONES OF THE BIODIVERSITY STRATEGY



Foster a communication and collaboration framework 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 Company's activities, 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.

MAIN HIGHLIGHTS OF THE ACTION PLAN 2010-2014

Direct actions regarding biodiversity:

- >> Development of the Mapping of flight paths project to identify the routes and flyways of birds that interact with transmission lines.
- >> Monitoring of the interaction of birds with the lines: methodology and protocols for the collection and analysis of data from bird collision accidents with transmission lines.
- >> Improved knowledge of natural protected areas and species of interest: development of the project Territorial Observatory/Updating of existing mapping.

Collaborative actions with the competent entities in biodiversity:

- >> Framework agreements for the protection of biodiversity
- >> Specific agreements related to specific projects and activities.
- >> Collaboration agreements for the prevention of forest fires (11 agreements).
- >> Agreements for the reforestation of degraded areas (REE Forest).
- >> Number of Autonomous Communities with collaboration agreements: 14

AWARDS



European Environment Award for Business 2014 (EBAE) in the special category Business and Biodiversity, for the project "Birds and Power Lines: mapping of bird flight paths".



More information in the 'Commitment to biodiversity' subsection of the 'Sustainability' section of the corporate website



More information in the 'Environmental' subsection of the 'Sustainability' section of the corporate website

MAIN PROPOSALS OF THE ACTION PLAN 2015-2020

Direct actions regarding biodiversity:

- >> Drawing up bird collision risk maps
- >> Definition and development of the multiyear plan for the marking of electricity lines with bird-saving devices.
- >> Evaluation of the effectiveness of blade or rotating-ball bird-saving devices.
- >> Habitat Project (2015-2017). Obtaining up-to-date geo-referenced information regarding the natural habitats of community interest; in addition to their conservation status with regard to the sphere of influence of Red Eléctrica's facilities.

Collaborative actions with the competent entities in biodiversity:

- >> Continuity regarding collaboration with the Autonomous Communities.
- >> Continuity of agreements for the reforestation of degraded areas (REE Forest).
- >> Signing of agreements for the prevention of forest fires nationwide.

ELECTRICITY GRIDS AND BIODIVERSITY

THE AIM of the electricity transmission grid is to link the points of energy generation with those of consumption. Therefore, Red Eléctrica's facilities are located nationwide.

The priority criteria for the siting of new facilities is to avoid areas rich in biodiversity. This criteria is taken into account in the planning phase of the transmission grid and

continues in the definition phase of each project. However, in some cases it is inevitable that infrastructures cross or are located in protected areas or areas with species of interest as many spaces are protected in Spain (approximately 25% of the surface area is protected).

On these occasions, Red Eléctrica implements all the necessary preventive and corrective measures to minimise such effects on spaces and species and it even establishes environmental improvement actions to improve biodiversity in those areas where its facilities are located.

ALL PROJECTS FOR NEW FACILITIES undergo an environmental assessment and work is carried out in consensus with all stakeholders so that facilities have minimal impact on the area

RED NATURA

In 2014, 335 km of line was brought into service, of which 9.6% is located in Red Natura spaces (this high percentage is related to the commissioning of the Spain-Portugal interconnection via

Extremadura, which was impossible to construct without crossing *Red Natura* spaces).

Of all existing infrastructures, only 15.1% of the lines and

6.2% of substations are in protected areas (*Red Natura*). Currently, Red Eléctrica's facilities occupy only 0.09% of *Red Natura* in Spain.



More information in the 'Habitats and species' subsection of the 'Sustainability' section of the corporate website.

THE PROTECTION OF HABITATS AND SPECIES

IN WORKS for the construction of lines or the modification of facilities, the main effects to be avoided are the alteration of the habitat of certain species of fauna and flora, and also the impact on vegetation due to the opening up of safety corridors, necessary to prevent fires in the operation of the line. [G4- EN12]

Preventive and corrective measures implemented include the following:

>> Detailed field studies on specific issues.

>> Introduction of some modifications in the design of facilities to minimise its effect on flora: compacting or increasing the height of towers, the relocation of towers, modification to access roads etc.

>> Signage and protection of habitats and species of ecological value to avoid them being damaged in the course of the work.

>> Using specific techniques to raise towers and hang conductors that minimise the need to open access roads and work sites: hoisting with a boom crane or helicopter and hanging lines by helicopter or by hand.

>> Biological stoppages (halting all works in the identified periods to reduce effects on fauna).

>> Recovery of affected areas: restoration of slopes, sowing of seed and the planting of trees.

>> Accompanying measures for improving biodiversity in affected areas.

>> RDI projects for improving the recovery of areas affected by the activities.

IN 2014, DRONES WERE USED for the first time for hanging cables between two towers on two sections of line. This technology improves the safety of personnel and is a major fuel saving when compared to the use of a helicopter

MAIN ACTIVITIES FOR THE PROTECTION OF HABITATS AND SPECIES 2014

>> Hoisting towers and hanging line by helicopter in the construction of a total of 28 km of line.

>> Using a drone, for the first time for hanging cables between two towers on two sections of line. This technology improves the safety of personnel and is a major fuel saving

when compared to the use of a helicopter

>> Restoration of areas with the use of strawberry trees (90), cherry (20), oak (65), apple (12), willow (36), fig (25), holly (50) and chestnut (25).

>> Development of the research project "Experimental technique for the

recovery of oceanic Posidonia meadows" (2013-2016), whose objective is to develop a technique to implant seeds germinated in the laboratory in areas that have been affected by the laying of submarine electricity cables. In 2014, fragments were grown in an aquarium which will be planted in 2015.

>> Biological stoppages of all work on line:

>> Penagos-Gueñes line: stoppages for various periods from February to September in 13 towers.

>> Mérida-San Serván line: stoppages during the period March to July in 9 towers.

>> Brovales- Guillena line: stoppages for various periods from January to August in 17 towers.

>> Boimente-Pesoz line: stoppages for various periods from April to September in 3 towers.

BIRDLIFE PROTECTION

THE MAIN effect on fauna by 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. [G4- EN12]

In 2014, 191 km of line was marked and work has continued on the project: 'Birds and Power Lines: mapping of bird flight paths'. Red Eléctrica was awarded the European Environment Award for

Business 2014 (EBAE) for this project in the special category Business and Biodiversity.

Furthermore, it has begun to implement a specific methodology to assess the effectiveness of the measures put in place to reduce bird collisions: methodol-

ogy and protocol for the collection and analysis of data from bird collision accidents with electricity transmission lines.

The method is applicable to both new installations (assessments in the context of environmental monitoring programmes),

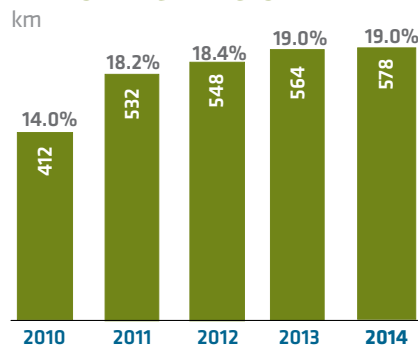
as in sections or specific points of existing lines. It is also valid for comparisons between different types of devices, such as the new blade-type model bird-saving device in comparison to the traditional spiral model.

RED ELÉCTRICA HAS WON THE EUROPEAN ENVIRONMENT AWARD 2014 for Business, in the category Business and Biodiversity for its project "Birds and Power Lines: mapping of bird flight paths"



More information regarding this distinguished project in the 'Noteworthy projects' subsection of the 'Sustainability' section of the corporate website.

MARKING OF LINES IN SPAS WITH BIRD-SAVING DEVICES



Note: There are SPAs that protect species not susceptible to collisions, and there are areas with sensitive species that are not classified as SPAs therefore, these values are currently calculated by identifying SPAs as areas of risk, although they may not always coincide.

MARKING OF LINES WITH BIRD-SAVING DEVICES



PROJECT 2010-2014

Identification, characterisation and mapping flight paths of birds that interact with high voltage transmission lines.

The design and implementation of a tool based on the use of geographic information systems (GIS) that integrates data regarding bird flight paths. In a first phase, this information allows the design of sensitivity maps, drawn up from the information related to those species

that are more prone to collisions. By introducing other environmental and territorial factors into the model, collision risk maps are also obtained. These maps are needed to prioritise corrective actions on existing lines and establish line marking plans. The ultimate goal

of the project is to define and develop line marking plans for all Autonomous Communities.

Project Status: Complete information of 14 Autonomous Communities. Risk maps developed for both the Balearic and Canary Islands.

FIRE PREVENTION

THE CRITERIA relative to Red Eléctrica's course of action regarding the fighting of forest fires is formally set out in an internal forestry management document, which this year incorporates new criteria and milestones to be achieved in this area.

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. The main activities carried out by Red Eléctrica are:

- >> Implementation of best practices in the design and maintenance of safety corridors.
- >> Active collaboration with the public administrations involved in forestry management.

- >> Predictive maintenance: annual review of all facilities.
- >> Preventive maintenance: periodic forestry works.
- >> Good practices in the opening up and maintenance of access roads: respect for shrub land and species of low-growing trees, minimisation of activities on protected species and the re-vegetation of degraded areas.
- >> Elimination of the use of chemical methods for treating the safety corridors.

These actions result in the number of fires involving Red Eléctrica's facilities being very low. During 2014, there was only one small

TO REDUCE AS FAR AS POSSIBLE THE RISK OF FIRE associated with the presence of transmission lines, strict compliance with the safety distances between flora and facilities is critical

outbreak of fire which was without consequence.

Noteworthy in 2014, the carrying out of the tests corresponding to the RDI project, 'Monitoring system for forest fires caused by lines' (2013-2014), whose objective is the development of an autonomous detection system of forest fires in the vicinity of overhead high voltage electricity lines.

COLLABORATION AGREEMENTS FOR THE PREVENTION AND FIGHTING OF FOREST FIRES

Since 2007, Red Eléctrica has aimed to sign agreements with the different competent administrations regarding forestry management through which, in addition to addressing issues related to the management of safety corridors which electricity lines run through, other commitments to fight fires are set out. In total eleven agreements have been signed, one of them in 2014. The total budget associated with existing agreements is 1.1 million euros.

- Main activities carried out under said agreements in 2014:
- >> Testing of new solutions for the prevention and fighting of fires: placement of cameras to detect forest fires, self-charging compactor for the management of forestry remains, retardant products to stop the spread of fire, biomass control system through controlled grazing.
 - >> Creation of a fire-break in the Balearic Islands.

- >> Improvement of forest fire-breaks and the refurbishment of access routes.
- >> Supply of personal protective equipment for forest fire-fighting volunteers.
- >> Raising awareness: public awareness sessions on forest fires in Castilla La Mancha (with 1,000 participants), the public awareness campaign on the island of Tenerife (20 sessions with a total of 1,500 participants) and the development of a manual for the prevention of fires.



More information regarding fire prevention in the 'Environment' subsection of the 'Sustainability' section of the corporate website.

CONTRIBUTION TO BIODIVERSITY CONSERVATION [G4-EN13]

RED ELÉCTRICA actively contributes to the conservation of biodiversity in Spain spearheading or participating in various projects and conducting dissemination activities and environmental training. During the period of the last Biodiversity Action Plan (2011-2014) we signed agreements and developed projects in 14 Autonomous Communities.

Most of the projects are aimed at the conservation of endangered bird species, although it also works with other species, for example by installing bat roosting boxes in towers.

In addition, the projects aimed at restoring degraded habitats are relevant, of note are: the REE Forest and the Recovery of the Ses Salines dunes (Formentera). Under the framework of the latter project numerous actions

were carried out and Red Eléctrica is committed to following up on the monitoring of the restored area for a period of ten years, which includes the review and replacement of elements that have been damaged and the assessment of the degree of evolution of the beach-dune system.

CONSERVATION PROJECTS IN CONNECTION WITH ENDANGERED SPECIES [G4-EN14]

>> Monitoring and analysis of the factors driving the increase in population of the Egyptian Vulture (*Neophron percnocterus*) in Catalonia ^{(1) (3)}

>> Programme for the reintroduction of the Black Vulture (*Aegypius monachus*) in Catalonia. ^{(2) (3)}

>> Platforms for the Osprey (*Pandion haliaetus*) in Andalusia. ⁽³⁾

>> Reintroduction of the Bonelli's Eagle (*Hieraetus fasciatus*) in Majorca. ⁽³⁾

>> Recovery of the Bonelli's Eagle in Aragón (*Hieraetus fasciatus*) ⁽³⁾

>> Conservation of the Shrike (*Lanius minor*) in Spain. ⁽⁴⁾

⁽¹⁾ Endangered species according to the IUCN Red List.

⁽²⁾ Near threatened species according to the IUCN Red List.

⁽³⁾ Vulnerable species according to the national catalogue of endangered species.

⁽⁴⁾ Endangered species according to the national catalogue of endangered species.

RED ELÉCTRICA'S FOREST

Started in 2009 and ongoing, this project is twofold: to offset emissions from Red Eléctrica by planting trees and the recovery of degraded natural areas, thus contributing to the conservation of biodiversity. This

initiative also seeks to contribute to the development of local economies by contracting work to companies or groups in the area, and also involve the local population through environmental education activities

and reforestation with volunteers. The project is undertaken on public land in different areas of Spain.

In 2014 the following works were carried out:

>> Zamora Forest

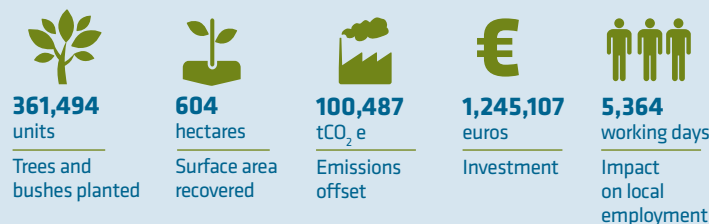
Work was carried out for the preparation of the land and the planting of 51 ha of pine began (*Pinus sylvestris*) in public highlands in the municipality of Puebla de Sanabria (Zamora). The area is included in the Sierra de la Culebra SCI (Site of Community Interest).

>> Majorca Forest

Recovery of 36 ha of burned lands in the Sa Duaia public commonland (Artá municipality) included in the Muntanyes d'Artá SCI. 11,520 species were planted including Pines (*Pinus halepensis*), Holm Oak (*Quercus ilex*) and Olive (*Olea europea* var. *Sylvestris*). The restored area will have a hiking route indicated with a plaque stating, "Walk in the Red Eléctrica's Forest".



The Red Eléctrica's Forest Figures 2009-2014



CLIMATE CHANGE

RED ELÉCTRICA as transmission agent and operator of the electricity system is a key player in the progress towards a more sustainable energy model: the development of transmission infrastructure and the implementation of solutions for system operation aimed at integrating renewable energy represent major opportunities in sustainability and at the same time, are essential to the achievement of the European climate targets. [G4 - EC2]

Red Eléctrica is not subject to regulations requiring reporting and the reduction (or possibly offsetting) of emissions associated with their activities, but as it is a company related to energy, in 2011 it decided to formalise its commitment to climate change by approving a specific strategy, which was reviewed and approved by the Chairman in May 2014.

The strategy to combat climate change is associated with an action plan covering not only actions related to the activity as transmission agent and operator of the electricity system, but also actions related to reducing its carbon footprint. This plan

RED ELÉCTRICA'S STRATEGY TO COMBAT CLIMATE CHANGE is associated with an action plan with actions related to the Company's activity as TSO and to the reduction of the carbon footprint. This plan was revised in 2014 and is set to be approved in 2015

was revised in 2014 and is scheduled for approval in 2015.

The activities as transmission agent and operator of the system are described in the Sustainable Energy chapter of this report.

CORNERSTONES OF THE CLIMATE CHANGE STRATEGY



Integration
of renewable energies.



Backing for
energy efficiency at all levels.



Protection
of forested areas. Fire prevention and promoting reforestation projects.



Reduction of
Greenhouse Gas emissions.



Development
of climate change adaptation projects.



Extending the
commitment to stakeholders, mainly suppliers.

MEMBER OF THE SPANISH GREEN GROWTH GROUP

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



PRESENT IN THE CARBON DISCLOSURE PROJECT (CDP) RANKING

Since 2011, Red Eléctrica has annually taken part in the CDP ranking (index of outstanding global companies on climate change) and discloses its responses to society. The Company has established,

as an objective, the progressive improvement of its score. In 2014, (corresponding to the 2013 fiscal year) the Company achieved a score of 83 B (vs. 71 C the previous year).



More information in the 'Energy and Climate Change' subsection of the 'Sustainability' section of the corporate website.

EMISSIONS

RED ELÉCTRICA drafts its emissions inventory based on the methodology of the GHG Protocol. Since 2011, the Company has been working on expanding

the inventory and improving the calculation methodology. In 2014, the inventory data of 2013 was submitted to independent review in accordance with ISAE 3410.

Control of SF₆ emissions

THE MAIN direct emissions derived from Red Eléctrica's activities are those of sulphur hexafluoride (SF₆). This gas, in spite of its high potential for global warming, provides huge technical advantages. It is a non-toxic gas that allows a huge reduction in the distances to be maintained between the various elements of facilities making it possible to reduce the size of the installation and therefore better blend it into the landscape. The emissions of this gas are associated to small leaks

from equipment, leakages due to handling the gas and those one-off accidents that may occur.

Red Eléctrica works in collaboration with the government and other entities in the search for solutions aimed at controlling and reducing these emissions. The main measures are associated with the implementation of best practices in equipment maintenance and management of the gas. The following actions are noteworthy:

MANAGEMENT OF SF₆

	2012	2013	2014	OBJECTIVE 2015	OBJECTIVE 2020
SF ₆ installed (kg) ⁽¹⁾	280,017	297,694	324,696		
Emissions from equipment in service (kg) ⁽²⁾	3,039	3,156	3,412		
Average emission rate of equipment in service (%) ⁽³⁾	1.08	1.06	1.05	1	0.8
Emissions derived from accidents (kg)	31	11	141		
Total emissions (kg)	3,070	3,167	3,553		

(1) The growth in installed gas is due to the putting into service of new facilities and the replacement of old equipment for SF₆ insulated equipment.

(2) The savings derived from reduction measures implemented are not reflected in this inventory due to the fact that the calculation is based on the allocation of different emission factors depending on the age of the equipment installed (these factors are reflected in the Voluntary Agreement signed in 2008 by the parties involved).

(3) Variations with respect to the 2012 and 2013 data published in the 2013 report are derived from the corrections made after the independent GHG inventory review process in 2014.

>> Improved procedures for the control and identification of leaks, an inventory and SF₆ gas management.

>> Replacing old equipment for equipment with lower leakage rates (2015-2020). Thanks to the equipment replaced in 2014, it is estimated that annually around 337 tonnes of CO₂ equivalent (tCO₂e) of emissions can

be avoided and with the planned replacement for 2015/2020 the forecasted savings in emissions will be over 1,500 tCO₂e during that period.

>> Incorporation of the most efficient equipment for leak detection, and the management and measurement of SF₆.

>> Training of personnel involved in the manage-

ment of this gas (Red Eléctrica has two legally recognised training centres offering classroom lectures and a workshop for hands-on training).

>> RDI projects related to the improvement in the management of this gas (Programme in collaboration with the Electric Power Research Institute) (2015-2020).

RED ELÉCTRICA DRAFTS ITS EMISSIONS INVENTORY based on the GHG Protocol methodology. In 2014, the inventory was submitted to independent review in accordance with ISAE 3410.

OBJECTIVE 2020

Reduction of 1,500 tCO₂e by replacing old equipment with new equipment with lower leakage rates.

ENERGY EFFICIENCY

AS A KEY COMPANY within the electricity system, Red Eléctrica considers relevant the efforts geared towards efficiency and electricity savings due to the enormous benefits they represent in economic, social and environmental terms.

Red Eléctrica works in this field from two converging perspectives. As electricity system operator, the first is focused on the implementation of various demand-side management measures aimed at promoting energy efficiency within the electricity system, mainly through research projects related to smart grids and electric mobility. The information detailed regarding these

actions is detailed in the Sustainable Energy chapter of this report.

The second is aimed at promoting internal energy efficiency of the Company and reducing its carbon footprint. To do this, Red Eléctrica works in three main areas: reducing electricity consumption, efficient mobility awareness raising actions.

MAIN HIGHLIGHTS 2014

- >> 3.8% reduction in electricity consumption of the head office since 2012, thanks to the increase of efficiency measures envisaged in the 2012-2019 plan, as set out in the ISO 50001 Energy Management System Certification for the head office.
- >> Implementation of efficiency measures in 10 work centres. In late 2014, of the 64 buildings owned by Red Eléctrica, 6 have a B energy rating and 12 have C.
- >> 20% reduction in electricity consumption associated with the use of computers in the period 2012-2014. Specifically, the renewal of IT equipment (screens and PCs) in 2014 will mean an estimated annual saving in consumption of 27,880 kWh.
- >> Specific analysis on consumption in substations and the potential reductions whose conclusions were included in the Guide to Energy Efficiency in Red Eléctrica facilities.

Reduction of electricity consumption

THE MAIN actions in this field are:

- >> Improved energy management of existing buildings and applying strict efficiency criteria in the construction of new buildings. The maximum rating the

Company selects for buildings is B, since A requires generating a certain quantity of renewable energy and Red Eléctrica, by law, cannot generate electricity.

- >> Reducing electricity consumption in substations by selecting more efficient equipment and components.

- >> Renewal of IT equipment and systems, with a target of reducing electricity consumption associated with this equipment of 60% during the period 2012-2020.

THE 'RED ELÉCTRICA EFICIENTE' DISTINCTION



To raise the profile of Red Eléctrica's interest in improving efficiency and to engage employees and shareholders in its commitment, the Company has created an internal seal of recognition for efficiency (Red Eléctrica Eficiente), which distinguishes those projects that promote the efficient use

of natural resources. In 2014, the second edition of Red Eléctrica Eficiente took place.

On that occasion three distinctions were awarded to the following projects: Energy management equipment (monitoring and recording of electricity consumption, water and temperatures in work centres); Perfila

Project (creation of a panel of consumers with smart meters that allows a more accurate knowledge regarding residential electricity consumption) and CARS Project (development of a tool that allows the monitoring and reduction of fuel consumption of Red Eléctrica's fleet vehicles).

EFFICIENT MOBILITY

AMONG THE ACTIONS

carried out by Red Eléctrica in this area are those related to its fleet vehicles. In this regard it is noteworthy that 70.6% of Company vehicles (fleet and leasing) have an energy rating A or B.

In this regard, noteworthy is the CARs Project (safe responsible and agile driving), whose implementation will enable the monitoring and optimisation of fuel consumption thanks to the

tools to be implemented, such as calculating efficient routes and responsible driving, among others.

In addition to these and other measures already in place (such as videoconferencing, lighting [led] in available parking spaces, company shuttle bus to the head office), Red Eléctrica's Sustainable Mobility Plan was defined and approved by the Management Committee in December 2014.

THE 'CARs PROJECT' will allow the optimisation of fuel consumption thanks to the tools that will be implemented, such as the calculation of efficient routes and responsible driving

2020 OBJECTIVES REGARDING MOBILITY

- >> Reduction of 21% of the emissions associated with the use of fleet vehicles (base year 2010).
- >> Business related travel: savings as over 300 tCO₂e per year is avoided.
- >> Commuting to and from work centres: over 200 tCO₂e in savings.

RED ELÉCTRICA'S SUSTAINABLE MOBILITY PLAN

Approved in December 2014, the Sustainable Mobility Plan is addressed from an environmental perspective (reducing emissions) and a social perspective (improving the quality of life of its employees). It includes a series of measures to improve mobility conditions for employees of Red Eléctrica and applies to business trips as well as the daily commute.

Four courses of action are carried out:

- >> Rationalise the use of private vehicles.
- >> Promote the use of efficient vehicles.
- >> Apply fuel saving measures.
- >> Awareness and training.

The implementation of the *Sustainable Mobility Plan* will have an associated saving in emissions.

OFFSETTING EMISSIONS

WITHIN THE climate change action plan, we have set a goal to offset at least 20% of our direct emissions. In this regard, Red Eléctrica offsets its emissions primarily through the project: the Red Eléctrica's Forest described in the biodiversity section of this report.

It is estimated that the trees planted in 2014 as part of that project will offset 3,456 tCO₂ e throughout their lifetime, representing 4.16% of the direct emissions of this year.

For reasons beyond Red Eléctrica's control, work on the Zamora Forest has been

delayed, which is why the plan to offset 20% of direct emissions has not been achieved so far.

On the other hand, Red Eléctrica has offset, for the first time, part of the emissions corresponding to the commuting of employees to and from work, having acquired a total of 2,324 CER (Certified Emission Reductions on the basis of projects derived from the Clean Development Mechanism (CDM) under the Kyoto Protocol) that correspond to the emissions generated by all those workers who responded to the mobility survey relative to 2014. The project for offsetting emissions, Hydroelectric Generation in

Lam Dong Province (Vietnam) was chosen by these same employees.

In addition, Red Eléctrica annually calculates and offsets the emissions associated with the holding of its General Shareholders' Meeting. In 2014, 17 tCO₂ e was offset with the purchase and permanent retirement in the National Registry of Emission Allowances account of 17 CER, for the project: CECIC Changma HKC Gansu Wind Power Project.

AWARENESS

AWARENESS ACTIVITIES for employees carried out this year have been mainly focused on the Sustainable City concept through posters, intranet communica-

tions, visits, competitions etc. Furthermore, in 2014 a specific campaign was developed for contractors working in Red Eléctrica's facilities.

CARBON FOOTPRINT OF SUPPLIERS

RED ELÉCTRICA continues to work on the calculation of the carbon footprint associated with its value chain. The information, as in previous years, was collected through a dedicated portal. For those providers with more weight in our indirect emissions (in the sectors of construction and the

manufacturing of equipment) a detailed monitoring was carried out. The aim is that through collaboration with these suppliers, the calculation process will improve year on year and thus monitoring can be performed on the improvements that the aforementioned suppliers implement regarding emissions reduction, and in addition promote the development of said improvements.

THE COMPANY ESTABLISHES TARGETS for the offsetting of at least 20% of its direct emissions, offsetting that is achieved primarily through the Red Eléctrica's Forest project



More information regarding the Red Eléctrica's Forest in the 'Noteworthy projects' subsection of the 'Sustainability' section of the corporate website.

WASTE AND DISCHARGES

THE MOST RELEVANT

waste generated by Red Eléctrica is produced as a result of the following activities:

>> Standard tasks regarding preventive or corrective maintenance: revisions, changing of parts, oil renewal, etc.

>> Actions against accidents: containment measures used in the case of leaks or spillages and cleaning work may lead to a lot of associated waste.

>> Adaptation of facilities: renewal of obsolete switchgear, improvement in accident prevention systems, among others.

In recent years, the largest quantities of waste are associated with the activities for the adaptation of facilities, given that a major campaign is being undertaken to bring the assets acquired from other companies to Red Eléctrica's standardised criteria.

Given the nature of these activities, it is

very difficult to predict the evolution of the amount of waste and set targets for its reduction. Therefore, although minimisation criteria have been established, such as the regeneration of oil from transformers and reducing the danger of some products used, the main ways of working are aimed at improving segregation and final waste management

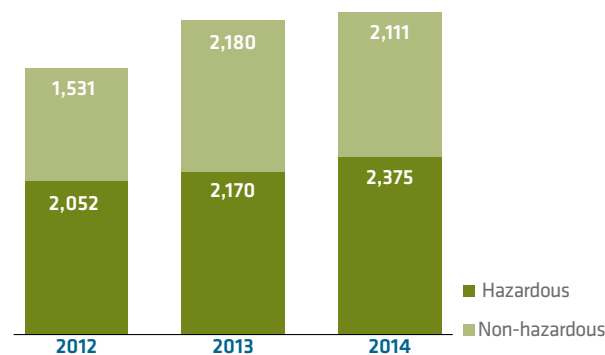
seeking the best options among our suppliers and promoting good practices through training and awareness.

The waste generated by construction activities is managed by contractors. For all works there is a Waste Management Plan which establishes the waste management to be carried out in each case, the criteria of minimisation and

reuse being of utmost importance (especially important for surpluses from excavation works). In addition, Red Eléctrica includes specific requirements for waste management in the contractual documentation of works and reviews compliance through the supervision works, visits and through the control of documentation.

WASTE

(tonnes)



Protection against leaks and spillages

THE RISK of spillages occurring that can cause the contamination of soil or water is mainly related to the presence and operation of equipment containing oil, with transformers being the most important example. To minimise

the consequences of a possible accident, these machines have containment systems appropriate for the volume of oil contained in the machine. The timely revision, maintenance and upgrading activity of these systems

is very important for the Company.

The adequate maintenance of equipment containing oil, the containment systems, the application of best practices in the work and

the suitable response to incidents make the number of spillages associated with our activities very low and the consequences thereof, when they occur, are usually minor.

INDICATORS

FUEL CONSUMPTION [G4-EN3]

(litres)

	2012	2013 ⁽⁴⁾	2014
Diesel	498,388	475,792	408,277
Petrol	19,408	27	-
Total fuel ⁽¹⁾	517,796	475,818	408,277
Average consumption (l/100 km) ⁽²⁾		10.5	9.6
Generator sets ⁽³⁾	5,374	2,377	4,100

(1) Included fleet vehicles, cherry pickers and executive vehicles until 2013. The 2014 figure does not include executive vehicles (shared leasing). [G4-EN5]

(2) This ratio is an average based on the different types of vehicles. Data was recalculated in 2013 after the launch of a new control methodology for the km travelled.

(3) Corresponds to diesel refilled in the fuel tanks.

(4) Data corrected after the verification process of the 2013 carbon footprint.

ENERGY CONSUMPTION [G4-EN3]

(kWh)

	2012	2013	2014
Head Offices (Moraleja+Albatros) ⁽¹⁾	8,788,140	8,566,662	8,399,121
Tres Cantos (1)	1,693,771	1,674,293	1,652,529
Non-peninsular systems ⁽¹⁾	1,408,343	689,674	1,304,592
Regional head offices	2,396,947	2,353,001	2,176,256
Regional work centres ⁽²⁾	1,713,227	1,887,422	2,648,473
Total	16,000,428	15,171,052	16,180,971

(1) These are work centres with special characteristics due to the fact that electricity control centres are located there. These work 24 hours a day 7 days a week and have special energy consumption.

(2) These are work centres staffed primarily with maintenance personnel. In the period 2012-2013, only the regional head offices (7 offices) were included. In 2014, the consumption of 38 additional work centres has been included.

SUMMARY OF ENERGY CONSUMPTION [G4-EN3]

(Joules)⁽¹⁾

	2012	2013	2014
Fuel consumption	1.93·10 ¹³	1.77·10 ¹³	1.52·10 ¹³
Consumption of electricity	5.76·10 ¹³	5.46·10 ¹³	5.82·10 ¹³

1 kWh = 36·10⁶ joules; 1 l of diesel = 37·10⁶ joules; 1 l of petrol = 34·10⁶ joules; 1 l of gas oil = 37·10⁶ joules

(1) Total consumption data in joules, according to the criteria defined by GRI G4.

INDIRECT ENERGY CONSUMPTION [G4-EN3]

Electricity

	2012	2013	2014
Transmission grid losses (MWh) ⁽¹⁾	2,947,000	3,115,000	3,187,000
Transmission grid losses (Joules)	1.06·10 ¹⁶	1.12·10 ¹⁶	1.15·10 ¹⁶

(1) Losses in the electricity transmission grid are related to the location of generation points in relation to the consumption points (the greater the distance, the greater the losses), the amount of energy demanded during the year, the generation mix of the year (percentage of each generation technology in the total energy generated), international exchanges and the shape of the demand curve. Practically none of these factors are controllable by Red Eléctrica, making it very difficult to reduce them. However, Red Eléctrica works to identify and improve those factors it can have an influence on (see Sustainable Energy chapter).

During 2014, the value of losses in the transmission grid increased slightly over the previous year mainly due to the different distribution of generation in the Spanish peninsular system that, in general, is far away from the point of consumption. Especially noteworthy was the increase of generation with domestic coal.

EXTERNAL ENERGY CONSUMPTION [G4-EN4]

Logistics

	2012	2013	2014
Fuel consumption (l)	291,914	251,654	239,120
Fuel consumption (Joules)	10.80·10 ¹²	9.31·10 ¹²	8.85·10 ¹²

1 l of gas oil = 37·10⁶ joules

ENERGY INTENSITY [G4-EN5]

	2012	2013	2014
Average consumption of fleet vehicles (l/100km) ⁽¹⁾		10.51	9.6
Average consumption of vehicles for logistical use (external) (l/100km)	27.08	26.36	25.75
Electricity consumption per employee in head offices (kWh/employee)	7,569	7,642	6,725
Transmission grid losses (MWh/MWh transported) (%) ⁽²⁾	1.170	1.265	1.320

(1) Average of different types of vehicles. The indicators have been recalculated for 2013 after the launch of a new control methodology for km travelled.

(2) The indicated percentage corresponds to the energy dissipated in losses with respect to total demand. Losses in the Electricity Transmission Grid are related to the location of generation points in relation to the consumption points (the greater the distance, the greater the losses), the amount of energy demanded during the year, the generation mix of the year (percentage of each generation technology in the total energy generated), international exchanges and the shape of the demand curve. Practically none of these factors are controllable by Red Eléctrica, making it very difficult to reduce them. However, Red Eléctrica works to identify and improve those factors it can have an influence on (see Sustainable Energy chapter). During 2014, the value of losses in the transmission grid increased slightly over the previous year mainly due to the different distribution of generation in the Spanish peninsular system that, in general, is far away from the point of consumption. Especially noteworthy was the increase of generation with domestic coal.

REDUCTIONS IN ELECTRICITY CONSUMPTION ⁽¹⁾ [G4-EN6]

	kWh	Joules
Reduction in the Head Office via the implementation of an energy management system ⁽²⁾	299,593	1.07·10 ¹²
	kWh/annually	Joules/annually
Reduction due to renewal of IT systems and PCs ⁽³⁾	27,880	1.10·10 ¹¹

(1) Reductions resulting from the measures already taken or plans that are in place in 2014 have been included. No reductions associated with measures previously implemented in the Company are included.

(2) Reduction achieved in 2014 compared to 2012, the year in which the energy management system was launched (associated reduction measures implemented in 2012, 2013 and 2014).

(3) Expected reduction with the measures implemented in 2014.

PRESENCE OF FACILITIES IN RED NATURA SPACES [G4-EN11]

	2012	2013	2014
Peninsular system			
Km of line in Red Natura / total km of line (%)	15.4	15.6	15.5
Number of substations in Red Natura / Total substations (%)	7.3	7.2	6.8
Surface area of facilities in Red Natura / Total surface in Red Natura on the Spanish Peninsula (%) ⁽¹⁾	0.12	0.12	0.10
Non-peninsular system			
Km of line in Red Natura / total km of line (%)	9.8	10.0	9.3
Number of substations in Red Natura / Total substations (%)	2.8	2.8	2.80
Surface area of line in Red Natura / Total surface in Red Natura on the islands (%) ⁽¹⁾	-	0.08	0.03*
Total Spain			
Km of line in Red Natura / total km of line (%)	15.0	15.2	15.1
Number of substations in Red Natura / Total substations (%)	6.6	6.4	6.2
Surface area of facilities in Red Natura / Total surface in Red Natura in Spain (%) ⁽¹⁾	0.11	0.12	0.09*

Red Natura (Natura 2000 Network) includes: SCI: Site of Community Importance; SPA: Specially Protected Areas for birds.

(1) Surface area occupied by lines and substations: The surface area of lines has been calculated assuming an occupation of 20 m on each side of the line. It is necessary to keep in mind that the occupation is overhead; there is only actual occupation in the case of the towers.

Note 1: For the calculation of the ratios of 2012 and 2013 the database of Red Natura 2000 published in 2011 and 2012 respectively was used. For the calculation of the ratios of 2014 the database published in July 2014 has been used. (The mapped area of Red Natura insular is significantly higher than in previous years, which explains the variation in the indicators identified).

Note 2: The mapping of in-service facilities is improved and updated annually, whereby some variations in calculations not related to the increase or decrease of facilities can be derived.

MOST SIGNIFICANT IMPACTS ON FLORA [G4-EN12]

Felling of 88 Oaks in several important areas for the protection of birdlife (classified as IBAs or SPAs) associated with the construction of new electricity line.

Felling of 99 Oaks and 9 Cork Oaks in the Sierra Norte Natural Park (SAC and SPA) and IBA 236 Sierra Morena in Seville, associated with the construction of new electricity line.

Felling of 210 poplars within the 'Rio Ebro' SCI (the felling is associated with the commitment of replanting 2,500 specimens of riverbank flora in the area).

Felling of native flora: Sweet Tabaiba (*Euphorbia balsamifera*), 14 large, 20 medium and 28 small.

Note: IBA: Important Bird and Biodiversity Area.
SAC: Special Areas of Conservation.

DETECTED COLLISION OF SPECIES OF INTEREST [G4-EN12]

Species affected	Nº of birds affected
Great Bustard (<i>Otis tarda</i>) ⁽¹⁾	22 ⁽⁶⁾
Little Bustard (<i>Tetrax tetrax</i>) ^{(2) (3)}	4 ⁽⁷⁾
Red Kite (<i>Milvus migrans</i>) ⁽⁴⁾	1 ⁽⁷⁾
Canarian Egyptian Vulture (<i>Neophron percnopterus majorensis</i>) ⁽⁴⁾⁽⁵⁾	1 ⁽⁸⁾
Houbara Bustard (<i>Chlamydotis undulata</i>) ⁽¹⁾	1 ⁽⁸⁾

(1) Vulnerable species according to IUCN Red List [EN14]

(2) Near threatened species according to IUCN Red List [EN14]

(3) Vulnerable species according to the National Catalogue of Endangered Species [EN14]

(4) Near extinction species according to the National Catalogue of Endangered Species [EN14]

(5) Endangered species according to IUCN Red List [EN14]

(6) Bird fatalities. Sixteen of the accidents were identified during the Environmental Monitoring Programme of a recently constructed line. The need for corrective measures will be analysed at the conclusion of said Programme. The rest have been detected on lines in service, whose marking is contemplated within the multi-year line marking plan.

(7) Bird fatalities. Accident identified during the Environmental Monitoring Programme of a recently constructed line. The need for corrective measures will be analysed at the conclusion of said Programme.

(8) Marking of this line will take place in 2015.

TOTAL NUMBER OF IUCN RED LIST SPECIES AND NATIONAL CONSERVATION LIST SPECIES WITH HABITATS IN AREAS AFFECTED BY OPERATIONS, BY LEVEL OF EXTINCTION RISK [G4-EN14]

The main effects on protected species from the operations of Red Eléctrica are those derived from birds colliding with electricity lines. Within

the framework of the "Birds and Power Lines: mapping of bird flight paths" project 2010-2014 for the identification, characterisation and

mapping of flight corridors of birds interacting with high voltage transmission lines, the species that prone to collision with the lines of Red Eléctrica

have been identified (focal species, a total of 47) and whose habitats are in areas where these lines exist. Of the 47 species identified, 31 are considered threatened.

Scientific name	Common name	Classification according to MARM (2011) (National Catalogue)	Classification according to the IUCN red list
<i>Aquila adalberti</i>	Imperial Eagle	In danger of extinction	Vulnerable (VU)
<i>Hieraaetus fasciatus</i>	Bonelli's Eagle	Vulnerable	Least concern (LC)
<i>Pandion haliaetus</i>	Osprey	Vulnerable	Least concern (LC)
<i>Aquila chrysaetos</i>	Golden Eagle	-	Near threatened (NT) / Least concern (LC)
<i>Burhinus oedicephalus</i>	Stone-curlew	Vulnerable	Least concern (LC)
<i>Neophron percnopterus</i>	Griffon Vulture	Vulnerable	Endangered (EN)
<i>Neophron percnopterus majorensis</i>	Canarian Egyptian Vulture	In danger of extinction	Endangered (EN)
<i>Chersophilus duponti</i>	Dupont's Lark	Vulnerable	Species native to the Canary Islands
<i>Botaurus stellaris</i>	Euroasian Bittern	In danger of extinction	Near threatened (NT)
<i>Otis tarda</i>	Great Bustard	-	Least concern (LC)
<i>Chlamydotis undulata</i>	Houbara Bustard	In danger of extinction	Vulnerable (VU)
<i>Aegypius monachus</i>	Black Vulture	Vulnerable	Vulnerable (VU)
<i>Marmaronetta angustirostris</i>	Marbled Duck	In danger of extinction	Near threatened (NT)
<i>Ciconia nigra</i>	Black Stork	Vulnerable	Vulnerable (VU)
<i>Corvus corax canariensis</i>	Common Raven	-	Least concern (LC)
<i>Fulica cristata</i>	Crested Coot.	In danger of extinction	Species native to the Canary Islands
<i>Pterocles alchata</i>	Pin-tailed Sandgrouse	Vulnerable	Least concern (LC)
<i>Pterocles orientalis</i>	Black-bellied Sandgrouse	Vulnerable	Least concern (LC)
<i>Ardeola ralloides</i>	Squacco Heron	Vulnerable	Least concern (LC)
<i>Falco pelegrinoides</i>	Barbary Falcon	In danger of extinction	Least concern (LC)

Scientific name	Common name	Classification according to MARM (2011) (National Catalogue)	Classification according to the IUCN red list
Geronticus eremita	Northern Bald Ibis	-	Critically endangered (CE)
Oxyura leucocephala	White-headed Duck	In danger of extinction	Endangered (EN)
Milvus migrans	Black Kite	In danger of extinction	Least concern (LC)
Columba junoniae	White-tailed Laurel Pigeon	Vulnerable	Near threatened (NT)
Dendrocopos leucotos	White-backed Woodpecker	In danger of extinction	Least concern (LC)
Fringilla teydea subsp	Blue Chaffinch	In danger of extinction (Gran Canaria) / Vulnerable (Tenerife)	Near threatened (NT)
Aythya nyroca	Ferruginous Duck	In danger of extinction	Near threatened (NT)
Gypaetus barbatus	The Bearded-Vulture	In danger of extinction	Near threatened (NT)
Tetrax tetrax	Little Bustard	Vulnerable	Near threatened (NT)
Tetrao urogallus cantabricus	Cantabrian Capercaillie	In danger of extinction	Least concern (LC)
Tetrao urogallus aquitanicus	Aquitanian Capercaillie	Vulnerable	Least concern (LC)



More information in the
'Habitats and Species'
subsection of the
'Sustainability' section of the
corporate website.

GREENHOUSE GAS EMISSIONS [G4-EN15]

(t CO₂ equivalent)⁽¹⁾

Direct (SCOPE 1)	2012	2013	2014
SF ₆ ⁽²⁾	69,986	72,210	81,018
Air conditioning ⁽³⁾	-	545	809
Fleet vehicles	1,381	1,275	1,094
Generator sets	-	950	204
Total direct emissions	71,367	74,980	83,125

(1) The emission calculation is performed from an operational control approach. The information on the scope and methodology of inventory is available on the website of REE. <http://www.ree.es/es/sostenibilidad/energia-sostenible/energia-y-cambio-climatico/nuestra-huella-de-carbono>. The values of 2013 and 2014 have been submitted to independent review in accordance with ISAE 3410. The variation in the values of 2012 and 2013 with regard to the report published in 2013 are due to the corrections made during this process.

(2) Taking GWP to 100 years: 22,800 (Source IPCC, Intergovernmental Panel on Climate Change: 4th assessment report). The increase in SF₆ emissions is derived from the increase in installed gas due to the commissioning of new installations and the replacement of old SF₆ insulated equipment. However, the emission factor (gas emitted/installed gas) is lower than previous years.

(3) The increase in 2014 is mainly due to adjustments made in data collection and the collation of information.

INDIRECT GREENHOUSE GAS EMISSIONS FROM THE GENERATION OF ENERGY [G4-EN16]

(t CO₂ equivalent)⁽¹⁾

Indirect (SCOPE 2)	2012	2013	2014
Emissions associated to electricity consumption ^{(2) (4)}	4,752	3,565	3,867
Emissions associated to transmission losses ⁽³⁾	875,259	732,025	767,907
Total indirect emissions	880,011	735,590	771,774

(1) The emission calculation is performed from an operational control approach. The information on the scope and methodology of inventory is available on the website of REE. <http://www.ree.es/es/sostenibilidad/energia-sostenible/energia-y-cambio-climatico/nuestra-huella-de-carbono>.

(2) Peninsular emission factor calculated by REE that takes into account the energy mix of each year and an emission factor is associated with each generation technology.

(3) Losses in the Electricity Transmission Grid are related to the location of generation points in relation to the consumption points (the greater the distance, the greater the losses), the amount of energy demanded during the year, the generation mix of the year (percentage of each generation technology in the total energy generated), international exchanges and the shape of the demand curve. Practically none of these factors are controllable by Red Eléctrica, making it very difficult to reduce them. However, Red Eléctrica works to identify and improve those factors it can have an influence on (see sustainable energy chapter). In this case, the same way that emissions associated with electricity consumption, CO₂ is not emitted during Red Eléctrica activities, as it takes place at the different points of power generation. To calculate this, the emission factor calculated by Red Eléctrica is used. In 2014, emissions increased slightly over the previous year due both to increased losses (3% increase in 2014/2013), and the increase of the emission factor (0.235 in 2013, 0.239 in 2014). The different distribution of generation in the Spanish peninsular system that, in general is located far from the point of consumption, has influenced the increase in losses. The growth in generation using domestic coal, has also affected the small worsening of the emission factor.

(4) Increased emissions associated with electricity consumption in 2014 are primarily due to the inclusion in the calculation of 38 additional works centres.

INDIRECT EMISSIONS [G4-EN17]

(t CO₂ equivalent)⁽¹⁾

Indirect (SCOPE 3)	2012	2013	2014
Emissions associated to business travel	827	1,046	1,485
Emissions associated to internal material transport (logistics)	782	674	641
Emissions associated to employee commuting ⁽¹⁾	-	1,579	3,468
Emissions associated to the value chain ⁽²⁾	190,858	176,528	175,389

(1) In 2013, the calculation was performed only for employees at the head offices. In 2014, this calculation was performed for all employees of REE.

(2) 2012: data on suppliers representing 95% of the volume of orders. Carbon intensity of the value chain: 294 t CO₂ / million Euros.

2013: provisional data calculated on suppliers representing 87% of the volume of orders. Carbon intensity in the value chain: 331 t CO₂ / million euros.

2014: information on suppliers representing 95% of the volume of orders. Carbon intensity in the value chain: 370 t CO₂ / million euros

Note: For the correct interpretation of the data it is necessary to take into account that:

- Carbon intensity depends on the type of orders made in the year and there are products / services with different carbon intensity. Therefore, one cannot establish strict comparisons between different years. Of all the activities, the construction of facilities and the manufacturing of equipment are the most carbon intensive (representing 88% of the emissions associated with the value chain in 2014).

- From the latest study of the value chain of Red Eléctrica, for the year 2014, it can be deduced that 44% of emissions in the value chain are associated to just 5 suppliers, and 73% to 25 suppliers.



More information in the 'Sustainable Energy' subsection of the 'Sustainability' section of the corporate website.

GREENHOUSE GAS EMISSIONS INTENSITY [G4-EN18]

	2012	2013	2014
Emissions of SF ₆ /installed SF ₆ (%)	1.08	1.06	1.05
Emissions ^(1 and 2) /revenues (t CO ₂ /million euros) ⁽¹⁾	562	476	479
Emissions/revenues (t CO ₂ /million euros) ⁽²⁾	44.93	46.16	48.76
Emissions/energy transported (t CO ₂ /GWh) ⁽³⁾	3.78	3.29	3.51

(1) Emissions Scope 1 and 2 (includes transmission grid losses)

(2) Emissions Scope 1 + electricity consumption emissions. REE considers it relevant to monitor this indicator, without including transmission grid losses (since it is not possible to act on them, as explained above).

(3) Emissions Scope 1 and 2 (including transmission grid losses). The total energy transported corresponds to the annual demand measured at power station busbars.

REDUCTIONS OF GREENHOUSE GAS EMISSIONS⁽¹⁾ [G4-EN19]

Net savings (tCO ₂ e)	t CO ₂ e
Reduction at the head office due to the implementation of an energy management system ⁽²⁾⁽³⁾	72
Annual savings	t CO ₂ e/year
Reduction due to the renewal screens and PCs ^{(2) (4)}	7
Reduction in SF ₆ emissions through the substitution of old equipment for that with a lower leakage rate ⁽⁴⁾	337

(1) Reductions resulting from the measures already taken or plans that are in place in 2014 have been included. No reductions associated with measures previously implemented in the Company are included (installation of efficient equipment, use of videoconferencing, company bus, etc.).

(2) The factor for 2014 emissions was used to estimate emissions savings.

(3) Reduction achieved in 2014 compared to 2012, the year in which the energy management system was launched (reduction associated to the measures implemented in 2012, 2013 and 2014).

(4) Reductions associated to the measures implemented in 2014.

SANCTIONS AND FINES [G4-EN29]

(Euros)

Type of infringement	2010		2011		2012		2013		2014	
	No. of cases	Amount	No. of cases	Amount	No. of cases	Amount	No. of cases	Amount	No. of cases	Amount
Fire risk ⁽¹⁾	2	200	7	2,314	4	1,082	6*	6,522*	1	100
Unauthorised felling and pruning	2	1,067	3*	22,477*	1	300	3*	1,478*	1	100
Felling, pruning and shrub-clearing without preventive measures	1*	722*					-	-	-	-
Fire due to line discharge	3	13,923	1	3,848	1	3,948	-	-	-	-
Obstruction of waterway / Unauthorised works in certain areas	1	300	2	3,100	-	-	1*	1,200*	1	3,000
Activities with high probability of soil contamination	5	1,050	1	-	-	-	-	-	-	-
Accumulation of biomass waste	-	-	-	-	-	-	1	100	-	-
Fauna/wildlife in captivity without authorisation	-	-	-	-	-	-	1	100	-	-
Works in protected areas without authorisation	1*	6,010*	-	-	-	-	-	-	-	-
Works without authorisation					2*	62,153*	1*	2,000*	-	-
Total	15*	23,273*	13*	31,138*	8*	67,483*	13*	11,409*	3	3,200

(1) Fire risk due to the lack of maintenance of vegetation, or abandonment of materia.

* Data updated in 2014 following the resolution of pending cases (2 cases opened in 2010, 1 case in 2011, 2 cases in 2012 and 6 cases opened in 2013).

ENVIRONMENTAL EXPENDITURE [G4-EN31]

(Euros)

	2012	2013	2014
Investments	5,154,305	2,752,119	2,651,609
Engineering and construction of facilities ⁽¹⁾	5,154,305	2,752,119	2,651,609
Expenditure	16,380,072	20,620,761	19,795,259
Development of methodologies and systems ⁽²⁾	25,153	49,980	50,082
Environmental studies and analyses	200,429	167,746	125,502
Environmental actions in facilities in service	14,053,007	18,564,425	17,502,652
Contamination prevention ⁽³⁾	1,890,198	1,547,453	1,376,552
Protection of biodiversity, Landscape ⁽⁴⁾	11,187,670	16,039,821	14,914,991
Climate change ⁽⁵⁾	475,360	277,067	494,335
Energy efficiency and savings in resources ⁽⁶⁾	236,043	206,834	277,153
Waste reduction and management	263,737	493,250	439,622
Research and development	147,799	305,868	363,316
Training and communication	402,004	163,180	256,722
Environmental training and awareness	11,590	26,394	54,310
Communication ⁽⁷⁾	390,414	136,785	202,412
Environmental taxes and fees	117,392	6,601,617	6,893,725
Municipal and regional government fees	117,392	105,162	280,223
Cost of personnel involved in environmental activities	1,434,287	1,264,401	1,216,762

(1) Environmental impact studies carried out on all projects, application of preventive and corrective measures, environmental supervision at electricity facilities under construction and application of environmental improvement measures.

(2) Certifications, audits, environmental consultancy.

(3) Adaptation of facilities, repair of equipment, analysis, etc.

(4) Fire prevention (inspection of facilities, felling, pruning and clearing of vegetation for the maintenance of the safety distances, projects related to the prevention and fight against fires) line marking with bird-flight diverters, bird-nesting deterrents, management of nests, landscaping adaptation, biodiversity conservation projects, etc.

(5) "The Red Eléctrica's Forest", improvement of SF6 management, replacement of equipment containing R-22.

(6) Installation of meters, energy audits, activities for the improvement of energy efficiency.

(7) Affiliations, congresses, brochures and reports, stands at fairs, publicity in magazines, collaboration and sponsorships agreements.

NUMBER OF ENVIRONMENTAL GRIEVANCES FILED [G4-EN34]

	2014
Birdlife	0
Electromagnetic fields	1
Consumption/energy efficiency	0
Environmental expenditure	0
Emissions/Climate change	0
Impact on the landscape	1
Facilities	0
General environmental information	0
Waste	2
Noise	0
Environmental management system	0
Flora	11
Total	15

The environmental claims are addressed through the DIGAME service (a unique service for all claims in REE). The claims are classified according to type (includes complaints, enquiries, suggestions, requests for information and acknowledgements) or grievance. In 2014, 39 claims of an environmental nature were addressed, 15 of them were grievances.

All claims filed in 2014 were addressed and resolved in the same period, except for two of them related to the felling and pruning of trees, which are pending closure.

NON-HAZARDOUS WASTE [G4-EN23]

(kg)

	2012	2013	2014	Management type*
Septic tank sludge	1,118,660	1,311,240	1,380,716	Recycling/Treatment
Scrap metal not contaminated with hazardous substances ⁽¹⁾	sd	1,513,762	2,022,441	Recycling
Inert waste	144,580	544,082	329,005	Landfill/Recycling
Paper and cardboard	211,338	241,938	262,328	Recycling
Toner & printer ink ⁽²⁾	32	22	14	Recycling
Wood ⁽³⁾	42,231	69,581	119,834	Recycling
Waste vegetation ⁽⁴⁾	34,153	8,567	6,820	
Electrical and non-hazardous electronic waste	699	3,443	1,415	Recycling
Plastics	7,535	4,957	12,014	Recycling
Glass	75	176	40	Recycling
Vegetable cooking oils	5,860	4,800	5,640	Recycling/Regeneration
Alkaline batteries/without mercury	0	33	40	Recycling
Total	1,531,010	2,180,272	2,111,046	

(1) In 2013, a computer application for the control and monitoring of scrap metal transfer data was introduced. Although the data collated is included, it will not be added to the waste total until all historical data is available.

(2) The management of toner and ink corresponds to the company that supplies and services the printer. Only units purchased directly by Red Eléctrica are taken into account.

(3) Increased due to improved segregation practices and delivery to a waste management company at the logistics centres.

(4) Not taken into account in the calculation of total non-hazardous waste. This is a non-representative value since most of this waste is incorporated into the land or given to landowners. The table includes only the waste delivered to the waste management company.

* Default Procedure for the contractors responsible for waste management.

HAZARDOUS WASTE [G4-EN23]

(kg)

	2012	2013	2014	Management type*
Used oil	433,156	287,967	315,235	Regeneration/Waste recovery
Oil with PCBs ⁽¹⁾	426	137	160	Waste recovery/Elimination
Oil/water mix	466,030	929,592	362,868	Waste recovery
Diesel/water mix	0	400	21	Waste recovery
Transformers and equipment with PCBs ⁽¹⁾	19,906	10,477	23,175	Waste recovery/Elimination by incineration
Hazardous electrical and electronic waste: equipment containing oil ⁽²⁾	353,745	307,077	1,248,046	Waste recovery
Hazardous electrical and electronic waste: Other	49,070	59,897	132,724	Waste recovery
Nickel/cadmium accumulators	105,866	112,035	73,102	Recycling
Lead batteries	1,703	15,062	2,131	Recycling
Soils impregnated with hydrocarbons	504,032	383,033	195,348	Elimination by disposal
Containers that have contained hazardous substances	7,620	5,077	7,057	Waste recovery
Absorbent matter and other	9,379	47,057	3,964	Waste recovery
Silica gel and other inorganic chemical products	0	848	0	Waste recovery
Non-halogenated solvents	134	47	4	Waste recovery
Halogenated solvents	5	108	0	Waste recovery
Water-based cleaning liquids	85	0	59	Waste recovery
Paint waste	843	372	284	Waste recovery
Insulation material (with or without asbestos)	9,656	1,244	1,154	Waste recovery/ Elimination by disposal
Laboratory chemical products	974	354	344	Waste recovery
Gases in pressurised containers ⁽³⁾	592	8,522	7,690	Regeneration
Antifreeze containing hazardous substances	301	29	80	Waste recovery
Fluorescent lighting tubes	459	974	517	Recycling
Batteries	96	28	15	Eliminación
Fuel oil and diesel	1,065	0	1,041	Waste recovery
Cable with hydrocarbons	87,180	0	0	Waste recovery
Total	2,052,323	2,170,337	2,375,019	

(1) Once the elimination / decontamination plan of transformers with PCBs oil equipment was completed in 2010, the amounts now produced are caused by the removal of old sealed equipment that is contaminated at the end of its useful life.

(2) The increase is linked to renovation and improvement actions regarding substations acquired from another company in the Canary Islands' regional office, the elimination of the damaged transformer and the waste generated in the logistics centres.

(3) These wastes deal with used SF6 gas that is out of specification. The treatment of these wastes, consisting of the regeneration of gas for reuse, takes place outside Spain. [G4-EN25] This means that 0.32% of total hazardous waste has been transported internationally.

* Default Procedure for the contractors responsible for waste management. The total amount of waste destined for recycling has been estimated at 48.6%

LEAKS AND SPILLAGES 2014 [G4-EN24]

(kg)

	Incidents ⁽¹⁾	Accidents ⁽²⁾				
		1	2	3	4	5
Construction	20	0	0	0	0	0
Maintenance	18	0	0	2 ⁽³⁾	0	0

LEAKS AND SPILLAGES HISTORICAL DATA [G4-EN24]

	2012	2013	2014	
Construction activities	Incidents	9	39	20
	Accidents	0	1	0
Maintenance activities	Incidents	25	17	18
	Accidents	6	5 ⁽⁴⁾	2

(1) Accidents of minor importance related to the breakage of hoses of the machinery used for construction, or minor spillages of oil or fuel occurring during decanting and temporary storage.

(2) Classification of accidents depending on the severity on a scale of 1 to 5 (1 slight - 5 severe)

(3) No spillage has been included to date in the financial statements of the organisation. The following spillages have been registered:

- Silicone oil leak due to an internal defect in the end section of a power line. It is estimated that the leak was 120 l. The affected area was cleaned up and no environmental monitoring was required.
- Oil leakage resulting from the malpractice of a supplier in the maintenance of a transformer. Pending the soil characterisation, communication of results to the competent body and performing corresponding actions.

(4) An accident that was not registered at the time of publishing the report corresponding to 2013 has now been incorporated

TOTAL WATER WITHDRAWAL BY SOURCE [G4-EN8]

	2012	2013	2014
Head Office (m ³) ⁽¹⁾	10,947	10,983	9,177
Work centres ⁽²⁾ (m ³)	41,586	31,597	28,069

(1) Only the building 'La Moraleja' is taken into account.

(2) Data taken from 45 of a total of 63 work centres. Data for all work centres is not available due to the absence of meters and the breakdown of some devices. The data provided has a coverage of 91%, in terms of personnel.

Note: The water consumed comes from: the municipal mains (64.36%), wells (32.96%), tanks (2.4%) and cisterns for rainwater collection (0.28%). (In the Northern regional office and in some work centres cisterns are available for the collection of rainwater for sanitary use, fire prevention and irrigation. In general the wells do not have mechanisms to measure the water stored, so the actual % utilisation of rainwater is greater than that calculated according to available data). [G4-EN10]

WATER CONSUMPTION IN THE VALUE CHAIN

(m³)

	2012	2013	2014
	13,414,362	11,545,107	10,407,760

Water usage intensity in the value chain: 20 m³ /million euros in 2012, 24 m³ /million euros in 2013 and 22 m³/million euros in 2014.

The water usage intensity depends on the type and number of purchase orders that have been placed during the year; therefore, a strict comparison cannot be made between different fiscal years. Of all the activities, construction of facilities and the manufacturing of equipment have the most intensive water consumption. Of the study carried out, it can be deduced that 60% of the water consumption in the value chain is associated to 25 suppliers.