RED ELÉCTRICA
DE ESPAÑA

EMAS ENVIRONMENTAL STATEMENT 2017

May 2018

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1. WHO IS RED ELÉCTRICA

Red Eléctrica de España is the sole transmission agent and operator (TSO) of the Spanish electricity system.

As a key element of the electricity supply process, Red Eléctrica as System Operator manages the electricity system in real time and is responsible for keeping generation and electricity demand in Spain in constant balance in order to guarantee the continuity and security of the supply for all citizens 24 hours a day, 365 days a year.

As Transmission Operator, Red Eléctrica is also responsible for the transmission of high-voltage electricity from the power generating stations to the points of distribution to consumers. Furthermore, it is responsible for the development, expansion and maintenance of the transmission grid, as well as for managing the transmission and exchange of electrical energy between external systems through international interconnections.

The Company exercises this responsibility with transparency, neutrality, independence and economic efficiency with the goal of providing an electricity service of the highest quality for society as a whole.

We are therefore responsible for the technical management of the Spanish electricity system, owners of the Spanish high voltage electricity transmission grid and the only company in Spain specialising in the activity of electricity transmission[1].

Our facilities consist of electricity control systems that direct and supervise the operation of the system; 43,793 kilometres of high voltage transmission line circuit and 5,601 substation bays with a transformer capacity of 86,654 MVA.

Evolution of the facilities (*)		2015	2016	2017
Lines (km of circuit)	**Kilometres of circuit**	**42,989**	**43,646**	**43,793**
	400 kV	21,184	21,619	21,728
	220 kV and less	21,806	22,027	22,065
Substations	**Number of bays**	**5,428**	**5,491**	**5,601**
	400 kV	1,441	1,458	1,484
	220 kV and less	3,987	4,033	4,117
	Transformer capacity (MVA)	**84,544**	**85,444**	**86,654**

(*) Data corresponding to the last three years - revised and updated in 2017.

[1] *Clasificación Nacional de Actividad Económica – CNAE* (Standard Industrial Classification) 35.12: Electricity transmission.

2. ENVIRONMENTAL MANAGEMENT AND POLICY

❖ ENVIRONMENTAL POLICY (*)

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

The principles of our environmental policy are as follows:

- Apply the principles of **excellence** adopted by the Company and incorporate and promote best practices in the field of environmental management.
- Ensure **compliance with environmental legislation, regulations and laws** applicable to the activities they carry out and adopt those **voluntary commitments** regarding environmental matters which are considered to be of interest.
- Guide the Group towards **sustainable development**, seeking to maintain the adequate balance between respect for the environment, the promotion of progress, social well-being and economic interests, with the objective of creating value on an ongoing basis.
- Achieve **leadership** in environmental matters in all the companies of the Red Eléctrica Group within their scope of activity.
- Ensure **continuous improvement**, the **prevention of contamination** and the **principle of caution**, according to the objectives and capacities of the Red Eléctrica Group.
- Promote **research, development** and the use of new technologies and processes with the objective of preventing or minimising environmental impacts.
- Contribute to a **sustainable energy model**, with a greater presence of energies generated by clean and efficient technologies regarding electricity consumption.
- Develop and maintain a **transmission grid that is not only integrated into the landscape, but also into the socio-economic environment**.
- Drive the conservation of **biological diversity** through active collaboration on those initiatives which help reduce its loss.
- Adopt a clear commitment in the fight against **climate change**, backing energy efficiency and sustainable mobility as fundamental pillars.
- Develop and provide ongoing actions regarding **training, awareness and motivation** concerning environmental protection.
- Develop and maintain dialogue channels and means of **communication** to keep all interested parties informed about environmental related actions whilst promoting **collaboration frameworks** with stakeholder groups.

- Consider the environmental policies and requirements as one of the criteria in the selection, qualification and assessment of **suppliers**.

(*) First Edition (PC01 replacing Edition.4 of policy PG11) approved by the Management Committee in October 2014.

❖ ENVIRONMENTAL MANAGEMENT

Red Eléctrica carries out all its activities taking into consideration environmental protection in accordance with the principles set out in its environmental policy, among which are included the commitment to the prevention of contamination and the principle of caution. All activities are undertaken from a position of ethical commitment to society, integrating environmental protection into the business management with the aim of creating ongoing value.

The main environmental impacts of Red Eléctrica are those derived from the presence of facilities in the territory, therefore the Company works non-stop to make them compatible with the environment, considering their entire life cycle and paying particular attention to biodiversity conservation.

Furthermore, Red Eléctrica is committed to a sustainable energy model, hence undertaking a specific commitment with climate change and energy efficiency.

Red Eléctrica's commitment to the environment, which stems from the Company's senior management, establishes the environmental policy and implements the means for compliance with environmental requirements, being the Chairman of the Company who holds the maximum responsibility regarding the environment. This commitment not only covers the Company's own activities but also extends to its supply chain.

The involvement of all organisational units and the commitment of all those working in the Company are essential for the development of an adequate environmental management.

In order to provide technical support, there is a Sustainability Department and a Line Engineering and Environmental Department made up of professionals with varying backgrounds and experience who are environmental experts that actively support all the organisational units from the Head Office and the territories in which the facilities are located. The territorial areas are responsible for the onsite environmental control of each of the phases involved in the development of Red Eléctrica's facilities: project definition, construction or maintenance.

The firm and focused effort of Red Eléctrica to become a model company that is responsible, efficient and sustainable has been recognised by leading sustainability rating agencies, which has led to the Company being present in some of the key sustainability indexes as a result of their performance in this field, among the indexes of note are:

- **Dow Jones Sustainability Index**
- **FTSE 4 Good**
- **MSCI** (Morgan Stanley Capital International)

Among the awards and recognitions received by Red Eléctrica for their environmental management in 2017 the following are noteworthy:

- **CDP Leadership Index** (A list). The Company has been included for a second successive year as part of the group of leaders, for its efforts and actions to combat climate change.
- Maximum score in the **Dow Jones Sustainability Index** in the Electric Utilities sector.
- **Maximum score** in the Dow Jones Sustainability Index for the **environmental** dimension.
- **Gold Class** rating in The Sustainability Yearbook 2018 report published by RobecoSAM.
- **Good Practice of the Year Award** granted by the Renewables Grid Initiative (RGI), in the Environmental Protection category for the project: 'Innovative technique for the recovery of Posidonia Oceanica seagrass meadows'.
- **Mention regarding REE** in recognition of its involvement in the promotion of sustainable mobility: issued by the Sub-Directorate for Air Quality and Environment of the Ministry of Agriculture and Fisheries, Food and Environment during the European Mobility Week 2017.

More information at: http://www.ree.es/en/sustainability/commitment-to-sustainability/leadership-in-sustainability

❖ ENVIRONMENTAL MANAGEMENT SYSTEM

In order to carry out a continuous improvement of its environmental performance Red Eléctrica has a certified Environmental Management System in accordance with **UNE-EN ISO 14.001:2015** standard, certified since May 1999 and which, since October 2001, has been registered under the EU Eco-management and Audit Scheme (EMAS) with registration number **Nº ES-MD-000313** (*previously ES-SB-000013*).

The Environmental Management System is part of a Comprehensive Management System which covers the areas of Quality, Health & Safety, Corporate Responsibility and the Environment, which enables the Company to:

- Gear the processes to achieving objectives, increasing the satisfaction of clients and stakeholders.
- Increase the integration and reliability of operations and effectiveness at a personal and organisational level.
- Create a culture oriented to safety, excellence and efficiency.

This model therefore involves the integration of all those areas that are common in the different norms that must be complied with by the three management systems, namely:

- Management of internal norms
- Qualification of personnel
- Operational control
- Audits
- Control of non-compliance and corrective actions
- Training and Communication
- Risk management
- Emergency plans and response capability
- Supplier qualification

Specifically, the Environmental Management System comprises all the activities performed by the company 'Red Eléctrica', with special attention to those that generate an interaction with the environment. It is integrated across the board into the decision-making process and in the Company's activities, promoting a business model that takes into account the social, economic, ethical and environmental dimensions.

During all the activities carried out in the development and implementation phases of the transmission grid infrastructure (essentially, the **definition of the project, construction/modification and maintenance of the infrastructures**), we identify and evaluate the direct and indirect environmental aspects that can interact with the environment and that may generate some type of negative impact, in either normal or abnormal operating conditions and as a result of emergency situations. There is also an ongoing dialogue with stakeholders prior to defining the project and also during the drafting process.

In order to identify, evaluate and register the environmental aspects, and to be aware of the applicable legal requirements to be applied to each one, it is necessary to indicate that the system presents differences among its various phases:

In the specific case of the identification and evaluation of aspects, the following are outlined:

- ✓ **Definition of projects (new facilities and modifications)**: the effects or impacts and by extension, the aspects associated to the same, for each one of the new facility projects, are identified in the corresponding environmental impact study and the appropriate environmental impact statement or resolution. Also set out are the preventive and corrective measures which shall be adopted in the construction phase of each facility.

- ✓ **Construction or modification of facilities:** for each construction project of new lines, new substations or enlargements with environmental relevance, the associated environmental aspects of the same are identified and evaluated. The results of the evaluation are incorporated into the Environmental Monitoring Programme (EMP), and/or the environmental specifications of each project, a procedure that ensures they are properly monitored and that they are in compliance with the preventive and corrective measures defined in the design of the projects.

  The environmental criteria established for the evaluation of aspects, under both normal and abnormal conditions are: magnitude and intensity.

- ✓ **Maintenance of infrastructure**: the environmental aspects detected during the maintenance activity are identified and evaluated periodically, under both normal and abnormal operating conditions and at different levels, depending on the status of the aspect with respect to a higher level of evaluation (maintenance phase), or at lower levels (regional centre and/or logistical building/centre). The evaluation of environmental aspects is performed annually, after year end.

  For the evaluation of maintenance aspects, the following general environmental criteria have been established:

  - o Normal and abnormal conditions: Magnitude, nature/sensitivity and prevention.
  - o Abnormal conditions: Probability of occurrence and of consequence.

Similarly, in the case of legal, regulatory and other requirements, the Company undertakes, as part of the Environmental Policy of the Group, the commitment on compliance with the environmental legislation, regulation and norms applicable to the activities it carries out.

In order to identify and assess the legal environmental requirements that apply to the different stages of development and implementation of transmission grid infrastructure within its respective spheres (European, state, regional and local), the following procedures are carried out:

- ✓ **Definition of Projects:** those facilities that have an 'Environmental Impact Study' incorporate the applicable environmental legislation during the design phase of the project and in any case, all applicable requirements are registered through an IT application.

- ✓ **Construction or modification of facilities:** during the construction phase, the applicable environmental requirements (internal and external) are set out in the environmental specifications of each project and/or in the construction Environmental Monitoring Programme (EMP), if appropriate. In order to assure and reinforce the process, it is established that prior to the start of the execution of a construction project, an initial assessment will be carried out regarding the legal environmental compliance with all the applicable legal requisites (including those at the municipal level), in order to detect possible shortcomings prior to the execution. Subsequently, an assessment is performed one year after the start of the project, during each environmental supervision visit, and once it is finished.

- ✓ **Maintenance of infrastructure:** during the maintenance of infrastructure/facilities, apart from the applicable regulations, environmental requirements are identified in the EMP for the operation phase (in facilities with Environmental Impact Statement - EIS) and in the transfer document for maintenance. All facilities have a transfer document, which includes all the requirements, and internal and external environmental commitments (among them, the ones marked in the EIS for the operation phase). In addition, the infrastructure/buildings shall meet the requirements set out in the authorisations for felling and pruning, removing nests, wells, septic tanks, waste generation and fuel tanks.

Once the results of the legal compliance reports are available, solutions are analysed and established for those cases where deviations occur with respect to what was foreseen. Depending on the case, tasks and actions will be established within the annual environmental plan, or corrective actions will be set that allow the activities to be adapted to the legal and regulatory requirements set.

In addition, activities are carried out regarding the identification, registration, updating, compliance assessment and reporting of requirements related to any agreements, contracts and voluntary engagements of an environmental nature undertaken by Red Eléctrica.

One of the fundamental elements of the environmental management system is the **annual environmental plan;** a comprehensive plan that is cross-cutting throughout the entire Company. Chapter 7 details additional information about this plan.

- *Changes in the documentation of the environmental management system 2017*

During 2017 many of the environmental management system documents were modified in order to keep them updated on an ongoing basis and introduce improvements in the management thereof. The changes are indicated in the table below.

Code	Title	Edition	Edition date	Approval date	Cancels
MANSIG	Comprehensive integrated manual on the Management Systems regarding Quality, Corporate Responsibility and the Environment	1	23.03.17	25.04.17	Environmental Management System Manual GA01
EA004(*)	Environmental specifications of work conducted on substations, lines and buildings	4	07.02.17	10.02.17	Ed 3
IA020	Environmental assessment of investment projects	1	17.04.17	11.05.17	AA010
IA001	Basic rules of action, classification, assessment and measures for the prevention of incidents that may have environmental consequences.	5	17.05.17	23.05.17	Ed 4

(*) *Included after being approved at the start of 2017*

No document regarding the environmental management system regulations has been updated or generated by other organisational units.

The following documentation regarding the environmental management system has been cancelled or annulled:

Code	Title	Edition	Edition date	Approval date	Cancels
GA01	Review of the Environmental Management System and establishment of environmental goals and targets	5	31.10.07	A-16.01.08	Integrated manual
IA012	Monitoring and control of natural resources	5	29.10.13	A-18.12.13	Monitoring of resources through different methodologies by different Organisational Units
AA010	Guide for the environmental assessment of projects	1	29.11.2012	A-20.12.12	IA020
AA007	Methodological guide for defining the scope and content of documents associated with the EIA procedure	1	31.10.07	A-13.02.08	IA020
Manual SIGMA	Environmental Management System Manual	3	07.11.07	A-07.11.07	Integrated manual

There have been no changes in the Addendums of the procedures corresponding to the environmental management system.

3. SCOPE OF THE EMAS REGISTER

Red Eléctrica de España, S.A.U has an environmental management system that complies with the requirements of Regulation (EC) No. 1221/2009 ('EMAS III') Nº ES-MD-000313 whose scope covers the **entirety of the Company's activities**:

- *The engineering, construction and maintenance of high voltage lines and electricity substations, and of telecommunication systems*
- *The operation of electricity systems*
- *The physical security of facilities*
- *Technological research, development and innovation projects*
- *The consulting and professional services in the activities described above within the national and international scope*
- *The provision of stakeholder attention and claims management services for all Red Eléctrica stakeholders via the corporate stakeholder attention centre ('Digame' service)*

And that are performed at:

- ✓ **Moraleja Head Office**: Paseo Conde de los Gaitanes, 177. 28109 - Alcobendas (MADRID)
- ✓ **Albatros Head Office**: C/ Anabel Segura 11, 28109 - Alcobendas (MADRID).
- ✓ **CECORE**: Parque Technological de Madrid, C/Isaac Newton, 13 Edificio REE. 28760 –Tres Cantos (MADRID).
- ✓ **System Operation Department of the Balearic Islands**: Camino Son Fangos, 100 Edificio A - 2ª planta. 07007 – Palma de Mallorca (BALERIC ISLANDS)
- ✓ **System Operation Department of the Canary Islands** (Main Office in Las Palmas de Gran Canaria) Calle Juan de Quesada, 9. 35001 – Las Palmas de Gran Canaria (LAS PALMAS)
- ✓ **System Operation Department of the Canary Islands** (Main Office in Tenerife): Nuestra Señora de la Ternura (Los Majuelos). 38108 – San Cristobal de la Laguna (S.C. DE TENERIFE)
- ✓ **Western Regional Office:** Calle Zalaeta, S/N Edf. REE. 15002 - La Coruña (A CORUÑA)
- ✓ **Northern Regional Office:** Av de Enekuri, 60 Edf. REE. 48014 - Bilbao (VIZCAYA)
- ✓ **North-western Regional Office:** Av Paralelo, 55 Edf. REE. 08004 – BARCELONA
- ✓ **Southern Regional Offices:** C/Inca Garcilaso, 1 Edf. REE. 41092 – Isla de la Cartuja (SEVILLE)
- ✓ **Eastern Regional Offices:** Avenida de Aragón, 30 Planta 14. 46021 – VALENCIA
- ✓ **Eastern Regional Transmission Office**: C/Puebla Larga, 18, 46183 – La Eliana-(VALENCIA)
- ✓ **North-western Regional Transmission Centre:** Carretera N-601, Madrid-Valladolid-León, KM 218. 47630 - La Mudarra (VALLADOLID)

- ✓ **Northern Regional Transmission Centre:** Carretera Zaragoza-Sariñera, Km 9,2. 50162 - Villamayor (ZARAGOZA).
- ✓ **North-eastern Regional Transmission Centre:** Carretera antigua Castellbisbal-Rubí, S/N Polígono Industrial Can Pi de Vilaroc. 08191 - Rubí (BARCELONA).
- ✓ **Central Regional Transmission Centre:** Carretera N-I Madrid-Burgos, KM 20,7. 28700 – San Sebastián de los Reyes (MADRID).
- ✓ **Southern Regional Transmission Centre**: Carretera Sevilla-Utrera, KM 17. 41500 – Alcalá de Guadaira (SEVILLA).
- ✓ **Balearic Islands Regional Transmission Centre:** (Polígono industrial MARRATXI) C/ Gerrers esquina Siurells, 2ª Planta. Marratxi (PALMA DE MALLORCA).
- ✓ **Canary Islands Regional Transmission Centre: (Polígono industrial MAYORAZGO)** C/ Laura Grötte de la Puerta. Polígono industrial Mayorazgo- (SANTA CRUZ DE TENERIFE).

The following infrastructure or line sections are excluded from the scope of the EMAS register specifically in those areas where they are located, or through which they cross (municipalities indicated):

Facility	Municipality
Double circuit: lines: 220 kV Las Arroyadas-Tordesillas line and the 220 kV Tordesillas-Otero line	Tordesillas (Valladolid)
220 kV San Esteban-Trives line	Teixeria (Ourense)
400 kV line linked to the 400 kV Segovia- Galapagar link	Collado Villalba, Alpedrete, Collado Mediano y Guadarrama (Madrid)

4. RED ELÉCTRICA'S ACTIVITIES AND THE ENVIRONMENT

Red Eléctrica's facilities are located nationwide due to the fact that the aim of the electricity transmission grid is to link the points of energy generation to the electricity distribution points, so it can be provided to the final consumer. The presence of electricity infrastructure, in no case, represents a significant alteration in the way of life of the communities affected.

The interaction of the electricity facilities with the environment is mainly linked to their presence in the territory and to the works associated with their construction and maintenance. Therefore, it can be understood that the main environmental impacts are associated with the territory and landscape where the substations are located, and which are crossed by electricity lines.

The main measure to reduce and even avoid the undesired effects of the facilities is the selection of their location. For this reason, it is essential to conduct a detailed study of the territory, and work in coordination with the public administration and key stakeholders in the definition of the jointly-agreed siting (location) of substations and regarding the routes the electricity lines will follow, as their adequate siting is crucial to reduce and even avoid undesired impacts on the environment and on the local communities. In addition, defining and establishing the appropriate preventive and corrective measures before undertaking the various tasks (whether it be the construction of new facilities or the modification of existing ones) is essential to minimise, to the highest degree possible, the potential impacts that the Company's activities may have on the territory.

The best tool to carry out this process is the Environmental Impact Assessment procedure, the majority of the Company' projects are bound by law to carry out this procedure, which defines the alternatives, which being technically and economically feasible, have the least social and environmental impact.

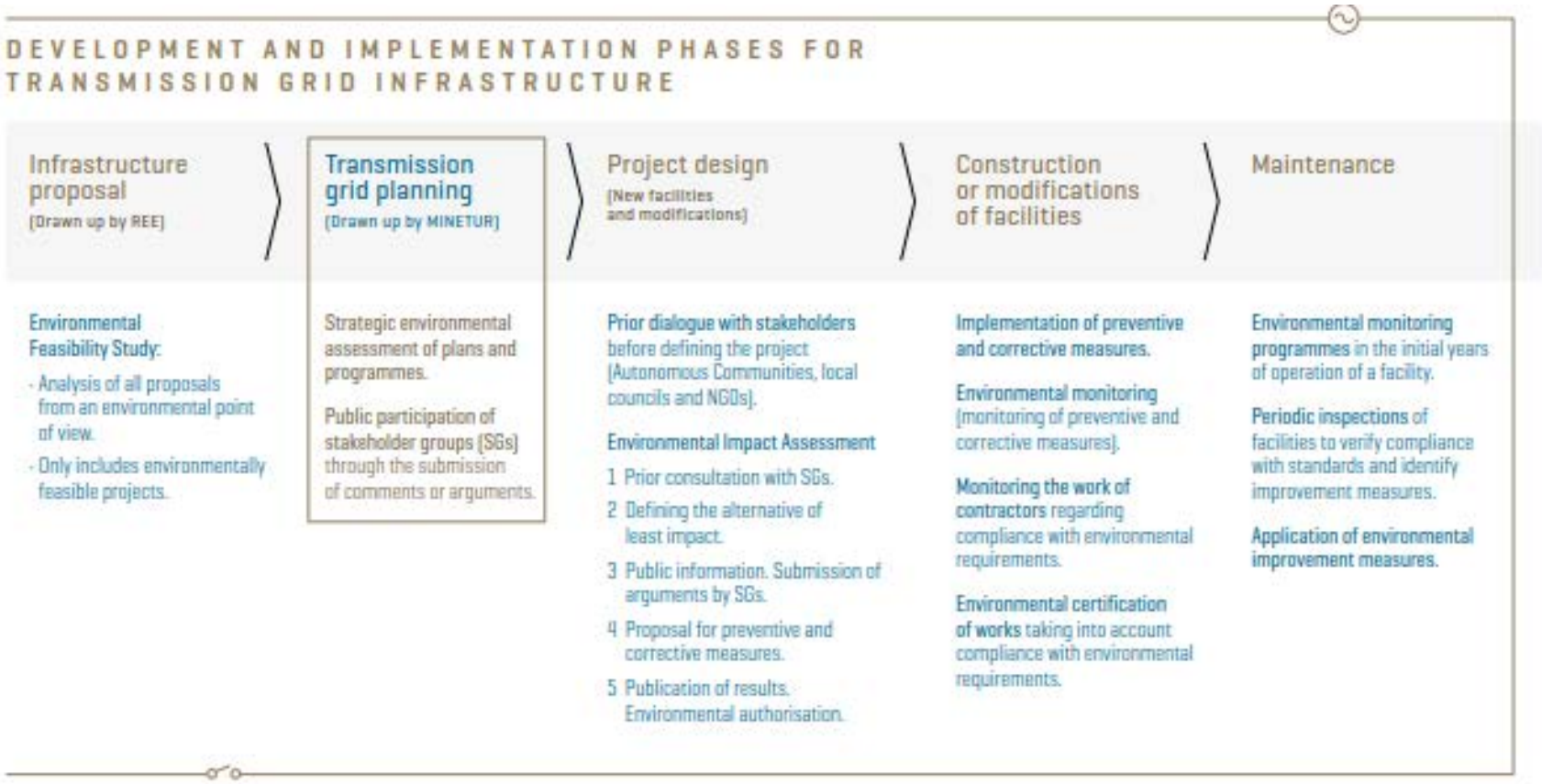
When the law does not require any regulated procedure, Red Eléctrica performs an assessment of an environmental nature which allows preventive and corrective measures to be defined and applied, and voluntary communication with the competent authority is established.

The environmental monitoring of construction works, the Environmental Monitoring Programmes (EMPs) and the periodic revisions and systematic audits of in-service facilities (in their maintenance stage), ensure that the defined measures are implemented and controlled during construction work, evaluating their effectiveness and verifying the compliance with environmental standards thus allowing necessary improvement actions to be identified.

Among the preventive and corrective measures applied noteworthy are those aimed at the protection of habitats and species, and those aimed at reducing potential impacts on the socioeconomic environment. In addition, currently one of the most relevant issues in relation to the integration of facilities into the environment is to improve their acceptance by society.

The diagram on the following page schematically illustrates the main environmental criteria applied in the key transmission grid development phases:

Environmental criteria applied in the development and implementation phases for transmission grid infrastructure



Taking the previously shown diagram regarding the environmental criteria applied as a reference, the following are relevant events that occurred during 2017:

1.- TRANSMISSION GRID PLANNING

The current infrastructure planning (*Energy Planning, 2015-2020 Electricity Transmission Grid Planning*), approved by the Council of Ministers in October 2015, covers a period of six years and is binding in nature for Red Eléctrica. This planning includes the projects for new transmission grid infrastructure that is necessary to guarantee the electricity supply nationwide. In the analyses conducted, environmental feasibility was taken into account in addition to physical and technological viability.

As a result of the obligations arising from the Environmental Report of the new 2015-2020 Energy Planning and, prior to that, from the 2008-2016 Planning of the electricity and gas sectors, the Company has been collaborating since 2009 with the Ministry of Energy, Tourism and Digital Agenda on the drafting of the annual environmental monitoring reports consisting basically of the calculation of a series of performance indicators defined in said Environmental Report.

The indicators established during 2017, like those of 2016, are different in nature to those carried out for the previous Plan, as they correspond to the 2015-2020 Strategic Environmental Planning currently in force.

2.- PROJECT DEFINITION

With the approval of the 2015-2020 Electricity Transmission Grid Planning, 2017 has been a year marked by the large number of permitting processes which have required a follow-up process and whose administrative processing began in 2016 (45).

Environmental permitting processes were initiated for **7 projects (investment projects + maintenance projects)**:

	Permitting process initiated		
	2015	**2016**	**2017**
Initial document	1	7	0
Environmental Document	16	28	5
Environmental Impact Study	5	10	2
Total initiated	**22**	**45**	**7**

The evolution of the conclusion of the environmental permitting process of projects for new facilities in the last three years is as follows:

	Completed permitting process		
	2015	2016	2017
Positive Environmental Impact Statement	5	2	3
Negative Environmental Impact Statement	1	0	0
Environmental Resolution	11	11	5
Total	**17**	**13**	**8**

Environmental authorisation was obtained for **8 projects**, all of which received a positive environmental impact statement. None of the projects have experienced delays in their processing.

At year end, **74 projects are at different stages of the environmental permitting process.**

Regarding **maintenance tasks**, during 2017 a comprehensive analysis was conducted of the environmental permitting requirements associated to the overall maintenance actions scheduled for 2018 *(Renovation and Improvement Projects (RIP), replacement of grounding cable for fibre optic (FO) cable, Asset Management (AM) and third-party modifications).*

Once said requirements are analysed (for projects in which initially a regulated environmental permitting process is not required), a letter of consultation is prepared and registered with the corresponding public administration offices accompanied by documents and reports that are required in each case. Noteworthy is that as a result of the aforementioned, in 2017, **17** replies were obtained in the way of authorisation and/or exemption from the environmental permitting process. This has guaranteed, from an environmental point of view, that the planned maintenance activities have received clearance prior to them being carried out.

	2015(*)	2016(*)	2017(*)
Renovation and Improvement Projects (RIP)	27	20	4
Fibre Optic cable	9	7	7
Third party modifications	1	3	1
Asset Management	38	48	5(**)
Total	**75**	**78**	**17**

(*) Data regarding letters replied to from the archaeological point of view or various responses from different agencies concerning the same facility is not included.
(**) REPEX (Replacement Expenditures) – MAR (Grid Asset Improvement)

The relationship of projects can be found in the Annex: *Environmental Actions 2017.*

3.- CONSTRUCTION OR MODIFICATION OF FACILITIES

Red Eléctrica performs environmental monitoring on the construction of new electricity lines and substations as well as renovations, upgrading and enlargements of those facilities already in service. This monitoring consists mainly of verifying that the preventive and corrective measures defined in the project are implemented, verifying their effectiveness and defining new measures, if deemed necessary, based on the results obtained.

Similarly, there has been a continued increase in the dedication of resources to the tasks prior to the commencement of works (e.g. inventories of trees felled) and the subsequent tasks included in the Environmental Monitoring Programmes (EMP) to be carried out during the start of the operating phase of the facility, primarily due to the increased requirements included in the environmental authorisations.

The following infrastructure was brought into service in 2017: **8 substations and 85,165 km of line.** In addition, 8,298 km of line, classified as 'turnkey' projects, were brought into service as a result of contracts with electric utility companies.

The following infrastructure was under construction during 2017; **44 substations and 333.16 km of line**.

With the aim of ensuring the suitable fulfilment of the environmental requirements and verifying the effectiveness of the implemented preventive and corrective measures, **environmental monitoring** was carried out throughout the year on the entirety of new infrastructure underway (113), in other words, **100% of the construction works in substations and 91% of the works on lines** (this percentage also considers modification works of existing lines arising from RIP (Renovation & Improvement Projects) and REPEX (Replacement Expenses)).

The **permanent environmental supervision**, aimed at intensifying the control and monitoring, covered **87.85%** of total works performed.

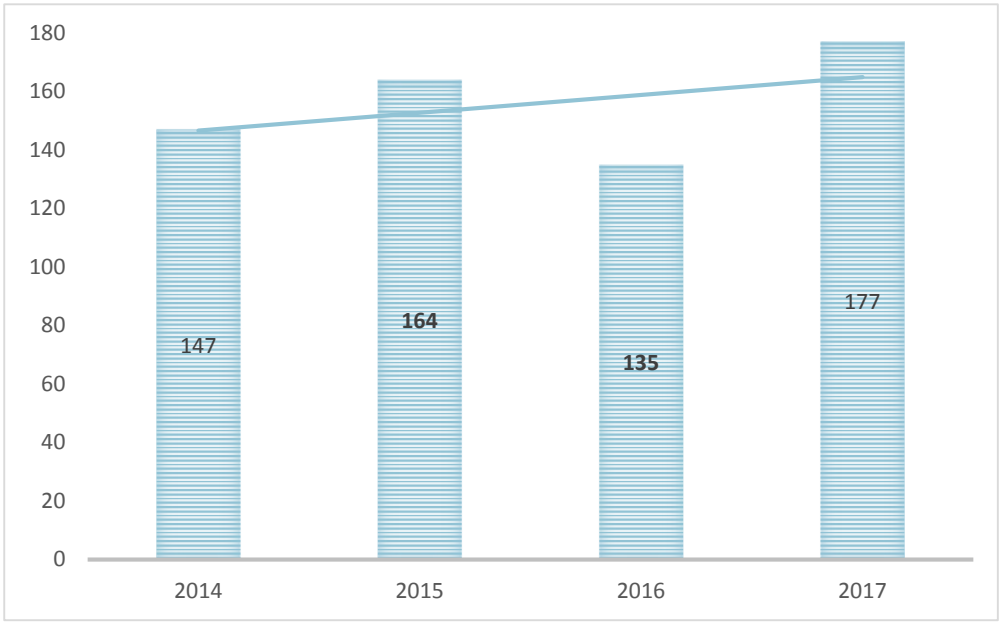
Environmental monitoring (new infrastructure + RIP/REPEX)				
		2015	**2016**	**2017(*)**
SUBSTATIONS	**No. of works supervised**	29	27	44
	Permanent environmental supervision	20	26	41
	Permanent environmental supervision %	68.97	96.30	**93.18**
LINES	**Total km of works supervised**	1,265.67	757.499	724.29
	Km of line with permanent environmental supervision	963.08	677.879	588.88
	Permanent environmental supervision %	76.09	89.49	**81.75**

(*): Included in the calculation is the environmental monitoring investment together with that of RIP (Renovation & Improvement Projects) and REPEX (Replacement Expenses).
(**): Monitoring carried out at a higher degree than the one set as a minimum in Environmental Instruction IA015

The most notable preventive, corrective and compensatory measures carried out in this phase during 2017 can be consulted in the Annex: *Environmental Actions 2017*.

4.- MAINTENANCE OF FACILITIES

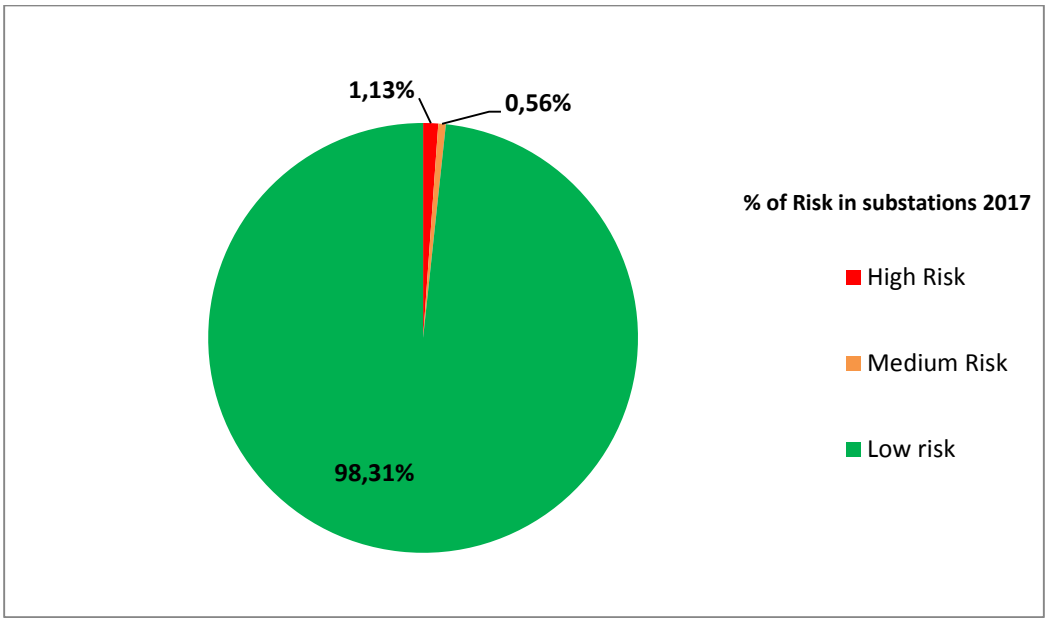
During 2017, environmental experts specialised in maintenance carried out a total of **177 environmental inspections** with 176 corresponding to substations. Of the total substations in service in 2017 (665), 98.04% (652) have been visited at least once since 2008.



**The blue line reflects the overall trend*

In the last 6 years (2012-2017) 576 facilities have been visited, representing 87.9% of the total.

In terms of risk, only 1.13 of the inspections registered a high level of risk. This fact is mainly due to the detection of incidents in the supervised installation of the Cacicedo substation in the Northern Regional Area.



The results of these supervisions allow environmental improvement actions to be identified and considered in the planning of actions in both the renovation and improvement plans as well as in the maintenance programmes.

In addition, the environmental risk of the work to be carried out during the year is analysed and the environmental supervision of the subsequent works related to the maintenance of the facilities is carried out:

- Works and adaptation to power transformers.
- Construction, adaptation and/or remodelling of oil tanks and collection pits.
- Remodelling or comprehensive remodelling of buildings in which earthworks/civil works are carried out.
- Characterisation and/or cleaning of soils (excluding incidents).
- Silvicultural operations on the strips of land around the perimeter of substations.
- Work in which asbestos waste may be generated.
- Work where SF_6 gas is handled by an external company in gas insulated substations.
- Work associated with the repair of damages caused by accidents that have environmental consequences (excluding incidents).

During 2017, a total of **119 environmental supervision actions of maintenance work** were carried out, consolidating the implementation of environmental management in the activities that have a significant environmental impact on maintenance activities.

5. ENVIRONMENTAL ASPECTS

❖ Environmental aspects in the definition of projects for facilities

The environmental aspects for each of the projects for new facilities are identified in the corresponding environmental impact study and the appropriate environmental impact statement or resolution, which also sets out the preventive and corrective measures that shall be taken in the construction phase of each facility.

❖ Environmental aspects in the construction of facilities

The construction activities for new lines and substations that are susceptible to generating environmental aspects are:

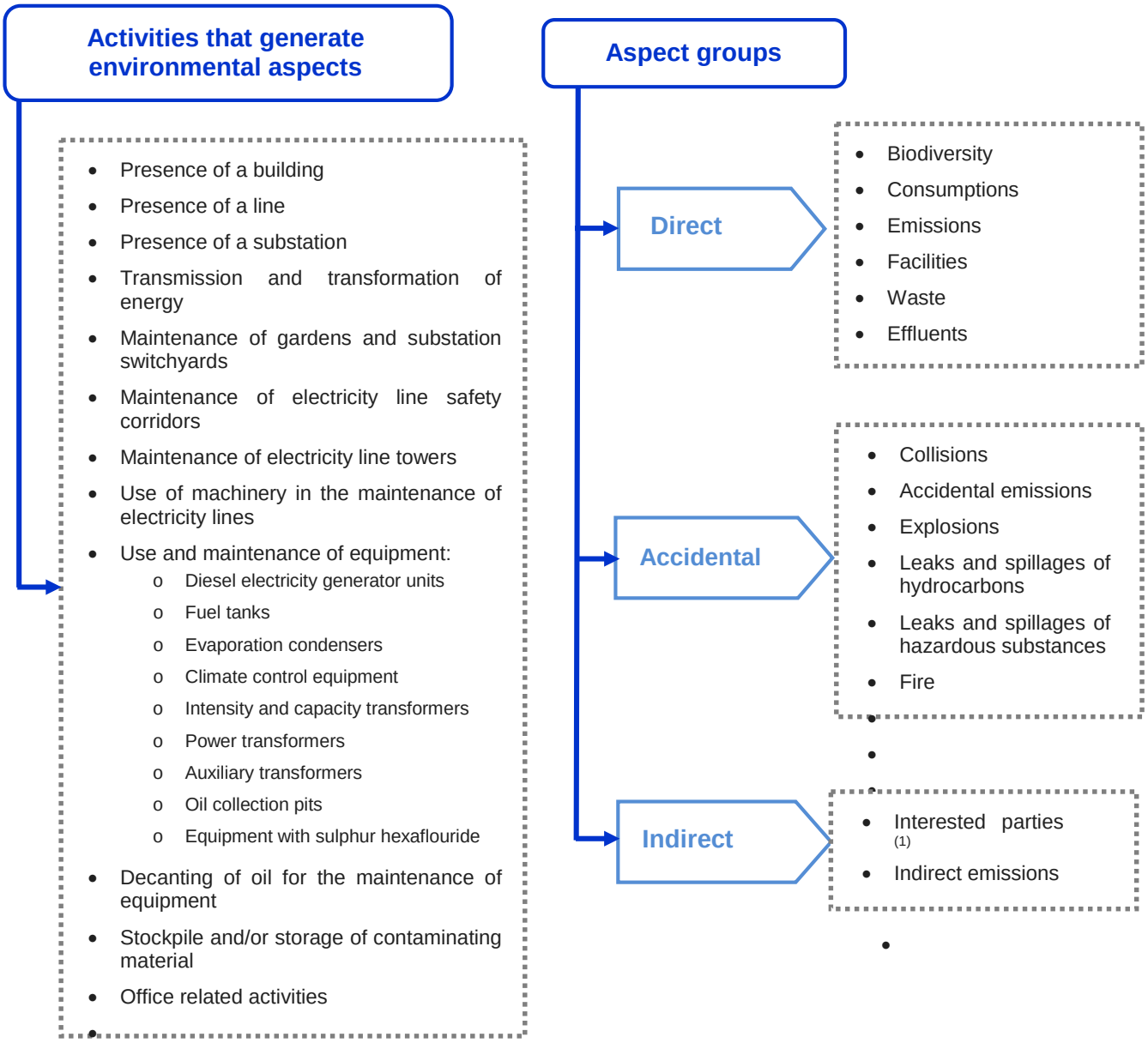
Activities that generate environmental aspects
Storage and transfer of oils and fuels
Storage and management of waste
Work sites (substations)
Land compacting
Clearing, pruning and felling
Excavation and landfill works
Concreting and cleaning of containers used
Hanging/stringing of conductors and grounding cables (lines)
Equipment assembly (substations)
Use of machinery

Although the environmental aspects associated to each of the works are specifically evaluated, those that generally have a significant impact on the construction of new lines and substations are detailed in the following table:

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

❖ Environmental aspects of facilities in service

The activities carried out in facilities in service that can generate an environmental aspect are the following:



(1) Collaborations carried out with interested parties (organisations and institutions) on matters linked to the environmental aspects of Red Eléctrica.

The evaluation of aspects is conducted annually. Those aspects shown in the following table were identified as **significant** in the 2017 assessment:

Aspect	Relevant evaluation	Environmental aspect susceptible to impact	Impact	Observations
Biodiversity				
Clearing, pruning and felling	All Regional Areas	Biological	Potential impact on species	40% or more of the actions are carried out in protected areas, forested areas or areas of high fire risk. For the evaluation, the most restrictive criteria have been used due to the lack of detailed information.
Consumption				
Water consumption	Southern Regional, Northern Regional and Central Regional Offices, CECORE, Tres Cantos	Physical	Reduction of natural resources	These are significant due to the fact that consumption has increased with regard to the average value of last year.
Electricity consumption	Canary Islands electricity system: Gran Canaria and the Southern Regional Offices	Physical	Reduction of natural resources	These are significant due to the fact that consumption has increased with regard to the average value of 2016. Consumption is evaluated with respect to consumption obtained in 2016 to which consumption of new centres has been incorporated (added in 2017).
Hazardous waste				
Equipment contaminated with oil without PCBs	Southern Regional Area	Physical	Potential contamination of ground and water due to storage or waste	The amount of hazardous waste has been significant and has exceeded 5,000 kg/year on average per generation centre in each Regional area and those that, with an average production of between 500-5,000 kg/year whose final destination is controlled disposal.
Soil contaminated with hydrocarbons (Direct)	Northern Regional Area North-Western Regional Area North-Eastern Regional Area			
Accidental aspects				
Birdlife collisions	Southern Regional and North-Eastern Regional Area	Biological	Potential impact on species	For the evaluation, the most restrictive criteria have been used due to the lack of data regarding its monitoring.
Leaks or spillages from power transformers	Northern Regional Area and the North-Western Regional Area	Physical	Potential contamination of the atmosphere	Noteworthy are the leaks related to the leakage of a shunt reactor from the Aragón substation.
Leaks or spillages from the fuel tank of diesel generator units	North-Eastern Regional Area	Physical	Potential contamination of ground and water	Consequence of the leak in the diesel generator unit located in the Santa Llogaia substation.

NOTE: The paper consumption aspect in 2017 could not be evaluated due to the lack of reliable data about the internal consumption of paper not dedicated to publications.

6. ENVIRONMENTAL PERFORMANCE 2017

To ensure the correct operation of the transmission grid, the facilities require permanent ongoing maintenance, an appropriate renovation as well as the relevant repairs in the case of failure, and these activities must be compatible with the environment in which the facilities are located. It is therefore necessary to be aware of both the existing natural values as well as those elements of the activity that could impede the Company from being able to act in the most respectful way possible.

Similarly, in its role as transmission agent and electricity system operator, the Company focuses its efforts on developing a more sustainable energy model, contributing to reaching the European 20-20-20 targets, through the integration of renewable energies (developing the transmission grid necessary for their evacuation, and facilitating their integration into the system), and the activities to increase the energy efficiency of the electricity system. In addition, Red Eléctrica has undertaken to work on reducing its own emissions of greenhouse gases.

The way in which Red Eléctrica carried out its activities regarding the environment in 2017 is included within the set of strategies that allow the environmental variable to be integrated internally in all the development phases of transmission grid facilities, and therefore in all the works performed by the Company that additionally contemplate both raising the awareness of stakeholders and encouraging their participation.

Throughout this section, Red Eléctrica's environmental performance and behaviour during 2017 regarding the Company's overall activities is set out as per each of the following environmental aspects:

- Climate change and energy efficiency
- Biodiversity
- Saving of resources: Water and paper
- Socio-economic environment
- Waste
- Ground/Soil
- Stakeholder groups
- Innovation

6.1 Climate Change and Energy Efficiency

In order to combat climate change, the transition to an energy model based on the electrification of the economy, the decarbonisation of the electricity sector and the increase of energy efficiency is essential.

Red Eléctrica, as the transmission agent and operator of the Spanish electricity system, is a key player in the transition to a more sustainable energy model, whose key elements must be the electrification of the economy, the maximum integration of renewables in the energy mix and efficiency, while always guaranteeing security of supply. Aware of its important role and the need for companies to have a clear position on climate change, Red Eléctrica has expressed its voluntary commitment in the fight against climate change.

Therefore, although Red Eléctrica is not subject to the regulation that requires reporting and deducting (or in its case, offsetting) emissions associated with its activities, in 2011 it decided to formalise its commitment to the fight against climate change by approving a specific strategy, which was reviewed and approved by the Chairman in May 2014. The latest revision of the strategy was carried out in 2017, changing its name to 'Climate Change Commitment'. This commitment is materialised in a Climate Change Action Plan, whose latest version was validated in 2017, mainly to align the Company's objectives with the commitments of the Paris Agreement and the European targets for 2020 and 2030, as well as the main measures to be carried out to achieve them.

Additionally, Red Eléctrica as a member of the Spanish Green Growth Group, signed the Barcelona Declaration in May 2015. The association seeks to promote public-private collaboration, in order to progress together in the de-carbonisation of the economy, by working on aspects related to mitigating actions and the adaptation to climate change and to the circular economy.

Since 2011, Red Eléctrica has annually participated in the Carbon Disclosure Project (CDP) and discloses its responses to society. The Company has established as an objective, the progressive improvement of its score. In 2017, (corresponding to fiscal year 2016, the Company was included for second consecutive year in the CDP Leadership Index (A list) in recognition for its efforts and actions to combat climate change.

The climate change commitment is linked to a climate change action plan in which the objectives to be achieved in this field and the measures to be taken to realise their achievement are established. The plan is divided into four main courses of action: contribution to a sustainable energy model, reduction of the carbon footprint, stakeholder involvement and adaptation to climate change.

The plan includes not only the actions related to its activity as transmission agent and operator of the electricity system, but also actions related to reducing its carbon footprint.

In relation to Red Eléctrica's business, there are various activities that are particularly relevant in the fight against climate change and the achievement of European climate targets:

- Development of facilities that help facilitate the electrification of the economy and that will contribute to reducing emissions from the electricity system as a whole, such as electricity interconnections and the transmission facilities necessary for the evacuation of renewable energy and for feeding the rail transport network.

- Integration of renewable energy into the electricity system by optimising system operation and the operations of CECRE (Control Centre of Renewable Energies), the improvement of generation prediction tools, participation in regulatory proposals and the integration of energy storage systems, and participation in different promotional projects, making it possible to integrate the maximum amount of renewable energy under safe conditions (in 2017 the coverage of the peninsular demand by renewable energy was 33.8%).

- Activities geared towards contributing to the efficiency of the electricity system by improving knowledge on electricity demand and the development of demand-side management measures (some of the projects in this area are included in section 6.1.3 on energy efficiency).

- Prepare the operation of the system for the presence and efficient integration of the electric vehicle

- Develop measures and studies to reduce losses in the transmission grid and increase its efficiency.

In connection with its carbon footprint, Red Eléctrica works on quantifying its emissions (GHG Inventory) and has established different actions that are described throughout this section.

During 2017, the revision of the existing reduction targets has been carried out to align them with the commitment made in Paris by governments to limit the increase in temperature to 2 degrees. The general targets have been redefined using the criteria of the Science Based Targets Initiative (SBTi):

- **2020:** 10% reduction of total emissions from Scope 1 and 2 per MWh transported compared to 2015.
- **2030**: Reduction of 60% of total emissions of Scope 1 and 2 per MWh transported compared to 2015.

6.1.1 CO2 emissions inventory

Red Eléctrica drafts its emissions inventory based on the methodology of the GHG Protocol. Since 2013, the inventory has been submitted to independent review in accordance with ISAE 3410.Since 2015, Red Eléctrica has registered its emissions inventory in the Carbon Footprint Registry, compensation and carbon dioxide absorption projects of the Spanish Office of Climate Change (Ministry of Agriculture and Fisheries, Food, and Environment).

Red Eléctrica works constantly to improve the calculation of the emissions associated with its activities. Thus, since 2015, the methodology for calculating the carbon footprint associated with the life cycle of the different electricity facilities is being developed and this has already been completed for the overhead lines and underground cables. The designed tool allows the footprint of the aforementioned facilities to be calculated using the project data and subsequently adjusted with the data collated during its construction.

In addition, during 2017 the review and adjustment of the methodology for the calculation of indirect emissions (Scope 3) has been conducted, reviewing the application of each of the categories indicated in the GHG Protocol guide for the calculation of emissions associated with the value chain and defining the criteria for its calculation.

The inventory of greenhouse gas emissions of Red Eléctrica in the last three years has been as follows:

Greenhouse gas emissions (t CO_2 equivalent) (*)	2015	2016	2017
SF_6 (1)	31,651	28,770	26,224
Air conditioning	840	610	709
Fleet vehicles	2,124	1,898	1,556
Diesel power generator units	182	222	275
Total direct emissions (SCOPE 1)	34,797	31,500	**28,764**
Emissions associated with electricity consumption (2)	5,440	1,664	946
Emissions derived from losses in transmission (3)	911,310	847,129	956,021
Total indirect emissions (SCOPE 2)	916,750	848,793	**956,967**
Totals (SCOPE 1+2)	951,547	880,293	**985,731**

(*) The calculation of emissions is performed from an operational control perspective. The information on the inventory scope and method is available on the REE website http://www.ree.es/en/sustainability/sustainable-energy/energy-and-climate-change/our-carbon-footprint*. The inventory was submitted to independent review in accordance with ISAE 3410.*

(1) Taking GWP to 100 years: 22,800 (Source IPCC, Intergovernmental Panel on Climate Change: 4th assessment report).

(2) The emissions are calculated under the 'market based' approach, applying the emission factors associated with the market agents/trader that supply the electricity).

(3) The emissions associated with transmission grid losses, in the same way as for the emissions associated with the consumption of electricity, do not occur during REE's activities as they take place at the different power generation points. For the calculation of these emissions, the emission factors corresponding to each system (peninsular, Balearic Islands or Canary Islands) calculated by REE are used from the annual generation balances. The increase in these emissions has been considerable in 2017, mainly due to the increase in the emission factor of the peninsular system (emission factor in t CO_2/Mwh: 0.214 in 2016 and 0.258 in 2017, which reflects the decrease in hydroelectric generation (associated to the scarce availability of hydro resources due to weather conditions), which has been replaced by generation from non-renewable and more carbon-intensive sources).

***NOTE**: Red Eléctrica has set 2015 as the base year to establish its reduction objectives. The emissions of the base year have been recalculated according to the current criteria: the emissions of fleet vehicles include the emissions of management vehicles and shared leasing.*

(NOTE… continued) In the case of emissions associated with the consumption of electricity, these are recalculated under the 'market based' approach, which was already applied to the 2016 inventory calculation. On the other hand, the emissions related to the electricity transmission losses of island systems (Balearic Islands and Canary Islands). This update also affects the 2016 data. During 2017 the methodology revision and the widening of the scope of the categories considered in the calculation of Scope 3 emissions were carried out. The emissions corresponding to 2015 and 2016 have been recalculated according to the new criteria.

Indirect emissions (SCOPE 3) (t CO_2 equivalent)	2015	2016	2017
Purchased goods and services (1)	304,596	249,584	295,787
Capital goods	312,797	195,804	111,619
Energy generation (not included in Scope 1 and 2)	1,092	674	517
Waste	96	91	134
Transportation and distribution (2)	1,416	1,594	2,288
Business travel (3)	1,421	1,399	1,487
Employee commuting	2,894	2,926	3,918
Leased assets	117	82	0.00
Total emissions Scope 3	624,429	452,154	**415,749**

(1) For the correct interpretation of the data, it is also interesting to consider the carbon intensity of the goods and services purchased (2015: 461 t CO_2 eq/million euros, 2016: 514 t CO_2 eq/million euros, 2017: 504 t CO_2 eq/million euros). This intensity depends on the type of purchase orders placed in the year and for this reason it is very difficult to establish comparisons between the different fiscal periods.
(2) Corresponds to the emissions associated with internal logistics (which were already calculated until 2016) and other emissions for the transport of material.
(3) Includes travel made by train, plane, own vehicle, rental vehicle and taxi.

***NOTE**: During 2017, the methodology and the widening of the scope of the categories considered in the calculation of Scope 3 emissions were revised. The emissions corresponding to 2015 and 2016 have been recalculated according to the new criteria.*

6.1.2 SF_6 emissions

The main direct emissions derived from Red Eléctrica's activities are those coming from sulphur hexafluoride (SF_6).

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.

However, for Red Eléctrica this is a priority issue and it has various courses of action underway aimed at improving knowledge about and control of the gas and the reduction of leaks. The most important courses of action are the following:

- Improvement of the procedures for the control and identification of leaks, inventory and management of SF_6 gas.

- Provision of the most efficient equipment for the detection of leaks, the handling and measurement of SF_6.

- Training of people involved in the handling of the gas. Red Eléctrica has two legally recognised training centres with a classroom for lectures and a workshop for experiments in which 468 employees have been trained since 2013.

- Replacement of old equipment with equipment with lower leakage rates. In 2017, the objective of avoiding emissions through the replacement of equipment was extended.

- Innovation projects related to the improvement of SF_6 management: 'Development of a methodology for repairing SF_6 leaks in Gas-Insulated Substations', 'Alternatives to SF_6 gas in high-voltage switchgear' and 'Systems for capturing leaked gases in indoor Gas-Insulated Substations'.

Additionally, Red Eléctrica continues working in collaboration with the Public Administration and other entities in the search for solutions aimed at controlling and reducing these emissions within the framework of the Voluntary Agreement signed in May 2015 between the Ministry of Agriculture, Food and Environment, manufacturers and suppliers of electrical equipment using SF_6, electricity transmission and electricity distribution companies and waste managers of this gas and of the equipment containing it, in order to achieve a comprehensive management of the use of SF_6 in the electricity industry which is more respectful to the environment.

	2015	2016	2017
SF_6 installed (kg)(1)	373,806	421,666	**434,566**
SF_6 emissions/SF_6 installed (%)(2)	0.37	0.30	**0.26**
Total emissions (kg)	1,388	1,262	**1,150**

(1) The growth in installed gas in 2017 is due to the commissioning of new facilities and the replacement of old equipment for SF_6 insulated equipment. However, the large increase in 2016 is also associated with the updating of the inventory of SF_6 gas insulated substations, which has made it possible to determine the amount of gas contained in them (until 2015 this was estimated).

(2) The reference rate is 0.5%, which is the maximum leakage rate for equipment in service established in the Voluntary Agreement for the management of SF_6 signed in 2015.
This rate is fixed for equipment commissioned as of the date of the signing of the agreement, thereby allowing previously commissioned equipment to have higher leakage rates.

REDUCTION OF GREENHOUSE GAS EMISSIONS (1)	
Annual savings	*t $CO_{2\text{-eq}}$ / year*
Reduction of SF_6 emissions due to the replacement of old equipment for equipment with a lower leakage rate (1)	302

(1) Reductions associated with measures implemented in 2016.

6.1.3 Energy efficiency

One of the cornerstones of the Company's climate change strategy is the commitment to energy efficiency at all levels. As a key player in the electricity sector, Red Eléctrica places utmost importance on efforts geared towards efficiency and energy savings due to the enormous benefits they represent in economic, social and environmental terms. The Company works in this field not only from the perspective of the operator of the electricity system, promoting various measures to improve system efficiency, but also from the perspective of improving its own processes, with the aim of reducing its own carbon footprint.

Increasing energy efficiency is essential when it comes to reducing emissions. Actions aimed at reducing energy consumption focus on two areas of action:

- Internal measures aimed at: reducing electricity consumption, efficient mobility and raising employee awareness. To increase the visibility of this initiative and encourage employees to identify and drive projects that promote the efficient use of natural resources, the Red Eléctrica eficiente internal efficiency seal was created. Each year, Red Eléctrica awards the prizes to its best projects for their contribution to the achievement of the various efficiency targets.

- Demand management measures aimed at contributing to the efficiency of the electricity system

The information regarding these actions is described in more detail in the following sub-sections.

6.1.3.1 Electricity consumption-Reduction of electricity consumption

Taking into account all Red Eléctrica work centres, electricity consumption in the last three years has been as follows:

	2015 (kWh)	2016 (kWh)	2017 (kWh)
Head Offices (Moraleja + Albatros)	8,558,868	8,284,272	8,026,472
Tres Cantos	1,690,439	1,707,270	1,904,531
Non-peninsular systems (2)	1,319,628	1,396,884	1,371,162
Regional Head Offices (1)	2,049,798	1,791,680	1,676,198
Regional work centres (3)	2,370,824	2,336,153	2,129,982
Electric vehicles	0	24,676	68,830
TOTAL (kWh)	16,169,682	15,540,936	**15,177,175**
TOTAL (Joules) (4)	$5.82 \cdot 10^{13}$	$5.59 \cdot 10^{13}$	**$5.46 \cdot 10^{13}$**

(1) Regional offices. A total of 6 buildings distributed around the peninsula. Only four of these were included (La Coruña, Bilbao, Barcelona and Seville).

(2) Non-peninsular systems. A total of 2 buildings distributed in the Balearic Islands and Canary Islands (Las Palmas and Mirall).
(3) These are work centres staffed primarily with maintenance personnel.
(4) 1kWh = $3.6 \cdot 10^6$ joules; total consumption data in joules, according to the criteria defined by GRI G4.

Note 1: Includes the consumption of the Head office, the electricity control centres (centres that operate 24/7 and have a special energy consumption), the work centres (Regional Offices and maintenance centres). As of 2016, the consumption of electric vehicles is also included.
Note 2: The total of 2015 (base year) has been recalculated applying the same criteria considered for 2016 and 2017. The total sum does not correspond to the total addended figures indicated.
Note 3. 84.4% of the energy consumed comes from renewable sources (green energy or energy with a guarantee of origin).

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The main actions aimed at reducing electricity consumption are the following:

- **Improvement of energy management of existing buildings and applying efficiency criteria in the construction of new buildings.** Energy management system certified under ISO 50001 for buildings at the head offices.
- **Reduction of electricity consumption in substations** by selecting more efficient equipment and components, establishing efficiency guidelines for their use and the rationalisation of the use of lighting.
- **Reduction of electricity consumption associated to the use or IT equipment:** Renewal of IT equipment and systems, and the implementation of policies for the efficient use of equipment.
- **Raising awareness** among employees and the collaborators who work in the facilities of the Company by means of awareness raising campaigns.

REDUCTION TARGETS: Electricity consumption

Reduction of emissions associated with electricity consumption: 85% in 2020 and 90% in 2030

Reduction of electricity consumption in work centres: 3% in 2020 and 10% in 2030

Note: The targets are set with respect to the base year 2015

Progress 2017

Reduction of **82.6% of the emissions associated with energy consumption in 2017** vs. **2015**

Reduction of **6.6% of electricity consumption in work centres in 2017** vs. **2015**

6.1.3.1.1 Specific energy efficiency measures implemented in 2017

Buildings	
Head office	Energy management system certified under ISO 50001
New buildings	In 2017, the renovation of the building of the Tres Cantos Corporate Campus (ECRE) was completed. One of the main objectives was to bring the consumption levels for these buildings down to the bare minimum. The consumption will be up to five times less than that of a conventional building with the same characteristics.
Existing buildings	Improvements in HVAC systems, lighting and insulation in 9 work centres, which will mean an estimated saving of **172,085** kWh per year.
IT Systems	
Renewal of equipment and systems	The renewal of IT equipment in 2017 (laptops, desktop computers and monitors) represent an estimated reduction in electricity consumption of 51,966 kWh per year.
Application of policies regarding the efficient use of equipment	More than 90% of the IT equipment incorporates measures such as automatic screen shutdown or sleep/hibernation mode. This represents an approximate saving of 20% in the energy consumption of the equipment.
Substations	
Selection of equipment and components as well as establishing guidelines for their efficient use	During 2017, a pilot project was carried out to replace substation lighting with LED technology, this led to consumption levels during the periods when lighting is used being nine times lower than with the previous lighting.
Rationalising the use of lighting	Thanks to the improvements implemented in the remote lighting control systems, total or partial shutdown of the night-time lighting has been carried out in 37 substations, which represents an estimated saving of 985,500 kWh per year.
Awareness campaigns	
Awareness campaigns	Awareness campaigns for employees and collaborators who work at the Company's facilities.

Of the climate control (HVAC) measures implemented during 2017, noteworthy are the climate control systems that **take advantage of geothermal energy** that have been put into place in two buildings: San Sebastián de los Reyes work centre and Tres Cantos Corporate Campus. These systems make it possible to significantly reduce the consumption of electricity.

In addition, work is also being carried out on the use of ground energy in the case of some electricity facilities, such as gas-insulated substations and cable galleries. In 2016, an innovation project was initiated with this objective in mind; and in 2017, a cooling system was installed that used geothermal ventilation in the 220KV Fuencarral gas-insulated substation and the pertinent data is being collected to assess its operation.

6.1.3.1.2 Main estimated savings

REDUCTIONS IN ENERGY CONSUMPTION (1)		
	kWh/annually	*Joules/annually*
Efficiency measures in work centres: improvements to insulation, climatization and lighting (1)	172,085	$408*10^{11}$
Efficiency measures in electricity substations: switching off of night-time lighting	985,500	$3.55*10^{12}$
IT efficiency measures: Renewal of desktop equipment, laptops and monitors (1)	51,966	$1.87*10^{11}$

(1) Estimated annual reductions resulting from the measures carried out in 2017 (estimations obtained from equipment specifications and information based on energy audits regarding the implementation of measures).

REDUCTION OF GREENHOUSE GAS EMISSIONS	
Net savings (1)	*t CO_2 eq.*
Fuel savings by incorporating electric and hybrid vehicles into the fleet of vehicles (owned and shared leasing)	144
Savings in emissions due to contracting an electricity supply with a guarantee of origin. (2)	23
Annual savings (3)	*t CO2-eq/year*
Efficiency measures in work centres: improved insulation, climatization and lighting.	11
Efficiency measures in electricity substations: switching off of night-time lighting	255
IT efficiency measures: Renewal of desktop equipment, laptops and monitors.	3
Reduction in SF_6 emissions due to the replacement of old equipment for new ones with a lower leakage rates.	302

(1) Net savings compared to 2016 (measured or estimated).
(2) Electricity with guarantees of origin: 0 t CO2/kWh.
(3) Reductions associated to the measures implemented in 2016.

6.1.3.2 Sustainable mobility

Red Eléctrica maintains a clear commitment to efficiency in mobility. In addition, Red Eléctrica has for several years been working on optimising the trips made required to carry out its activity and reducing the emissions associated with the same.

Furthermore, Red Eléctrica participates in initiatives promoted by external organisations in the field of the promotion of sustainable mobility. Thus, in 2017, the Company has taken part in:

- Advisory board of the Sustainable Mobility Observatory (Club de Excelencia de Sostenibilidad).
- European Mobility Week, in which the Company has registered two initiatives: The Sustainable Mobility Plan and the Electric Vehicle Control Centre (CECOVEL).

The Company has also received recognition for its involvement in the promotion of sustainable mobility, issued by the Sub-Directorate of Air Quality and Environment of the Ministry of Agriculture and Fisheries, Food and Environment.

Among the actions carried out by Red Eléctrica noteworthy are those related to its vehicle fleet which have led to **73% of Company vehicles** (including shared leasing vehicles) having an energy rating of A or being electric. This figure has increased 5% in 2017.

Target - Climate change action plan: Mobility

Reduction of emissions associated with the use of Red Eléctrica vehicles*: 15% in 2020 and 30% in 2030 vs. 2015*

*- Progress **2017: 27%***

Reduction of emissions associated with business travel using vehicles: *20% in 2020 and 40% in 2030 vs. 2015*

*- Progress **2017: 42%***

Fuel consumption (litres) during 2017 associated to vehicles:

	2015	2016	2017
Diesel (l)	450,752	712,853	567,942
Gasoline (l)	23,799	49,768	52,124
Biodiesel	121	0	0
Autogas (LPG)	33	0	0
Total vehicle fuel (l)	474,672	762,621	**620,066**
Consumption of diesel generator units [(1)] (not associated to vehicles) (l)	5,061	3,452	1,212
Fuel consumption (Joules)	$1.70 \cdot 10^{13}$	$2.82 \cdot 10^{13}$	$\mathbf{2.28 \cdot 10^{13}}$

[(1)] Corresponds to diesel refilled in the fuel tanks in the year.
***Note**: The data for 2015 has been recalculated to include management and shared leasing vehicles, according to the methodology applied since 2016.*
1 litre diesel = 37•10 [6]joules; 1 L of gasoline = 34•10^6 joules; 1 L of gas oil = 37•10^6joules; 1 L of biodiesel = 32.79•10^6 joules; 1 L of LPG = 25.7•10^6 joules.

6.1.3.2.1 Sustainable mobility plan

Red Eléctrica approved the Sustainable Mobility Plan in 2014 with the aim of incorporating a new culture of mobility in the Company. This plan is aimed at helping meet the challenges undertaken in the Company's climate change strategy, promote energy efficiency, improve the quality of life of people employed and promote the positioning of Red Eléctrica as a company committed to sustainable development that takes actions anticipating future regulations in this field.

The objective of the Plan attempts to solve the specific issues caused by employees' daily commuting between home and the workplace and redirect those work displacements that are usually for work reasons towards more sustainable transport alternatives and with less impact on climate change.

Therefore, the 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 and applies both to business travel as well as the daily commute.

Four courses of action are carried out:

- Rationalise the use of private vehicles in commutes to the work centres.
- Promote the use of efficient vehicles among employees
- Apply fuel saving measures
- Awareness and training

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

SUSTAINABLE MOBILITY MEASURES		
COURSE OF ACTION	**NAME**	**2017**
Rationalise the use of private vehicles	Employee shuttle service (company bus)	**2017**: The service consists of three service routes. During 2017 the following took advantage of the employee shuttle service: • 10 employees in the 10-trip travel pass modality • 13 employees in the monthly travel pass modality • 11 employees in the annual travel pass modality 2016: 47 employees.
	Covered bus stop for shuttle buses	Installed in 2015
	Travel card for public transportation	**2017**: 19% of REE employees 2016: 16% of REE employees
	Car sharing	**2017**: 8% of people share a car. 39 groups in the car sharing scheme and 72 people who share a car (2 employees / car). A total of 146 registered users. 2016: 6% of employees shared a car.
	Pool of Electric vehicle	The use has increased, 36% more kilometres driven. **2017:** 27,703 km driven. 12 vehicles in the Head offices (10 in La Moraleja and 2 in Albatros) 2016: 10,062 km driven
	Preferential parking spaces for car sharing	Car sharing: 23 spaces in La Moraleja and 6 in Albatros
	Preferential use of efficient taxis	More efficient taxis that offer services to REE. **2017**: 104 gr CO_2/km 2016: 108 gr CO_2/km
Promote the use of efficient vehicles	<u>Changing trend in REE fleet vehicles</u> (Fleet (includes trucks/lorries), Pool, Shared leasing, Management team and Chairman's office). The addition of vehicles with an energy rating of A or electric vehicles to the fleet has been increased by 5%. **2017**: **73% of the fleet with an energy rating of A or are electric** (813 vehicles). 2016: 68% of the fleet with an energy rating of A or are electric (783 vehicles).	
	Loans available for employees for the purchase of efficient vehicles	No change
	Leasing of electric vehicles for the management team	**2017**: 7 vehicles with a low efficiency rating (B or > B). 2016: 11 vehicles with a low efficiency rating. 112 vehicles (9E, 3H (2> B)), 91HE, 4A, 1B and 4>B). 2 Chairman's office (2HE)
	Efficient vehicle fleet	The incorporation of electric vehicles, hybrids or plug-in hybrids has been increased. **2017**: 209 vehicles with a low efficiency rating (B or >B). 2016: 236 vehicles with a low efficiency rating. **2017**: 813 fleet vehicles. (Fleet 223, Pool 12, Shared leasing 434, Trucks/lorries 30, Management Team 112 and Chairman's office 2) 2016: 699 vehicles 15E, 180H, 295A, 46B and 163>B **2017**: 180 H.

		2016: 74 H. Note H=Hybrid E=Electric HE = Hybrid-Electric
	Increase in the number of electric vehicle recharging points	Those already installed continued to be used 2015. 119 recharging points (91 La Moraleja: 2 private, 10 pool and 79 management) + 28 Albatros: 1 private, 2 pool and 25 management)
	Ecological fleet certification	Ecological fleet certification in its' Master' modality since 2015 (the most demanding) received from AEGFA (Association of Fleet Managers) and IDAE (Institute for Energy Diversification and Saving).
Apply fuel saving measures	Tyre pressure gauges	Installed since 2015
	Increasing the services of the La Moraleja car wash service	No change
Awareness and training	Efficient driving training	REE is a member of the Sustainable Professional Mobility project promoted by the CONAMA Foundation and co-financed by the 2017 Go Green Programme.

6.1.3.3 Awareness

The awareness raising actions targeted at employees carried out this year have been focused mainly on the 'Sustainable City' concept through posters, intranet communications, visits, competitions etc.

In 2017, the **fifth edition of the Award to the year's most noteworthy Red Eléctrica Eficiente Project** took place; a recognition that arises from the need to promote best practices in energy efficiency developed or carried out in Red Eléctrica. The ceremony for the presentation of the awards was organised on 5 March on the occasion of World Energy Efficiency Day.

Additionally, as in previous years, a number of projects and initiatives in this specific area have been carried out taking as a reference the two significant dates indicated below. These initiatives were complemented by disseminating messages and information using internal and external communication media in order to publicise the events.

- ***Energy efficiency: 5 March - World Energy Efficiency Day***
- ***Mobility: 16 to 22 September - European Mobility Week***

6.1.3.4 Demand management: Projects related to energy efficiency

Red Eléctrica actively works on the promotion, development and dissemination of initiatives that allow the evolution of the current electricity grid towards a more intelligent grid (smart grids) characterised by a greater flexibility of demand and by the integration of elements of the new energy model into the electricity system such as the electric vehicle, energy storage or self-consumption.

In this way, demand management and smart grid initiatives contribute to maintaining the guarantee and security of supply, promoting the integration of renewable energy, reducing emissions of polluting gases and driving the sustainable use of energy, in order to achieve greater efficiency for the electricity system as a whole.

The main actions in the field of demand management are the following:

- **Initiatives in the field of Smart Grids**: Faced with the challenge of maintaining security of supply in a decarbonised electricity system, Red Eléctrica promotes smart grid initiatives in order to anticipate solutions regarding new energy storage technologies, dynamic capabilities of the grid, the monitoring of grid elements, self-consumption, the electric vehicle and new options for consumers, which are already currently shaping the electricity grid of the future.

In 2017, five projects obtained specific results that are already a reality in the operation of the current system:

- Incorporation of phasor measurement units in the operation systems. Improvement in the decision-making processes of the operators thanks to the integration of the information coming from the phasor measurement units deployed in the electricity system.

- Fault detection system in cables in mixed lines. Development of a system based on optical sensors and advanced protection equipment that are capable of accurately detecting faults in underground cable sections in mixed lines.

- Extension of temperature monitoring in underground cable II. Temperature monitoring in already existing isolated cable installations.

- CECOVEL. Development of the Electric Vehicle Control Centre.

- New demand forecast tools (Balearic Islands). Development of new tools to improve the forecast of electricity demand in different horizons, ranging from one hour to one week.

- **Future participation of the demand in the balancing services**: Another challenge that Red Eléctrica is already addressing is the beginning of the opening up of balancing services to the participation of demand management, as a consequence of the European harmonisation process of ancillary services.

  During 2017, a seminar was held at Red Eléctrica to exchange international experiences on aggregate demand and its participation in balancing services in which the key players in the electricity sector (more than 40 organisations) were able to see first-hand how this challenge is being addressed by other countries with a situation similar to that of Spain (France, Belgium, Holland and Germany).

- **Active Citizen:** The electricity system finds itself in a transition towards a new, more dynamic energy model where the role of citizens as key protagonists in system operation is becoming increasingly prominent. Therefore, Red Eléctrica promotes demand-side management initiatives as well as making information about the situation of the system available to citizens, or to disseminate recommendations on best practices for efficient consumption.

- **Interruptibility Service**: This service is an industrial demand-side management tool provided by large consumers that provides a fast and efficient response to the needs of the electricity system. In this regard, the industrial consumers who provide this service reduce, at the request of the System Operator, their consumption down to certain predetermined values.

  Order IET/2013/2013 of 31 October 2013, introduced a new allocation mechanism for the demand-side management interruptibility service based on a competitive auction procedure. For the period between 1 January 2018 and 31 May 2018, Red Eléctrica, in its capacity as administrator of the auctions, has managed the holding of auctions in which the large industry of the country has competed for the allocation of the

interruptible resource and that have resulted in the awarding of 2,600 MW of interruptible resource.

- **Profiling Service**: Due to the fact that in the electricity market all energy is settled on an hourly basis, it is necessary to make an estimate of the hourly behaviour of those consumers that do not have smart meters installed. Said forecast is carried out through the so-called 'consumption profiles', which Red Eléctrica drafts and which assign to each consumer a typical demand behaviour according to their contracted power and the voltage levels (access tariffs).

  With the aim of improving the current profiling service, since 2013 Red Eléctrica has lead the PERFILA project, which has the participation of the most important distribution companies, and which is based on the analysis of the hourly information coming from a panel of consumers that already have smart meters.

  The information that has been collected since January 2014 from approximately 25,000 members of the panel has been used in the proposals of initial profiles prepared by Red Eléctrica for 2015, 2016 and 2017. In 2017, in which the profile proposal for 2018 has been defined, in addition to the information of the Perfila Project panel, information from power measurements, received by telematic means by SIMEL (Power Measurement System) has been incorporated for the first time.

- **Electric Vehicle**: Electric mobility represents an opportunity to improve the efficiency of the energy system as a whole, as it allows the incorporation of electricity as an energy vector of the transport sector.

  The CECOVEL project (Electric Vehicle Control Centre) is an initiative of Red Eléctrica to support electric mobility in the current scenario of energy transition.

  Operational since January 2017, CECOVEL allows us to track the electricity demand for the recharging of electric vehicles, making these new electricity consumers visible. It is a collaborative project with the participation of the main recharging managers in Spain. In addition, it currently monitors the measurements of more than 900 recharging points.

6.1.4 Offsetting of emissions

Red Eléctrica has put into effect different alternatives for emissions reduction.

However, given the nature of these emissions (the principal direct emissions are diffuse) and the characteristics of the Company´s activities, in order to achieve greater progress in reducing the Company's carbon footprint, it is important to work on offsetting measures.

In this regard, Red Eléctrica offsets its emissions primarily through the **'Red Eléctrica Forest'** initiative.

Initiated in 2009 and ongoing in nature, the goal of this project is twofold: on the one hand help offset part of Red Eléctrica's emissions by planting trees and recover degraded natural areas, and on the other, contribute to biodiversity conservation.

This initiative also seeks to contribute to the development of local economies by contracting work to companies or groups in the area, and as well as raising environmental awareness and involve the local population and Company employees. The project is undertaken on public land in different areas of Spain.

The following relevant milestones in 2017 are worth noting:

- **Firgas Forest (Gran Canaria)**
- **Chajaña Forest (Tenerife)**.
- **Asturias Forest**.

It is estimated that reforestation works completed in the Firgas Forest (Gran Canaria), will offset approximately 1,228 tonnes of CO_2 equivalent, **4.5% of the direct emissions in 2017.**

In addition, for the fourth consecutive year, the Company has offset part of its emissions derived from the daily commutes of its employees to their respective work centres by **purchasing 2,200 VCUs** (Verified Carbon Unit) under the VCS (Verified Carbon Standard), which correspond to the emissions generated by all those workers who have answered the 2017 mobility survey. Actions to offset emissions were made by supporting a project selected by the participants in the survey: Madre de Dios Amazon REDD Project, a deforestation project which was halted in the Amazon jungle (Peru) that contributes to the conservation of biodiversity in the area and the development of the indigenous communities.

The emissions offset through the acquisition of VCUs in 2017 correspond to the emissions generated by 56% of the workforce in their daily commute to and from work centres.

6.2 Biodiversity

The protection and conservation of biodiversity have always been basic elements in the environmental management of Red Eléctrica. In 2017, Red Eléctrica renewed its commitment to biodiversity and has approved a new multi-year Biodiversity Action Plan that includes the challenges and main objectives for the period 2017-2021, as well as the main projects to be carried out in this period.

In 2017, Red Eléctrica continued to adhere to the Biodiversity Pact signed by the Chairman in 2013. The Pact, promoted by the Ministry of Agriculture and Fisheries, Food and Environment, whose validity is from 2013 to 2018, aims to showcase the Company's commitment biodiversity. Furthermore, the Company is a member of the Spanish Business and Biodiversity Initiative (IEBB) also promoted by the Ministry.

During the last year, new collaborations have been established in the field of biodiversity with various administrations and agencies, as well as adherence to the following initiatives:

- The Ocean Conference (UN)_SDG 14.
- Spanish Maritime Cluster.

Different recognitions have been obtained regarding biodiversity, among which the following are noteworthy:

- 'Good Practice of the Year Award 2017' granted by the Renewables Grid Initiative (RGI), in the Environmental Protection category for the project: 'Innovative technique for the recovery of Posidonia Oceanica seagrass meadows'.
- Maximum score (100 out of 100) in the biodiversity criteria in the Dow Jones Sustainability Index 2017.
- Recognition of Red Eléctrica de España for its contribution to the biodiversity data bank of the Government of Valencia.

The courses of action regarding the biodiversity commitment are the following:

- ✓ Development of the transmission grid and the protection of biodiversity: search for and implementation of solutions that make the Company's activities compatible with the protection of biodiversity.
- ✓ Conservation of biodiversity: promotion and collaboration in the conservation of species of fauna and flora, especially those linked to the activity of the Company.
- ✓ Dissemination of information to stakeholders regarding the actions carried out by Red Eléctrica and the Company's stance on biodiversity.

In addition, the Company works in two cross-cutting areas, whose development is fundamental to be able to advance in the three courses of action mentioned:

- ✓ Improvement of biodiversity management: development of new systems, procedures and the implementation of new approaches and methodologies.
- ✓ Innovation applied to the management, protection and conservation of biodiversity.

6.2.1 Electricity grids and biodiversity

Red Eléctrica's facilities are located nationwide as a result of the need of the electricity transmission grid to link the points of energy generation with those of consumption.

The priority criteria for the siting of new facilities are to Avoiding areas rich in biodiversity is priority criteria taken into account in the planning phase as well as in the definition phase of each project. However, considering that 25% of the area of Spain has some form of environmental protection it is inevitable that in some cases infrastructure cross, or are located in protected areas or areas with species of interest.

On these occasions, Red Eléctrica sets in motion all the necessary preventive and corrective measures to minimise possible impacts on habitats and species (impacts associated with the construction and modification of infrastructure, impacts on birdlife due to collisions and fire risk). These measures also include the restoration of affected areas, when possible. In addition, they are supplemented by environmental improvement actions to boost biodiversity in those areas where the facilities are located, and which seek to offset part of the impacts that may have occurred.

Lastly, Red Eléctrica promotes and collaborates with the Government, non-governmental organisations, research organisations and other interested parties in the development of biodiversity conservation projects, mainly focused on the species most linked to the Company's activities.

Currently, Red Eléctrica's facilities occupy only **0.08%** of Red Natura Española. Of all existing infrastructures, only **15%** of total lines and **5.9%** of substations are in protected areas (Red Natura 2000).

6.2.2 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.

In 2017, there were **214 km** of line marked with bird-saving devices. The percentage of kilometres marked with respect to the total kilometres of lines stood at **10.1%** (3,073 km of line marked totalling 30,363 km including grounding cables).

Thanks to the project 'Birds and Power Lines: mapping of bird flight paths', which ended in 2016, there is a Multi-year Line Marking Plan 2016-2023 in which the actions on the existing line sections are prioritised in areas with the greatest potential risk of birdlife collisions. The execution of this plan will mean a 25% reduction in the potential risk of birds colliding with elements of the electricity grid.

At present, the sections that have been identified as having a critical priority level, total 738.5 km in length, of which 332 km have already been marked.

Red Eléctrica also works on other relevant projects in relation to the protection of birdlife against collisions:

- ✓ Analysis of the effectiveness of the blade-type bird-saving device in different bird communities. Project in collaboration with the Doñana Biological Station (CSIC) (2013-2018).

- ✓ Collaboration with SEO Birdlife in the development of the 3rd Atlas of birds in breeding season in Spain (2014-2018). The information obtained will enable the updating of data relevant to the 'Birds and Power Lines: mapping of bird flight paths' project.

6.2.3 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. Among the preventive and corrective measures applied, the following are noteworthy:

- o Detailed field studies on specific issues, such as impact reports on Red Natura and surveys to identify the presence of protected flora and fauna.
- o Introduction of 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.
- o Construction of decanting pools and filters to prevent contamination of waterways.
- o Signage and protection of habitats and species of high ecological value to avoid them being damaged in the course of the work.

- Using construction techniques that help minimise earthworks and land occupation (reduction in the need to open access paths, the size of the work sites and storage areas for materials): hoisting with a boom crane, or helicopter, hanging lines by hand or conducting work using a helicopter or drone.
- Transplanting of flora species affected by work to other areas.
- Biological stoppages in the totality of all work in rearing or nesting periods of species that could potentially be affected by work.
- Recovery of affected areas: restoration of slopes, sowing of seed and the planting work.
- Accompanying measures and carrying out of specific projects for improving biodiversity in affected areas.

In 2017, the following specific measures for the protection of habitats and species were carried out:

- Concreting with the use of a helicopter of 7 towers in the construction works of the 132 kV Puerto del Rosario-La Oliva line to protect the surface of this barren rocky area.
- Hanging by hand of two spans in the 132 kV Gran Tarajal- Matasblancas line to protect palm groves and Salt Cedar trees (included in habitats of community interest) and the entire 132 kV Puerto del Rosario-la Oliva line (83 spans) for the protection of the surface of this barren rocky area (lava rock).
- Biological stoppages of varying duration (periods between 3 and 6 months) on 5 lines, to avoid impacts on various species of birds, among which noteworthy are: Egyptian vulture, Houbara bustard, Great bustard, Little bustard, Dupont's lark, Lesser kestrel, Bonelli's eagle, Kite, Honey buzzard, Sand martin, Trumpeter finch, Black-bellied sandgrouse and the Eurasian stone-curlew.
- Installation of 37 nesting boxes for European Rollers, Little owls and Common kestrels on the 220 kV Plasencia-Almaraz incoming and outgoing lines.

The other actions carried out are included in the 'Environmental Actions' annex of this environmental statement.

- **Habitat Project (**2015-2021)

  This project seeks to determine in detail the natural values present in the sphere of influence of Red Eléctrica facilities and their conservation status. The goal is to monitor the interaction of electricity transmission lines with natural habitats of Community interest, with the aim of using this information for the decision-making process regarding the operation and maintenance of facilities.

  The first phase consists of the development of a digital map with all the information obtained by working in collaboration with the different Autonomous Communities and experts in the field and carrying out a subsequent validation in the field. This phase has already been completed for 16 Autonomous Communities. Subsequently work will be done on the design of management plans or measures that encourage the conservation of these habitats.

Contribution to biodiversity conservation

Red Eléctrica actively contributes to biodiversity conservation by spearheading or participating in various projects and conducting dissemination activities and environmental training. Although working in different areas, within the biodiversity action plan, the objective of the project is to develop wildlife conservation projects, mainly related to focal species (prone to collision with transmission lines).

Most of the projects are aimed at the conservation of endangered bird species, although it also works with other flora and fauna species.

Also relevant are actions aimed at the restoration of degraded habitats, among which the 'Red Eléctrica Forest' stands out.

❖ Conservation projects related to endangered species

Detailed information on all projects spearheaded by, or in which Red Eléctrica participates, can be found via the following web links:

http://www.ree.es/en/sustainability/map-of-projects
http://www.ree.es/en/sustainability/the-natural-environment/avifauna

The following are the noteworthy conservation projects for endangered species:

- Installation of nesting platforms for the Osprey Eagle (*Pandion haliaetus*)(1) in Andalusia: since the start of the project, 3 nesting platforms have been installed on high voltage electricity towers, two in Cádiz and one in Huelva. Since 2011, breeding pairs have given birth to 24 chicks in the nesting platforms installed.

- Reintroduction of the Bonelli's Eagle (*Hieraaetus fasciatus*)(1) in Majorca: since 2011, 41 Bonelli's Eagles have been ringed, fitted with a radio-tracking device and released. Population of the species consists of 27 eagles. A study by the University of Barcelona has concluded that the population of the Bonelli's Eagle on the island of Majorca is currently sustainable, and that its population is experiencing a slight increase.

- Impact of food supplementation on the spatial and reproductive ecology of the Bonelli's Eagle (*Hieraaetus fasciatus*)(1) in the Autonomous Community of Valencian: 24 Bonelli's eagles have been captured, ringed and fitted with radio-tracking devices. Data is currently being received from 15 eagles, located in 9 different territories.

- Monitoring, conservation and recovery of the Iberian Imperial Eagle (*Aquila adalberti*)(2)(3) in the Doñana National Park: the population in Doñana increased thanks to the incorporation of a new breeding pair, hence Doñana now has 10 breeding pairs, mirroring pre-2015 levels. For the first time, since records regarding population of the Bonelli's Eagle began in 1982, the population at large is producing offspring.

- Foraging areas and dispersion of the Canarian Hubara (*Chlamydotis undulata fuertaventurae*)[(2)(3)]: in 2016 two male birds were captured and ringed, and their monitoring was continued in 2017. No new captures have been performed in 2017.

- Effects of global change on the Iberian populations of Egyptian Vulture (*Neophron percnopterus*)[(1)(4)]: in 2017 the census of the population of this species was taken in 28 territories, 18 of which were occupied by breeding pairs and in which 22 chicks were born.

- Reintroduction of the Black Vulture (*Aegypius monachus*) in the province of Burgos[(1)]: in 2017 the 10th anniversary of the Reintroduction Project of the Black vulture in the Pyrenees was completed, coinciding with the first releases of birds of this species in the Sierra de la Demanda (Burgos). Both initiatives are encompassed within the Monachus Project. In 2017, 15 birds of this species were released.

- Conservation of the White-headed Duck (*Oxyura leucocehala*) in the Community of Valencia[(2)(4)]: an incubator has been purchased.

(1) Vulnerable species according to the national catalogue of endangered species.
(2) Vulnerable species in danger of extinction according to the national catalogue of endangered species.
(3) Vulnerable species according to the IUCN Red List.
(4) Endangered species according to the IUCN Red List.

❖ **<u>Other actions carried out in 2017 for the conservation of birdlife:</u>**

- Monitoring of the nesting of birds of prey in towers in Extremadura: seven of the eight towers inspected contained nests, 3 of the towers were occupied by breeding pairs. The nesting species included: Imperial Eagle, Bonelli's Eagle and Raven.

- Monitoring of artificial nests in towers in Huelva: 28 nesting boxes of which 24 were occupied by Starling, Common and Lesser Kestrel, Roller and Little Owl) and a nesting platform for Osprey in a tower which was not occupied.

- Creation of an ornithological observatory in Mequinenza (Zaragoza) and improvements in the habitat of the Special Protection Area for Birds (SPA) of Aiguabarreig. In collaboration with the Municipality of Mequinenza and the Government of Aragón (2018)

- Recovery of the population of the Golden Eagle (*Aquila chrysaetos*) in Galicia. (Red list species of minor concern). Since the project began, a total of 12 birds of this species have been released using the hacking method. Since 2013 a total of 3 chicks have been born within the territory of the Xurés Natural Park, a fact that had not occurred since 1997. Five territorial pairs have been created, which represents an increase in the reproductive population of the Golden Eagle in Galicia. Collaboration with GREFA (2011-2019).

- Reintroduction of the Lesser Kestrel in Valencia (*Falco naumanni*) by means of a breeding in the wild method: since 2013 a total of 521 fledglings have been reintroduced in the areas that have adequate habitat and that have the authorisation and support of owners, local entities and associations. There are 18 pairs for breeding in captivity in the 'La Granja' Wildlife Recovery Centre.

- Technical programme for the execution of works for satellite radio tracking of Golden Eagles (*Aquila chrysaetos*) in Navarra. Capture and fitting of radio transmitters for three Golden Eagles. Unfortunately, one of the birds died in 2017.

❖ **Noteworthy projects for the protection of marine flora**

- **The Red Eléctrica Marine Forest**

Posidonia oceanica is a marine plant endemic to the Mediterranean. It forms a habitat of priority interest, an essential ecosystem for many organisms to complete their life cycle. Posidonia seagrass meadows contribute to the control of water quality and the protection of the coastline, and also constitutes one of the main CO_2 sinks in the sea.

Posidonia seagrass meadows can be affected due to various reasons, among them construction works for laying submarine electricity cables. For this reason, Red Eléctrica decided to promote this project.

In a first phase (2012-2016) an R&D+i project was carried out in collaboration with the Mediterranean Institute of Advanced Studies (CESIC-IMEDEA), which helped determine the viability of a course of action that entailed the planting of Posidonia, obtained either by beach-cast fragments of Posidonia or through seeds grown under laboratory-controlled conditions and subsequently transplanted to the seabed.

In 2017, collaboration agreements were signed with the CSIC and the Regional Government of the Balearic Islands for the restoration of 2 hectares of Posidonia in a degraded area of the Bay of Pollensa (Balearic Islands), using and applying the methodology resulting from the research carried out.

Prior work has already begun and during 2018 the planting works will take place. This project is contemplated as a living laboratory in which to continue gaining further knowledge regarding both the species and its ecology.

The ‘Innovative technique for the recovery of Posidonia Oceanica seagrass meadows’ project received the ‘Good Practice of the Year Award 2017’ from the Renewable Grid Initiative (RGI) in the Environmental Protection category.

❖ Red Eléctrica Forest

The most relevant milestones related to the 'Red Eléctrica Forest' in regard to biodiversity were the following:

- **Firgas Forest (Gran Canaria).** 17 hectares have been restored on the Firgas mountain, within the protected natural area of the Doramas Rural Park, with 8,908 native trees characteristic of the Canary Islands' Monteverde ecosystem (made up of laurel forest and evergreen heathland). In addition to greatly improving the landscape, the restoration of this space will contribute to the fight against desertification and the reintroduction of the Laurel pigeon on the island. Throughout the next year various awareness and promotional activities regarding the recreational use of the area will be conducted.

- **Chajaña Forest (Tenerife).** Work has begun on the restoration of 23 hectares in the Corona Forestal Natural Park (municipalities of Arico and Fasnia). In addition, work is being done on the design of an ethnographic route through the different forest areas.

- **Asturias Forest.** The signing of an agreement for the restoration of 29 hectares in the Cordel de Santín and San Fernando highland areas, in the municipality of Boal, has been approved.

The Red Eléctrica Forest in figures 2009-2017

Trees and shrubs planted: **647,053 units**

Surface area recovered: **778 hectares**

Emissions offset: **184,771 tCO_2eq.**

Investment: **1,843,941 euros**

6.2.4 Fire prevention

In order to minimise the risk of fire associated with the presence of transmission lines, strict compliance with the safety distances between flora and the various elements of the facilities is critical.

To minimise the risk of fires associated with the presence of transmission lines, strict compliance with safety distances between flora and the facilities is essential. Red Eléctrica ensures this compliance thanks to the adequate design of the safety corridors and the actions of predictive and preventive maintenance, such as the annual review of all the facilities and the conducting of periodic forestry works.

The Company applies best practices in the design and maintenance of safety corridors, respecting the scrubland and the species of small-sized slow-growing trees, minimising impacts on protected species and not using chemical products in the vegetation treatment works.

In addition, it is worth noting the importance of the active and continuous collaboration of Red Eléctrica with the public administrations involved in forestry management.

This collaboration is formalised through the signing of collaboration agreements for the prevention and fight against forest fires. In 2017, a new agreement was signed (Castilla y León), there are 12 agreements currently in force, with a budget of more than 1,200,000 euros every five years. The Company has the objective of establishing this type of agreement with all 21 competent administrations.

As result of the actions carried out, there are very few fires relating to Red Eléctrica's facilities.

Within the framework of these agreements, various relevant actions have been carried out during 2017:

Territorial scope	Noteworthy projects in 2017 linked to collaboration agreements
ARAGÓN	Material produced with the Government of Aragón for an awareness raising campaign for the prevention of forest fires
ANDALUSIA	Informative campaign about forest fires. Scope: 160 municipalities
CASTILLA LA MANCHA	Sponsorship of the 4th training session on forest fire management (2nd International Awards on innovation and management in the prevention of forest fires). Organised by the Pau Costa Foundation.
CASTILLA Y LEÓN	Development of a network of forest fire monitoring systems to improve communications that will enable a faster detection of fires and facilitate coordination and rapid response to fight against forest fires in the region of El Bierzo (León). In collaboration with the Natural Heritage Foundation of Castilla y León.
EXTREMADURA	Technical Expert in Forest Fire Fighting Course - Infoex Plan. (44 attendees)
COMMUNITY OF VALENCIA	Publishing of audio-visual materials within the general communication campaign called 'El Bosc Vital'.
BALEARIC ISLANDS	Creation of a safety zone perimeter (fire break) for the Sant Telm residential area in the municipality of Andraxt, Majorca

CANARY ISLANDS	Volunteering Actions Project: Forest Fires (Tenerife). Drafting of the manual, designing of routes and training actions; informative material and the provision of equipment.
	Courses regarding fire prevention and fighting large fires geared towards Directors and unit heads, Chief of Unit/Group. A Theoretical-Practical Course on firefighting safety for CVE (La Palma).
NAVARRA	Equipment for firefighting crews Controlled burning of underbrush with training of firemen in the Baquedano Local Council Refurbishment of a fire hydrant point to supply water for the Fire Service in the town of Narbarte, Bertizarana Local Council, in the vicinity of the Bertiz Natural Park.
BASQUE COUNTRY	Preventive actions of clearing vegetation in areas of fire risk: clearing of 15 hectares and clearing of slopes (an overall total of 10 km).

In order to optimise the vegetation treatment tasks, the R&D+i ***Vegeta*** **Project** (2015-2021) was continued. The objective of the project is to create a work methodology that provides the optimisation of the vegetation treatment cycles (detection of needs, execution of monitoring works and updating of information) to achieve an efficient and sustainable management.

This methodology aims to increase efficiency in the contracting of work, improve the application of environmental criteria in the execution of work and improve relations with the rest of the agents of the territory (organisations, land owners). In addition, the project includes the drafting of detailed inventories of the flora within the safety corridors, which will make it possible to more accurately identify the species which are compatible or non-incompatible with the facility.

In 2016, work was conducted in order to define a technical algorithm that collects the input variables (vegetation status, distance of the same from the electricity facility/infrastructure, vegetation growth rate, legal requirements and other preestablished criteria) enabling felling and clearing works to be established with greater efficiency. Up to 2017, progress has been made in the execution of pilot projects in two autonomous communities (Extremadura and Galicia). It is foreseen that the study of the algorithm and its implementation in the Basque Country will be carried out in 2018.

6.3 Saving of resources: Water and paper

- **Water consumption**

	2015	2016	2017
Head Office (m^3) (1)	9,018	9,166	8,064
Head Office (m^3/employee) (1)	9.61	9.72	8.47
Total work centres (2) (m^3)	27,250	26,455	27,627

(1) Only the head office building in the Moraleja and the staff that consume water in it is considered (employees, interns and collaborators: a total of 952 people).
(2) The data provided has a coverage of 80%, in terms of personnel (taking into account all personnel that work in the different work centres in Spain: employees of the Group, interns, employees from temporary staffing agencies and collaborators). The data is not available for some centres, mainly those that are not owned by the Company (rented).

Withdrawal by source (%)	2015	2016	2017
Rain water collection tanks (1)	0	0	0
Cisterns	5.04	3.27	3.14
Wells	35.44	34.58	33.74
Municipal water mains	59.52	62.15	63.12

(1) In some centres there are rainwater collection tanks for sanitary use, fire prevention and irrigation. In general, collection tanks do not have mechanisms to account for stored water, so the percentage of rainwater use cannot be calculated.

An awareness raising session was held on 22 March on the occasion of the celebration of World Water Day.

- **Paper consumption (office)**

	2015	2016	2017
kg	18,838	19,437	24,190 (*)
kg/employee (1)	9.08	9.37	11.62

(1) Employee: All REE staff, including interns, workers from temporary employment agencies and collaborators. Total of 2,074.

(*) In 2017, the printer service provider was not able to provide the data regarding printing on 1 or 2 sides, reporting only a cumulative data since installing the printers in 2014, and it was impossible to obtain the data for 2017. For this reason it has been estimated that in 2017 the percentage of double-sided printing was same as in 2016, 72%. (70% in 2015).

The table below shows the evolution of paper consumption in publications in the period 2014-2017.

	2015	2016	2017
kg	16,036	12,397	16,327
% FSC [1]	86	99.5	95.2
% FSC 100% Recycled	2	2	28.4
% FSC 60% Recycled	84	44.7	8.7
% FSC Mixed	---	50.2	62.9
% Ecological paper used in publications	---	2.6	---

[1] *Ecological paper certified to Forest Stewardship Council standards.*

6.4 Socio-economic environment

6.4.1 Protection of archaeological and ethnological heritage

The protection of archaeological and ethnological heritage is an important aspect in the design and construction of facilities.

Before performing any earthworks, an archaeological survey is carried out whose intensity and scope are based on the probability of any material/remains of interest existing in the area. The results of this survey determine the need for the ongoing presence of an archaeologist during works. In 2017, archaeological supervision took place during the construction of 25 lines (in 19 of which (76%) this was carried out with the permanent presence of an archaeologist during the earthworks stage, in all or part of the route) and in 10 substations (60% with the archaeologist's permanent presence during earthworks).

On the other hand, in 2014 work began on the ArqueoRED project, whose objective is to have the cultural heritage information catalogued in digital cartography for the entire national territory. The consultation of this information prior to carrying out works in the facilities allows the necessary measures in each case to be defined and potential impacts to be avoided. Thanks to close collaboration with the relevant authorities, the project has progressed in a highly satisfactory manner and information is already available on all the Autonomous Communities. In 2017, work was conducted on the field review of the information obtained in four of them and this will continue in a further ten communities in 2018.

Similarly, Red Eléctrica collaborates actively with the public administrations in the conservation of cultural heritage.

The main activities carried out regarding the protection of archaeological and ethnological heritage are set out in the 'Environmental actions' annex.

The most noteworthy action carried out in 2017 regarding the protection of the archaeological-ethnological heritage is the following:

- **Adaptation of the 'Era de Son Telm' (Ferreries, Menorca)** Restoration of a stone 'threshing floor' of about 100-120 years old that was in very poor condition, located on one of the farms along which the 132 kV Ciudadela-Mercadal line runs (Menorca). Although the 'threshing floor' had in no way been affected, neither by access nor by the installation of any towers, these remodelling works were determined by an agreement between Red Eléctrica and the owner of Son Telm as a compensatory measure. The restoration consisted of the removal of undergrowth, the repair of the paving and adding new grout and the collecting of perimeter stones that were scattered around the area for them to be put back in their original place. The conservation of this element is important both for the value of the structure itself and for relevance as a symbol of the agricultural tradition in the area.

6.4.2 Electric and Magnetic Fields (EMFs)

Thanks to the criteria 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 compliance with the recommendation of the Council of the European Union, Red Eléctrica has a tool that, as of certain parameters of the lines, accurately calculates the maximum EMF levels that said facilities can generate.

Electromagnetic field measurements were conducted using predictive software for the following infrastructure at the request of the local administration and other stakeholders:

- *220kV Astillero-Cacicedo conductor in the municipalities of Astillero and Camargo for communication sessions on the project in both municipalities.*

On the other hand, and also at the request of stakeholders, in-situ measurements of the levels of electric and magnetic fields have been carried out in:

- *220kV Majadahonda-Villaviciosa/Boadilla-Majadahonda line, spans included between tower 14 and 17, municipality of Boadilla del Monte (Madrid) at the request of the city council.*
- *EMF measurements in the Arkale substation requested by the city council following the commissioning of the phase shifter.*
- *Modification of the 400 kV Lada-Robla/Soto-Robla line between towers 207 and 208, in the municipality of Llanos de Alba (León), at the request of a private citizen.*
- *Burying of the 220 kV Fortuna-Moraleja and 220 kV Camino Fregacedos-Leganés lines in the municipality of Fuenlabrada (Madrid) at the request of the Fuenlabrada City Council.*

The results of both the predictive calculations and the measurements all the values being in all cases below those recommended by the European Union.

It is also necessary to carry out measurements in situ when the values of the parameters necessary for the calculation are not available. This is the case of some facilities acquired by the Company in 2010 in the electricity systems of the Balearic Islands and Canary Islands, and which is why during 2015 and 2016 a specific plan of EMF measurements was carried out. The measurements carried out proved in 2017 that all values registered in said period were below the minimum limits or were in accordance with the recommendation.

During 2017, there were no incidents resulting from non-compliance of the norms regarding EMFs.

Nonetheless, aware that electromagnetic fields are an aspect that generate significant interest in the territories where electricity facilities are located, this issue is addressed with special relevance in the informative sessions regarding future projects, as has been the case with those sessions carried out in the local councils of Astillero and Camargo in 2017 and has participated in the round table on 'Electromagnetic Radiation' included as part of the Health and Environment Plan of the Principality of Asturias (PASYMA).

In addition, with the aim of reflecting the advances of the scientific community and the latest declarations on EMFs from international organisations, as well as to incorporate the information related to new technologies in the field of electrical energy, Red Eléctrica together with UNESA has updated the publication: '**Electric and magnetic fields of 50 HZ. Analysis of the current state of knowledge'**. Said publication has been uploaded to the corporate website during 2017.

http://www.ree.es/en/sustainability/the-natural-environment/electric-and-magnetic-fields

6.4.3 Noise pollution

Sometimes the noise produced by some of the equipment or elements that make up the electricity substations can cause inconvenience to people living in neighbouring areas. Red Eléctrica constantly works on the implementation of the most effective noise mitigation measures.

The ACURED R&D+i project was launched in 2016 in order to improve the understanding of the nature of the noise generated. The aim was to better understand how the noise was generated and assess different technical solutions to reduce such noise. To date, the phases of preliminary study, evaluation, classification and prioritisation of sources of noise have been carried out and a proposal and simulation of corrective measures has been submitted.

Within the scope of the project in 2017, a noise barrier adapted to the real needs of the Soto de la Ribera substation (Asturias) has been designed in accordance with the project for the implementation of a new reactor and considering the noise emissions expected to be generated by the new equipment. The acoustic simulation and design of the noise barrier have been carried out, placing it on the perimeter of the substation very close to the equipment. Installation is scheduled for early May 2018.

On the other hand, two measurements were performed in 2017 due to claims made by private citizens, although in both cases the results were within the legal limits:

- ✓ *Herrera Substation, municipality of Herrera de Pisuerga (Valladolid)*
- ✓ *Eliana Substation, municipality of La Eliana (Valencia).*

After the measurements made after receiving a claim in 2016 regarding noise in the 400/220 kV Solorzano substation (Cantabria), whose values were found to be within the limits established under current legislation, a tree-based barrier has been planted (Leyland cypress hedge) that has been placed in front of the power transformer on the outer side of the perimeter of the substation. The objective of this hedge-like barrier is to mask the noise

generated but in no case eliminate it as it is a permeable barrier. Masking is achieved through the noise generated by the wind as it passes between the branches and the leaves of the trees.

In this regard, it is necessary to point out that although the substation is currently energised (live) the main source of noise of the substation (the transformers) are not yet in service and will not be in service until the new Cicero substation is installed.

This is the reason why the installation of an acoustic barrier that encapsulates the transformers until they are in service has been temporarily ruled out. It will be at that moment when the necessary data of this source of noise is available, which will allow the characteristics of the noise barriers to be designed which will be used to limit the noise intensity registered in the vicinity of the facility.

In 2017, there were no incidents resulting from non-compliance with noise regulations.

6.5 Waste management

Red Eléctrica has established processes that help minimise both the quantity and the hazardous level of waste generated, such as the in-situ regeneration of power transformer oil for its reuse and the avoidance of the need to deal with large quantities of oils as waste. Work is also being carried out on the 'Minimisation of cleaning waste from transformer containment pits' and 'Sustainable Stock' projects.

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

- Tasks regarding preventive or corrective maintenance: revisions, changing of parts, oil renewal, etc.
- Improvement to facilities: renewal of obsolete switchgear, improvement in accident prevention systems, etc.
- Measures against accidents: containment measures used in the case of leaks or spillages and cleaning work may lead to a large amount of associated waste.

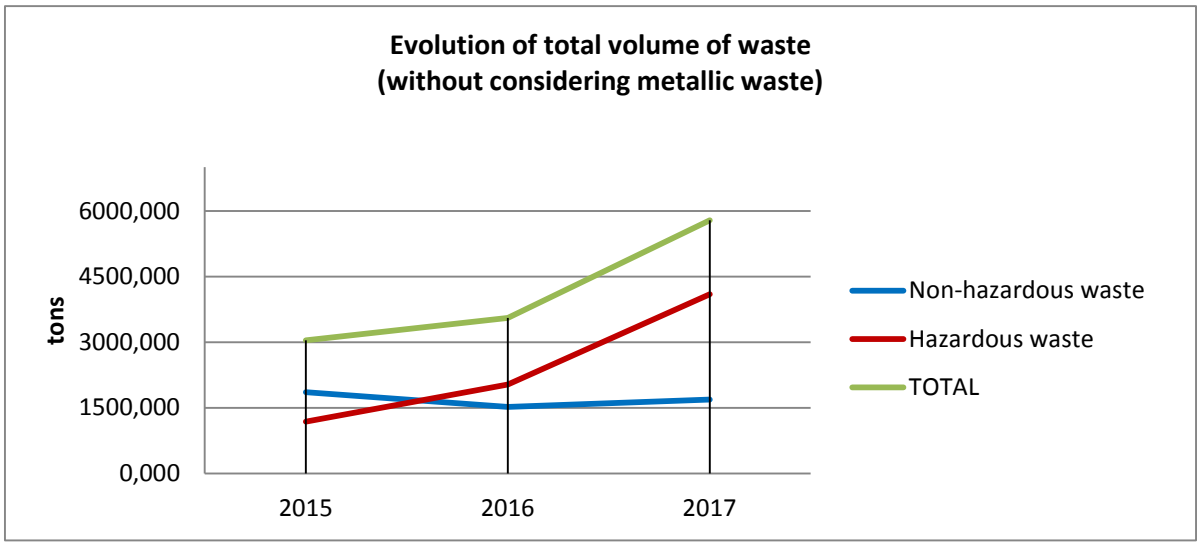
Due to the nature of the activities that generate waste, most of these do not follow a fixed pattern of behaviour, which is largely dependent on the number of construction and maintenance activities carried out throughout the year. Therefore, the interpretation of the data obtained and the comparison with previous years presents difficulties. For the same reason it is very difficult to predict the evolution of the quantities produced and to establish quantitative reduction targets. For example, the activity of renovation and adaptation of facilities generates a large amount of waste, but it cannot be limited as this activity is often linked to the reduction of environmental risks.

This year also adds a difficulty in comparing the overall data and non-hazardous waste obtained with that data available from previous years as metallic waste could not be included due to the fact that an adjustment in the process for the collection and recording of information regarding said waste is currently underway. This explains the difference between the 2015 data and that published in the 2016 and that shown in this report.

Flora and vegetation waste is not included either, but this was also the case in previous years, as most of it is incorporated into the land or handed over to landowners, as it is the most adequate waste management process, and therefore no variation in data.

In the case of hazardous waste, there is no impact and therefore can be compared directly with the figures registered in previous years.

In general terms, taking into account the foregoing parameters, the total volume of waste generated in 2017 has increased by 2,232 tonnes with respect to 2016. The volume of non-hazardous waste has increased with respect to last year by approximately 166 t (10.91%), and that of hazardous waste by approximately 2,066 t (101.51%) and therefore total overall waste increased by 2,232 t.



The following are noteworthy based on waste type:

Non-hazardous waste:

- It should be noted that the total amount is practically the same as that of the previous year, although if we do not take metallic waste into account, the amount of non-hazardous waste has grown by approximately 166 t (an increase of 10.91%) with respect to 2016.

- The increase in the amount of waste coming from glass insulators, ceramic and inert materials, is due to the fact that as of this year the waste management carried out by contractors that conduct maintenance work is starting to be registered, so it is expected that this increase could be exponential in the coming years.

- Actions to reduce the management of sludge coming from the cleaning of septic tanks continued in 2017, after the volumes of this waste experienced a stabilisation in 2013 and 2014 as a result of the efforts begun in 2015. This is primarily due to the fact that the campaign for the adaptation or replacement of assets to Red Eléctrica's standardised criteria and in some cases, to regulation in force, launched in 2010 is practically coming to its end.

- Noteworthy is that the amount of paper and cardboard waste managed has dropped by 59%. This reduction is due to the implementation of document management actions that encourage the use and exchange of information in electronic format, these tools have been implemented during the last 3 years and the results are now starting so show.

- Other non-hazardous waste, generated in insignificant amounts, follow the trend of previous years.

Non-hazardous waste	Quantities managed (t)			
	2015	2016	2017	Type of management (7)
Septic tank sludge	1,087.310	753.461	532.330	100% Composting/treatment/ Recycling (*Composting 62% and Anaerobic Digestion 38%*)
Metallic waste not contaminated with hazardous substances	1,476.903	333.036 (2)	161.701	100% Recycling
Inert waste	537.505	574.013	955.971	Recycling (93%)/ Waste-to-energy recovery (2%) Controlled elimination-landfill (5%)
Paper and cardboard	95.106	102.739	61.111	100% Recycling
Toner and printer inks (1)	0.008	0.026	0.015	100% Recycling
Wood	119.939	71.416	110.178	100% Recycling
Vegetable waste (3)	68.300	11.730	15.200	100% Recycling
Non-hazardous electrical and electronic waste	0.291	0.862	0.386	100% Recycling
Plastics	15.483	15.577	16.093	Recycling (96%) / Controlled elimination-landfill (4%)
Glass	0.010	0.160	0.385	100% Recycling
Vegetable cooking oils	1.160	2.460	3.680	100% Regeneration
Alkaline batteries - Non-Mercury	0.051	0.044	0.153	100% Recycling
Silica gel and other inorganic chemicals (4)	0.673	1.174	0.197	100% Elimination
Absorbent and filtering materials (5)	0.000	0.490	0.076	100% Waste-to-energy recovery
Saturated or used ion exchange resins (8)	Not contemplated at the time	Not contemplated at the time	6.905	100% Waste-to-energy recovery
Large volume waste (8)	Not contemplated at the time	Not contemplated at the time	1.060	100% Elimination
Total	**3,334.439**	**1,855.458**	**1,850.241**	
Total without metallic waste (6)	**1,857.536**	**1,522.422**	**1,688.540**	

(1) 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.
(2) In 2016 and 2017 the total amount of metallic waste is not included as an adjustment is being made in the process of collecting and recording the information.
(3) This item is not taken into consideration in the calculation of the total non-hazardous waste. This value is not significant due to the fact that the greater part of this waste is incorporated into the land or given to landowners. The table includes exclusively that waste delivered to a waste management company.
(4) This waste item was incorrectly accounted for in previous years in the hazardous waste section.
(5) New waste item - included in 2016.
(6) This year a recalculated total is added without taking into account metallic waste, as an adjustment is being made in the process of collecting and recording the information with the aim of potentially being able to compare it. This explains the difference between the 2016 and 2017 data with that published in previous years.
(7) Waste management corresponds to the information provided by the contractor or to the default procedure used by the contractor responsible for waste management
(8) New waste item - included in 2017.

Hazardous waste:

- It should be noted that in 2017 there was a significant increase (101.51%) in the amount of hazardous waste, which has increased by approximately 2,066 t due mainly to:
    - Used oil and hazardous electrical and electronic waste (management of equipment containing oil) as a result of the considerable increase in power transformers managed via REPEX projects (Replacement Expenditures).
    - The change of all the battery rooms in the Southern Area office has been carried out, which has led to the increase in the generation of Nickel/Cadmium accumulators:
    - An oil-filled cable (hydrocarbon) was managed as waste due to the accident of the submarine cable of the interconnection with Morocco and the replacement of the oil-filled cable as a consequence of the REPEX project (Replacement Expenditures).

- There has been a reduction in the quantities of oil and water mixture generated. The reduction of this waste is due to the start-up of an R&D+i project carried out in 2016, consisting of the use of a catalyst that enables the water from the oil collection tanks to be treated through the use of a mobile treatment plant. This means that it is only necessary to manage, through an authorised waste manager, a part of its content (the oil) and not the entire tank (water-oil mixture). The treated water is reused in the tanks themselves to keep them at the level necessary for their correct operation and in this way minimising the waste to be managed and treated.

(1) Once the elimination/decontamination plan for transformers, equipment and oil containing PCBs was completed in 2010, the amounts that are now generated are caused by the removal of old sealed equipment that is contaminated at the end of its useful life. 12,611 Kg of equipment contaminated with PCBs were managed in 2017.-EN1
(2) These wastes deal with used SF_6 *gas that is out of specification. The treatment of these wastes, consisting of the regeneration of gas for reuse, takes place outside Spain. EN 25- This means that 0.52% of total hazardous waste has been transported internationally.*
(3) Default Procedure for the contractors responsible for waste management. The total amount of waste which is delivered for recycling is estimated at ***48.6%.***
(4) New waste item included in 2016.
(5) New waste item included in 2017.

Hazardous waste	Quantities managed (t)			Type of management (3)
	2015	2016	2017	
Used oil	172.389	256.227	657.673	100% Regeneration
Oils with PCBs (1)	0	0	0	100% Elimination
Oil/water mixture	418.535	721.785	182.393	Regeneration (73%) /Recycling (27%)
Diesel/water mixture	0	9.945	0	Waste-to-energy recovery (90%) Elimination due to prior evaporation (10%)
Transformers and equipment with PCBs (1)	3.942	10.479	12.611	Recycling (58%) Elimination (42%)
Hazardous electrical and electronic waste: equipment containing oil	275.542	539.863	2,745.417	100% Recycling or recovery of metals
Hazardous electrical and electronic waste: Other	119.476	236.831	30.965	100% Recycling or recovery of metals
Nickel-cadmium accumulators	33.352	15.588	54.139	100% Recycling
Lead batteries	0.661	1.047	0.549	Recycling (88%) Waste-to-energy recovery (12%)
Earth impregnated with hydrocarbons	144.864	204.824	264.588	68% Elimination 32% Recycled
Containers that have contained hazardous substances	5.600	7.443	4.597	Recycling (99%) Incineration (1%)
Absorbent materials, filtering materials, cleaning rags/cloths and protective clothing contaminated with hazardous substances	2.770	5.594	29.864	Waste-to-energy recovery (91%) Elimination (4%) Recycling (5%)
Non-halogenated solvents	0	0	10.076	100% Regeneration
Halogenated solvents	0	0.007	0	Regeneration (70%) Elimination (30%)
Water-based cleaning liquids	0.059	0	0	Waste-to-energy recovery
Paint waste	1.749	0.890	0.226	Waste-to-energy recovery (28%) Elimination (72%)
Insulation material (with or without asbestos)	0.291	3.276	12.062	100% Controlled elimination-landfill
Laboratory chemical products containing hazardous substances	0.951	0.415	0.777	Recycled 3%, Elimination 97%
Gases in pressurised containers (2)	3.120	10.563	3.835	100% Recovery

Anti-freeze containing hazardous substances	0.043	0.573	0.020	Regeneration (60%) Elimination (40%)
Florescent tubes	0.548	0.659	0.886	100% Recycling
Batteries	0.092	0.039	0.033	100% Waste-to-energy recovery
Fuel oil and diesel	0	0	0.017	100% Waste-to-energy recovery
Oil-filled cable (hydrocarbon) (5)	0	0	91.370	100% Recycling or recovery of metals
Waste coming from adhesives and sealants containing organic solvents or other hazardous substances (4)	0	0.348	0	100% Waste-to-energy recovery
Metal contaminated with hazardous substances (4)	0	9.250	0	100% Recycling or recovery of metals
Total	**1,183.925**	**2,035.645**	**4,102.096**	

Waste management type (%) (*)

	Non-Hazardous (%)	Hazardous (%)
Recycling/Composting/ Anaerobic Digestion	95.3	74.9
Regeneration	0.2	19.5
Waste-to-energy recovery	1.5	0.7
Elimination (any method)	2.9	4.9

(*) The management of the waste corresponds to the information provided by the contractor (the one that appears in the legal documentation of waste management). The categories of final waste management have been extended to unify criteria with national legislation. The amount of waste whose destination has been recycling was 95.7% (it is included in the generic recycling category: recycling, composting, anaerobic digestion and regeneration).

❖ Minimisation of waste resulting from the cleaning of transformer containment pits. R&D+i Project

A catalyst has been developed that enables the water to be separated from the oil in containment tanks, so that the oil on its own can be managed as waste and not the oil and water mixture as a whole.

The treated water can then be reused in the same tanks to maintain the level of water required and, in this way, the waste to be managed and dealt with are significantly reduced.

In 2017, this process started to be applied in the management of facilities, resulting in a considerable reduction in the oil and water mixture waste compared to previous years.

	2016	2017

Water/oil mixture (Kg)	721,785	182,393

❖ Zero Waste Management Systems

Zero Waste Management Systems are a new waste management model whose objective is to avoid waste going to landfill sites, encouraging first its reuse, then recycling and finally its waste-to-energy recovery. In this way it is possible to re-introduce the waste into the value chain and convert it into a new resource.

At Red Eléctrica, we have extensive knowledge of the quantity and type of waste generated and its final destination. Waste reduction projects have been carried out that have produced good results and are currently being applied. However, what has not been achieved is to set targets for waste reduction because the vast majority of activities that generate waste do not follow a fixed pattern of behaviour and are largely dependent on the number of actions carried out throughout the year.

In order to reduce the amount of waste generated, taking into account the fact that it is not possible to reduce the volume of work carried out, it is necessary to consider the final destination of the waste generated and contemplate it as a potential new resource.

The implementation of zero waste management systems will enable processes to be optimised, reduction targets to be set, greenhouse gas emissions to be reduced, waste management costs to be brought down and even the possibility of new revenue to be received as a result of final waste being considered as new resources.

These management systems are in line with the circular economy and climate change strategies. The European Commission, which in its 2020 economic strategy has already set out reduction targets for the elimination of waste in landfill sites, states that only 10% of waste will go to landfill sites in Europe in 2030.

The objective for 2018 is the implementation of this type of model in the Red Eléctrica Corporate Campus, as a pilot test, in order to develop a methodology and an action plan to implement it in the rest of the facilities and waste generating activities in the Company.

❖ Reverse logistics project ‘Sustainable Stock’: obsolete power transformers as a new resource

Regarding the Company’s efforts to minimise waste, this project is noteworthy as it is based on a reverse logistics approach that follows the 3R principle: reduce, reuse and recycle.

It consists of the resale of materials considered inappropriate for their reuse, or their waste-to-energy recovery as waste, through an auction system. The project allows the extension of the useful life of some materials and the total or partial recovery of their components or materials.

In 2017, approximately half of the hazardous waste generated by weight corresponds to power transformers. From this data, the need arises to study the feasibility of applying reverse logistics in power transformers. All the actions that were planned during the year and that are going to generate this type of waste were analysed. It was decided to carry out a pilot project for the renovation and improvement of the Lomba substation (Castilla y León), in which it was necessary to remove four units of single-phase 200 MVA transformers.

The objective of the project was to sell the power transformers of the Lomba substation, for their reuse. The aim of this action was to reduce waste and obtain a favourable financial return.

All the waste generated in this project has been recycled or regenerated. The waste sent to a landfill site was zero.

6.6 Prevention of Soil Contamination and/or Groundwater

Red Eléctrica includes among its environmental risks the risk of contamination of soil or groundwater from leaks or spillages of oils, fuels and hazardous substances. On the one hand, the proper maintenance of equipment is carried out and strict working procedures that reduce the number of incidents are established. On the other hand, it has adequate containment systems as is the case of power transformers containing large amounts of oil and response protocols when faced with possible events that allow a reduction in the severity of the consequences should accidents occur. For this reason, numerous preventive and corrective measures have been established in order to minimise the risks of this type of accident.

The activity of Red Eléctrica within the context of Royal Decree 9/2005 of 14 January is set out in Annex I as 'Potentially soil contaminating activity' through the NCEA (*National Classification of Economic Activities*) CNAE-2009: 35.12: and the scope of activity is as follows: Electricity substations and power transformers or reactors.

Since 2005, in accordance with the provisions set out in the legislation, preliminary soil reports (PSRs) in the case of new substations and mandatory periodic updates (situation reports or SRs) have been presented with the frequency established by the various Autonomous Communities that cover different cases for which they are necessary. During 2017, 45 PSRs/SRs were presented.

In addition, work has been conducted in order to know, through an exploratory analytical investigation of soils, if there was or not any type of impact after minor accidents occurred in the following substations:

- *400/220 kV Trives substation (Galicia)*
- *220 kV Sabon substation (Galicia)*
- *220 kV Sobradelo substation (Galicia)*

Red Eléctrica works at several levels regarding the concept of land:

- **Purchase of new land**: prior to the formalisation of the purchase of new land for the installation of a new substation, enlargement, etc…, jointly with geotechnical studies, a soil and groundwater characterisation study is carried out in order to know its state at the time of purchase and to detect, in advance, possible impacts. In the event that no impact is detected, the aforementioned soil and water characterisation establishes the state of the soil before the start of operation of the facility and may be used at some point in time as a reference point to determine in the future if there has been a significant increase in the contamination of soil and groundwater.

During 2017, 3 characterisation studies were made in the land purchase process corresponding to the lands for future substations (La Farga, Lousame and Porís), and prior to the works it was determined that there would be no real impact on the land.

- **Existing facilities (substations)**: internal regulations establish that whenever a geotechnical study is carried out, at the same time a sampling of soil and/or groundwater is to be taken in order to determine, in an easy way and with an acceptable cost, the possible state of the land on which the substation is located. This will either confirm or rule out the presence of contaminants in the subsurface; identify possible sources of contamination and evaluate the possibility that there may have been anthropic impacts due to activities that may have been previously undertaken on the site.

8 specific characterisation studies were conducted in existing substations. (Soto de Ribera, Aldeadávila, Renedo, Zumárraga, Ortuella, Mas Figueres, Lomba, Hernani)

In none of the cases were values of contaminants found to be exceeding the generic reference levels (GRL).

- **Actions related to soil/groundwater as a result of accidents in previous years**

- **Recovery after the Cala Mesquida environmental accident**

During 2016, an incident on the Majorca-Menorca link occurred due to a leak in its land section in Majorca, through a pore in the cable sheath, producing the discharge of 3,620 litres of oil onto the beach of Cala Mesquida.

Different soil and water characterisation studies were carried out in order to determine the extent and depth of the impact. The affected area was 1,100 m^2 of land and 1,700 m^3 of groundwater.

Red Eléctrica followed the procedure for the recovery of soil and groundwater through article 38 of Law 22/2011, of 28 July, on Waste and Contaminated Soils. The origin of the fault was found to be at the Cala Mesquida beach located in Red Natura 2000, belonging to the study area which belongs to the Site of Community Importance (SCI) and SPA of 'Muntanyes d'Artá' code ES0000227.

During the first quarter of 2017, actions to recover soil and groundwater at Cala Mesquida Beach were undertaken following the recovery plan approved on the premise of there being no risks that were deemed unacceptable. However, there were potential risks discovered following a full analysis of both the soil and groundwater and taking into consideration previously unknown variables.

The main conclusions after the work carried out are the following:

- the leakage has not affected the existing water wells in the vicinity, as it was confined only to the affected area on the beach itself.

- the recovery has obtained very high yields both in soils **(> 98% reduction**) and in water (**99.7% reduction**), based on the analytical result of the external certification, and the previous analytical data regarding the same zone. The aforementioned reduction is higher than that usually achievable by this type of treatment. The type of sand (with reduced presence of organic matter, and a fairly uniform size of sand grain), the decrease in the flow of tonnes/hour of treatment and the greater time the affected sand remained in the sand washing plant, as well as the addition of the

surfactant (oil dispersant) in the correct dosage, and the high rate of pumping installed in the excavation area, have led to the results obtained exceeding best forecasts. On the other hand, the surfactant used has not been subsequently detected in the groundwater after the treatment and discharge of the treated water, nor in the results obtained for the soils in the affected area.

- The results obtained in remnant soils and from the report of the external certifier (external accredited company not involved in the remediation and sanitation project), have determined the need to carry out an update of the Quantitative Risk Analysis (QRA) as a result of 2 samples (of the 6 extracted) being slightly higher than the target values of 50 mg/kg reflected for total petroleum hydrocarbons (TPH) in the resolution issued by the Ministry of Environment, Agriculture and Fisheries. Based on the results obtained in the update of the QRA, the risks have decreased to a great extent, determining that they are **acceptable** for all the scenarios considered.

- The reduction of risks is highly significant in any of the scenarios (in the range of two to three levels of magnitude that determine reductions in the range of 97-99%) and determines that even under any analysis of uncertainty the risks are well below the threshold where risks become inadmissible.

- **Recovery after the Cala'n Bosch environmental accident**

In January 2016, an incident in the Menorca-Majorca connection on the stretch of land in Menorca produced a leak through a pore in the lead shield of the cable sheath. Red Eléctrica followed the procedure for the voluntary recovery of soil and groundwater.

During 2017, the application of emergency and recovery measures continued in the short and medium term in order to extract the spilled oil. In addition, a project to recover soil and groundwater is being developed / designed in order to recover the site once all the free phase oil recovery (‘free phase’ a term to describe hydrocarbon contamination which is present as a discrete substance rather than mixed with water or soil) has been concluded. The extent of the impact (latest estimated official data) is about 1,200-1,600 m^2 of soil while the area of groundwater affected is estimated at about 2,200-2,600 m^2. The fault is located in an urban area near the sea where residential and tourist activities usually take place.

Since May 2017, a free phase oil recovery and groundwater extraction plant has been installed in order to optimise the previous system based on individual active skimmers located in the main affected areas, which has allowed a larger quantity of free phase oil to be extracted with a high-level of efficiency by ensuring that the entire free phase oil is present in the focus area and affecting the surrounding areas. In addition, since December 2017, a system of ‘slurpers’ or vacuum extraction tubing has been installed in the boreholes located on the affected stretch in order to continue increasing the effectiveness of the extraction of the free phase oil in said area.

In the last few months of the year a gradual decrease in the extracted volumes has been detected, which determines that the volume of existing free phase oil remaining in the geological formation in the area of impact is increasingly smaller and increasingly difficult to extract.

During 2018, once the potential completion of the project is foreseen, actions will be taken in the short term to submit the **recovery plan** designed to the competent Public Administration for its approval and subsequent execution.

- Other noteworthy actions

Environmental risk assessment and identification of environmental liabilities in electricity substations:

As a result of the accidents that occurred during 2016 in the oil-filled cables, one the one hand the need was established to carry out a risk assessment study that would prioritise the cable sections with the greatest risk from an environmental perspective and, on the other hand, a technical and economic feasibility study regarding future actions and management solutions linked to the study.

The objective of the project was to evaluate the level of environmental risk associated with the various oil-filled cable circuits in operation (130 km distributed throughout different areas of Spain whether it be a land, marine and waterway section), prioritising these sections of line according to the level of environmental risk and defining an action plan for the final management of these facilities.

It is a known the impacts fact that this type of cable can suffer oil leaks or spillages that could have a have a significant impact on the environment in which they are located, which can lead to environmental risks, risks to human health and reputational risks that may affect to the Company.

In the first phase of the project, an environmental risk assessment of the oil-filled cables was carried out with regard to those aspects that could be affected (physical, ecological and human):

- For land cables, the evaluation of environmental risks focused on the estimation of potential impacts on soil, groundwater and surface waters, developing a probabilistic calculation model that integrates technical, historical, environmental and social data, and calculates the level of environmental risk from a certain probability of occurrence of an event and the severity of the impact thereof for each section of each oil-filled cable. The environmental risks have been expressed in monetary terms, which has made it possible to determine how urgently actions should be taken for each cable section.

- For submarine cables, the associated risks have been evaluated based on the potential impacts generated on ecosystem services. These services are the direct and indirect contributions of ecosystems to human well-being. Generally, they are classified into four broad categories: provisioning, regulating (e.g. climate, air, soil and water, flood protection), cultural and recreational uses (e.g. bird watching and boating activities) and supporting (e.g. nutrient cycles and oxygen production). This methodology first characterises the social, economic and environmental values existing in the study areas, and then performs a cost-benefit analysis regarding the effects of the different decommissioning options for cables on said values.

Based on the results obtained, a prioritisation of the cable sections into classes has been generated, obtaining cost estimates of environmental liabilities for a Probable Scenario (***a 50% probability that cost will not be exceeded***) and an Adverse Scenario (***a 90% probability that cost will not be exceeded***). In addition, risk maps have been prepared that represent the classification of each facility in terms of its potential level of environmental risk.

In the second phase of the project, based on the results of the classification of the potential environmental liabilities, a Plan of specific actions has been prepared for each oil-filled circuit that establishes the order of priority of the actions associated with the deactivation and/or replacement of the cables, and the options available.

6.7 Stakeholder groups

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

6.7.1 Management of Consultations and Grievances

We monitor and attend to all consultations and grievances of an environmental nature which are sent to us by interested parties via electronic mail or the DÍGAME service (Stakeholder Attention Centre) specifically provided for this purpose on our website www.ree.es.

The consultations filed are classified by their nature: enquiries (including complaints, queries, suggestions, requests for information and recognition) or grievances.

In 2017, Red Eléctrica managed a total of **76 enquiries of an environmental nature**, of which **16 resulted in grievances**.

The areas for which stakeholders have contacted Red Eléctrica in the last three years are shown in the table below. Noteworthy were the enquiries received by the different organisational units as a result of works for the felling and pruning of flora and the grievances regarding said concept.

	Evolution of enquiries (2)			Evolution of grievances (1) (3)		
	2015	**2016**	**2017**	**2015**	**2016**	**2017**
Birdlife	4	3	6	0	0	0
Electromagnetic fields	17	9	12	1	0	2
Consumption/Energy efficiency	1	3	0	0	0	0
Environmental costs	0	0	0	0	0	0
Emissions/Climate change	11	9	5	0	0	0
Impact on the landscape	1	0	1	0	0	0
Facilities/Infrastructure	5	10	3	0	7	1
General environmental information	8	4	6	0	0	0
Waste	0	1	2	0	0	0
Noise	3	2	8	1	1	1
Environmental management system	8	8	3	0	0	0
Flora/Vegetation	27	23	30	19	17	**12**
Total	85	72	**76**	21	25	**16**

(1) The disciplinary proceedings are detailed in another section of this statement.
(2) The result encompasses all enquiries received.
*(3) Only includes **applicable** grievances pursuant to procedure IQ002.*

6.7.2 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.

Red Eléctrica requires all those suppliers with a greater environmental impact (providers of services that can generate direct impacts on the environment, and equipment suppliers whose manufacturing process is resource-intensive) to have an environmental management system that has been documented or certified by a third party. In 2017, this requirement was requested from 224 new suppliers.

With the aim of improving the environmental performance of the supply chain, in 2015 a project was launched to adjust the requirements demanded of different suppliers to the impacts (potential or real) of each one of them. After a process of identifying and assessing the impacts for the contracted services and conducting tests with a significant group of suppliers, in 2017 it was concluded that there was a requirement for a system certified by a third party that conforms to the type of impacts associated with the services provided by Red Eléctrica's suppliers, so it was therefore considered appropriate to continue with this requirement without adding any other mandatory requirements. We will continue working with suppliers through a scoring questionnaire on sustainability that will help identify areas for improvement and collaborative projects that serve to enhance and progress in their environmental performance.

In addition, the Company will proceed to review and complete the identification of impacts associated with the acquisition of goods and services, including in the matrix of impacts those associated with supplies of equipment and materials, with special attention to those from countries at risk from a perspective of socio-labour conditions, and evolving the requirements associated with the significant impacts in the qualification and monitoring processes. The environmental requirements, in terms of training and specifications for the execution of the works, are part of the contractual documentation for those services in which they have been identified as necessary.

In the case of the activities with the greatest potential impact, such as construction, refurbishment of facilities and some maintenance activities, part of the payment of the contracted work is conditional on the result of the relevant environmental certification process which implies an extremely exhaustive monitoring of the established environmental requirements.

On the other hand, in line with the Climate Change Action Plan, a new methodology for calculating emissions associated with the supply chain has been defined in 2017, to continue in 2018 with the definition of the work procedures and methodology necessary to promote the reduction of these emissions.

6.7.3 Internal training and awareness

Red Eléctrica considers environmental training as a strategic line to form a team which is increasingly more aware of environmental protection. The training given is beyond merely a professional level; its aim is also to contribute to improving environmental habits in both the daily work and family life of each employee.

The percentage of staff of Red Eléctrica who received specialised environmental training during 2017 was 2.2% (compared to 8% in 2016), corresponding to 37 people and a total of 668 hours of training (compared to 539 hours in 2016).

6.7.4 Stakeholder relations

❖ **Participation in working groups**

Working groups	Organiser
WG C3.12: 'Methodologies for the calculation and reporting of carbon inventories in electricity transmission and distribution companies'	CIGRE (International Council on Large Electric Systems)
WG C3.14 Environmental responsibility	
WG C3.16: Interaction between electricity infrastructures and wildlife	
Study committee C3 (Environment): Secretariat of the committee	
National CIGRE committee (Environment committee member)	
Environment Community, Committee member	AEC (Spanish Association for Quality)
WG Assets Implementation and Management (AIM), Environmental Impact Assessment. Subgroup	ENTSO-E
SF_6 Voluntary Agreement Monitoring Group	UNESA, AFBEL and MAGRAMA
Biodiversity Management Observatory Consultation Committee Energy Efficiency Observatory Sustainable Mobility Observatory	CES (Excellence in Sustainability Club)
Working group on electricity lines	Spanish Business and Biodiversity Initiative (Biodiversity Foundation)
Working group on Business and Biodiversity	CONAMA
Working groups - ST-21 'The challenges of protected natural areas' - GT9: Business and Biodiversity. Mitigation Ranking - Practical workshop. Mitigation Ranking - GT5: Mobility at work	CONAMA
Spanish Green Growth Group. Various working groups	Spanish Green Growth Group
Climate Change Cluster	Forética

WG - Working Group

❖ Congresses and informative sessions/days

Congresses and informative sessions	Organiser
Health and Environment Plan of the Principality of Asturias (PASYMA), thematic round table on 'ELECTROMAGNETIC RADIATION', 19 June 2017	Ministry of Health in Oviedo.
Exhibition on EMFs in the Municipalities of Camargo and El Astillero (220 kV Astillero-Cacicedo conductor)	Town Councils of Camargo and El Astillero
Developing transmission electricity grids, protecting our seas. Presentation of REE's subsea forest: 'Innovative technique for the recovery of Posidonia Oceanica seagrass meadows' project	RGI (Renewables Grid Initiative)
'Good Practice of the Year Award 2017' Award ceremony by Renewables Grid Initiative	
Presentation of the 2nd edition of the Observatory of Business Management of Biodiversity. Presentation of the project entitled 'Innovative technique for the recovery of Posidonia Oceanica seagrass meadows'	CES (Excellence in Sustainability Club)
Presentation of the 'Innovative technique for the recovery of Posidonia Oceanica seagrass meadows' project. Holding of the second anniversary of the adoption of the SDGs	Spanish Global Compact Network
Participation in a round table. Business workshop on the protocol of natural capital	CES (Excellence in Sustainability Club) and the Natural Capital Coalition
Business management of biodiversity. Natural capital and the Company: from what to how'	Forética
Participation in a roundtable. Meeting: Proposal for the creation of the monitoring network for the problem of the mortality rate of protected birdlife due to electricity lines.	Provincial Office for the Environment of the Justice Administration.
Participation in a round table. Conference 'Giving Life to the Natura 2000 Network'. Organised by SEO Birdlife.	SEO Birdlife
Participation in the closing ceremony of the Life + Activa Red Natura 2000 project	
Sponsorship and stand. 4th International Doñana Birdfair	
Sponsorship 23rd Spanish Ornithology Congress	
12th BIO Week Valencia. Action linked to the Government of Valencia's biodiversity framework agreement	General Directorate of the Natural Environment and Environmental Assessment (Regional Department of Agriculture, Environment, Climate Change and Rural Development)
Participation in the 3rd 'Jornades of the Societat d'Història Natural de Els Ports' Lecture	Societat d´Història Natural de Els Ports

6.7.5 Communication and dissemination of environmental information

The main channels of communication Red Eléctrica has for stakeholders regarding information pertinent to the environmental performance of the organisation are the following:

- Corporate reports. Red Eléctrica makes a significant effort to publish and disseminate publications as a key tool for communication with its various stakeholders. Among these reports, the **Sustainability Report** stands out as the main channel to transmit to the stakeholders the Company's commitments to sustainability and the activities carried out in this area. The Sustainability Report is verified externally in relation to the ISAE3000 standard in order to ensure the reliability of the information, as well as its adaptation to international reporting standards.

- The **EMAS Environmental Statement** through which information is provided regarding the environmental impact and behaviour of the organisation in addition to data regarding the continuous improvement in the field of environmental performance within the organisation and this is verified externally in relation to the European EMAS Regulation.

In addition, the corporate website is a communication tool that is developed under criteria of transparency and continuous improvement.

During 2016, as a result of the loss of information caused by an incident on the Company's server and web analytics software, there has been an incorrect / incomplete visualisation and reading of the access and download data of the Company website therefore, it is not possible to provide reliable data or any comparison with previous years.

In the environmental section of the Red Eléctrica website (www.ree.es), two sections are noteworthy:

- In the 'Natural Environment' subsection of the 'Sustainability' section of the website there is a section called 'Environmental Permitting Process' where the environmental permitting process of projects is described and where the documents associated to those projects that are currently in the processing stage are published:

http://www.ree.es/en/sustainability/the-natural-environment/status-of-the-environmental-permitting-process-of-projects

- The Map of projects section includes a new section entitled 'Noteworthy Projects' that includes the projects 'The Red Eléctrica Forest' and 'Birds and power lines: Mapping of bird flight paths'.

http://www.ree.es/en/sustainability/noteworthy-projects

Furthermore, in 2017 the following new videos were produced and uploaded:

- 'The Red Eléctrica Forest' video
- Video on the satellite radio tracking of the Golden Eagle in Navarra

http://www.ree.es/en/videos

❖ Internal communication

Since September 2015, the Company has a new corporate intranet 'miRED', therefore 2017 is the second year for which data is available regarding the impact of miRED on internal environmental communication:

- Visits to miRED:

	2016	2017
Environmental Section	Average of 24 visits/month	Average of 32 visits/month
'Red Eléctrica eficiente' Community	49 followers	67 followers
'Sustainable Mobility' Community	61 followers	81 followers

- News published in miRED:

  - 16 news items published in the 'carousel'.
  - In addition, the miRED wall is open for all Company employees to publish news that is of interest.

Furthermore, as in prior years, a great number of projects and initiatives have been undertaken, in four specific areas taking four key dates as a reference point. Internal communication tools (miRED and display screens in the foyer, canteen and coffee break areas) shall be used for this communication purpose.

Red Eléctrica positions itself through the publication of external messages on social networks, the corporate web and to all staff through the internal communication tools devised for this purpose:

In addition, as a tool for communication aimed at the Company's employees, Red Eléctrica eficiente has a collaborative space on miRED: Red Eléctrica eficiente community. In 2017, 9 publications were posted in the community in addition to a press release, three messages on Twitter and Facebook were issued. Via other communication media, 4 news items related to the fifth edition of the Red Eléctrica Eficiente Awards project were published.

- **Communication campaign 5 March 2017 (World Energy Efficiency Day):** A series of messages was programmed and launched on social networks, the corporate website and to employees through the internal communication channels designed for this purpose.
- **Actions with employees**: 2nd Edition of the workshop for employees regarding the electricity bill.

- **Actions carried out at other times throughout the year:**

Commitment to the **sustainable city** concept has continued, revolving around energy, water, recycling and mobility.

Throughout the year, activities have been carried out on the dates indicated. To this end, internal communication channels (miRED and display screens in the foyer, canteen and coffee break areas) have been used.

o **22 March, World Water Day**. Messages published via internal communication channels. Messages issued by the United Nations (UN) in its campaign for World Water Day 2017.

Display screens in vending machine areas:

- *Water and sustainable development.*
- *Water is energy.*
- *Water is equality.*
- *Water is nature.*
- *Water is health*

News published on the REe community and the miRED wall.

- Today is World Water Day, a limited vital resource.

o **17 May International Recycling Day.** Messages published via internal communication channels.

Display screens in vending machine areas:

- *Reduce, reuse and recycle. Use the appropriate collection containers.*

News published on the REe community and the miRED wall:

- *Today is World Recycling Day*

o **16-22 September - European Mobility Week.**

Actions linked to mobility week. Publication of messages using the various internal communication channels:

News published on the REe community and the miRED wall:

- *Europe celebrates European mobility week*
- *CECOVEL registered on the European Mobility Week webpage as a mobility action 2017*

- *Recognition of REE for its involvement in the promotion of sustainable mobility. Issued by the Sub-directorate of Air Quality and Environment of the Ministry of Agriculture and Fisheries, Food and Environment during the European Mobility Week 2017.*

- **Other dates:**

  - Sustainable mobility observatory advisory board CES (Excellence in Sustainability Club).
  - REE membership of the Sustainable Professional Mobility project promoted by the CONAMA Foundation.

6.8 Innovation

During 2017, R&D+i expenditure of an environmental nature increased to **593,857 euros**. This amount represents **6.37%** of the total expenditure on R&D+i. With the collaboration of all the areas involved, the following R&D+i projects stand out from the point of view of sustainability and the environment:

Development of a modular, sustainable and flexible transformer	The objective of the project is the development of a modular transformer, consisting of single-phase banks that allow the interchangeability with existing three-phase or single-phase units, of a sustainable nature, or with low environmental impact, using hybrid technology that reduces the size and weight required. It shall also have the monitoring systems required to enable predictive maintenance and flexible operation in emergencies.
Analysis of conductor displacement	The object is to delve into the knowledge regarding the real conditions of displacement of the conductors of overhead lines when they are subjected to wind action.
Office 2020 horizon	The objective is to demonstrate the feasibility of ending the use of traditional media (paper, CD, etc ...) and optimising the control of information that is handled electronically (e-mails, etc.) at work by a large number of units within Red Eléctrica.
ACURED – Noise reduction in substations	The project emerges as an opportunity to: - Identify and characterise noise sources in facilities. - Analyse the current legislation on noise. - Study possible solutions to reduce noise and make proposals for effective noise reduction. - Define and develop solutions to reduce noise emission in the vicinity of electricity substations.
Study on the use of transmission lines as stepping-stones for fauna	The objective is the analysis, identification, diagnosis and assessment of the effectiveness of the bases of the towers of the electricity transmission line as stepping-stones for fauna of the various protected natural areas throughout the Spanish Peninsula, Balearic Islands and Canary Islands and their connections with the electricity lines of Portugal and France. The project aims to be innovative in its field and its subsequent use is sought to improve the populations of certain species of animals with dispersion problems. For this reason, the species of different taxa (animal or plant groups having natural relationships) most affected by habitat fragmentation problems will be analysed as a priority, and then electricity lines that can connect distant populations will be selected, regardless of their level of protection. During 2017, the target species and optimal spaces were identified.
Tecnosuelos	The objective of the present project is to delve into the knowledge regarding certain types of soils designed with specific characteristics that could be used for different objectives in REE. There are experiences with hyper dystrophic soils (without vegetative development) that prevents the appearance of any type of vegetation. Its possible use in the complete set of substations would avoid having to carry out the clearing work by using herbicides that have to be used currently.
Vegeta 2	Second phase of the project. The objective is to optimise vegetation management tasks. In 2016, work was carried out on the definition of an algorithm that, by analysing different variables (vegetation status and growth rate, distance to the electricity line, legal requirements and other established criteria), enables felling works to be established with greater efficiency. In addition, the project includes the conducting detailed Vegeta Project inventories (2015-2021) of the vegetation inside the safety corridors, which makes it possible to identify compatible and incompatible species more accurately, thus facilitating the application of environmental criteria in maintenance tasks.

	Up to 2017, progress has been made in the execution of pilot projects in two autonomous communities: Galicia and Extremadura, 2016 and 2017 respectively. During 2018, the aim is to study the algorithm and implement it in the Basque Country.
Methodology for repairing SF_6 leaks in GIS	It is a project for the development of a methodology and systems for repairing SF_6 leaks in GIS that are different from conventional repair systems, which always involve the dismantling of GIS compartments and the conducting of subsequent AT tests.
Geothermal HVAC	Implementation in the building in San Sebastian de los Reyes
Geothermal ventilation	Study of the use of geothermal ventilation for gas-insulated facilities and cable galleries
Sustainable transformer	Validation of the use of natural ester fluids as a refrigerant in standard power transformers

7 ENVIRONMENTAL RISKS

Red Eléctrica has a comprehensive risk management system in place in order to facilitate compliance with the Group's strategies and objectives, ensuring that the risks that could affect them are identified, analysed, assessed, managed and controlled systematically, with uniform criteria and within the level of acceptable risk approved by the Board of Directors.

The Management System conforms to the ISO 31000 standard on the principles and guidelines in risk management and is ongoing and comprehensive in character.

There is also a Comprehensive Risk Management Policy and a Comprehensive Risk Management and Control Procedure, based on the Comprehensive Risk Management Framework COSO II (Committee of Sponsoring Organisations of the Treadway Commission).

The General Comprehensive Risk Management and Control Procedure regulates the process of identification, analysis, assessment and management control of the relevant risks faced by the Company.

This process is carried out in order to ensure that the various levels of management of the Company are fully aware of and assess the risks and that the management of risks is carried out within the established limits of acceptable risk.

Operational risks are among the different types of risks for Red Eléctrica. Included among them are **environmental risks.** These risks are mainly related to the environment in which the activities are carried out.

The level of risk that Red Eléctrica is willing to accept is established both for the risks individually and in aggregate form (acceptable overall risk level). A methodology for the determination of acceptable risk has been defined. In this way, all identified risks are classified into three categories: high-level risks, medium-level risks and low-level risks.

In order to establish the level of a risk, two parameters are used, which are the probability of occurrence and the impact it would have on the Company, in the case it materialises, on four key elements of the business: electricity supply, achievement of the basic strategies, reputation and economic loss.

In the process of identification, analysis, assessment and control of risks, the necessary actions are established to reduce the level of risk and take it to the acceptable risk value.

During 2017, no environmental risk has materialised.

The following have been identified as the main risks and actions from an environmental point of view:

	Environmental impact risks	Main actions for the management of risks
1A011R04	Impact on archaeological and ethnological heritage	• Application of strict environmental criteria in all phases of planning, development and maintenance of facilities. • Environmental supervision of construction works. • Biodiversity strategy and actions. • Development of research projects and fire prevention plans. • Projects for birdlife conservation. • Training courses in environmental matters for field personnel. • Environmental awareness of suppliers. • Implementation of the Environmental Work Certification. • Establishment of collaboration agreements on environmental protection with the various Autonomous Communities. • Fire protection plans. • Contingency plans.
1A011R02	Delays or stoppages during works due to non-compliance or inadequate environmental management.	
1A012R01	Risk of fires due to lines and in substations	
1A012R03	Impact on birdlife due to transmission grid facilities	
1A012R04	Contamination of soils and / or ground, surface or marine waters due to leaks or spillages of oils, fuels and hazardous substances	
1A013R01	Inadequate actions of suppliers with relevant environmental consequences	

	Risks arising from climate change	Main actions for the management of risks
1A010R03	Climate change: Risk arising from greenhouse gas emissions.	• Commitment and action plan for the fight against climate change. • Voluntary agreement for comprehensive management of SF_6 gas in the electricity industry, between the Ministry of Agriculture, Food and Environment, equipment manufacturers (AFBEL), UNESA, REE and waste managers. • Development of system operation tools (CECRE). • Construction of new transmission lines for the evacuation renewable energy. • Strengthening of international interconnections. • Development of demand-side management initiatives (interruptibility service, measures to achieve a more efficient consumption profile, initiatives for the implementation of the electric vehicle). • Development of research and innovation projects: new technologies and technical solutions for efficient system management, new tools for emergency situations, smart demand management, energy storage.
1A013R03	Climate change: Risk arising from changes in legislation due to climate change.	
1A010R03	Climate change: Physical risks on the facilities of the transmission grid associated with the effects of climate change.	

❖ Risks arising from legal requirements and other requirements

The strengthening of the compliance function is one of the priority actions in the Company due, among other reasons, to the demands made by stakeholders requiring the Company to maintain high levels of service excellence and ethical standards when carrying out its functions.

Since 2016, a Compliance System has been developed and is aligned with the best practices in this area, in order that the organisation adequately complies with the established obligations and commitments undertaken. One of the regulatory areas in which the compliance system is being developed is **environmental**. One of the key objectives is based on promoting a global and anticipatory vision of compliance risks, ensuring an efficient control of said risks, guaranteeing the coordination and standardisation of its management at a corporate level, as well as improving internal control in the organisation.

The Company has an environmental management system in place based on the 14001 standard and therefore has, since 1999 has had a process implemented for the identification and assessment of legal requirements and other requirements that allows the Company to maintain compliance with them and anticipate and be prepared when faced with the modification or appearance of new requirements. Nonetheless, in 2017 a preliminary map of environmental compliance risks was defined and developed.

In addition to identifying and assessing risks, we have begun to identify, analyse and assess the key controls that mitigate such risks. All this process will continue its development and evolution during 2018.

To date, 14 risks have **preliminarily** been identified and evaluated and show a different classification in terms of risk assessment.

RISKS ASSESSED

1 Not adopting or not complying with the necessary preventive measures to avoid damage to the natural environment.	8 Generation of fires.
2 Not adopting or not complying with the necessary corrective measures to repair any damage caused to natural resources or the environment.	9 Conducting felling and pruning works without administrative authorisation.
3 Discharge of wastewater and contaminating liquid waste products without proper/due authorisation.	10 Conducting work without authorisation in periods declared as high-fire risk.
4 Existence of high-voltage overhead electricity lines that do not comply with the minimum safety distances or guidelines defined and set out by the Public Administration.	11 Inadequate management of hazardous and non-hazardous waste (operational and documental).
5 The Company losing its presence in the sustainability indexes.	12 Loss of ISO certification
6 Not carrying out the administrative permitting process for a project and/or works subject to an Environmental Impact Assessment.	13 Loss of EMAS certification
7 Non-compliance with the Environmental Impact Statement.	14 Inadequate actions by suppliers having relevant impacts on the natural environment

8. OBJECTIVES – ANNUAL ENVIRONMENTAL PLAN

In order to perform continuous improvement of environmental performance and processes, Red Eléctrica annually defines an environmental plan in which the objectives derived from the different strategies of the Company are specified and specific work actions are defined.

The purpose of Red Eléctrica's environmental plan in 2017 was to develop an annual action plan with all those tasks that had an environmental component associated and that were intended to be carried out during 2017. This model is different to the one carried out and named as the Environmental Programme and which had been used to date, which had an objective that was more focused on complying with the requirements of the Environmental Management System (and under the criteria the standard establishes for them).

The intention from 2017 is to have a model with a global scope that constitutes a compilation of all the environmental activities that the Company will carry out during the following year.

The areas of action included in the 2017 Environmental Plan are grouped into three defined and interrelated vectors that correspond to the Company's most relevant areas of environmental activity:

- **A. Environmental management of facilities:** this encompasses the activities of integrating facilities into the environment (area considered as a material aspect), the prevention of contamination, as well as the generic cross-cutting activities related with environmental management.
- **B. Biodiversity.**
- **C. Climate Change.**

The actions included in the plan are aligned with the 2014-2019 Corporate Strategic Plan and with the different strategies and programmes in force in the Company, highlighting the Company's growing environmental dimension and contributing to the progress of the defined courses of action that guarantee success and the achievement of common goals.

The total compliance with the Environmental Plan is the result of the fulfilment of the various tasks (144 in total for 2017) as pertaining to that scheduled for the year. The contribution of each task to the Annual Environmental Plan is weighted according to its importance, out of a total of 100 points.

Overall fulfilment of the 2017 Environmental Plan was 73%.

Those tasks that were considered of greater relevance reached a compliance level of **84%**. Taking into account the ambitious nature and the significant number of high-level voluntary tasks that were set, the result obtained can be assessed as highly positive. Below we highlight the most relevant tasks undertaken:

Vector	Tasks	Results obtained
A. Environmental management of facilities	Adapting to the new ISO 14001: 2015 standard.	Environmental Management System adapted and certified by AENOR in June 2017.
	Definition of a protocol and drafting of an action guide for the management of the stakeholders of the projects linked to the central electricity ring in Asturias	General protocol drafted for the improvement of public participation and social acceptance of certain projects included in the Electricity Planning and action guide for the management of the stakeholders of the projects linked to the electricity ring in Asturias.
	Environmental risk assessment in oil-filled cables	Environmental risk assessment of all oil-filled cables currently installed in the transmission grid.
B. Biodiversity	Biodiversity Strategy Action plan	Approval of the 2017-2021 Biodiversity Action Plan by the Executive Committee.
	Carrying out works for the Firgas Forest (Gran Canaria)	17 hectares restored on the Firgas mountain (protected natural area of the Doramas Natural Park), with the planting 8,908 individual native trees that are characteristic of the monteverde ecosystem formed by laurel forest and evergreen heathland.
	Promoting the recognition of REE's environmental commitment in the 'Good Practice of the Year Award 2017'	Awarded the 'Good Practice of the Year Award 2017' from the Renewables Grid Initiative (RGI) in the category of Environmental Protection: 'Innovative technique for the recovery of Posidonia Oceanica seagrass meadows' project
C. Climate Change	Reviewing and adapting information pursuant to external requirements and promoting the Climate Change Action Plan: Definition of pending targets (Science Based Targets). New Action Plan for the Climate Change Commitment	Approval of the revision of the Climate Change Action Plan that aligns the Company's objectives with the commitments of the Paris Agreement and the European targets for 2030.
	Improved calculation of emissions associated with the supply chain	Definition of a new methodology for calculating emissions associated with the supply chain.
	Implementation of defined energy efficiency measures (140,000kw/h annual theoretical savings)	Improvements in HVAC systems, lighting and insulation in 9 work centres, which will mean an estimated savings of 172,085 kWh per year.
	Carbon Disclosure Project (CDP)	Inclusion in the CDP Leadership Index (A list) in recognition of the Company's efforts and actions to combat climate change.

9 ACCIDENTS WITH ENVIRONMENTAL IMPACT

At Red Eléctrica we are well aware of the consequences that an accident may have on the environment, and for this reason, we apply preventive measures to reduce the likelihood of them happening, or in the event they might occur; minimise the impact on the environment.

The evolution of incidents with environmental consequences in the last three years is reflected in the following table:

Incidents reported	2015		2016		2017	
	Accident	Incident	Accident	Incident	Accident	Incident
Construction activities	0	67	1	44	**0**	**35**
Fires due to fault in lines	0	0	0	0	0	0
Fires due to fault in substations	0	0	0	0	0	0
Leaks and spillages of oil due to error in the filling of transformers	0	2	0	0	0	0
Leaks and spillages of oil and hydrocarbons due to minor breakdowns during the use of machinery during construction works	0	60	0	33	0	35
Leaks and spillages of hazardous substance due to explosion of equipment	-	-	1	0	0	0
Leaks and spillages of hazardous substance	0	2	0	4	0	0
SF_6 leaks	0	1	0	1	0	0
Effects on flora	0	2	0	6	0	0
Maintenance activities (1)	13	30	14	43	**8**	**36**
Fires due to fault in lines	2	1	1	1	0	0
Fires due to fault in substations	1	1(2)	1	1	0	0
Towers brought down due to severe weather conditions	0	0	0	0	0	0
Leaks and spillages of oil and hydrocarbons during the use and maintenance of substation equipment	4	25	5	36	8	35
Oil leaks in lines	2	0	5	0	0	0
Floods	0	0	0	0	0	0
SF_6 leaks due to explosion of equipment or other accidents	4	0	2	1	0	1
Leaks and spillages of hazardous substances	0	3	0	3	0	0
Effects on flora (2)	0	0	0	1	0	0

(1) Bird collisions with electricity lines in service and under construction are dealt with in a separate table.
(2) Fire in plot adjacent to the substation.

- In the construction phase **there were no accidents during 2017** with environmental consequences and there were 35 incidents reported, which represents 49% of the total environmental incidents (construction + maintenance) that occurred during 2017.

- In the maintenance phase there were 8 accidents, which represent 100% of those occurred during 2017, 36 incidents, which represent 51% and 3 near accidents (the only ones originated during construction and maintenance).

As an important accident (evaluated as major), this was produced by the spillage of some 1,469 litres of diesel fuel from the Link 2 generator of the Santa Llogaia Converter Station (Catalonia). When checking the fuel levels between September and November, it was detected that the consumption due to its operation did not justify the fuel consumption. Analysing the problem in situ, a surface of gravel and contaminated soil of approximately 12 m^2 was detected around the concrete platform on which the equipment is located, caused by a leak in a seal of one of the fuel tanks of the equipment.

❖ Birdlife collisions

Regarding birdlife collisions in 2017, 70 collisions of endangered / vulnerable species (National Catalogue and / or IUCN Red List) and / or focal species were detected, of which 17 of them corresponded to endangered species:

Endangered species affected	Nº of birds affected
Great Bustard (*Otis tarda*)(1)	10
European turtle dove (*Streptopelia turtur*)(1)	2
Eurasian Stone-curlew (*Burhinus oedicnemus*)(2)	5
Total	**17**

(1) Vulnerable species according to IUCN Red List.
(2) Vulnerable species according to the National Catalogue of Endangered Species.

***NOTE**: Collisions are detected mainly during monitoring plans or specific studies: the 5 Eurasian stone-curlew collisions and 3 Great Bustard collisions are related to specific studies. Both the European turtle dove and the Stone-curlew are not focal species.*

10 LEGAL COMPLIANCE ASSESSMENT

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

The annual legal compliance assessment performed indicates that Red Eléctrica complies with the applicable environmental requirements established by current legislation.

Those practices considered inadequate that result in cases/claims that are given leave to proceed, are resolved in all cases with administrative sanctions of low monetary value.

The following table details the type of infringement committed and the total cost of the same (as a result of the claims/cases resolved with a sanction) in the period 2011-2017.

*The data is reviewed annually to include the resolved cases/claims that were initiated in previous years. The data affected by the cases/claims resolved in 2017 appears **in red** in the table.*

	2011		2012		2013		2014		2015		2016		2017	
Type of infringement	**Nº of claims/ cases**	**Amount (€)**	**Nº of claims/ cases**	**Amount (€)**	**Nº of claims/ cases**	**Amount (€)**	**Nº of claims/ cases**	**Amount (€)**	**Nº of claims/ cases**	**Amount (€)**	**Nº of claims/ cases**	**Amount (€)**	**Nº of claims/ cases**	**Amount (€)**
Fire risk [1]	7	2,314	4	1,082	6	6,522	1	100	2	811	2*	751		
Unauthorised felling and pruning	3	22,477	1	300	4	1,597	2	2,175	2*	200	2	7,060		
Felling, pruning and clearing without preventive measures														
Fire due to line discharge	1	3,848	1	3,948										
Waterway obstruction/works in areas without authorisation	2	3,100			1	1,200	2	3,600						
Activities that could contaminate soils														
Accumulation of biomass waste					1	100								
Fauna in captivity without authorisation					1	100								
Works in protected areas without authorisation														
Unauthorised works			2	62,153	1	2,000								
Opening up of a forest trail without authorisation							1	1,001	1	2,000				
Use of a helicopter in a critical birdlife area without authorisation									1	1,000				
Electricity line crossing livestock trail without authorisation									1	30,051	1*	30,051		
Incorrect waste management									1	2,500				
Total nº claims-cases / €	13	31,739	8	67,483	14	11,519	6	6,876	**8***	**36,562**	**5***	**37,862**		

(*) Data updated in 2017 following the resolution of two pending cases opened in 2015.

11 ENVIRONMENTAL EXPENDITURE

During 2017, environmental investments totalling **1,334,887.40 euros** were made in new facilities, equating to 0.32% of the total investments carried out in the transmission grid. These investments correspond to the execution of Environmental Impact Assessments of all projects, implementation of preventive and corrective measures, environmental monitoring of electricity facilities under construction and the application of compensatory measures related to environmental aspects.

Similarly, during 2017 expenditure totalling **21,336,233.48 euros** was made in the improvement and protection of the environment.

In the following table you can see the evolution of environmental costs in the last three years.

	2015	2016	2017
INVESTMENT (€)	**3,856,802.15**	**2,983,757.15**	**1,334,887.40**
Engineering and construction of facilities (1)	3,856,802.15	2,983,757.15	1,334,887.40
EXPENDITURE (€)	**18,848,972.08**	**19,665,124.98**	**21,336,233.48**
Development of methodology and systems (2)	47,145.00	116,853.62	169,876.00
Environmental studies and analyses	201,743.17	108,434.50	224,040.00
Environmental actions in facilities in service	16,722,722.18	17,679,436.20	19,026,028.09
Prevention of contamination (3)	1,268,564.57	1,395,593.67	2,115,872.72
Protection of biodiversity, landscape (4)	14,593,764.69	14,820,438.97	15,437,015.84
Climate change (*) (5)	635,143.40	974,994.08	1,067,021.52
Energy efficiency and saving of resources (6)	226,418.04	-	-
Waste reduction and management	225,249.52	488,409.48	406,118.01
Research and development	339,553.68	440,738.91	593,857.18
Training and communication	176,594.99	48,861.84	136,752.04
Environmental training and awareness programmes	41,066.55	15,125.02	16,821.35
Communication (7)	135,528.44	33,736.82	119,930.69
Environmental taxes and levies	92,906.06	51,359.91	61,294.17
Cost of personnel dedicated to activities of an environmental nature	1,268,307.00	1,219,440.00	1,124,386.00
	22,705,774	**22,648,882**	**22,671,121**

(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 Forest', improvement of SF_6 management.
(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.
** The climate change and energy efficiency costs are bundled within the climate change section.*

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

Percentage of investment and expenditure on the Environment		2015	2016	2017
% of investment on the environment	Environmental investment / total investment in the transmission grid	0.93	0.74	**0.32**
% of expenditure on the environment	Environmental expenditure / total operating costs	2.00	2.10	**2.29**

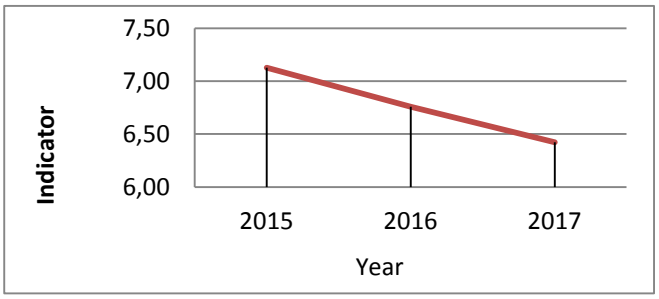
12 INDICATORS

By way of introduction, the following is a numerical representation of the information that is deemed most relevant, and which is detailed throughout this Environmental Report.

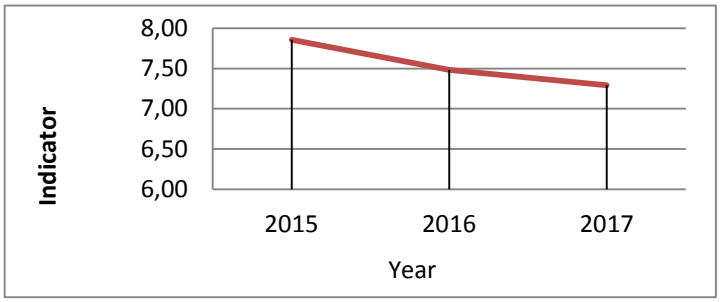
Basic Indicators

Electricity consumption at Head Office			
A	MWh consumed		
B	Nº employees at Head Office (*)		
Indicator	A/B		
Year	**2015**	**2016**	**2017**
A	8,558	8,284	8,026
B	1,201	1,226	1,250
Indicator	**7.13**	**6.76**	**6.42**

(*) La Moraleja and Albatros buildings. Includes interns, temporary employment agency workers and collaborators as they are susceptible to consuming electricity.

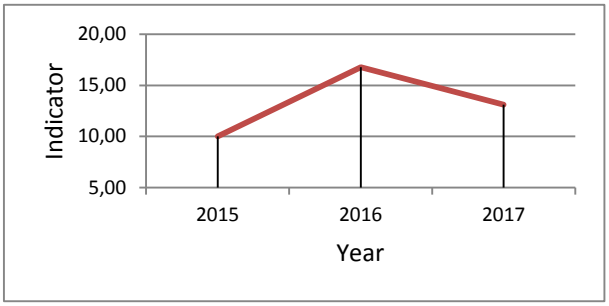


REE Electricity consumption (*)			
A	MWh consumed		
B	Nº employees Red Eléctrica		
Indicator	A/B		
Year	**2015**	**2016**	**2017**
A	15,900.04	15,516.26	15,177.18
B	2,024	2,074	2,082
Indicator	**7.86**	**7.48**	**7.29**



(*) Includes work centres with special characteristics that house the electricity control centres that operate 24/7 and have special energy consumption. Also included are work centres where mainly maintenance personnel are located.

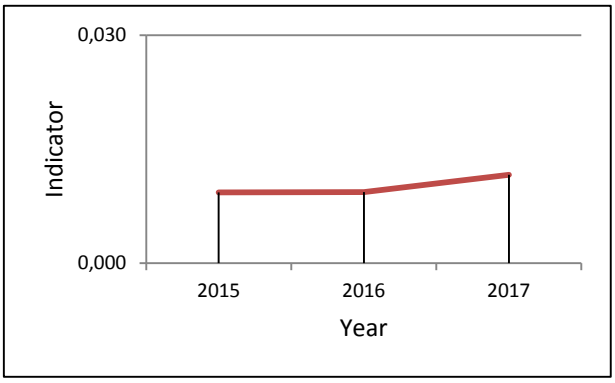
Vehicle fuel consumption [3]			
A	GJ (Gigajoules) consumed [2]		
B	Total Nº of employees [1]		
Indicator	A/B		
Year	**2015**	**2016**	**2017**
A	17,000	28,200	22,810
B	1,697	1,682	1,741
Indicator	**10.02**	**16.77**	**13.10**



(1) Number of employees in the workforce that can use vehicles, (without taking into account interns or collaborators)
(2) 1 kWh = 36 • 10^6 joules; 1 litre of diesel = 37 • 10^6 joules; 1litre of gasoline = 34 • 10^6, 1 litre of gas oil = 37 • 10^6 joules; 1 litre of biodiesel = 32.79 • 10^6 joules; 1 litre of LPG = 25.7 • 10^6 joules
(3) 2015 data has been recalculated to include shared leasing and management vehicles, according to the methodology applied since 2016.

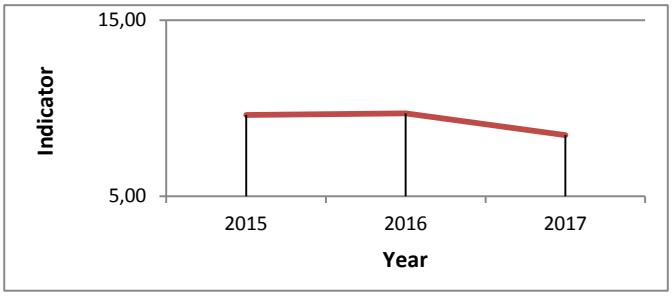
***Note**: Modification of the indicator. It begins to count as an indicator in 2017. It replaces the indicator of average vehicle consumption / 100 km as it is not significant for the activity carried out by REE. All types of vehicles are included. In 2015, only vehicles owned by REE were considered. As of 2016, shared leasing vehicles are also considered (not including management vehicles or the pool of electric vehicles).*

Paper consumption			
A	Tonnes (t) consumed		
B	Total Nº of employees (*)		
Indicator	A/B		
Year	**2015**	**2016**	**2017**
A	18.838	19.437	24.190 [**]
B	2,024	2,074	2,082
Indicator	**0.009**	**0.009**	**0.012**



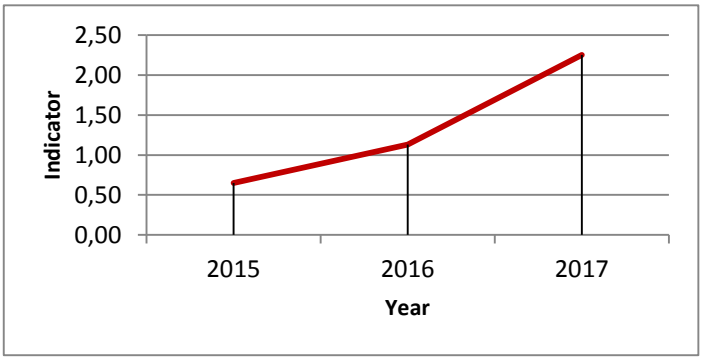
(*) Includes interns, temporary employment agency workers and collaborators as they are considered paper consumers.
(**) In 2017, the printer service provider was not able to provide the data regarding printing on 1 or 2 sides, reporting only a cumulative data since installing the printers in 2014, and it was impossible to obtain the data for 2017. For this reason, this has had to be estimated. In 2017, the percentage of double-sided printing was the same as in 2016, 72%. (70% in 2015).

Water consumption at Head Office			
A	m^3 consumed		
B	Nº of employees at Head Office (*)		
Indicator	A/B		
Year	**2015**	**2016**	**2017**
A	9,018	9,166	8,064
B	938	943	952
Indicator	**9.61**	**9.72**	**8.47**



(*) The 'La Moraleja' buildings including interns, temporary employment agency workers and collaborators as they are considered water consumers. The 'Albatros' building is not included.

Hazardous waste			
A	Tonnes (t) of hazardous waste generated		
B	Revenue (millions of euros)		
Indicator	A/B		
Year	**2015**	**2016**	**2017**
A	1,183.925	2,035.645	4,102.096
B	1,823.70	1,803.80	1,823.90
Indicator	**0.65**	**1.13**	**2.25**

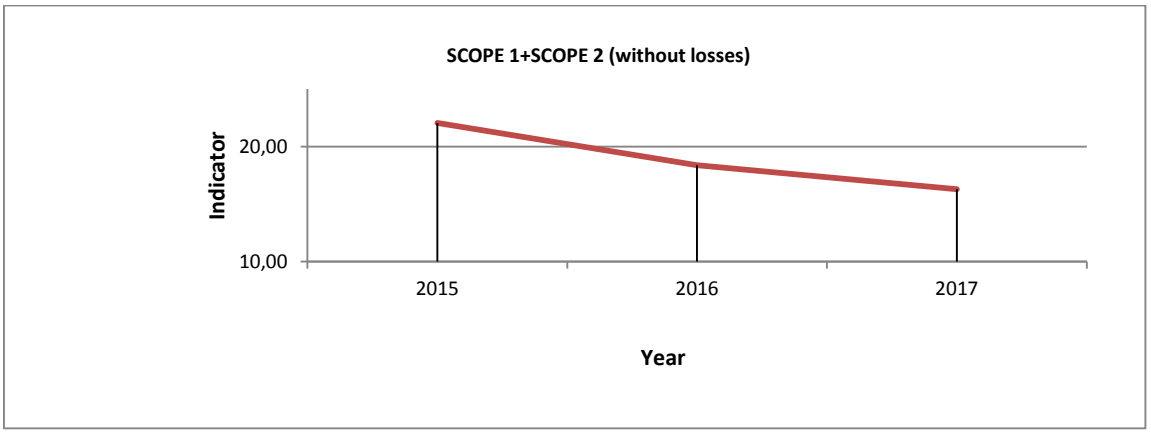


Direct emissions of greenhouse gases (SCOPE1) + Emissions from electricity consumption (SCOPE 2 without losses)			
A	t CO2-eq (SCOPE 1+ Emissions from electricity consumption)		
B	Revenue (millions of euros)		
Indicator	A/B		
Year	**2015**	**2016**	**2017**
A	40,237.50	33,164.00	29,711.28
B	1,823.70	1,803.80	1,823.90
Indicator	**22.06**	**18.39**	**16.29**

***Note 1**: Emissions of Scope 1 and 2 (not including transmission grid losses). REE considers it relevant to monitor this indicator, without including transmission grid losses (as it is not possible to act on them).*

***Note 2**: Red Eléctrica has established 2015 as the base year to establish its reduction targets. The emissions of the base year have been recalculated according to the current criteria: the emissions of fleet vehicles include the emissions of management and shared leasing vehicles. The calculation of emissions is made under the operational control approach. Information on the scope and methodology of the inventory is available on the REE website.*
The emissions of the base year have been recalculated according to the current calculation criteria: in the case of emissions associated with the consumption of electricity, they are recalculated under the 'market based' approach, which has already begun to be applied in the calculation of the inventory of 2016.

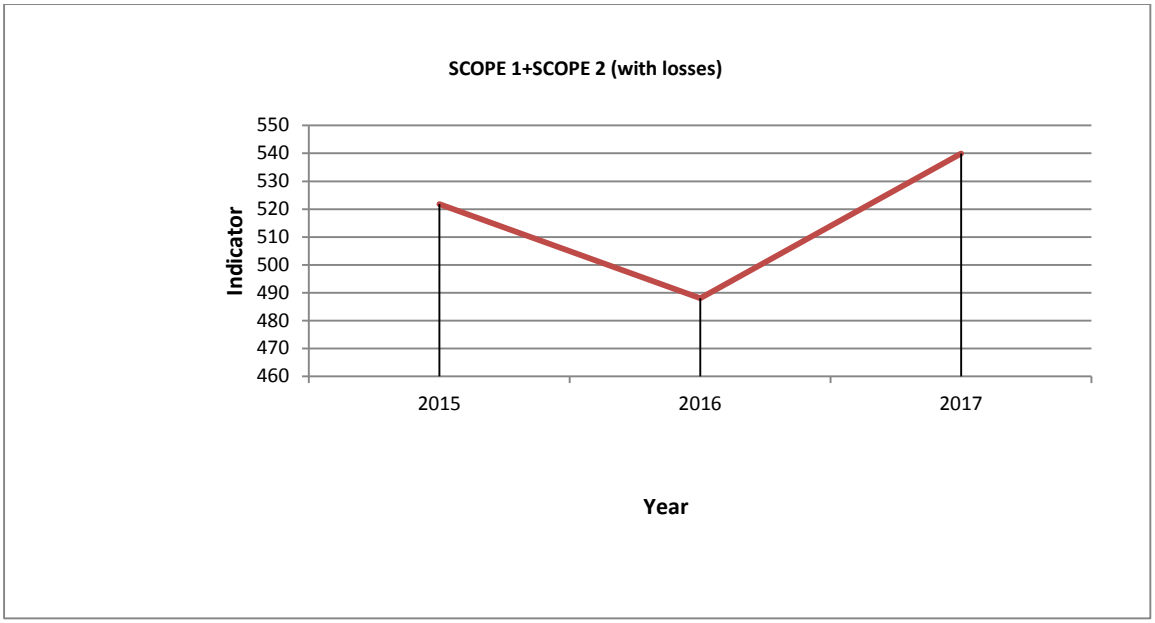
http://www.ree.es/en/sustainability/decarbonisation-of-the-economy/carbon-footprint



Emissions SCOPE 1+SCOPE 2 including transmission grid losses			
A	T CO2-eq (**SCOPE 1+SCOPE 2**)		
B	Revenue (millions of euros)		
Indicator	A/B		
Year	**2015**	**2016**	**2017**
A	951,547.59	880,293.06	984,785.57
B	1,823.7	1,803.8	1,823.9
Indicator	**522**	**488**	**540**

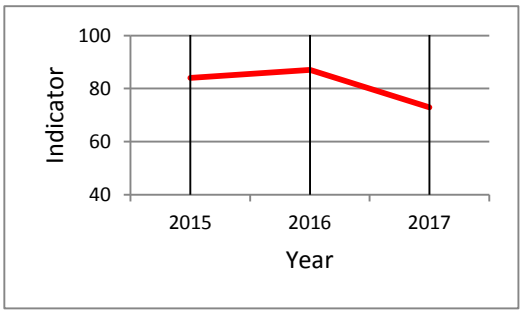
Note 1: *Scope 1 and 2 emissions (including transmission grid losses). The total energy transported corresponds to the annual electricity demand measured at the power station busbars. The indicator has been recalculated for all years, including the emissions recalculated according to the current criteria and considering the annual demand in the peninsular, Balearic Islands and Canary Islands systems.*

Note 2*: Red Eléctrica has established 2015 as the base year to establish its reduction targets. The emissions of the base year have been recalculated according to the current criteria: the emissions of fleet vehicles include the emissions of management and shared leasing vehicles. The calculation of emissions is made under the operational control approach. Information on the scope and methodology of the inventory is available on the REE website. On the other hand, emissions related to transmission grid losses of island systems (Balearic Islands and Canary Islands) are incorporated. This update also affects the 2016 figure.*

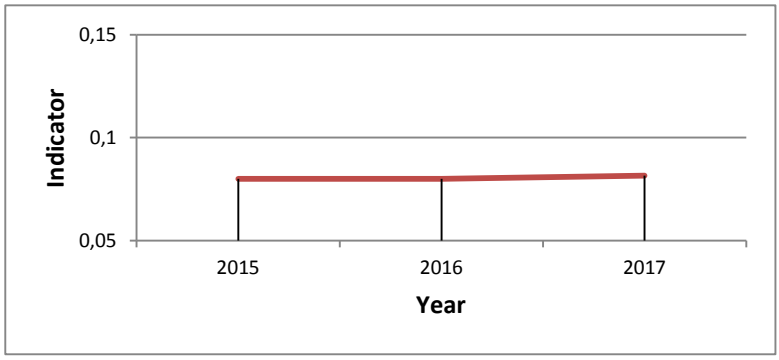


Environmental performance indicators

% Fulfilment of the Environmental Programme			
A	Contribution of fulfilled environmental objectives		
B	Total contribution of the programme		
Indicator	A/B x100		
Year	**2015**	**2016**	**2017**
A	84	87	73
B	100	100	100
Indicator	**84**	**87**	**87**



Biodiversity: Occupation of land (1)			
A	Surface area in Red Natura occupied by facilities (m^2) (1)		
B	Total surface area of Red Natura (m^2)		
Indicator	A/B x 100		
	Facilities		
Year	**2015**	**2016**	**2017**
A	$179.588*10^6$	$180.943*10^6$	$181.530*10^6$
B	$223.011*10^6$	$223.354*10^6$	$223.358*10^6$
Indicator	**0.080(*)**	**0.081**	**0.081**



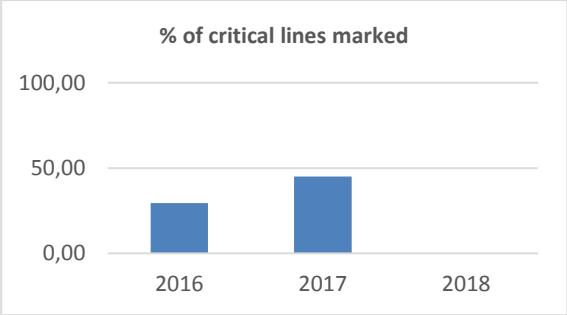
Red Natura (Natura 2000 Network) includes: SCI (Site of Community Importance) and SPA (Specially Protected Areas for birds).

(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. The surface occupied by submarine cables has been estimated at 0.5 metres on each side of the line.

***Note 1.** For the 2015 ratios, the base data published in February 2016 has been used and for 2016 and 2017 the base data published by MAPAMA in January 2017 and January 2018, respectively, has been used. The mapped area of Red Natura on the islands is significantly higher than in previous years, which explains the variation in the indicators shown.*

***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 in the number of facilities may result.*

Biodiversity: Protection of birdlife (*)			
A	km of line marked in critical areas		
B	km of line in critical areas		
Indicator	A/B x 100 (% of line in critical area marked)		
Year	**2016**	**2017**	**2018**
A	217.7	332.0	No data available as yet
B	738	738	No data available as yet
Indicator	**29.50**	**44.99**	No data available as yet



(*) Modification of the indicator:

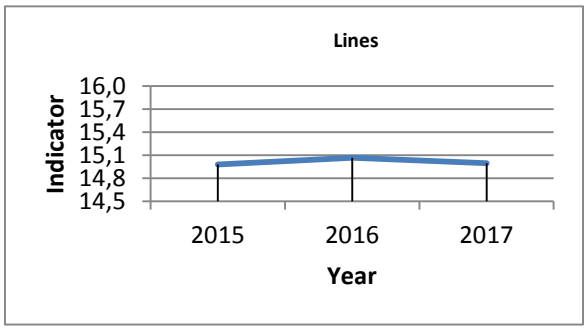
Until 2015, the following indicator was used: km of line in SPAs marked with bird-saving devices / total km line in SPAs.

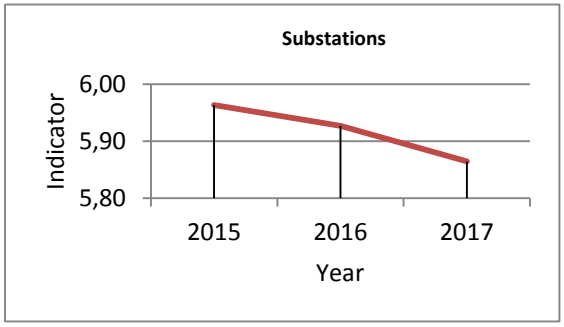
The objective of this indicator was not to reach the marking of 100% of the lines that cross through SPAs because not all the species of birds present in these SPAs are prone to colliding with the cables and therefore the data that was included previously was not actually be representative. SPAs and risk areas for birdlife do not always coincide. There are SPAs that protect species not prone to collision and there are areas not classified as SPAs in which there are sensitive species, and these are not classified as SPAs.

Therefore, for the calculation of this new indicator from 2016 onwards, the critical areas in which there are species at risk of collision are taken into account, whether it be a SPA or not (data resulting from the project 'Identification, characterisation and mapping of flight paths of birds that interact with high-voltage electricity transmission lines'.

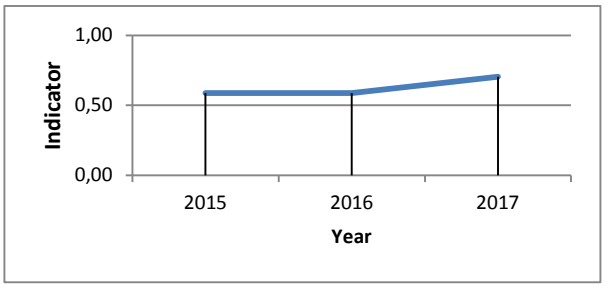
Biodiversity: Impact of facilities						
A	Km of line in Red Natura (*)			Nº of substations in Red Natura		
B	Total km of line (*)			Total Nº of substations		
Indicator	A/B x 100			A/B x 100		
	Lines			**Substations**		
Year	**2015**	**2016**	**2017**	**2015**	**2016**	**2017**
A	4,567.18	4,704.40	4,736.24	39	39	39
B	30,491.60	31,226.07	31,582.86	654	658	665
Indicator	**15.00**	**15.10**	**15.00**	**5.96**	**5.93**	**5.86**

(*) Includes the total km of submarine cable and those in Red Natura





Biodiversity/Relationship with Stakeholders			
A	Nº of Autonomous Communities with biodiversity projects		
B	Total Nº of Autonomous Communities		
Indicator	A/B		
Year	**2015**	**2016**	**2017**
A	10	10	12
B	17	17	17
Indicator	**0.59**	**0.59**	**0.71**



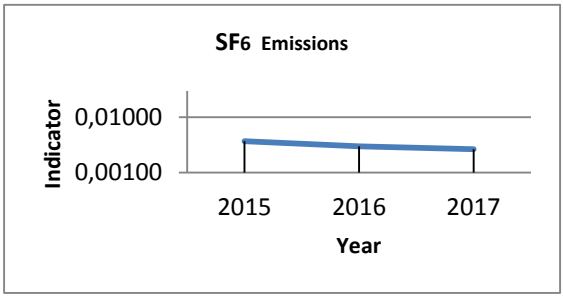
Emissions						
A	t SF_6 emitted			Indirect emissions derived from transmission grid losses (t CO_2-eq)		
B	t SF_6 installed			MWh transported		
Indicator	A/B			A/B		
	SF_6 Emissions (1)			**Emissions derived from transmission grid losses (2)**		
Year	**2015**	**2016**	**2017**	**2015**	**2016**	**2017**
A	1.39	1.26	1.15	911,310	847,129	956,021
B	373.806	421.666	434.566	248,025,000	250,132,000	267,749,623
Indicator	**0.00371**	**0.00299**	**0.00265**	**0.00367**	**0.00339**	**0.00357**

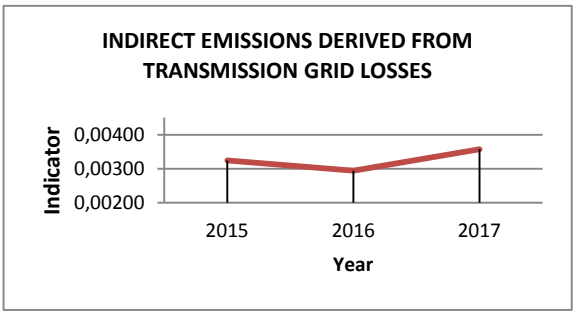
The most representative emissions of REE's activity are SF_6 emissions (direct) and emissions from transmission grid losses.

(1) To assess SF_6 gas emissions in relation to the total SF6 gas installed, it is considered more appropriate to use t of SF_6 emitted as the unit of measure, rather than calculate it in tonnes of CO2 equivalent. The emission rate has been calculated based on the emission data calculated according to actual leakage records.

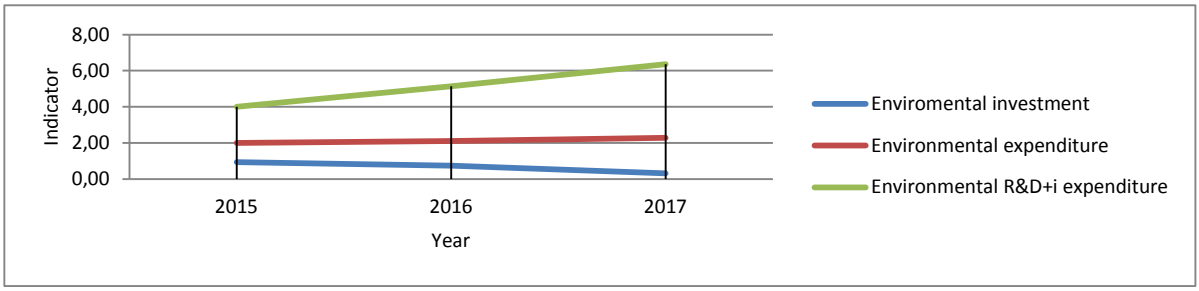
(2) The emissions associated with the losses in the transmission grid, in the same way as for the emissions associated with the consumption of electricity, do not occur during the REE activities as they take place at the various electricity generation points. For the calculation of these emissions, the emission factors corresponding to each system (peninsular, Balearic Islands or Canary Islands) calculated by REE are used from the annual generation balances. The increase of these emissions has been considerable in 2017, mainly due to the increase in the emission factor of the peninsular system. Emission factor in tCO_2/Mwh: 0.214 in 2016 and 0.258 in 2017, which reflects the decrease in hydro generation (associated with the scarce availability of water due to weather conditions), which has been replaced by generation from non-renewable and more carbon-intensive sources.

***Note**: Red Eléctrica has established 2015 as the base year to establish its reduction targets. The emissions of the base year have been recalculated according to the current criteria: the emissions of fleet vehicles include the emissions of management and shared leasing vehicles. The calculation of emissions is made under the operational control approach. Information on the scope and methodology of the inventory is available on the REE website. On the other hand, emissions related to transmission grid losses of island systems (Balearic Islands and Canary Islands) are incorporated. This update also affects the 2016 figure.*



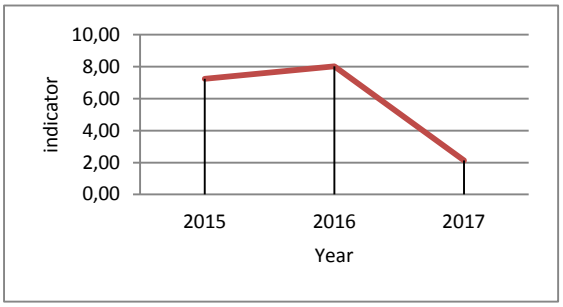


Environmental expenditure									
A	Environmental investment			Environmental expenditure			Environmental R&D+i expenditure		
B	Total investment			Total expenditure			Total expenditure on R&D+i		
Indicator	A/B x 100			A/B x 100			A/B x 100		
	Environmental investment			**Environmental expenditure**			**Environmental R&D+i expenditure**		
Year	**2015**	**2016**	**2017**	**2015**	**2016**	**2017**	**2015**	**2016**	**2017**
A	3,856,802.15	2,983,757.15	1,334,887.00	18,848,972.08	19,665,124.98	21,336,233.48	339,553.68	440,738.91	593,857.18
B	410,709,000	398,511,000	411,829,185	941,915,000	936,250,000	932,497,000	8,477,826.00	8,582,567.37	9,330,000.00
Indicator	**0.94**	**0.75**	**0.32**	**2.00**	**2.10**	**2.29**	**4.01**	**5.14**	**6.37**

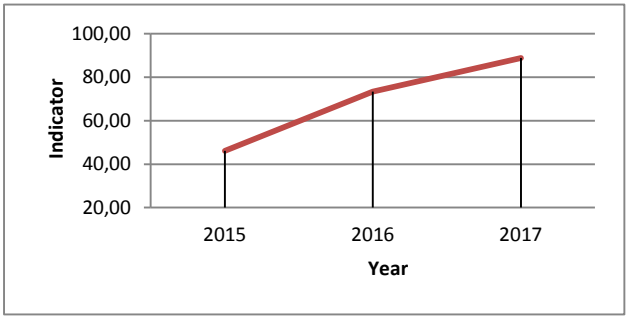


Training and awareness			
A	Nº of employees who received environmental training		
B	Nº of employees (1)		
Indicator	A/B x 100		
Year	**2015**	**2016**	**2017**
A	123	135	37
B	1,697	1,682	1,741
Indicator	**7.25**	**8.03**	**2.13**

(1) *Only REE personnel.*



Accidental spillage of hydrocarbons			
A	Nº of accidents involving oil or fuel spillages from in-service transformers and equipment		
B	Total Nº of accidents		
Indicator	A/B x 100		
Year	**2015**	**2016**	**2017**
A	6	11	8
B	13	15	9
Indicator	**46.15**	**73.33**	**88.89**



13 FREQUENCY OF THE ENVIRONMENTAL IMPACT STATEMENT

This Report is published annually and acts as an Environmental Statement. Its purpose is to provide information to all stakeholders concerning Red Eléctrica's environmental behaviour regarding those activities carried out during 2017.

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

The next Statement will be presented and published during the first half of 2019.

GLOSSARY OF TERMS

BIRD-SAVING DEVICES OR 'SPIRALS'	A white or orange spiral made of polypropylene (PVC) in the shape of a spiral, measuring 30-35 centimetres in diameter and with a length of 1 metre, which is coiled around the grounding cable or conductor to mark it and alert birds to the presence of the lines in order to reduce the risk of collisions. *(Own definition REE).*
ELECTRIC FIELD:	In a point in space, the force exerted on a static load located at that point. Expressed in volts per metre (V/m). *(50 Hz. Electrical and Magnetic fields REE and UNESA, 1998)*
ENVIRONMENTAL ASPECT:	An element of the activities, products or services of an organisation having or which may an impact on the environment. *(Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS)).*
ENVIRONMENTAL BEHAVIOUR INDICATOR:	Specific performance indicators providing information on an organisation's environmental behaviour. *(Standard UNE-EN ISO 14031 Environmental management. General Guidelines).*
ENVIRONMENTAL IMPACT:	Any change in the environment, either adverse or beneficial, that is caused in full or in part by the activity, products or services of any organisation. *(Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS)).*
ENVIRONMENTAL MANAGEMENT SYSTEM:	That part of the general management system that includes the organisational structure, planning of activities, responsibilities, good practices, procedures, processes and resources to develop, apply, achieve, revise and maintain the environmental policy and manage the environmental aspects. *(Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS)).*
ENVIRONMENTAL OBJECTIVE:	A general environmental objective, which originates from the Environmental Policy and is set out as a goal to be fulfilled by the organisation and which, insofar as is possible, is measured. *(Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS)).*
ENVIRONMETAL POLICY:	The general management and intentions of an organisation with respect to its environmental behaviour, put forward officially by its management teams, including the compliance with all the regulatory provisions applicable to environmental matters, as well as the commitment to continuously improve environmental behaviour. It constitutes a framework for the company's actions and for establishing environmental targets and objectives. *(Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS)).*
MAGNETIC FIELD:	In a point in space, the force exerted on a live element located at that point. Expressed in amperes per metre (A/m). The international measuring unit is Tesla (T) or any fraction thereof, and in particular the microtesla (μT). *(50 Hz. Electrical and Magnetic fields. REE and UNESA, 1998).*

NESTING DETERRENT:	A device comprised of several elements made of galvanised steel, and of different sizes, that deters birds from nesting or perching in the places where it is installed or on the actual device itself. *(Own definition of REE).*
RED NATURA 2000	The European Natura 2000 Ecological Network is a coherent environmental network comprised of Sites of Community Importance whose management shall take into account the economic, social and cultural requirements, as well as the special regional and local characteristics. These sites are later designated as either Special Areas of Conservation (SACs) or Special Protection Areas (SPAs) for Birdlife. (Law 42/2007 of 13 December, on Natural Heritage and Biodiversity). .
SIGNIFICANT ENVIRONMENTAL ASPECT:	An environmental aspect that has, or which may have, a significant impact on the environment. *(Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS)).*
SPECIAL AREA OF CONSERVATION (SAC):	An area which, based on the biogeographic region or regions to which it belongs, contributes greatly to maintaining or restoring a type of natural habitat (…) in a favourable state of conservation so that it can help considerably in establishing the cohesion of Natura 2000 (…) and/or contributes noticeably to maintaining biological diversity in the biogeographic region or regions in question. For the animal species occupying large areas, the special areas of conservation will usually correspond to specific locations inside the area in which that species is naturally distributed, presenting the physical or biological elements that are essential for them to live and reproduce. *(Directive 92/43/EC, of May 21, on the Conservation of Natural Habitats and Wild Fauna and Flora).*
SPECIAL PROTECTION AREA (SPA) FOR BIRDLIFE:	An area of community interest for the protection of bird species listed in Annex I of the Council Directive 79/409/EEC of 2 April 1979, on the conservation of wild birds.
VISUAL SIMULATION:	An infographic technique (based on computer applications for graphic representation) applied in order to obtain a visual representation of a project, providing an approximate idea of what it will truly look like once completed, and showing the elements that it is comprised of, as well as its integration into its environment. *(Own definition REE).*
WASTE:	Any substance or object whose owner intends to dispose of as waste or may have the intention or obligation to remove as waste. *(Law 22/2011, 28 July, on Waste and Contaminated Soils).*

VALIDATION

DECLARACIÓN MEDIOAMBIENTAL VALIDADA POR

AENOR

DE ACUERDO CON EL REGLAMENTO (CE) Nº 1221/2009
modificado según REGLAMENTO (UE) 2017/1505

Nº DE ACREDITACIÓN COMO VERIFICADOR MEDIOAMBIENTAL
ES-V-0001

Fecha de Validación:

ANNEX ENVIRONMENTAL ACTIONS 2017

Definition of Projects (Investment + Maintenance)

Environmental authorisation for **8 projects**:

Positive Environmental Impact Statement [1]
220 kV Cañuelo-Pinar del Rey line (2 circuits)
220 kV Lousame substation 220 kV Lousame line and conductor - Tambre-Santiago line 220 kV Lousame-Tibo line and conductor 220 kV Lousame-Mazaricos line and conductor
400 kV Isona substation 400 kV Isona/Sallente-Sentmenat line 400 kV Isona/Calders-Sallente line

[1] Authorisation resulting from the Complete Environmental Impact Assessment process (Environmental Impact Study)

Environmental Resolution [2]
Increase in power capacity of the 220 kV Tajo de la Encantada-Illora line 1-2 Increase in power capacity of the 220 kV Caparacena-Illora line Increase in power capacity of the 220 kV Atarfe-Illora line
Increase in power capacity of the 220 kV Telledo-Pereda line
66 kV El Tablero-Lomo Maspalomas conductor
Increase in power capacity of the 220 kV Adrall-Llavorsi line
Increase in power capacity of the 220 kV Llavorsi-La Pobla line

[2] Authorisation resulting from the Simplified Environmental Impact Assessment process (Environmental Document)

	Correspondence sent	Responses obtained (*)
Renovation and Improvement Projects (RIP)	4	4
Optical Fibre	10	7
Third party modification	0	1
REPEX-MAR (Grid Asset Improvement)	1	5
Total	**15**	**17**

(*) The data relating to correspondence from an archaeological point of view or several responses from different organisms regarding the same facility are not included.

Responses / Authorisations received in 2017: Maintenance works	
REPEX & MAR PROJECTS (*)	
132 kV Ciutadella-Mercadal line	Replacement of towers
132 kV Ciutadella-Mercadal line	Replacement of string insulators
220 kV Telledo-Villablino line	Replacement of towers 293-234
220 kV Belesar-Meson Do Vento line	Replacement of towers 54-137
220 kV Belesar-Meson do Vento line	Replacement of conductor (91-142)
220 kV Belesar-Meson do Vento line	Replacement of conductor (142-200)
220 kV Telledo-Villablino line	Replacement of towers (212-233)
220 kV Telledo-Villablino line	Replacement of towers (188-211)
OPTICAL FIBRE	
400 kV Almaraz-Bienvenida line	Stringing of optical fibre (431-ALZ)
400 kV Casaquemada-Onuba line	Stringing of optical fibre (complete line)
400 kV Arañuelo-Valdecaballeros line	Stringing of optical fibre (complete line)
400 kV Huéneja-Tabernas line	Stringing of optical fibre (complete line)
400 kV Litoral-Tabernas line	Stringing of optical fibre (complete line)
400 kV Aragón-Asco line	Stringing of optical fibre (83-ARG)
220 kV Llavorsi-Tabascan line	Stringing of optical fibre (complete line)
RENOVATION & IMPROVEMENT PLANS (RIP)	
400 kV N.Escombreras-Rocamora line	Fitting of line tensioners to reduce the amplitude of the sag in the line (towers 22-30-76-85-95)
400 kV N. Escombreras-El Palmar 1 line	Replacement of towers (9-14)
400 kV Cartelle-Meson Do Vento-Silleda line	Repositioning of towers (143-151)
400 kV Rubi-Vandellos line	Repositioning of towers (104-108)
THIRD-PARTY MODIFICATION	
Modification of 220 kV Lubian-Sanabria line towers 76-82	Third-party modification

(*) Responses to different actions were obtained in the same document. (5 responses corresponding to 8 actions where some of them are performed on the same facility). REPEX (Replacement Expenditures)-MAR (Grid Asset Improvement)

Construction or modification of facilities

❖ Protection of flora and fauna

Protection of flora: Preventive and corrective measures	
Modification of the design of the project during works	
Modification of 400kV Aragón-Morella line	Adjusting access routes to towers in such a way that the minimum amount of flora is affected, especially to safeguard oaks and other species of high ecological value.
132 kV Gran Tarajal-Matas Blancas line	Modification of the last section of access to tower T28 (to avoid crossing the archaeological site of Gambuesa del Esquincillo (ARQ-001)); Modification of a section of the common access to towers T-50 and T-51 (to avoid driving so close to homes and damaging the road through the transit of vehicles and heavy machinery); Modification of access to tower T-77 (to reduce the impact on the archaeological site La Pared II (ARQ-004)); Modification of access to towers T-84 and T-85 (to reduce the impact on the Jandía Natural Park); Modification of the common access route to towers T-96, T-97 and T-98 (to avoid crossing the archaeological site of Lomita del Corral Blanco (ARQ-005)).
Marking off and protection of habitats and areas with protected species	
Callejones 66 KV substation	Phase 1 habitat surveys were conducted at the beginning of the works to avoid having an impact on protected species. No species with protection status were detected on the plot owned by REE.
Playa Blanca 132 KV substation	Phase 1 habitat surveys were conducted at the beginning of the works to avoid having an impact on protected species. No species with protection status were detected on the plot owned by REE.
La Oliva 132 kV substation	Phase 1 habitat surveys were conducted to avoid having an impact on protected species. Several specimens of *Caralluma burchardii* (a cactus-like plant) have been found that are in danger of extinction according to the Canary Islands Catalogue of Protected Species. The area where these plants are located are outside the limits of the area affected by construction. The marking off of the area was undertaken to avoid impacts on this flora.
132 kV Puerto del Rosario - La Oliva line **66 kV line between Corralejo substation-La Oliva substation**	Phase 1 habitat surveys were conducted to avoid having an impact on protected species. The surface area of flora affected is minimal. Nevertheless, the specimens of singular flora, such as Sweet *tabaiba* (a native flowering bush), that could be affected by the works, were relocated.
220 kV Lubián -Sanabria line	Prior checks in order to locate the presence of *Paradisea lusitanica* and *Eryngiun duriaei* (native plants).
220 kV Telledo-Pereda line (REPEX)	Marking off of Holly trees (*Ilex aquifolium*) in access and platform of tower 448. Holly is considered of Special Interest in the Regional Catalogue of Endangered Flora Species of Asturias. The works for the replacement of the tower and new foundations have been conducted without damaging these Holly trees.
	Control and monitoring in order to avoid opening up new access routes.
220 kV Pereda-Soto de Ribera line (REPEX)	Control and monitoring in order to avoid opening up new access routes.
400 kV Soto-Robla line	Control and monitoring in order to avoid opening up new access routes. In the Las Ubiñas-La Mesa Natural Park.
220 kV Villablino -Telledo line	Prior reassessment of the opening up of new access routes in conjunction with the environmental agents of the Castilla y León Regional Government.

Protection of flora: Preventive and corrective measures	
Buniel incoming/outgoing feeder line - 400 KV Barcina-Grijota line	Marking off of access routes to reduce as much as possible impacts on flora and non-priority habitats.
132 kV Gran Tarajal-Matas Blancas line	Defining access routes to avoid impacts on protected flora.
	Measures taken to ensure the protection of the bases of local Salt Cedar (*Suaedo verae* - Tamaricetum canariensis), designated as a non-priority habitat of community interest: Thermo-Mediterranean southern riparian galleries and thickets (*Nerio-Tamaricetea* and *Securinegion tinctoriae* (native plants)), at the access routes to both the towers and the worksites for towers T20 and T37.
	Measures taken to ensure the protection of palm groves and Salt Cedar which can be considered of interest as they are located within two habitats of community interest: 9370 and 92d0, respectively, in the area of towers 2-3, 20-21, 29-30 and 36-37.
	Measures taken to ensure the protection of the bases of local Salt Cedar in the access to tower T66.
66kV Candelaria – Tagoro line (RIP)	Marking off of specimens of protected flora (Spiked pepper) in the area of works for the replacement of towers and conductor to avoid them being affected. Similarly, the specimens directly affected by the works are removed and replanted in the same location once the work has been completed.
Agüimes 66 kV substation	Phase 1 habitat surveys were conducted at the beginning of the works to avoid having an impact on protected species. No species with protection status were detected on the plot of land owned by REE.
66 kV Gran Tarajal-Matas Blancas line (REPEX)	Phase 1 habitat surveys were conducted at the beginning of the works to avoid having an impact on protected species.
Hoisting by boom crane (*)	
Godelleta I/O - 220kV Catadau-Torrent line	Assembly and hoisting with a boom crane for all the towers of the line.
400 kV Campanario-Ayora line	Assembly and hoisting with a boom crane for all the towers of the line.
132 kV Gran Tarajal-Matas Blancas line	Assembly and hoisting with a boom crane for towers T37, T40-T42, T47, T54-T57 and T59 to minimise the impact on flora.
Concreting works, hoisting by boom crane and hanging of line by helicopter (*)	
132 kV Puerto del Rosario - La Oliva line	Concreting works with the use of a helicopter for 7 towers 77 - 83.
Hanging line by hand	
Godelleta I/O - 220kV Catadau-Torrent line	Section T8-T9 was hung by hand.
132 kV Puerto del Rosario - La Oliva line	The entire line was hung by hand.
132 kV Gran Tarajal-Matas Blancas line	The following spans were hung by hand 2-3, 20-21, which house species of flora of a certain nature, such as palm groves and Salt cedar, and which can be considered of interest as they are located within two habitats of community interest: 9370 and 92d0, respectively. The pilot cable for stringing the electricity line was hung by hand for the entire line.

Protection of flora: Preventive and corrective measures	
Planting of trees	
La Farga 400/220 kV substation	Hydroseeding on substation slopes and access roads (17,625 m^2)
Other	
Plaza I/O 220 kV Montetorrero-Plaza/Entrerrios-Plaza line	Phase 1 botanical survey conducted.
Buniel I/O - 400 KV Barcina-Grijota line	Temporary restrictions for the opening up of safety corridors (Not before September), and restriction on the use of arboricides (chemical treatment for trees) in the proximity of rivers.
Godelleta I/O - 220kV Catadau-Torrent line	Work stoppages on the days when fire-risk LEVEL 3 has been established due to risk of fires in forested areas or within a 500m proximity.
400 kV Campanario-Ayora line	Work stoppages on the days when fire-risk LEVEL 3 has been established due to risk of fires in forested areas or within a 500m proximity.
Modification of 400kV Aragón-Morella line	Work stoppages on the days when fire-risk LEVEL 3 has been established due to risk of fires in forested areas or within a 500m proximity.
Torremendo 220/400 kV substation	The plot of land on which the substation has been built is within the SPA called 'Sierra de Escalona and Dehesa de Campoamor'. The Environmental Impact Statement contemplated the environmental restoration of the plot once the works had been completed, but this has not been carried out as yet, as the Company is waiting to see if the plot is capable of a natural repopulation of its flora
220 kV Cártama-Los Montes line (increasing power capacity)	Walk-through survey of the access routes.
220 kV Dos Hermanas-Puerto Real line (increasing power capacity)	Inventory of trees located within safety corridors and access routes in order to request the permitting process from the competent agency.
66 kV Guinchos - Valle de Aridane line (RIP)	Removal of specimens of the invasive species known as crimson fountaingrass (*Pennisetum setaceum*) that have been eliminated and bagged as indicated in the Order of 13 June 2014, approving the Technical Guidelines for the handling, control and elimination of crimson fountaingrass.

(*) Although classified as measures for the protection of flora, in general these avoid impacts on soil, riverbeds and other elements.

Protection of flora: Preventive and corrective measures	
Biological stoppages	
Playa Blanca 132 KV substation	The biological stoppage determined for this facility included the months of January to June. In December 2016, a 'Report on the analysis of biological stoppages' was submitted to the competent agency (Environmental Impact Service), proposing the elimination of the biological stoppages at the Playa Blanca 132 kV substation. In February 2017, the resolution was received which eliminated the aforementioned stoppage.
132 kV Puerto del Rosario - La Oliva line	The stoppages established initially were from January to June. According to the resolution received, as of June 2017, biological stoppages must be observed for: • Towers 17-26 March-July (Egyptian Vulture). • Towers 14-28 January-June (Houbara Bustard). • Towers 6 and 7 from January to April. • Towers 10 to 13 March to June.
66 kV conductor Corralejo substation - La Oliva 66kV substation	Initially, work had been limited during the months of March to September. In December 2016, a 'Report on the analysis of biological stoppages' was submitted to the competent agency (Environmental Impact Service), proposing the elimination of the biological stoppages at the Playa Blanca 132 kV substation. In February 2017, the resolution was received which eliminated the aforementioned stoppage.
400 kV Aragón-Peñaflor line (increasing power capacity)	Work stoppages between 1 February and 1 August due to the presence of protected birdlife.
Godelleta I/O 220kV Catadau-Torrent line	From April to July inclusive, work was restricted on SPAN 8-9 and SPAN 20-21.
66 kV Gran Tarajal - Matas Blancas line (REPEX)	Towers T22 to T27, T30, T65 to T73: Work stoppages between 1 March and 31 May due to the presence of protected birdlife.
	Towers T75, T76, T77, T85 to T105: Work stoppages between 1 January and 31 June due to the presence of protected birdlife.
132 kV Gran Tarajal - Matas Blancas line	Towers T18 to T23, T26, T61 to T72: Work stoppages between 1 January and 31 June due to the presence of protected birdlife.
	Towers T73 to T76, T94 to T98: Work stoppages between 1 April and 31 June due to the presence of protected birdlife.
	Towers T75 to T82: Work stoppages between 1 January and 31 June due to the presence of protected birdlife.
	Towers T83 and T84: Work stoppages between 1 February and 31 June due to the presence of protected birdlife.
Accompanying / compensatory measures: Installation of nesting boxes	
220kV I/O Plasencia-Almaraz line	Installation of 37 nesting boxes for European Rollers, Little Owls and Common Kestrels.
Other	
Agüimes 66 KV substation	A phase 1 survey was conducted on the plot of land where this work will be carried out to verify the presence of nests and birds that are protected.

❖ Socio-economic environment and the landscape

Measures for the protection of the socioeconomic environment	
Modification of the design of the project during works	
400/220 kV Solórzano substation	Longitudinal vegetation barrier planted in response to a complaint regarding the noise produced by the power transformer.
Arkale 220 kV substation	Creation of a ridge with sterile waste material that will repopulate with vegetation to mitigate the noise produced by the phase-shifter.
400/220 kV Torremendo substation	Enlargement, with respect to the original design, of the stone swale of a rainwater drainage outlet from the substation to avoid problems of erosion in the adjacent agricultural plot.
Hoisting by boom crane/helicopter	
220 kV Pereda-Soto de Ribera line (REPEX)	Replacement of the main body of the towers by helicopter to prevent the opening up of new access routes.
220 kV Telledo-Pereda line (REPEX)	Replacement of the main body of the towers by helicopter to prevent the opening up of new access routes.
220 kV Villablino-Telledo line (REPEX)	Replacement of the main body of the towers by helicopter to prevent the opening up of new access routes. (Tower 254 and section 274 to 293).
Godelleta I/O - 220kV Catadau-Torrent line	Assembly and hoisting with a boom crane for all the towers of the line.
400 kV Campanario- Ayora line	Assembly and hoisting with a boom crane for all the towers of the line.
Hanging of line by helicopter	
No actions during 2017	
Other	
220 kV Pereda-Soto de Ribera line (REPEX)	Agreements with land owners and owners of neighbour plots for improvements of enclosures or access routes, for the clearing of plots of land and the laying of pipework for irrigation channels.
220 kV Telledo-Pereda line (REPEX)	Agreements with land owners and owners of neighbour plots for improvements of enclosures or access routes, for the clearing of plots of land and the laying of pipework for irrigation channels.
220 kV Villablino-Telledo line (REPEX)	Agreements with land owners and owners of neighbour plots for improvements of enclosures or access routes, for the clearing of plots of land and the laying of pipework for irrigation channels.
Godelleta 400kV substation	Periodic damping down works carried out in the area of the works to control the emission of dust into the atmosphere. Repair of damage done to roads used in the construction of the substation as well as storage areas.
400kV Campanario-Ayora line	Restoration of the areas (access routes/plots) affected by the works for the construction of the line.
Godelleta I/O - 220kV Catadau-Torrent line	Restoration of the areas (access routes/plots) affected by the works for the construction of the line.

❖ Landscape restoration

Landscape restoration	
Substations under construction	
Regoelle 220 kV substation	Adaptation of ditches in plots of land and external slopes of the substation, in addition to the sowing of seed by hand.
La Oliva 132 kV substation	In order to comply with point M, section f of the Environmental Impact Statement, as measures to offset the impacts on areas of barren landscape affected by the construction of the new Corralejo substation, the restoration of the adjacent areas that were degraded through the extraction of rocks or illegal dumping of rubble and debris. To do this, the rocks on the plot affected by the substation works have been removed and piled up carefully removing the rocks that have lichens that will be relocated in their natural position in the areas to be restored. They have been stacked for later use.
La Farga 400-220 kV substation	Hydroseeding on substation slopes and access routes (17,625 m^2).
Godelleta 400/220 kV substation	The initial phase of landscape restoration of the substation was conducted, encompassing erosion control measures for the slopes. The exterior slope of the substation is pending reconstruction and the landscape restoration will be carried out with the planting of olive trees and aromatic plants (March 2018).
Torremendo 400/220 kV substation	Pending the planting of olive trees and aromatic plants at the entrance of the facility (March 2018).
Torremendo 400/220 kV substation	The plot of land on which the substation has been built is within the SPA 'Sierra de Escalona and Dehesa de Campoamor'. The monitoring of the natural revegetation of the plot was included in the Environmental Monitoring Programme (EMP). The interior slopes of the substation have been repopulated with flora and coconut matting and trinter meshing have been placed on the outer slopes of the facility. The Environmental Impact Statement contemplated the environmental restoration of the plot once the works were completed, but this has not been carried out as yes, as the Company is waiting to see if the plot is capable of a natural repopulation of its flora.
Sabinal 220/66 kV substation	Placement of a BIANMAT type triple twisted geogrid which was planted with Sweet *tabaiba* (a native flowering bush) (*Euphorbia balsamifera*).
Lines under construction	
400 kV Boimente-Pesoz line	Replanting of trees that did not take hold in the vegetation barrier made for span 54-55, where the line crosses the Camino de Santiago (Saint James' Road – a pilgrimage route).
	Refurbishment of the route called Camino Real that runs from tower 61 to 69.
220 kV Mazaricos-Regoelle line	Making good of access routes and worksites.
Facilities undergoing maintenance works	
220 kV Lubián-Sanabria line	Making good of access routes and worksites. Restoration of affected dry-stone walls. THIRD-PARTY MODIFICATION.
400kV Cartelle-Mesón do Vento line	Making good of access routes and worksites. FAULT.
220 kV Mesón do Vento-Belesar line	Making good of access routes and worksites. Restoration of affected dry-stone walls. FAULT.

Landscape restoration	
220 kV Pereda-Soto de Ribera line (REPEX)	Geomorphological restoration of the land, removal of surplus material to landfills, sowing of seeds, repair of roads, opening up of water culverts and repair of dry-stone walls.
220 kV Telledo-Pereda line (REPEX)	Geomorphological restoration of the land, removal of surplus material to landfills, sowing of seeds, repair of roads, opening up of water culverts and repair of dry-stone walls.
220 kV Villablino-Telledo line	Geomorphological restoration of the land, removal of surplus material to landfills, sowing of seeds, repair of roads, opening up of water culverts and repair of dry-stone walls.
400 kV Lada-Pola de Gordón line	Geomorphological restoration of the land, removal of surplus material to landfills, sowing of seeds, repair of roads, opening up of water culverts, repair of dry-stone walls and restoration of irrigation channels.
400 kV Soto-Robla line	Repair of roads, opening drainage and intercept ditches.
Solórzano 400/220 kV substation	Reinforcement of the perimeter restoration of the substation, with the planting of trees, at the request of the Regional Ministry of Environment of Cantabria.
220 kV Siero-Puente de San Miguel 1 line	Geomorphological restoration of the land, removal of surplus material to landfills, repair of roads, opening up of water culverts.
66 kV Guinchos - Valle de Aridane line (RIP)	Geomorphological restoration of the land, reuse of excess material in environmental restorations, planting of native species from the Island's Council nursery, repair of roads.
Adaptation of substation slopes	
Penagos 400/220 kV substation	Removal of invasive species of pampas grass (*Cortaderia selloana*).
Godelleta 400/220 kV substation	Restoration of slopes with coconut matting and trinter meshing. The restoration must be carried out again due to the washing away of the coconut fibre on the outer slope of the substation (March 2018).
Torremendo 400/220 kV substation	Stabilising slopes by using coconut matting with topsoil and trinter meshing to avoid erosion.
Sabinal 220/66 kV substation	Placement of a BIANMAT type triple twisted geogrid which was planted with Sweet *tabaiba* (*Euphorbia balsamifera*).

❖ Archaeological heritage

Protection of archaeological-ethnological heritage	
132 kV Puerto del Rosario-La Oliva line	There were archaeological findings in the immediate vicinity of tower 71 before the start of the works that involved the modification of the location of the tower and of the access routes proposed to tower 71 and 72. In addition, archaeological findings were made in the vicinity of tower 50. Works conducted to mark off the archaeological zones next to several towers.
132 kV Ciudadela-Mercadal line	A number of Assets of Cultural Interest close to the works have been marked off so as not to have an impact on any of them. Dry-stone walls have been found on the access roads to rural properties. Those walls that prevented access of the necessary machinery, were dismantled and were rebuilt once the work was completed. As compensatory measures made to the individual affected by two towers, it was agreed to restore a stone thrashing floor (Era de Son Telm) close to the overhead line between towers 39-40.
Modification of 400kV Aragón-Morella line	Archaeological findings of the remains of a bone when conducting landfill works included in the improvement of tower 13. Currently pending classification of bone type and chronology
La Farga 400/220 kV substation	A dolmen (a single-chamber megalithic tomb) catalogued in the vicinity of the work has been marked off and signage has been installed. A silo for grain storage has been found in the 220-kV switchyard, which has been inventoried and communicated to the local authority responsible for Culture. After approval by the local authority, it was dismantled, and work continued.

❖ Restoration of affected areas

Restoration of areas affected by works	
Restoration of areas affected by works	
Playa Blanca 132 KV substation	Geomorphological restoration of the land, reuse of surplus material in the repair of roads linked to the substation.
132 kV Puerto del Rosario La Oliva line	Geomorphological restoration of the land, reuse of excess material in environmental restorations, repair of roads and repair of stone walls.
400 kV Siero-Puente de San Miguel 1 line	Geomorphological restoration of the land. - Improvement of the track that gives access to towers 144 and 145. In this improvement, a re-profiling of the platform, the opening of ditches and new waterways, the supply and spreading out of material in the points where there were potholes and in one of the transversal waterway to improve flow. - Improvement of track that gives access to tower 142. The track that came to this tower was overgrown and inaccessible and was quite narrow. The improvement consisted of eliminating the vegetation that had invaded it, re-profiling the platform, adding material where slopes were steeper and extending the width in one of the bends.

Restoration of areas affected by works	
220 kV Abadiano-Mondragón line (REPEX)	- Improvement of existing track to towers 33 and 34 with platform re-profiling of the camber of the surface and opening up of wateways. - Improvement of existing track to tower 55 with platform re-profiling. - Improvement of the track that gives access to the towers that go from 63 to 66. Before the work it was impassable due to its state and the platform was reprofiled and waterways were opened up. - Improvement in the drainage of the track that gives access to tower 73. Initially there was a track that crossed a small riverbed and when it rained the water pooled there. With the improvement, a pipe has been installed that allows the run-off water to flow away.
Godelleta 400 kV substation	Restoration of land used as an inert storage and construction site.
400 kV Campanario-Ayora line	Restoration of plots following the natural topographic relief of the land. The evolution of the natural revegetation of platforms in forested areas will be evaluated at the end of the EMP to determine the possibility of making restoration works to the towers.
Godelleta I/O - 220kV Catadau-Torrent line	Restoration of plots following the natural topographic relief of the land.
220 kV Casaquemada-Onuba line (increasing power capacity)	Removal of the material supplied to build the access route to tower 202 and restoration of the affected area
132 kV Gran Tarajal-Matas Blancas line	Buried line section between tower 100 and the Matas Blancas substation. Restoration of the surface of the buried section, by covering over the trench.
66 kV Candelaria-Tagoro line (RIP)	Geomorphological restoration of the land, repair of dry-stone walls of agricultural terraces, sowing of seeds of the flora removed for the execution of works.
Sabinal 220/66 kV substation	Placement of a BIANMAT type triple twisted geogrid which was planted with Sweet *tabaiba* (*Euphorbia balsamifera*).
66 kV Gran Tarajal-Matas Blancas line (REPEX)	The areas affected by the works have been repaired and restored properly.
66kV Guinchos - Valle de Aridane line (RIP)	Geomorphological restoration of the land, reuse of excess material in environmental restorations, sowing of seeds, repair of roads.

I/O: incoming/outgoing feeder lines

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This English version is a translation of the original and authentic Spanish text found in RED ELÉCTRICA'S *"DECLARACIÓN AMBIENTAL EMAS 2017",* originally issued in Spanish. In the event of discrepancy, the Spanish-language version shall prevail.