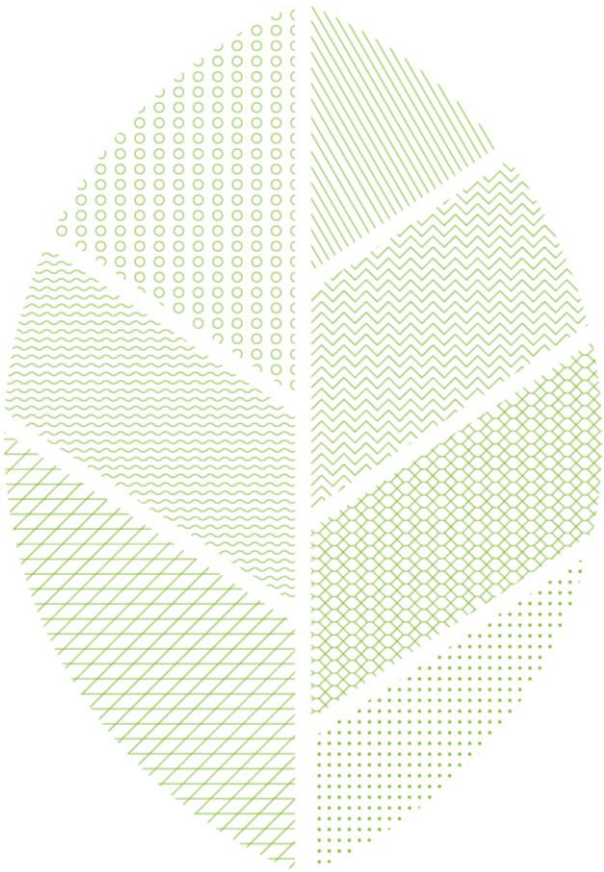
RED ELÉCTRICA CORPORACIÓN



EMAS Environmental Statement 2021

June 2022

Table of Contents

1. Who is Red Eléctrica

Red Eléctrica de España S.A. (REE) was set up on 29 January 1985 as the first company in the world dedicated exclusively to the transmission of electricity and the operation of the electricity system.

In 2008, in order to strengthen the transparency and separation of regulated activities (electricity transmission and operation of the electricity system in Spain) from the rest of the business activities, a change was made in the Company's corporate structure with the creation of **Red Eléctrica Corporación (REC)**, as the parent company of the **Red Eléctrica Group**.

On 1 November 2020, following a resolution of the Board of Directors, the corporatisation process was definitively consolidated by transferring the Corporate Services, which were encompassed within Red Eléctrica de España (REE), to the parent company: Red Eléctrica Corporación (REC).

The main activity that falls under the responsibility of REE is to carry out the functions of sole transmission agent and operator (TSO) of the Spanish electricity system. Its mission is to guarantee the security and continuity of the electricity supply at all times and to manage the transmission of high-voltage electricity. As the operator of the electricity system, it carries out its operational functions through its electricity control centres in order to guarantee the correct operation of the electricity supply process at all times, both in the mainland system and in the non-peninsular systems.

In its capacity as manager of the high-voltage transmission grid, REE transports electricity from the power generation facilities to the consumption areas through its own extensive transmission grid, which it improves, expands and maintains by applying uniform standards and efficiency criteria. Furthermore, it is responsible for managing the exchange of electrical energy between external electricity systems through cross-border connections[1] and for guaranteeing third party access to the grid under equal conditions.

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[2].

Our main facilities are comprised of electricity control systems that manage, monitor and supervise the operation of the system; 44,687 circuit kilometres of high voltage transmission line and 6,104 substation bays with a transformer capacity of 93,871 MVA.

Evolution of facilities/infrastructure[3]		2019	2020	2021
Transmission lines (km of line circuit)	**Total kilometres of line circuit**	**44,365**	**44,482**	**44,687**
	400 kV	21,748	21,764	21,768
	220 kV or less	22,617	22,718	22,919
Substations	**Total number of bays**	**5,951**	**5,970**	**6,104**
	400 kV	1,538	1,549	1,591
	220 kV or less	4,413	4,421	4,513
	Transformer capacity (MVA)	**91,591**	**93,021**	**93,871**

[1] In this regard, since 2018, Red Eléctrica owns 50% of the share capital of INELFE, a company jointly set up with its French counterpart, RTE, to develop electricity interconnections with France.

[2] *Clasificación Nacional de Actividad Económica – CNAE* (Spain's National Classification of Economic Activities) 35.12: Transmission of Electricity.

[3] Data corresponding to the last three years - revised and updated in 2022. Source: Sustainability Report 2021

For the **complete** and adequate development of the described activity, the participation of both REE and REC is essential, each of them intervening in those tasks that are under their responsibility throughout the process.

Therefore, the scope of this environmental statement and the EMAS Register **encompasses the activity of both REE and REC**:

- Transmission and Operation of the Spanish electricity system
    - *Activity carried out by REE according to* ***NACE*** [4] ***Rev.2 code: 35.12. Transmission of Electricity****.*
- Corporate services that support these activities
    - *Activity carried out by REC according to* ***NACE Rev.2 code: 64.20. Activities of holding companies****.*

It should be noted that the ownership of the registration in the EMAS[5] Register is in the name of the parent company.

It is not possible to separate the data pertaining to REE with regard to the carrying out of its functions as transmission agent and operator of the Spanish electricity system from that data pertaining to the activities of REC and its personnel regarding its corporate support function for such activities. Therefore, the scope of the information provided throughout this document, in terms of the environmental management process and the environmental performance results obtained, **encompasses both companies**.

In order to make the reading process easier and improve understanding of the document, both companies are hereinafter referred to as **Red Eléctrica** for all activities carried out within the scope of the Environmental Statement.

[4] Statistical Classification of Economic Activities in the European Community.

[5] Registration in the EMAS Register in 2021 and thereafter will be in the name of the parent company, Red Eléctrica Corporación (REC). In previous years, ownership of the EMAS register was in the name of Red Eléctrica de España (REE).

2. Environmental Management and Policy

ENVIRONMENTAL POLICY[6]

PURPOSE

To establish the principles in environmental matters that guarantee the commitment of the Red Eléctrica Group to the conservation and improvement of the environment and the sustainable development of any activity and facility throughout its life cycle. Furthermore, the Company will work towards meeting the needs and expectations of stakeholders within this scope.

Focusing on and complying with the principles contained within this Policy contribute to achieving the purpose of the organisation, as well as to help achieve its strategic objectives, in coherence with the values, principles and guidelines for conduct established in the Code of Conduct and Ethics of the Red Eléctrica Group.

SCOPE OF APPLICATION

This Policy applies to all majority-owned companies of the Red Eléctrica Group. It is the responsibility of all persons forming part of the Group to comply with this Policy in the fulfilment of their duties and responsibilities, and in all professional areas in which they represent the organisation.

In those investee companies in which the Red Eléctrica Group does not have effective control, principles aligned with those established in this Policy shall be promoted.

PRINCIPLES

- Ensure **compliance with environmental legislation, regulations and standards** applicable to the activities and facilities in the countries where the Company operates, anticipating as far as possible the application of new regulations when these are more demanding, as well as complying with the **voluntary commitments** acquired regarding environmental matters.
- Contribute to a model for the execution of activities that is carried out in an environmentally respectful manner, and which considers the **life cycle of infrastructure**, facilities and buildings and that integrates such infrastructure into the landscape, thus minimising its environmental impact.
- **Prevent** the materialisation of **environmental risks** and the appearance of situations that could lead to environmental emergencies, applying the necessary preventive measures and, where appropriate, responding effectively, mitigating the consequences of such materialisation.
- Strengthen our commitment to the **fight against climate change**, contributing to the energy transition and taking steps towards achieving carbon neutrality, while facilitating the electrification of society and the increased integration of renewables. Furthermore, the Company is committed to reducing the emissions associated with its activities through energy efficiency and sustainable mobility, as fundamental pillars, while factoring in the impact of the Company's supply chain in this aspect.
- Consider **biodiversity and natural capital** as key factors in the Group's strategy, with the aim of generating a net positive impact on the environment in which the Company carries out its activities.
- Integrate **circular economy** criteria in all of the Group's activities with a view to achieving responsible consumption and the sustainable use of resources.
- Ensure **continuous improvement, risk management and control, the precautionary principle and the prevention of pollution** in the environmental management of the Group's companies through the implementation and maintenance of environmental policy management systems aligned with the requirements of international standards and adjusted to the specificities of each of them.
- Incorporate **environmental criteria** and consider environmental risks in **investment and procurement** decision-making processes, as well as in the planning and execution of activities.

[6] Environmental policy applicable to all the companies that make up the Red Eléctrica Group. Second Edition (*E-PA011 replacing Edition 1 of Policy PC01*) approved by the Executive Committee in June 2021.

- Promote behaviour in accordance with environmental requirements and the principles and commitments undertaken by the Group with regard to its supply chain and partners, ensuring that its **supplier value chain** adopt these same commitments.
- Foster a culture of respect for the environment through ongoing internal and external training, **awareness-raising campaigns and activities aimed at promoting engagement** that convey the importance of environmental protection and the relevance of minimising impacts on the environment.
- Encourage and contribute to **innovation** aimed at the design and adoption of solutions and new ways of working in order to avoid or minimise environmental impacts.
- Promote channels of communication to inform, to establish dialogue and generate **alliances with stakeholders** that enhance the generation of shared value.
- Promote **visibility and transparency** in terms of the information communicated regarding the results of the Group's environmental performance.
- Integrate best environmental practices into the activities carried out by the Company and proactively promote the application of the decisions adopted by national and international forums and organisations, which promote and encourage sustainable behaviour and conservation in the field of environmental management, in order to achieve **leadership** in this area within the activities carried out by the companies of the Group.
- Ensure the **collaborating companies** acting on behalf of any of the Group's companies apply the principles of this Policy.

RESPONSIBLE 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 their facilities compatible with the environment, considering their entire life cycle and paying particular attention to biodiversity conservation.

Furthermore, Red Eléctrica is a key player in the energy transition towards a decarbonised energy model and therefore has undertaken a specific commitment in the fight against climate change.

Red Eléctrica's commitment not only covers its own activities, but this commitment also extends to its supply chain.

Sustainability Indexes

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.
- **Euro**next Vigeo Index Eurozone 120 and Euronext Vigeo Europe 120
- MSCI (Morgan Stanley Capital International).
- **Ethibel Sustainability Index Excellence Europe, Ethibel PIONEER and Ethibel EXCELLENCE Investment Registers**
- **Sustainalytics**

Among the awards and recognitions received by Red Eléctrica in 2020 for its environmental management the following are noteworthy:

- **Worldwide leadership position** in the Dow Jones Sustainability Index within the Electric Utilities sector. In 2021, the Red Eléctrica Group was once again recognised as one of the most sustainable companies in the world by the prestigious Dow Jones Sustainability Index (DJSI), which is evaluated by S&P Global Corporate Sustainability Assessment.
- **Silver Class** distinction in the Electric Utilities sector of the 'The Sustainability Yearbook 2022' published by S&P Global.
- ***CDP Supplier Engagement Leader***. *The Red Eléctrica Group was recognised as a Supplier Engagement Leader in 2021.*
- ***Good Practice of the Year Award 2021 organised by RGI (Renewables Grid Initiative)*** *Special mention by the European Commission Jury for the 'Pastoreo en RED' project (project for livestock grazing under overhead power lines).*

More information can be found at:

https://www.ree.es/en/sustainability/commitment-to-sustainability/leadership-in-sustainability

https://www.ree.es/en/publications/sustainability-report-2021

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).

This system covers all the activities and facilities of Red Eléctrica.

- MANAGEMENT STRUCTURE

The Environmental Management System is part of a Comprehensive Corporate Management System which also encompasses the Quality, Occupational Health and Safety, and Corporate Responsibility management systems. The aforementioned management systems take into consideration all those regulatory aspects which have been defined as being potentially crosscutting based on the existing processes and resources dedicated to each one of them, with the aim of:

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

Specifically, the Environmental Management System comprises all the activities performed by Red Eléctrica in all its facilities and work centres, 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.

- FUNCTIONAL STRUCTURE

The management area responsible for defining and coordinating the development and monitoring of the environmental management system (hereinafter SIGMA) lies with the **Sustainability Area,** which is part of the **Sustainability Department** and is integrated into the **Corporate Sustainability and Research Division** that reports to the *Chairperson's Office*. The mission of the Sustainability Department is to design, coordinate and oversee the implementation of the strategies, policies, systems, criteria and actions regarding the sustainability of the Red Eléctrica Group and, as part of its duties and responsibilities, it is also responsible for coordinating the development and monitoring of the Environmental Management System.

Of particular note are the functions carried out in the management system of the **Environmental department** belonging to the Licenses and Environmental Management Area which is part of the Transmission Division. Its function is to integrate the environmental parameters in all phases of the life cycle of the facilities, collaborating in the determination and implementation of sustainability criteria and actions, and reporting all relevant information regarding its management. It also ensures compliance with the environmental conditioning factors required by the competent bodies in environmental matters and by internal and external regulations. In the specific case of corporate buildings, responsibility for environmental management falls under the remit of the **Corporate Culture and People Management Area**.

The maintenance of *SIGMA* also involves all the units of the Company within the scope of their competences and responsibilities. The functional guideline manual highlights two **functions common to all organisational units and which are of a strategic nature** and are relevant to the environmental management system in order to:

- *Implement management systems in the strategic areas established by the Company that promote continuous improvement and facilitate the achievement of the expected results.*
- *Guide the execution of all activities in the fulfilment of the objectives established in the different environmental management plans in order to guarantee the fulfilment of the commitment regarding the protection of and respect for the environment.*

It should be noted that one of the principles in the Red Eléctrica Group on which sustainability is based is care for the environment. The objective of the **Sustainability Committee of the Board of Directors** is, among other things, to monitor and promote actions related to the environment and the fight against climate change within the Group.

The Committee is responsible for the oversight of the Group's strategy and practices in relation to the **2030 Sustainability Commitment**, monitoring compliance with policies aimed at meeting the Sustainable Development Goals, oversight of stakeholder relation processes and supervising and coordinating the sustainability reporting process.

Similarly, the Sustainability Steering Committee and the Corporate Sustainability and Research Area play a key role, reinforcing the engagement of the highest levels of decision-making within the Company and involving all areas of the organisation in the monitoring, supervision and implementation of the 2030 Sustainability Commitment.

- DOCUMENTATION STRUCTURE

The Environmental Management System is based a set of applicable regulations.

The management processes include the drafting, custody, maintenance and registering of the documented information necessary for the Environmental Management System. The associated documentation is updated and easily accessible in different formats/media for all personnel.

The regulations of the Environmental Management System are composed of the following documents:

- POLICIES: set out general guidelines developed with the aim of achieving the business vision and strategies. The procedures and the rest of the associated regulations are derived from them.
- ACTION GUIDES: documents that establish and provide criteria or guidelines or information to facilitate the carrying out of activities from an environmental point of view. The action guides include those documents that set out the strategic guidelines contained in the corporate policies.
- PROCEDURES: regulations that govern processes of a general or corporate nature. They describe the purpose, scope, responsibilities and courses of action to be followed in each procedure.
- TECHNICAL INSTRUCTIONS: describe in detail some or all of the activities of a process. Their objective is to explain the methods and systems for carrying out tasks and functions to technical experts or positions that perform them within the company.
- TECHNICAL SPECIFICATIONS: describe in detail the terms and conditions as well as the technical specifications required for the acquisition of goods and services that are made on a regular basis from external suppliers of the Company.
- MANUALS: documents that govern certified or accredited activities.

Changes in the documentation of the environmental management system 2021

During 2021 many of the environmental management system documents[7] 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	Published	Approval date	Supersedes
E-IA004	Environmental inspection of in-service substations	5	27-01-2021	10-03-2021	Edition 4
E-IA021	Identification, registration and monitoring of environmental regulatory requirements	1	29-01-2021	10-03-2021	--
E-IC008	Supplier qualification	1	16-04-2021	23-06-2021	--
E-PA01	Environmental policy	2	22-06-2021	22-06-2021	Edition 1
E-IA005	Management of the environmental certification for external works	2	20-06-2021	14-07-2021	Edition 1
E-IT150	Management and control of the inspection and testing of equipment (EIME)	2	24-09-2021	30-09-2021	Edition 1
E-IT151	Maintenance of buildings and infrastructure	5	15-10-2021	02-12-2021	Edition 4
E-IT107	Maintenance of power transformers and reactors	4	15-10-2021	02-12-2021	Edition 3
E-IT145	Procedure regarding oversight of the substation inspection roadmap	4	15-10-2021	02-12-2021	Edition 3
E-ET050	Geotechnical, hydrological and environmental characterisation studies of soils and groundwater	3	22-11-2021	22-12-2021	Edition 2
G-GN02	Crisis management in the Red Eléctrica Group	1	16-12-2021	17-01-2022	--

[7] The technical instruction IC002-3 "Disposal of non-hazardous waste with metallic components" was cancelled or annulled. The cancellation of this standard is due to its non-applicability as a result of the creation of the waste management office (whose scope is the documented treatment of waste), which has led to the withdrawal of the ECHA (European Chemicals Agency) application as an environmental information tool.

3. Scope of the EMAS Register

Red Eléctrica has an environmental management system, with EMAS Registration No. ES-MD-000313, whose scope covers the entirety of the Company's activities (*NACE Rev.2: 35.12. Transmission of Electricity and NACE 64.20. Activities of holding companies)* and complies with the requirements of Regulation (EC) No. 1221/2009 ('EMAS III'), Regulation (EU) 2017/1505 amending Annexes I, II and III to Regulation (EC) No. 1221/2009 and also Regulation (EU) 2018/2026 amending Annex IV to Regulation (EC) No. 1221/2009 which sets the environmental reporting requirement:

- **Transmission and Operation of the Spanish electricity system.**
- **Corporate services that support these activities.**

and that are performed at:

- **Moraleja Head Office and Central Regional Office**: Paseo Conde de los Gaitanes, 177. 28109 - Alcobendas (Madrid)
- **Albatros Head Office**: C/Anabel Segura 11. 28109 - Alcobendas (Madrid).
- **CECORE**: Parque Tecnológico de Madrid, C/Isaac Newton, 13. 28760 - Tres Cantos (Madrid).
- **CAMPUS Tres Cantos:** Parque Tecnológico de Madrid, C/Isaac Newton, 2. 28760 - Tres Cantos (Madrid).
- **Regional Office and System Operation Department of the Balearic Islands**: Camino Son Fangos, 100 Edificio A - 2ª planta. 07007 - Palma de Mallorca
- **Regional Office and 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)
- **Regional Office and System Operation Department of the Canary Islands** (Main Office in Tenerife): Nuestra Señora de la Ternura (Los Majuelos), 38108 - San Cristobal de la Laguna (Santa Cruz de Tenerife)
- **Northern Regional Office**: C/Ibañez de Bilbao, 28 7ºA. 48009 - Bilbao (Vizcaya).
- **North-Eastern Regional Office**: Avenida Paralelo, 55. Edificio REE. 08004 - Barcelona.
- **North-Western Regional Office**: **C/Gambrinus, 7 2º Izq. 15008** - La Coruña
- **Southern Regional Office**: C/Inca Garcilaso, 1 Edificio REE. 41092 - Isla de la Cartuja (Sevilla)
- **Eastern Regional Office**: Avenida de Aragón, 30 Planta 14. 46021 - Valencia
- **Ebro Regional Office**: Plaza Aragón, 10, Planta 2, Oficina 3. 50004 - Zaragoza
- **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**: C/ Gerrers esquina Siurells, 2ª Planta. Polígono industrial Marratxi. 07141 - Marratxi (Palma de Mallorca).
- **Canary Islands Regional Transmission Centre: C/ Laura Grötte de la Puerta, 5. Polígono industrial El Mayorazgo.** 38110 - 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
Line: 220 kV Mediano-Pont de Suert	Bonansa (Huesca)
Line: 220 kV Penedés-Viladecans	Sant Climent de Llobregat (Barcelona)
Line: 400 kV Baza-Caparacena	Iznalloz, Deifontes and Cortes de Baza (Granada)

Also excluded from the scope of the register are those sections of line or facilities with sanctioning proceedings **that have not been finalised**[8]:

Facility	Municipality
Line: 400 kV Galapagar-Lastras	El Espinar (Segovia).
Line: 220 kV Cartelle -Castrelo 1	Castrelo de Miño (Orense).
Line: 400 kV Morata-Villaviciosa	Valdemoro (Madrid).
Line: 400 kV Baza-Caparacena	Dehesas de Guadix (Granada).
Turbine installed in the Formentera[9] electricity substation	Formentera (Balearic Islands)

[8]Sanctioning proceeding that have been finalised are understood as those in which the ALL of the following circumstances are met:

1. The Company acknowledges it responsibility for the non-compliance.
2. The required amount (sanction/fine) has been paid.
3. No appeal has been lodged, or the option of lodging an appeal to a higher court is still open or
4. A decision has been taken by the Company to assume responsibility for what has happened, or the decision has been made not to proceed to appeal the case.

[9] The sanctioning procedure is initiated against GAS ELECTRICIDAD GENERACIÓN S.A. and REE, S.A.U. as jointly responsible parties. Responsibility is attributed to REE due to the fact that the operating regime of the Formentera turbine responds to the strategies derived from REE's new operating procedures that came into force in 2006. However, and as pointed out in the allegations submitted on 5 May 2011, the fact that the System Operator decides to schedule the use of a turbine for electricity system security reasons does not imply responsibility for the condition and maintenance of said turbine. The sole owner of the turbine is GESA ENDESA, and therefore, it is the only entity that has the power to repair or replace it in the event it is in poor condition.

4. 2030 Sustainability Commitment. Sustainable Development Goals

The 2030 Sustainability Commitment of the Red Eléctrica Group, approved by the Board of Directors materialises the commitment made by the Company to its long-term continuity and success through a business model capable of creating shared value for all its stakeholders through the responsible execution of its activities.

The Commitment is underpinned by ten principles defined in the Sustainability Policy and is specified in four sustainability priorities, in order to address the challenges facing the organisation and to prioritise the existing opportunities, with the aim of occupying a position of reference in the global business context.

This Commitment has been driven by defining eleven sustainability goals for the 2030 horizon that are quantifiable and aligned with the Strategic Plan (https://www.ree.es/en/sustainability/commitment-to-sustainability/sustainability-objectives-2030).

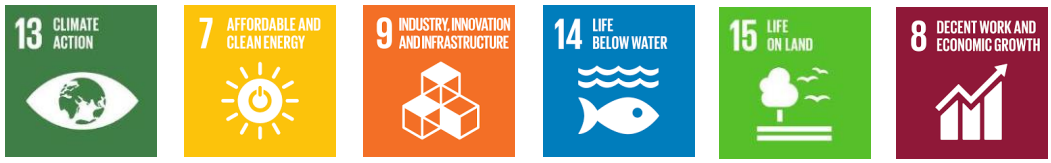
These objectives, defined by the Sustainability Steering Committee and validated by the Sustainability Committee of the Board of Directors, contribute directly to the achievement of the United Nations Sustainable Development Goals (SDGs).

The most relevant 2030 Sustainability Goals for environmental management are the following:

- **Reduce our GHG emissions by more than 40% per MWh transported.**
- **Generate a positive net impact on the natural capital in the vicinity of our facilities.**
- **Be a leading company in circular economy.**

The 2030 Sustainability Commitment is deployed through multi-year plans. The 2020-2022 Sustainability Plan was approved by the Executive Committee in July 2020. The plan is made up of 17 courses of action and consists of a total of 39 targets.

Aware that the role of companies is key to achieving the SDGs, the Red Eléctrica Group, based on the nature of its activity and the countries in which it operates, has carried out a process to identify priority SDGs. As a result of this process, the most relevant SDGs have been classified into two levels of relevance for Red Eléctrica:

Identification and Prioritisation of SDGs for the Red Eléctrica Group	
SDGs High Relevance	
SDGs Medium Relevance	

In 2019, in order to advance in the Company's 2030 Sustainability Commitment, an update of the materiality study was carried out in accordance with the Global Reporting Initiative (GRI) standards in order to identify the Company's relevant material issues. During 2021, the sustainability materiality study of the Red Eléctrica Group was updated as a result of various events such as the creation of the new technology company (Elewit), the acquisition of 89.68% of the shares of Hispasat S.A., the situation arising from COVID-19 and the approval of the new 2021-2025 Strategic Plan.

The materiality study carried out identified 16 material issues for the Red Eléctrica Group and its stakeholders.

Among the material issues identified, those with a more significant environmental component and also prioritised by a greater criticality for the achievement of the Company's long-term objectives were the following:

- **Climate Emergency (*Climate Change*)**
- **Biodiversity and Natural Capital**
- **Circular Economy**

The aforementioned material issues constitute two of the three vectors that articulate the Annual Environmental Plan of the Red Eléctrica Group. The 'Circular Economy' issue is included as a relevant area of action in the Environmental Management vector of facilities (*Landscape integration of the facilities into the environment and the prevention of pollution*) together with other areas of action.

In 2022, a new Sustainability Plan for 2023- 2025 will be defined, aligned with the Group's Strategic Plan and the 2030 Sustainability Goals. To this end, an in-depth materiality study will be carried out.

In any case, and although it has not been determined in the analysis process as a material issue**, the landscape integration of the facilities into the environment and the prevention of pollution** is one of the main vectors of progress for Red Eléctrica in environmental management.

The three vectors are interrelated

5. 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 of the Company on the environment and on the local communities/municipalities is the selection of the site where facilities will be located. In this regard, it is essential to consider environmental and social variables at all stages of the development of the transmission grid.

This includes carrying out a viability analysis of the facilities before their incorporation into the electricity planning proposal that Red Eléctrica, as System Operator, submits to the Ministry of Ecological Transition and the Demographic Challenge (MITERD).

Red Eléctrica has worked on the feasibility analysis of the infrastructures proposed for the next Electricity Planning for 2021-2026 and has analysed the different alternatives and studied the complexity of their implementation within the territory.

Once the Electricity Planning is approved, which is subject to the strategic environmental assessment procedure, the Company carries out a detailed study of the territory and defines, in a coordinated manner with the public administrations and key stakeholders, the siting (location) of substations and the routes the electricity lines will follow.

Furthermore, with the aim of minimising the potential impact of facilities and lines, the appropriate and necessary preventive and corrective measures to be applied during the construction or maintenance of facilities are established. The best tool that makes it possible to define the most appropriate project and establish the suitable preventive and corrective measures is the **Environmental Impact Assessment** (EIA) procedure; a procedure which the majority of the Company' projects are legally required to carry out.

To ensure the implementation and effectiveness of the established measures, **environmental monitoring programmes** are defined and executed. These are applied in the construction of the facilities and in the first years of their operation, and they facilitate the definition of new measures that may be deemed necessary.

For the facilities in operation, the Company conducts periodic reviews in order to verify compliance with environmental standards. It should be noted that, during the last three years, the 'Maintenance management and territorial observatory' project, which consisted of integrating into the corporate mapping system all the environmental, social, cultural and technical conditioning factors that must be taken into account when requesting authorisation and carrying out maintenance works on facilities (more than 70 layers of digitalised information covering 200 metres on each side of an electricity line), in order to facilitate that all conditioning factors are accessible to all Company staff and are taken into consideration and analysed before carrying out any activity.

Among the preventive and corrective measures applied noteworthy are those aimed at the protection of biodiversity, habitats and species, and those aimed at reducing potential impacts on the socioeconomic environment.

Currently one of the most relevant issues in relation to the integration of facilities into the environment is to improve their social acceptance. In this sense, the Company continuously works to improve its ties with stakeholders and in carrying out the necessary public information and consultation processes. Among other objectives, the aim is to enrich stakeholder information, strengthen the environmental impact assessment processes of projects and minimise potential conflicts.

In 2021, a new methodology was defined for the drafting of environmental impact studies, which incorporates the preparation of sociograms for those areas where new facilities are to be constructed. These impact studies will provide valuable information on the conditioning factors of the social environment, the map of agents and stakeholders and their interrelations, representing a good instrument for the territorial analysis of these areas.

Another of the challenges regarding the integration of electricity transmission infrastructure into the environment is the ability to blend them into the landscape. The use and ongoing enhancement of the tools available for assessing the visual impact of facilities, enables comparative analysis to be made between different project alternatives, criteria to be defined for the design of the facilities and communication with stakeholders to be improved. These tools, together with the application of landscape integration measures, allow progress to be made in reducing the impact of the facilities on the landscape.

Over the last year, work was carried out on the design of measures to integrate the buildings of important projects, such as the converter stations and electricity substations associated with the Spain-France electricity interconnection or the Peninsula-Balearic Islands II interconnection and the Tenerife-La Gomera submarine cables. The design of the Caletillas substation is particularly noteworthy as its construction was extremely well blended into its surroundings.

Lastly, in 2021, work was carried out to restore access roads/paths and worksites following the dismantling of the 220kV Trives-Aparecida line, and also included the removal of the concrete foundations of the towers and the sowing of various types of grass seed by hand in any of the areas affected by the works.

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

Development and implementation phases for transmission grid infrastructure

Infrastructure proposal
(Drawn up by REE)

Environmental Feasibility Study

- Analysis of all proposals from an environmental point of view.
- Only includes environmentally feasible projects.

Transmission grid planning
(Drawn up by MITECO)

Strategic environmental assessment of plans and programmes.

Public participation of stakeholder groups (SGs) through the submission of comments or arguments.

Project design
(New facilities and modifications)

Prior dialogue with stakeholders before defining the project (Autonomous Communities, local councils and NGOs).

Environmental Impact Assessment.

1 Prior consultation with SGs.

2 Defining the alternative of least impact.

3 Public information. Submission of arguments by SGs.

4 Proposal for preventive and corrective measures.

5 Publication of results.

6 Environmental authorisation.

Construction or modifications of facilities

Implementation of preventive and corrective measures.

Environmental monitoring (monitoring of preventive and corrective measures).

Monitoring the work of contractors regarding compliance with environmental requirements.

Environmental certification of works taking into account compliance with environmental requirements.

Maintenance

Environmental monitoring programmes in the initial years of operation of a facility.

Periodic inspections of facilities to verify compliance with standards and identify improvement measures.

Application of environmental improvement measures.

Taking the previously shown diagram regarding the environmental criteria applied as a reference, the following are relevant events that occurred during 2021:

1. Transmission Grid Planning

As a consequence of the obligations derived from the Environmental Report of the 2015-2020 Electricity Transmission Grid Planning and, previously, from the 2008-2016 Planning of the electricity and gas sectors, since 2009 the Company has been collaborating with MITERD in the drafting of the annual environmental monitoring reports consisting, basically, of the calculation of a series of performance indicators defined in such Environmental Report.

In addition, in 2021, a Strategic Environmental Statement was issued linked to the Electricity Transmission Grid Development Plan for 2021-2026 (Resolution of 9 December 2021 of the Directorate General for Environmental Quality and Assessment) and in 2022 it is foreseen that said Plan will be approved. The Company has collaborated on the environmental part with MITERD, as it has in the previous periods with the Energy area of the Ministry of Industry, participating in the preparation of the Strategic Environmental Study.

All the proposals included in the Plan have been analysed from a physical, technological and environmental viability point of view, prioritising those alternatives that allow a better use to be made of the existing grid and avoiding the inclusion of those alternatives that are environmentally or socially unviable.

2. Definition of projects

Environmental permitting processes were initiated for **6 investment projects**:

	Permitting process initiated		
	2019	2020	2021
Initial document	1	0	0
Environmental Impact Statement	5	0	0
Environmental Impact Assessment	10	1	6[10]
Total initiated	16	1	1

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

	Permitting process completed		
	2019	2020	2021
Positive Environmental Impact Statement	3	3	10
Negative Environmental Impact Statement	0	0	0
Environmental Resolution	2	4	6
Total	5	7	16

[10] EIA for the Baza–Ribina project. February 2021.
EIA for the submarine interconnection with France across the Bay of Biscay, updated in April 2021.
EIA for the 400 kV Itxaso line-the Castejón-Muruarte line and the dismantling of the 220 kV Itxaso-Orcoyen 1 and 2 axes between the Basque Country and Navarra. May 2021.
EIA for the 220 kV Tierra Estella substation and the 220 kV Muruarte -Tierra Estella line. October 2021.
EIA for the submarine cable between Ceuta and the Spanish mainland. December 2021.
EIA for the 400 kV Ronda substation and the 400 kV Ronda-Jordana-Tajo line. December 2021.

Environmental authorisation was obtained for **6 projects**, all of which received a positive environmental impact statement.

Positive Environmental Impact Statement[11]
Increasing the voltage of the 66 kV Candelaria-Buenos Aires line to 220 kV.
Increase in transmission capacity of the 400 kV Tajo-Litoral line
Modification of the 220 kV Penedés-Viladecans line
The 220 kV Mangraners-Juneda-L'Espluga-Montblanc-Penedés-Begues line
Increase in transmission capacity of the 220 kV Pobla de Segur-T de Foradada line
Increase in transmission power capacity of the 400 kV Aldeadávila-Arañuelo/Hinojosa-Almaraz/Aldeadávila-Hinojosa line (bird-saving device [blade-type])
Chira -Soria energy storage project
The 132 kV Ibiza-Formentera interconnection
The 220 kV Cáceres-Trujillo line
The 400 kV Morella-La Plana line

Environmental Impact Statement/ Environmental Resolution[12]
The 220 kV Moraleja-Fuenlabrada-Buenavista line
Increase in transmission capacity of the 220 kV Garoña-Puente Larrá line
Modification of the 400 kV Rubí-Vandellós/Pierola-Vic line between towers 251 and 256
Increase in transmission capacity of the 220kV Santiponce - Cristóbal Colón line
The 220 kV Zumajo-Puerto Real line
The 220 kV ST Caceres - ST Los Arenales line

At the end of 2021, **80 investment projects are at different stages of their environmental permitting process.**

In the environmental subsection of the sustainability area of the corporate website you will find the section 'Environmental permitting process' where the procedure of environmental processing of projects is described and the documents related to the projects that are being processed are published: https://www.ree.es/en/sustainability/the-natural-environment/status-of-the-environmental-permitting-process-of-projects

[11] Authorisation resulting from the Ordinary Environmental Impact Assessment process (Environmental Impact Study)
[12] Authorisation resulting from the Simplified Environmental Impact Assessment process (Environmental Document)

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.

Additionally, there is 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 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 facilities/infrastructure underwent works in 2021: **42 substations** and **997 km of line** (773 km investment and 224 facility improvement and update projects).

With the aim of ensuring the adequate fulfilment of the environmental requirements and verifying the effectiveness of the implemented preventive and corrective measures, during the year **environmental monitoring** was carried out on **100% of all construction works for new infrastructure** (for a total of **93**).

The **permanent environmental supervision**[13]**,** aimed at intensifying the control and monitoring of measures, covered **98.9%** of total **works** performed.

Environmental monitoring of construction works		2019	2020	2021
Substations	% Permanent environmental monitoring	92.5	91.7	**97.6**
Lines (km)	% Permanent environmental monitoring	94.4	98.9	**100**

In works associated with the construction of lines or the modification of facilities, the main impacts 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 during the operation of the line.

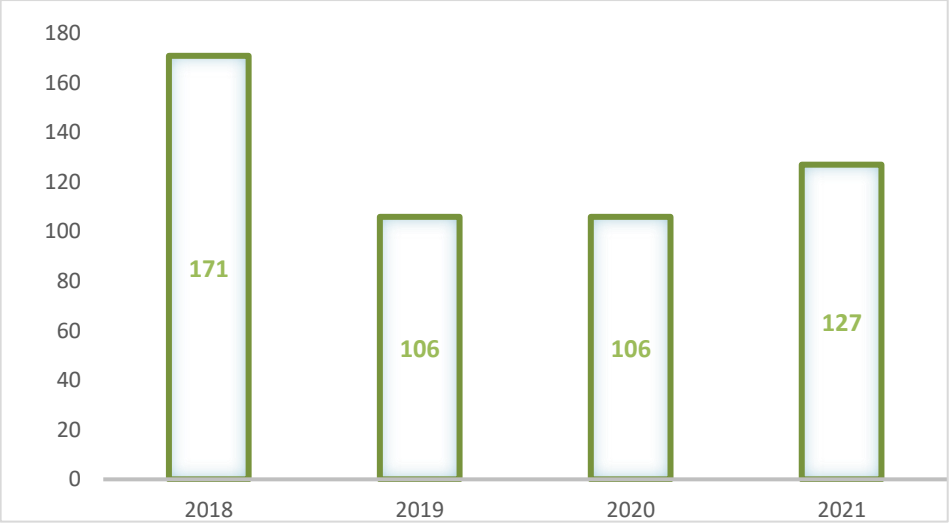
The specific preventive, corrective and offsetting measures carried out in this phase during 2021 can be consulted in the Annex: 'Environmental Actions 2021', shown at the end of this document.

[13] Supervision carried out to a higher degree than that set as a minimum in Environmental Instruction IA015.

4. Maintenance of facilities

Regarding the maintenance phase, in 2021, a total of **127 environmental inspections** were carried out in substations. This total represents 18% of all the substations in operation (705) in 2021. In the last 6 years a total of 460 substations have been inspected.

Number of environmental inspections in substations



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:

- Modification and adaptation work regarding power regulating equipment (power transformers, reactors, phase shifters, auxiliary transformer units with more than 1,000 litres of oil).
    - Transfer, emptying and filtering of oil
    - Replacement of power terminal blocks
    - Repair of faults or repairs involving the transfer or movement of oil
    - Transportation / transfer
    - Decommissioning
- 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 2021, a total of **55 environmental supervisions of maintenance work** were carried out, consolidating the implementation of environmental supervision in activities that have a significant environmental impact.

6. Environmental aspects

During all the activities carried out in the development and implementation phases regarding transmission grid infrastructure (fundamentally: the **definition of the project, construction/modification and maintenance of facilities**), Red Eléctrica identifies and evaluates the direct and indirect environmental aspects that can interact with the natural environment, producing some type of negative impact, not just under normal operating conditions but also under abnormal conditions and as a result of emergency situations.

For the identification, assessment and recording of environmental aspects, it is necessary to indicate that in the system differences exist between the various phases:

- **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 infrastructure projects, are identified in the corresponding Environmental Impact Assessment (EIA) and the appropriate environmental impact statement or resolution, which also include 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 for 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 assessment of aspects, under both normal and abnormal operating conditions, are: magnitude and intensity.
- **Maintenance of facilities:** 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 environmental aspect related to a higher degree of assessment (maintenance phase), or at lower degrees (regional work centre and/or logistics centre/building). 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:
    - Under normal operating conditions: magnitude, nature/sensitivity and prevention.
    - Under accidental conditions: probability of occurrence and potential impact.

Environmental aspects considered in the definition of projects for new facilities

The environmental aspects for each of the projects for new facilities are identified in the corresponding Environmental Impact Assessment (EIA) 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:

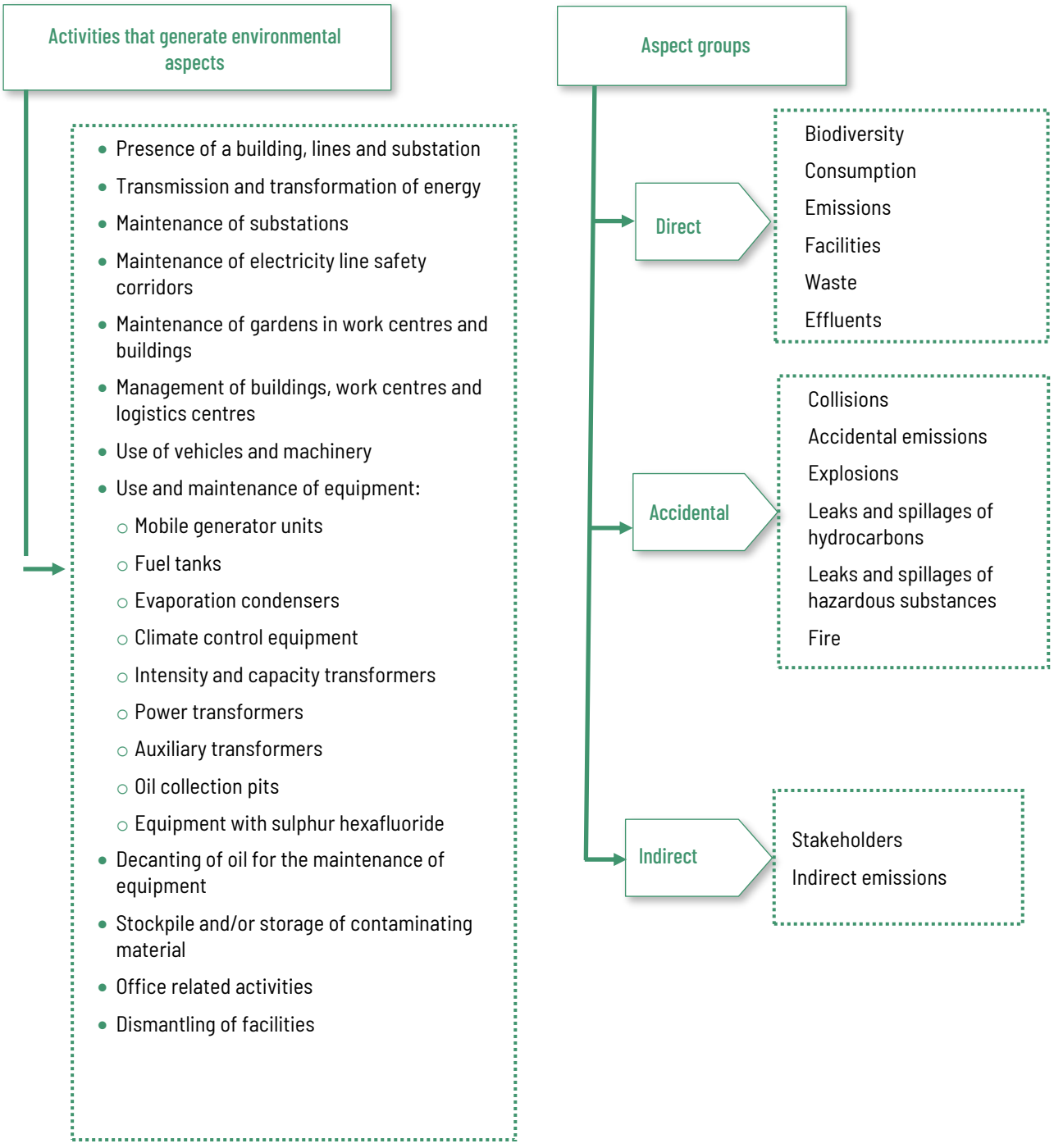
Activities that generate environmental aspects
Storage and transfer of oils and fuels
Storage and management of waste
Work sites (substations)
Land compacting
Clearing, pruning and felling
Excavation and landfill works
Concreting and cleaning of containers used
Hanging/stringing of conductors and grounding 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	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 spill during use of machinery	Physical	Potential contamination of ground and water sources
Risk of oil and fuel spill during storage and transfer of oils and fuels	Physical	Potential contamination of ground and water sources
Risk of oil spill 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 in maintenance activities

The activities carried out in facilities in service (*substations, lines, work centres and corporate buildings*) that can generate an environmental aspect are the following:



The evaluation of aspects is conducted annually. Those aspects shown in the following table were identified as **relevant** in the 2021 assessment:

Aspect	Relevant evaluation	Environmental aspect susceptible to impact	Impact	Observations[14]
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. The most restrictive criteria is used for the evaluation, due to the lack of detailed information.
Removal of nests	Northern Regional Area	Biological	Potential impact on species	Nests were removed in areas where there were no nesting deterrents.
Emissions				
Greenhouse gas emissions (Diesel power generator units)	Maintenance phase	Physical and biological	Climate change	Diesel power generator sets in the regional offices averaged 23.95 hours/year per unit, although only 6 units exceeded 100 hours (1.51%). In work centres the average was 10 hrs/year, and none exceeded 100 hrs). The CO2eq emissions generated by diesel power generator sets in 2021 were 313 tonnes.
Consumption				
Water consumption	Central and North-eastern Regional Areas and the North-eastern Regional Office	Physical	Reduction of natural resources	Consumption was more significant as it increased by 5% or more compared to last year's average value. Reduction measures are not implemented or those in place are considered sufficient. In the North-eastern area, a significant increase in water consumption was detected in the Rubí substation, due to the irrigation of green areas adjacent to the building. The North-eastern Regional Area showed a 20% increase compared to 2020 (from 507 m3 to 608 m3) and the Central Regional Area registered an increase of 23%.

[14] Some aspects appear repeatedly as they are 'key' environmental aspects for the organisation over which the Company exercises significant management and control, such as clearing, felling and pruning works, and the monitoring and prevention of birds colliding with the electricity lines.
With regard to assessments conducted in previous years, it should be noted that for the assessment of 2020 aspects, the waste assessment criteria implemented in 2019 was used, mainly in the concept of prevention. Following the modification made to this concept, the maximum value is applied in the assessment of the concept of prevention if on at least one occasion the waste in question has had as its final destination as elimination. This decision is aligned with the zero-waste model (zero waste to landfill) that the Company has adopted in its commitment to the circular economy. This has meant the appearance of a greater number of types of hazardous wastes assessed as significant and allows efforts to be directed in alignment with the Company's policy of zero waste to landfill by 2030.
Both the impact that transmission grid facilities have on birdlife, and the contamination of soil and/or underground water, surface water or marine water due to leaks or spills of oils, fuels and hazardous substances, are identified and managed as relevant risks at a corporate level. With regard to clearing, felling and pruning works (formerly included in the risk '*Potential impact on plant species due to the transmission grid*'), these are also identified and integrated in the corporate risk of '*Fires due to lines and in substations*'.

Aspect	Relevant evaluation	Environmental aspect susceptible to impact	Impact	Observations
Paper consumption	Northern Regional Office	Physical	Reduction of natural resources	The increase is significant as consumption has grown from 36 kg in 2020 to 68.82 kg in 2021.
Hazardous waste				
Used insulating oil without PCBs	North-eastern Regional Office	Physical	Potential soil and water contamination from its storage and management	Hazardous waste with an average of more than 5,000 kg/year per production centre in each regional area and those with an average production of between 500-5,000 kg/year whose final destination is elimination were found to be significant.
Used insulating oil containing PCBs	North-eastern Regional Area	Physical	Potential soil and water contamination from its storage and management	PCBs have been found in 2 pieces of equipment at the Ascó and Abrera substations.
Equipment contaminated with PCB oil	Northern Regional Area	Physical	Potential soil and water contamination from its storage and management	Waste for elimination
Soil contaminated with hydrocarbons	Central, Eastern, North-western and Southern Regional Areas and the Canary Islands Regional Area	Physical	Potential soil and water contamination from its storage and management	Hazardous waste with an average of more than 5,000 kg/year per production centre in each regional area and those with an average production of between 500-5,000 kg/year whose final destination is controlled elimination were found to be significant.
Laboratory chemicals consisting of or containing hazardous substances	Northern Regional Area	Physical	Potential soil and water contamination from its storage and management	Waste for elimination

Aspect	Relevant evaluation	Environmental aspect susceptible to impact	Impact	Observations
Paint residues containing hazardous substances	North-western Regional Area	Physical	Potential soil and water contamination from its storage and management	Waste for elimination
Materials impregnated with hazardous substances (absorbent / filtering materials, rags, clothes)	Central, Eastern, North-eastern and North-western, Northern and Canary Islands Regional Areas	Physical	Potential soil and water contamination from its storage and management	Waste for elimination
Oil/water mix	Eastern Regional Area	Physical	Potential soil and water contamination from its storage and management	Waste for elimination
Material with asbestos (insulation or construction)	North-eastern Regional Area	Physical	Potential soil and water contamination from its storage and management	Removal of uralite sheets in the Ascó Substation
Accidental aspects				
Birdlife collisions	Central, Eastern and North-eastern, North and Southern Regional Areas	Biological	Potential impact on species	Derived from collisions with unmarked electricity lines or with ineffective marking
Fire in electricity line	Eastern Regional Area	Physical	Potential impact on species	Fire in security corridor of the 220 kV ITX-ORC1 line and initial outbreak of a fire in 220 kV Regoelle-Vimianzo line
Accidental leak of SF6	Eastern Regional Area	Physical and Biological	Climate change	Accident in the Fausita Substation
Leak or spill in the underground stretch of the cable	Southern Regional Area	Physical	Potential contamination of soil and water	Oil leak in the submarine section of the 400 kV Tarifa-Fardioua interconnection line. No activation of the Interior Maritime Plan has been necessary. Repair work has been completed.

7. Environmental Performance 2021

The correct operation of the transmission grid facilities requires 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.

Red Eléctrica actively participates in the energy transition towards an emission-free model, committing to the electrification of the economy and the efficient integration of renewable energy, through a robust and better interconnected grid, the development and operation of energy storage systems and the promotion of new services and innovative activities that facilitate coordination between the various agents.

Additionally, Red Eléctrica has voluntarily 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 2021 is encompassed within the set of strategies that allow the environmental variable to be integrated throughout the entire life cycle of the transmission grid facilities, and therefore of all the works performed by the Company. These strategies also encompass both raising the awareness of stakeholders and encouraging their participation.

Throughout this section, Red Eléctrica's environmental performance and behaviour during 2021 regarding the Company's overall activities is set out as per each of the following environmental aspects:

- Climate Change and Energy Efficiency
- Biodiversity – Natural Capital
- Saving of Resources: Water and Paper
- Socio-economic environment
- Circular Economy and Waste Management
- Ground/Soil
- Stakeholder Groups
- Innovation

7.1. Climate Change and Energy Efficiency

Climate change is a global challenge that is high on the international agenda. In a context of decarbonisation, the role of the electricity sector is fundamental to achieve the transformation of the energy sector.

Red Eléctrica, as the key player of the Spanish electricity system, is an **essential agent** in the transition towards a new energy model, whose key elements shall be overall efficiency, the **electrification of the economy, the maximum integration of renewables into the energy mix,** all while guaranteeing security of supply at all times.

This position of the Company is reflected in its 2021-2025 Strategic Plan, which aims to drive the green and digital transformation and whose central pillar is to make the energy transition a reality in Spain, being a key agent for the massive incorporation of renewables into the electricity system.

The elements that will be decisive in order to advance in this transition are the development of a robust, smart and increasingly interconnected transmission grid, the establishment of energy storage systems that maximise the integration of renewables and increase the flexibility, efficiency and security of the system and the incorporation of tools that enable the operation of a more complex, dynamic and digital electricity system of the future.

In addition, since 2011, the Red Eléctrica Group has stated its **voluntary commitment to the fight against climate change**, which is materialised in specific objectives and a **Climate Change Action Plan**.

Emission reduction targets have been updated for 2021 to **increase the climate ambition** and align with the global goal of limiting the **average temperature increase to no more than 1.5°C**. The targets have been set in line with the criteria of the Science Based Target initiative (SBTi)[15]. It should be noted that, in addition to increasing the effort to **reduce Scope 1 and 2 emissions**, **Scope 3 emission reduction targets** have been incorporated for the first time.
The proposed targets for 2030 are:

- 55 % reduction of **Scope 1 and 2** emissions compared to 2019.
- 28% reduction in **Scope 3** emissions compared to 2019.
- Suppliers accounting for 2/3 of supply chain emissions need to have science-based targets implemented within five years.

In addition, the target approved in 2018 for 2030 **for Scope 1** has remained unaltered:

- Reduction of emissions by 25% compared to 2015. However, a proposal has been drawn up for full offsetting of emissions from 2023 onwards.

Based on the approved targets, a new Red Eléctrica Group Climate Change Action Plan for 2022-2030 has been drawn up, aligned with the internal objectives, those of Spain's National Energy and Climate Plan and the Company's Strategic Plan.

[15]The new targets were submitted for approval in December 2021, but given the new system established by the initiative, formal approval is expected in 2022.

The **Climate Change Action Plan** is based on four main lines and a cross-cutting line of innovation: **contribution to a sustainable energy model; reduction of the carbon footprint; positioning and dissemination; 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, as the transmission agent and operator of the Spanish electricity system, there are various activities that are particularly relevant in the fight against climate change and that contribute to the achievement of Spain's National Energy and Climate Plan (NECP), with a 2030 horizon:

- Develop the infrastructure to facilitate the electrification of the economy, connect new renewable energy power capacity, reduce technical constraints and provide the power to feed the railway network. Noteworthy is the development of electricity interconnections, both international and between islands, which guarantee supply when dealing with the variability associated with renewable generation.
- Achieve the maximum level of integration of renewable energy into the electricity system through the optimisation of system operation and the operation of the Control Centre of Renewable Energies (CECRE), the improvement of generation forecasting tools, the greater integration of distributed generation and the development of energy storage systems that will enable the integration of renewables, while guaranteeing the security of the system.
- Make progress in the efficient management of the grid, promoting technological innovation (smart grids and digitalisation), incorporating new elements and services and applying new flexibility measures.

In relation with its carbon footprint, Red Eléctrica works on quantifying its emissions (GHG Inventory) and has established different actions, mainly aimed at reducing these emissions; these are described throughout this section.

Red Eléctrica is aware of the need to make progress in adapting to climate change, in order to tackle both the inevitable physical changes in climate parameters and the social, economic and regulatory changes associated with the fight against climate change. The Company periodically identifies and assesses both risks and opportunities derived from climate change and applies various measures defined within the framework of this analysis.

Since 2018, the Company has made significant progress in the implementation of the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), as a result of carrying out an in-depth review of governance and the process of identifying the risks and opportunities associated with climate change, incorporating the consideration of different scenarios and improving the economic quantification of the same.

Since 2011, Red Eléctrica has annually participated in the Carbon Disclosure Project (CDP[16]) survey and discloses its responses to society. The Company has established as an objective, the progressive improvement of its score. In 2021, (corresponding to the 2020 fiscal year), Red Eléctrica was granted a rating of A⁻ and was included in the CDP Leadership index (A list).

[16] CDP (Carbon Disclosure Project) is an independent non-profit organisation that manages and keeps updated the largest global database of corporate information on climate change to offer institutional investors a unique analysis of how companies are responding to climate change around the world.

7.1.1. Inventory of CO_2 Emissions

Red Eléctrica drafts its emissions inventory based on the GHG Protocol methodology. Since 2013, the inventory has been subject to independent review in accordance with the ISAE 3410 standard.

In addition, the Company has developed methodologies for calculating the carbon footprint associated with the life cycle of the different types of facilities built by Red Eléctrica de España, the application of which facilitates the identification of improvements and specific reduction measures that can be implemented on a case-by-case basis

The inventory of greenhouse gas emissions of Red Eléctrica[17] in the last three years can be seen on the following pages.

Greenhouse gas emissions (tCO_2 equivalent)[18]	2019	2020	2021
SF_6[19]	21,289	22,214	20,299
Climate control equipment (HVAC systems)	450	533	500
Fleet vehicles	1,646	1,364	1,647
Mobile generator units	229	334	313
Total direct emissions (SCOPE 1)	23,614	24,445	**22,759**
Emissions associated with electricity consumption[20]	587	308	295
Emissions derived from losses in transmission[21]	780,865	592,078	634,221
Total indirect emissions (SCOPE 2)	781,452	592,386	**634,516**
Total (SCOPE 1+2)	805,066	616,831	657,275

[17] The emissions reflected as carbon footprint are limited to the activity of Red Eléctrica (REE+REC) while in the Sustainability Report the results reflected are those of the Red Eléctrica Group as a whole.

[18] 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

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

[20] The emissions are calculated under the 'market based' approach, applying the emission factors associated with the market agents that supply the electricity.

[21] The emissions associated with transmission grid losses, in the same way as for the emissions associated with consumption of electricity, do not occur during the activities of the Company as they take place at the various electricity generation points. The emission factors corresponding to each system (Spanish peninsula, Balearic Islands or Canary Islands) are calculated and taken into account by Red Eléctrica based on the annual balance in the generation mix and the corresponding emission factors. The increase in emissions in 2021 is mainly due to the recovery of the demand and the increase in transmission grid losses.

Indirect emissions (Scope 3) (tCO_2 equivalent)	2019	2020	2021
Purchased goods and services[22]	246,917	186,282	222,467
Capital goods	319,486	162,834	193,394
Energy generation (not included in Scope 1 and 2)	462	486	1,546
Waste	62	70	31
Transportation and distribution (logistics)[23]	2,090	1,177	1,236
Business travel[24]	1,441	269	332
Employee commuting[25]	4,545	952	1,518
Leased assets	33	153	163
Total emissions Scope 3[26]	575,036	352,223	**420,686**

7.1.2. SF_6 Emissions

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

This gas, despite its high global warming potential, has enormous technical advantages. It is a non-toxic gas that allows the distances between the various elements of the facilities to be much less, which makes it possible for the overall size of the facilities to be reduced and, therefore, enable them to be better integrated into the landscape. The emissions of this gas are associated to small leaks in the equipment, leakages due to decanting/transferring the gas and those one-off accidents/equipment faults that may occur and which make it complicated to establish reduction measures and targets for this type of emissions.

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

- Improvement of the procedures for carrying out the inventory, monitoring and the recording of leaks.
- Training of people involved in the handling of the gas. Red Eléctrica is legally recognised to provide training for the handling of gas. Since 2013, 483 employees have been trained, of which 444 have the official SF_6 gas handling certificate.
- Renewal/replacement of switchgear. The progressive renewal of old equipment and equipment with very high leakage rates of SF_6 represents a significant control measure in quantitative terms. In this regard, it is worth highlighting the start of the project to renovate the equipment in the Litoral 400 KV substation, one of the facilities in which, due to its age and environmental conditions, most gas emissions have occurred in recent years
- Improvement in leak detection and control. The efforts made by the Company to reduce the leak detection and intervention times, as well as in the development of more effective leak repair methodologies, make it possible for SF_6 emissions to be kept at low levels, not exceeding an average emission rate of 0.2%. The new action plan envisages reinforcing all these actions and includes additional measures such as the definition of design criteria for installations that limit the degradation of materials and therefore leakage and the incorporation of requirements in procurement tenders that help to minimise gas losses (rapid inter-

[22] For the correct interpretation of the data, it is necessary to consider that the emissions associated with the acquisition of goods and services depend on the characteristics of the specific goods and services purchased each year (which entail different carbon intensities) and the financial amount earmarked for these acquisitions.
[23] Corresponds to emissions associated with internal logistics and other emissions regarding transport of materials.
[24] Includes trips made by train, plane, own vehicle, rental vehicle and taxi.
[25] The data reflects the situation resulting from COVID-19, with a drastic reduction in travel and a situation where the number of people teleworking has increased significantly.
[26] REE + REINTEL.

vention in cases of leakage and equipment design criteria, among others). Noteworthy are the various innovation projects on which work has been carried out in recent years such as the 'Development of SF_6 leak repair methodology in GIS facilities', which enables the repair of breakdowns/faults in GIS substations without the need to disassemble the damaged sections and this significantly speeds up the work and the project; or the implementation of an 'SF_6 leaked gas capture system in indoor GIS substations' has enabled to identify different compounds with high affinity for SF_6 and whose behaviour and effectiveness was field-tested by means of a pilot project carried out in 2021.

- The Company is committed to promoting the development of alternatives to the use of SF_6, which are currently under development. The Company has begun to work on the assessment and application of different solutions at lower voltages and passive elements in substations. In relation to this last point, two very relevant pilot projects have been launched, in which the use of an alternative gas has been planned for 400 kV insulation gas ducts and substation busbars. In addition, it should be noted that the Red Eléctrica Group has two 66 kV cubicle-type GIS with alternative gases, located in the Canary Islands for use as mobile substation bays and is assessing the applicability of SF_6-free circuit breakers for this same voltage.

Additionally, Red Eléctrica collaborates 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 for the comprehensive management SF_6, signed in May 2015, between the Ministry of Ecological Transition and the Demographic Challenge (MITERD) and the manufacturers and suppliers of Electrical equipment that use SF_6, electricity transmission and distribution companies and waste management companies who handle this gas and the equipment that contains it, for a comprehensive management of the use of SF_6 in the electricity industry that is more respectful towards the environment.

REDUCTION TARGETS[27]: SF_6 emissions

25% net reduction of SF_6 emissions compared to 2015 by 2030
Maximum cumulative emissions in the period 2021-2030: 244,507 tCO_2eq

---

PROGRESS MADE IN 2021[28]

35.6% reduction in SF_6 gas emissions compared to 2015
Cumulative emissions in the 2021-2030 period: **20,363 tCO_2eq**

	2019	2020	2021
SF_6 installed (kg)[29]	479,821	491,165	521,311
SF_6 emissions/SF_6 installed (%)[30]	0.19	0.20	0.17
Total emissions (kg)	934	974	890

[27] The targets are set taking 2015 as the base year.

[28] SF_6 gas emissions are directly related to the amount of gas installed and the age of the equipment. In 2030, a significant increase in installed gas is expected associated with the development of the transmission grid and an increase in the average age of installed equipment. Considering these circumstances, it is expected that in the coming years the trend will show an increase in emissions.

[29] The increase in installed gas is mainly due to the commissioning of new facilities and the replacement of old equipment for SF_6 insulated equipment, although it is also associated with the updating of the inventory of Gas Insulated Substations (SF_6 insulated), which has enabled data regarding the gas contained in them to be ascertained.

[30] The rates reflected in the graph are calculated using real data collected in the field and include, in addition to leaks as a result of maintenance work, the estimated emissions corresponding to the end of the life cycle of the equipment. The maximum leakage rate for in-service equipment established in the Voluntary Agreement for the management of SF_6 signed in 2015 is based on the number of years the equipment has been in service. This annual rate is fixed at 0.5% for equipment commissioned as of 2008 (equipment installed prior to 2008 is allowed to have higher leakage rates). The low emission rates reflect the enormous effort of the Company in improving the management and control of SF_6 emissions. Specifically, the decline shown in recent years due to the breakdown repair work performed since 2018.

7.1.3. Energy Efficiency

One of the cornerstones of Red Eléctrica's climate change strategy is the commitment to energy efficiency at all levels within the activities of the Company. As a key player in the electricity sector, the Company 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 has in place different projects aimed at reducing the consumption of electricity in its different facilities. The increase in efficiency in energy consumption is fundamental when it comes to reducing emissions.

7.1.3.1. Electricity Consumption - Reduction of Electricity Consumption

Taking into account all Red Eléctrica work centres[31], electricity consumption in the last three years has been as follows:

	2019 (kWh)	2020 (kWh)	2021 (kWh)
Total (kWh)	14,051,381	12,508,991	14,055,399
Total (Joules)[32]	$5.05*10^{13}$	$4.50*10^{13}$	**$4.48*10^{13}$**

Red Eléctrica, in addition to having an essential role in the integration of renewables, is committed to the use of renewable energy to cover the energy consumption of its own facilities. **80.6% of the electricity consumed comes from renewable sources** (*Renewable Energy Guarantee of Origin (REGO) certificates).*

REDUCTION TARGETS: Electricity Consumption

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

Reduction of electricity consumption in work centres[33]: 30% in 2030

PROGRESS MADE IN 2021

Reduction of **94.6**% of the emissions associated with electricity consumption in work centres in 2021 compared to 2015

Reduction of **13**% of the electricity consumption in work centres in 2021 compared to 2015

[31] Includes the consumption of the Head Office, the electricity control centres (centres that operate 24/7 and have a high energy consumption) and the work centres (Regional offices and maintenance centres). Consumption of electric vehicles is included as of 2016. In 2021, 80.6% of the total electricity consumed (work centres + electric vehicle) has come from renewable sources (12,441,929 kWH work centres + 140,314 kWH electric vehicles).

[32] 1kWh = $3.6*10^6$ Joules; Total consumption data in Joules following criteria defined by GRI G4.

7.1.3.1.1. Energy Efficiency Measures Implemented in 2021

The main courses of action regarding the reduction of electricity consumption were 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 and the Red Eléctrica Campus.
- **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.

Buildings	
Head Office and the Campus Red Eléctrica.	Energy management system certified under the ISO 50001:2001 standard
Buildings with reduced energy consumption.	The buildings in which the control centre and the technology company of the Group, Elewit, are located, include a system that helps maximise the available geothermal energy and have construction measures that significantly reduce their electricity consumption.
Energy efficiency measures in buildings	In 2021, the **implementation of a set of energy efficiency measures was approved**, the associated estimated savings of which is expected to exceed **1,700,000 kWh in the period 2021-2030**. In 2021, improvement measures were carried out on the air conditioning (replacement of cooling equipment with efficient heat pumps), lighting (installation of LED lamps) and the incorporation of consumption monitoring systems, which will lead to an estimated annual energy saving of **150,938 kWh**.
IT Systems	
Renewal of IT equipment and systems in accordance with maximum efficiency criteria.	In 2021, a renewal of equipment (data storage systems) was carried out, representing an estimated savings in annual electricity consumption of **4,039 kWh** per year.
Consolidation of the use of collaborative communication platforms that reduce work-related travel or commuting.	This aspect has been especially relevant in the last two years, due to the COVID-19 pandemic.
Migration to and intensive use of virtual servers (as of 2015)	These represent a 50% reduction in energy consumption compared to physical servers.
Substations	
Rationalising the use of lighting	Thanks to the improvement in remote control systems for outdoor lighting currently there are 426 substations whose night-time exterior lighting does not switch on unless it is necessary, representing an estimated **annual saving linked to this measure stands at 10,050,655 kWh.**

Regarding the use of renewable energy for self-consumption in work centres, headway is being made in the progressive incorporation of solar thermal energy installations for domestic hot water, additionally three buildings have HVAC installations based on geothermal energy. In addition, Red Eléctrica plans to implement self-consumption installations in the corporate head offices and in other work centres that will start to be put into operation during 2022.

Reductions in energy consumption[34]		
	kWh/annually	Joules/annually
Efficiency measures in work centres: lighting and HVAC systems, (replacement of cooling equipment with efficient heat pumps)	150,938	$5.4*10^{11}$
Efficiency measures in electricity substations: switching off of night-time lighting.	10,050,655	$36*10^{12}$
Efficiency measures in computer IT equipment: renewal of desktops and laptops, data storage systems.	4,039	$1.45*10^{10}$

Reduction of greenhouse gas emissions	
Net savings	tCO_2eq
Contracting an electricity supply with a Renewable Energy Guarantee of Origin (REGO) certificate[35]	2,236
Switching off of night-time lighting in substations.	46.4
Reduction of SF_6 leaks as a result of repair works/actions on equipment.	869
Annual savings[36]	$tCO_2eq/year$
Reduction of SF_6 emissions due to the replacement of old equipment with equipment with lower leakage rates.	93.5

[34] The estimated annual reductions derived from the measures implemented in 2021 have been included.

[35] Electricity supply with a Renewable Energy Guarantee of Origin (REGO) certificate: 0 t CO_2/kWh.

[36] Reductions associated with the measures implemented in 2021.

7.1.3.2. Sustainable mobility

Red Eléctrica is working on the optimisation of work-related travel and in the reduction of the emissions associated with them. The Company has a Sustainable Mobility Plan in place in order to incorporate a new culture of mobility within the Company. Among the most important measures carried out in recent years, noteworthy are the following:

- **Efficient management of fleet vehicles**. The Company is committed to using the best technologies currently available (100% of the new vehicles incorporated into the fleet are either hybrid, plug-in hybrid or electric cars) and to optimize their use through the application of CARS (Agile, Responsible and Safe Driving System), which facilitates the use of efficient routes and promotes responsible driving. Since 2015 Red Eléctrica has maintained the 'Ecological Fleet Accreditation in its '**Master'** category (the most demanding one) received from the Fleet Managers Association (AEGFA) and the Institute for Diversification and Energy Saving (IDAE).
- **Measures to optimise work-related travel**. The Company has incorporated sustainability criteria in the Company's work-related travel policy. Of note is the implementation of a corporate fleet of electric vehicles for commuting during the working day, prioritisation of the use of efficient taxis and improvements in communication tools to reduce the need for travel (video conferences and platforms for remote access). The latter have been decisive in facing the situation derived from the pandemic.
- **Rationalisation of the use of private vehicles in the daily commute to work centres**. The Company has a corporate bus service and shuttle services connecting the office with various locations and has installed various electric vehicle charging points on their premises for use by employees. Additionally, the transport pass is included among the options of the benefit in kind for employees and the use of car-sharing is promoted.

Fuel consumption (litres) associated with vehicles during 2021:

	2019	2020	2021
Diesel (l)	443,251	353,817	332,850
Gasoline (l)	250,643	237,934	390,584
Biodiesel	0	0	0
Autogas (LPG)	0	0	0
Total vehicle fuel[37] (l)	693,894	591,751	723,434
Consumption of mobile (off-grid) diesel generator units[38] (not associated to vehicles) (l)	2,472	164,635	153,538

[37] Fuel consumed by Red Eléctrica vehicles (fleet vehicles, shared leasing and management vehicles)
[38] Data provided up until 2019 corresponded to the refuelling of diesel oil for the auxiliary generating units in the year indicated. As of 2020, there has been a change in methodology: the data reflects the total fuel consumed in the year.

7.1.4. Carbon Footprint in the Supply Chain

The emissions associated with the supply chain are those that have the greatest impact on the indirect emissions of the Company (Scope 3). Between 2019 and 2021 a Collaboration Programme with suppliers was put in place seeking to meet the following key objectives:

- Involve suppliers in the Group's commitment to fight climate change, providing appropriate guidelines in order to promote changes in their management and promoting collaboration.
- Integrate more direct information in the calculation of Scope 3 emissions, to improve their analysis and monitoring.
- Be willing to establish ambitious commitments for the reduction of Scope 3 emissions.

During the recent years, 20 of the Company's most relevant suppliers, who together represent around 51% of the emissions in the supply chain, have joined the programme. Thanks to this collaboration, participants provide annual information on their emissions, thus making it possible to improve the Company's emissions inventory.

Furthermore, each of the suppliers has been qualified with a level of maturity in the area of climate change, which allows, in addition to making a general diagnosis of the supply chain, the deployment of different and specific development and collaboration programmes depending on the characteristics of each supplier.

The programme has seen a positive evolution in the number of suppliers with a third-party verified emissions inventory and, very importantly, in the number of suppliers with SBTi approved targets. The final assessment shows that 40% of participating suppliers have improved their climate change performance level and 50% are at high maturity levels.

In 2021, the Board of Directors of the Red Eléctrica Group approved specific reduction targets for Scope 3, which means that in the coming years, efforts will be increased to extend the Group's supply chain climate change commitment, seeking to develop new initiatives and intensify the collaboration with its suppliers.

REDUCTION TARGETS: SCOPE 3 EMISSIONS

Ensure that those suppliers responsible for 2/3 of the supply chain emissions have SBTi goals with a 5-year horizon.

Reduction of 28% of Scope 3 emissions compared to 2019[39] values

7.1.5. Offsetting of Emissions

In addition to the measures aimed at reducing emissions, and with the goal of minimising the carbon footprint of Red Eléctrica as much as possible, specific actions have been implemented to offset emissions.

The '**Red Eléctrica Forest**' project, detailed in the 'Biodiversity - Natural Capital' section of this report, is carried out in order to help offset part of the Group's emissions.

On the other hand, and for the ninth consecutive year, the Company has purchased carbon credits from the voluntary carbon market a total of **1,538 VCUs** (Verified Carbon Units), verified under the Verified Carbon Standard (VCS) associated with the reforestation and avoiding deforestation project in the Tambopata National Reserve and Bahuaja-Sonene National Park in the Madre de Dios Amazon region (Peru).

[39] Emissions linked to the supply chain represent 96% of the Company's total of Scope 3 emissions.

The carbon credits purchased helped offset 6.5% of the Company's direct emissions, which would correspond to the emissions associated with the use of back-up off-grid diesel generator units and emissions associated with the use of fuel used for heating.

The Company is developing a new emissions neutralisation and offsetting strategy, which will be published in 2022.

7.1.6. Transmission Grid Losses

The emissions associated with energy losses in the transmission grid are accounted for within the emissions of Scope 2, as indicated by the GHG Protocol. These emissions are calculated taking into account the energy lost in the grid (transmission grid losses) and the emission factor of the energy mix (calculated by Red Eléctrica according to the amount of energy generated by the different technologies).None of these variables are under the direct control of Red Eléctrica, although it should be noted that increased efforts to integrate more renewable energy into the energy mix results in a lower emission factor and therefore a greater reduction in emissions associated with losses.

The transmission of electricity inevitably leads to energy losses in the grid. This means that, to satisfy a given final consumption, a slightly higher level of generation is required.

Several factors generate losses: The Joule effect, the corona effect and the own consumption of the electricity substations necessary for their correct operation. Of these, the most relevant, without a doubt, is the Joule effect[40], associated with the flow of current through the conductors.

Red Eléctrica works to improve the aspects that depend on its management and that can influence the reduction of these losses. Among them, the following actions are noteworthy:

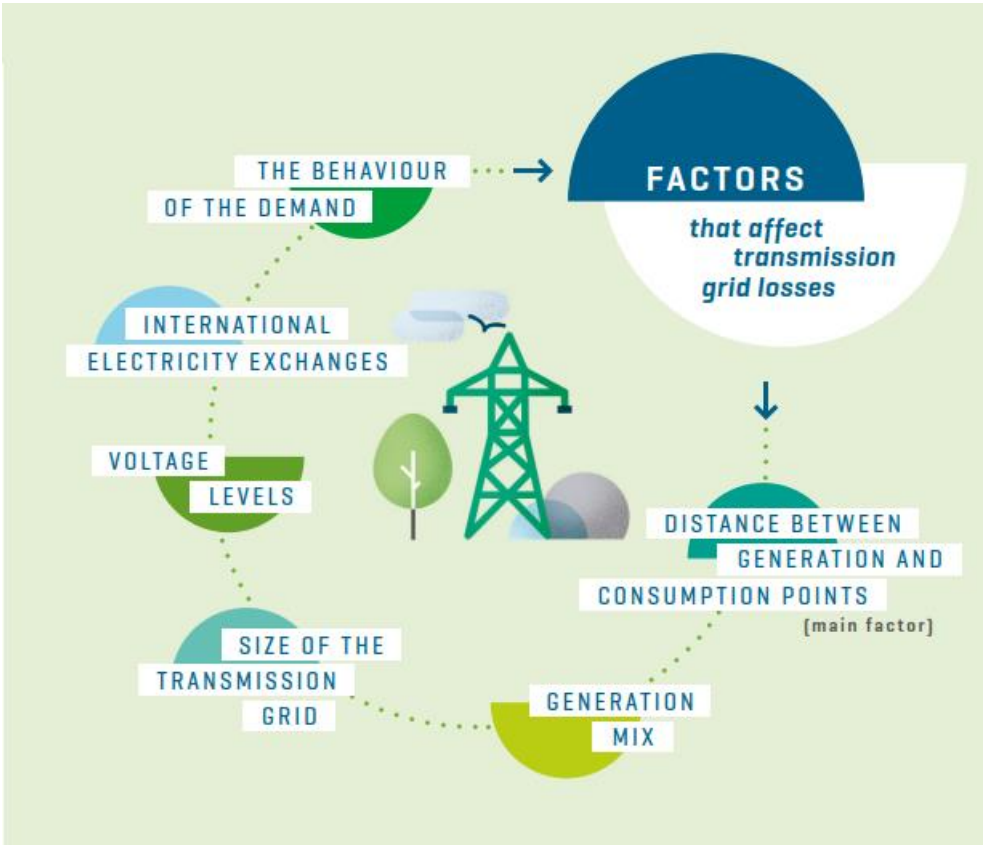
- Development and meshing of the transmission grid.
- Increase in the number of conductors per circuit.
- Use of technologies and systems with the best performance.
- Maintenance of the facilities in the best conditions to ensure their proper functioning.

The first two measures seek to create parallel routes in order to allow a given intensity to flow, which in turn results in lower resistance and, therefore, reduced losses. However, all these improvements have a minor impact on the evolution of energy losses, with those other aspects, not controlled by Red Eléctrica, having the greatest influence.

Increased losses are mainly due to the following: distances between generation and consumption points (losses increase notably when there are significant distances), the amount of energy demanded in the year, the electricity generation mix, international electricity exchanges, the shape of the demand curve and weather conditions. It is important to highlight that the evolution of the electricity system towards a more decarbonised and flexible one in which the participation of renewables (generation generally far from consumption points), the demand (greater electrification) and international energy flows will entail a higher level of losses.

The electricity generation mix and the flows in the transmission grid depend on the rules of the electricity market, regulated by an independent body. The function of Red Eléctrica de España, as operator of the electrical system, is carried out in accordance with specific and statuary operating procedures. In accordance with these procedures, it is not possible to operate the electricity system based on loss reduction criteria, so the Company has little capacity to act in relation to said reduction.

[40] Joule effect: the effect whereby, when an electrical current flows through a conductor, part of the kinetic energy of electrons is transformed into heat which thereby raises the temperature of the conductor. Joule effect losses are proportional to the intensity flowing through the conductor and the resistance of the same, the greater the length of the line the greater this resistance is. In view of this, it can be understood that the losses are mainly related to the distance between points of generation and consumption, which is determined by the result of the wholesale electricity market.


FACTORS
that affect transmission grid losses
THE BEHAVIOUR OF THE DEMAND
INTERNATIONAL ELECTRICITY EXCHANGES
VOLTAGE LEVELS
SIZE OF THE TRANSMISSION GRID
GENERATION MIX
DISTANCE BETWEEN GENERATION AND CONSUMPTION POINTS
(main factor)

7.2. Biodiversity – Natural Capital

The protection and conservation of biodiversity have always been basic elements in the environmental management of Red Eléctrica, which has a specific commitment in this field. Within the framework of the Company's Sustainability Goals for 2030, Red Eléctrica is committed to generating a net positive impact on the natural capital in the surroundings of its facilities.

Up until 2021, the main biodiversity actions had been included in the Multi-year Action Plan (2017-2021) and these actions have been now included in the **2030 Biodiversity Roadmap**. This Plan establishes the new strategy and the measures that will allow the Group to improve its sustainable management of natural capital and meet the objective set for this horizon.

The results obtained in the 2017-2021 Biodiversity Action Plan are included in the annex: 'Environmental Actions 2021' of this Environmental Statement.

Red Eléctrica has alliances in matters of biodiversity conservation with the competent areas of the public administration and other organisations in the different regions of Spain (autonomous communities). The following alliances with organisations of reference are also noteworthy:

- Biodiversity Pact. Red Eléctrica is part of the Spanish Initiative for Business and Biodiversity (IEEB) promoted by the Ministry of Ecological Transition since 2013.
- Working Group between Red Eléctrica and the Sub-Directorate General for Environmental Assessment of the MITERD.
- International Union for Conservation of Nature (IUCN) Centre for Mediterranean Cooperation.
- SEO/BirdLife (Spanish Ornithological Society) for the conservation and protection of biodiversity (2018-2021).
- Working Group on natural capital in the Spanish energy sector. (Natural Capital Coalition).
- Natural Capital Working Group of the Spanish Green Growth Group.
- ISO Biodiversity Committee (CTN 328).

Detailed information on all the projects spearheaded or in which Red Eléctrica participates can be found on the Red Eléctrica website: https://www.ree.es/en/sustainability/map-of-projects

7.2.1. Capital natural

One of the challenges that Red Eléctrica undertakes as part of **its biodiversity commitment** is that of generating a net positive impact on the natural capital in the environment surrounding its facilities. Under a global approach to natural capital, the Company is committed to **generating a positive impact on biodiversity in areas of the territory in which the Group operates**. In order to move towards the fulfilment of this objective, Red Eléctrica is working on the incorporation of the concept of natural capital in its management.

In accordance with the guidelines of the Natural Capital Protocol and given the interdependence relationship of the activities of the Group with society, Red Eléctrica defined in 2021 the Group's **Biodiversity Roadmap** with a 2030 horizon. Red Eléctrica understands **natural capital** as the inventory of assets or natural resources of an ecosystem, whether biotic or abiotic (biodiversity, air, water, soil, minerals) that, combined or on their own, provide society with benefits: ecosystem services.

The Roadmap consists of five strategic axes that are carried out through specific courses of action, and which have concrete measures and actions defined.

The two supporting axes (governance and management) set the framework for the coordination, implementation and monitoring of the Roadmap. They also cover issues related to governance, financing, accounting and assessment, reporting and management of risks and opportunities in natural capital. Regarding assessment, it should be noted that work will be carried out on the validation and application of the methodology and analysis of responsible assessment of natural capital based on ecosystem services, designed in recent years.

The three operational axes include actions aimed at creating social and environmental value and creating a positive impact on biodiversity:

- Habitat and species: actions aimed at protecting and conserving relevant habitats and species and extending the application of the mitigation and conservation hierarchy to all the Group's activities.
- Social value: the contribution to social development is addressed through environmental awareness and training actions, in addition to collaboration with public entities and other stakeholders. Of particular note is the course of action aimed at developing the green economy in rural, urban and industrial environments based on the sustainable management of natural capital.
- Supply chain: measures aimed at reducing the impact of the Group's supply chain on biodiversity.

In 2021, the *'Guide for the assessment of ecosystem services. Ecosystem services reinforced in the management of vegetation through grazing in the vicinity of electricity transmission grid elements*', was designed and published in collaboration with the University of Alcalá which analyses the balance of profit and loss in terms of natural capital linked with the maintenance of electricity line safety corridors through the use of livestock grazing.

7.2.2. Electricity Grids and Biodiversity

Red Eléctrica's facilities are distributed nationwide, as the aim of the electricity transmission grid is precisely to connect the points of energy generation with those of consumption.

Biodiversity management is carried out taking into account the **hierarchy of impact mitigation**. The potential effects on biodiversity are associated with the presence of the facilities in the territory and with the construction and maintenance of the same.

Avoiding areas rich in biodiversity is one of the priority criteria taken into account both in the grid planning phase as well as in the definition of each project. However, bearing in mind that 25% of the surface area of Spain has some form of environmental protection, it is inevitable that in some cases infrastructure will cross or be located in protected areas or areas with species of interest.

On these occasions, Red Eléctrica implements all the preventive and corrective measures required to **minimise** the possible impacts on habitats and species (impacts associated with construction work and the modification of facilities, impacts on birdlife as a result of collisions and fire risks). These measures also include the **restoration** of affected areas, when possible.

Lastly, the Company carries out different environmental improvement actions aimed at promoting biodiversity in the vicinity of the facilities. In addition, Red Eléctrica encourages and collaborates with the public administration, non-governmental organisations, research bodies and other interested parties in the development of biodiversity conservation projects.

These measures and projects are aimed at **offsetting** the impacts that may possibly have been produced during the execution of the activities.

Currently, Red Eléctrica's facilities occupy only **0.08%** of the Spanish Natura 2000 Network. Of all existing infrastructure, only 15.45% of total lines and 5.67% of substations are located in protected areas (Natura 2000 Network).

7.2.3. Protection of Birdlife

The main effect on the fauna of Red Eléctrica's facilities is the risk of birdlife colliding with the grounding cables that protect the lines from electrical discharges during storms. The main measure to reduce this risk is the **marking of the grounding cables** by means of devices that increase their visibility.

In 2021, 310 km of line were marked with bird-saving devices. The percentage of kilometres marked with respect to the total kilometres of overhead lines stood at **15.8**% (4,655 km of line marked).

Thanks to the 'Birds and power lines: mapping of bird flight paths' project, the Company identified a set of focal species, prone to collision and selected according to various criteria (47 species) and drew up sensitivity maps (areas where these species may be found, and which must be considered for the definition of new power line routes) and risk maps (sensitive areas where there are also factors that influence the probability of accidents occurring).

Based on this information, the 2016-2023 multi-year line marking plan was defined, which prioritises actions on the sections of line with the greatest potential impact on birdlife. It is expected that the progressive marking of the lines will reduce the potential risk of collision with the electricity transmission grid to 26.7%.

The line sections that have been identified as having a 'critical' priority (level of 5), total 790.8[41] km in length, of which 562.5 km have already been marked, which represents **61.1**% of the target set. 228 km are yet pending to be marked.

In 2021, an update of the information on this project was carried out, adding six species to the list of focal birds and defining new sensitivity and risk maps on which work will begin in 2022.

Red Eléctrica is also working on other relevant projects in relation to preventing birdlife collisions. In 2021, in collaboration with the Miguel Hernández University (Alicante), the methodology and protocols for the collection and analysis of data on bird collision accidents with electricity transmission lines were reviewed and the analysis of the collision data collected between 2014 and 2020 was carried out, obtaining relevant information regarding the results of the different devices, the status of the environment and territory that increase the number of accidents and the likelihood of collision of the various species.

7.2.4. Protection of Habitats and Species

Regarding works associated with the construction of lines or the modification of facilities, the main impacts 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, noteworthy are the following:

- Detailed field studies on specific issues, such as impact reports on Natura 2000 Network and surveys to identify the presence of protected flora and fauna.
- Introduction of modifications in the design of facilities to mitigate their impact on flora: compacting or increasing the height of towers, relocation of towers, modification of access roads etc.
- Construction of decanting pools and filters to prevent contamination of waterways.
- Signage and protection of habitats and species of high ecological value to avoid them being harmed when carrying out works.
- Use of construction techniques that minimise earthworks and the occupation of land (reducing the opening up of access roads, size of work sites and storage areas for materials): hoisting structures with a boom crane, hanging of line by hand, or carrying out works using a helicopter or drone.
- Transfer to other areas and replanting of species affected by the work.
- Biological stoppages in 100% of the works during breeding or nesting periods to reduce impacts on the fauna that may be affected.
- Recovery of affected areas: restoration of slopes, sowing of seed and the planting of flora.

[41] The target value varies slightly each year, depending on variations in REE infrastructure (new lines and modifications to existing ones) and data related to accidents registered.

- Accompanying measures and the carrying out of specific projects to improve biodiversity in affected areas.

The specific measures that are noteworthy regarding the protection of habitats and species during 2021 are included in the Annex: 'Environmental Actions 2021' of this environmental statement.

7.2.5. Contribution to Biodiversity Conservation

Red Eléctrica actively contributes to the conservation of biodiversity, implementing various environmental improvement measures and promoting different projects for this purpose.

In general, initiatives focus on those aspects of biodiversity most closely related to the impacts of the Company's activities. For this reason, they are mainly focused on the conservation of habitats and the preservation of birdlife, specifically for focal species (those most prone to colliding with the lines).

In addition, the Company has launched various projects aimed at determining and enhancing the capacity of infrastructure as a biodiversity reservoir and a generator of natural capital.

Also relevant are the actions aimed at restoring degraded habitats, among which the 'Red Eléctrica Forest' project is noteworthy.

7.2.5.1. Noteworthy Projects regarding the Protection of Habitats and Vegetation

- ***Hábitat* Project (2015-2021)**[42]

  The aim of the *Hábitat* project (2015-2021) is to know the Priority Habitats of Community Interest and other flora and vegetation formations of interest (included in other protection schemes due to their endemic nature, scarcity, or rarity) that exist within the vicinity of Red Eléctrica facilities, as well as its state of conservation. The objective is to have information on the interaction between electricity transmission infrastructure and these habitats, and use it to make decisions regarding maintenance, so that the conservation of these habitats and flora and vegetation formations is ensured through the adequate management of its maintenance. The first phase of the Project consisted of the mapping and characterisation of the flora and vegetation formations of interest present within the vicinity of the facilities (50 metres on each side of the route of the line in 100% of the transmission grid). As a result of this work, carried out in collaboration with the autonomous communities and experts on the subject, a digital mapping was developed with all the information, which was later validated in the field.

  Twenty-five types of 'priority' Habitats of Community Interest (HCIs) were detected underneath the transmission grid infrastructure or in its immediate surroundings (50 m on each side of the routes of the line and 500 m around substations). A total of 2,823.80 km of lines are located in HCIs (9.60% of the overall length of line included in the grid). Of these, 1,005.70 km are located in Natura 2000 Network areas (3.4% of the overall length of line included in the grid). In relation to qualitative aspects, a total of 1,121.80 km of lines are located in HCIs with a high or very high conservation value (3.82% of the overall length of line included in the grid), while 1,701.96 km are located in HCI areas with medium or low conservation values (5.79% of the total length of line included in the grid).

  In addition, scientific-technical reports have been drawn up with documentation, an assessment and a proposed action plan for each case and by autonomous community.

[42] Aligned with the State Green Infrastructure Strategy and Ecological Connectivity and Restoration (EEIV) of the Ministry of Ecological Transition and the Demographic Challenge (MITECO).

Work was carried out on the standardisation of the information obtained from the different autonomous communities, integrating it into a single national layer compatible with the corporate geographic information system (GeoRED). In addition, a system of performance indicators was developed to assess the impact, reflecting the habitat's state/stress it is under/ how it responds to the impact and the subsequent monitoring of the influence that activities have on the habitats.

In 2021, after integrating the current information, said system of indicators was updated to recalculate their current status while, at the same time, a method of prioritisation of quadrants and spans of the transmission grid was designed with a view to planning future actions for the conservation and improvement of the condition of these habitats. Lastly, a comprehensive proposal was drawn up for the management of the HCIs potentially affected by the transmission grid, with general guidelines for actions to be carried out and specific guidelines for each type.

7.2.5.2. Conservation Projects in relation to Focal and Threatened Species

The detailed information of all the projects spearheaded by Red Eléctrica or in which it participates in relation to threatened species can be found in the following sections of the website:
https://www.ree.es/en/sustainability/the-natural-environment/avifauna

- **Monachus project: reintroduction of the Black vulture (*Aegypius monachus*) in the province of Burgos**

  In the Iberian Mountain range (Sierra de la Demanda), 77 vultures have been released in the territory since 2017, of which 70.13% remain in the territory. The current colony has 73 birds – of which there are 19 breeding pairs. In 2021, 20 vultures were released in the area and 2 chicks fledged.

  On the other hand, linked to the black vulture in the Pyrenees (Boumort), since 2010, 77 vultures have been released, 68 chicks have hatched and 46 have fledged, and 15 breeding pairs have been formed. In 2021, 6 vultures were released and 7 chicks fledged; the colony is currently made up of 59 birds.

- **Environmental education and Aquila a-Life project for the Bonelli's eagle (*Hieraaetus fasciatus*) in Majorca**

  The population is made up of a total of 39 individual birds, having created 8 territorial pairs distributed throughout the island of Majorca with a total of 25 chicks born. In 2021, the monitoring of the radio-tagged individuals will continue. 25 bird-saving platforms have been installed to prevent drowning (currently there are a total of 37 platforms). Specific monitoring of the use of medium and high-voltage towers was carried out. In the case of the latter, the use of the towers has been confirmed for 6 eagles, 3 of which use them occasionally and the other three use them on a regular basis.

- **Egyptian Vulture (*Neophron percnopterus*) nesting platform in Caceres**

  In 2020, the first recorded birth in Europe of an Egyptian Vulture (called Berto) was recorded on a 400 kV line. In 2021, from the same pair and on another tower of the same line, Ruanda was born. This event consolidates this type of infrastructure as a support for the nesting of these birds of prey. Both birds are fitted with a GPS/GPRS transmitter and a camera has been installed in one of the nests for monitoring. The work has been carried out in collaboration with the Regional Government of Extremadura and the Ministry of Ecological Transition and the Demographic Challenge (MITERD).

- **Osprey (*Pandion haliaetus*) nesting platforms in Cádiz**

  Since 2010, four nesting platforms have been installed on towers in the Barbate reservoir area (Cádiz) and chicks have been ringed. The osprey, which has not reproduced in Andalusia since the 1980s, has returned to nesting in the region. Since the installation of the nesting platforms, the hatching of 44 eagle chicks has been recorded on Red Eléctrica towers, from three breeding pairs (30% of the pairs detected in Andalusia). The project is carried out in collaboration with the Migres Foundation and the Andalusian Regional Government.

- **Otras actuaciones de conservación de la avifauna especies amenazadas desarrolladas durante 2021:**
    - Monitoring, conservation and recovery of the Iberian Imperial eagle (*Aquila adalberti*) population in the Doñana natural area. In 2021, the 8 pairs were maintained, 6 of which have had clutches, 8 chicks have fledged and 5 of them have been fitted with GPS transmitters. Action has been taken regarding 10 nesting platforms. Supplementary feeding through the provision of a total of 350 rabbits has been made.
    - Project for the reintroduction of the osprey in the Pego-Oliva Natural Park of Marjal (Valencia). In 2021, satellite transmitters and three video surveillance cameras were purchased in order to continuously monitor the chicks in the hacking site installed in Pego.
    - Technical programme for the execution of satellite radio monitoring work of Golden eagles (*Aquila chrysaetos*) in Navarra. In 2021, 5 pairs of golden eagles continued to be monitored (3 of them are radio tagged as part of the agreement) and 2 chicks have fledged. The eagles use the towers of the 220 kV Orcoyen-Olite-La Serna line and the 400 kV Castejón Muruarte line mainly in those stretches that run through their territories, located in open spaces and with a greater availability of food.
    - Foraging area and movements of the Canarian Houbara (*Chlamydotis undulata fuertaveturae*). A project carried out in collaboration with the Museum of Natural Sciences (belonging to CSIC) through which 53 birds were tagged: 48 in Lanzarote and 5 in Fuerteventura. Movement patterns detected are between 10 km (males) and 25 km (females), distinguishing between sedentary individuals (mostly males) and migratory individuals (mostly females). The radio-tagged birds have been monitored and various awareness-raising campaigns have been carried out.
    - Reintroduction of the Bearded vulture (*Gypaetus barbatus*) in the Tinença de Benifassa Natural Park. Following the acquisition and installation of a third surveillance camera in 2020, in 2021, the vultures continued to be monitored on an ongoing basis.
    - The study 'Patterns of Use of Transmission Lines by Egyptian vultures (*Neophron percnopterus*) tracked via GPS devices', on the island of Fuerteventura, in the Canary Islands. In collaboration with the Doñana Biological Station (belonging to CSIC) the article 'Applying spatial ecology to determine the main drivers of power line use by vultures' was written and will be submitted to the Journal of Applied Ecology. The main conclusions are that 66 kV high-voltage lines are used more than medium-voltage lines. With the construction of the new 132 kV high-voltage line, roosts are moving towards this new installation, with a preference for certain towers over others depending on the availability of food resources, anthropisation and territorial behaviour. The towers are used as perches or roosts, increasing their use during the breeding season and in areas where livestock is present. On the other hand, it was found that maintenance work using helicopters had no effect on the movement patterns of the vultures.
    - Installation in the Tafalla substation (Navarra) of a base station for collecting data on the movements of the Lesser kestrel (*Falco naumnni*). In collaboration with GREFA.
    - Reintroduction of the Lesser kestrel (*Falco naumnni*) in the Community of Valencia by means of a free-range breeding method. Since the start of the project, a total of 944 chicks have been reintroduced from captive breeding. The consolidation of colonies has been confirmed in three Special Protection Areas (SPAs): Meca-Mugrón-San Benito SPA (Ayora), Els Alforins SPA (Fontanars dels Alforins-Villena) and Moratillas-Almela SPA (Villena), and work continues in new areas with suitable available habitats and where there is authorisation and support from landowners, local bodies and associations.
    - Monitoring actions for the conservation and protection of the Montagu's Harrier (*Circus pygargus*), Marsh Harrier (*Circus aeroginosus*) and Hen Harrier (*Circus cyaneus*) species in Extremadura. In 2020, the following has been carried out: population control, breeding pairs and nests with the help of local volunteers, individual protection of nests and continuous contact with farmers and users of agricultural machinery as a measure to increase the protection of nests containing eggs; monitoring of nests the dissemination of these actions through environmental education in social networks and the digital design of the story "The life of 'Cartucho' the Harrier".

- Study of the impact of submarine cables on marine fauna. In 2020, a study was carried out on the impact of submarine cables on cetaceans and sea turtles within the area and vicinity of the subsea interconnections. The study consisted of assessing the interaction of such fauna with the Red Eléctrica's activity and analysing the potential environmental impacts on cetaceans and sea turtles and designing preventive/corrective measures to minimize the impacts on this fauna. In 2021, training courses on marine fauna were held for employees which highlighted the interaction of said fauna with the activity of Red Eléctrica.
- Study of the potential impact of the electro-magnetic fields generated by the underwater cables in Tarifa on the sublittoral endobenthic community. The analysis of the community did not reveal a pattern of differentiation between the area under the influence of the cable and the control zones. The ordination analysis also showed no pattern of differentiation between the cable area and the control zones in any bathymetric range (study area at three depth ranges: 5, 10 and 20 metres).

7.2.5.3. The 'Red Eléctrica Forest'

The 'Red Eléctrica Forest' is an ongoing project, started in 2009, which aims to offset part of the Company's emissions through the planting trees and the recovery of degraded natural spaces on publicly owned land, thus contributing to the conservation of biodiversity. Additionally, this initiative supports the development of local economies by contracting work to companies or groups in the area, raising awareness regarding the importance of forests and to involving the local population and employees of the Company in this initiative.

Since the inception of the Red Eléctrica Forest in 2009, the Company has contributed to the recovery of 16 forests in Spain.

In 2021, 30,855 trees were planted (pines, holm oaks, oaks, rowan, strawberry trees and yews) for the recovery of 51.42 ha, which completes the work carried out last year in the municipality of Agallas (Salamanca). In addition, work has begun on preparing the land for the reforestation of several public use highland areas in Navarra.

Red Eléctrica Forest in figures 2009-2021

Trees and shrubs planted: **735,733 units**
Surface area recovered: **915 ha**
Emissions offset: **210,883 t of CO_2eq.**
Investment: **2,277,758 €**

- **The 'Red Eléctrica Marine Forest'**

Posidonia oceanica is a marine plant endemic to the Mediterranean that forms a habitat of priority interest and is an essential ecosystem for numerous organisms to complete their life cycle. Similarly, Posidonia seagrass contributes to the control of water quality and the protection of the coastline, as well as being one of the main CO_2 sinks in the sea. Posidonia seagrass meadows can be affected for various reasons, including the works associated with the laying of submarine electricity cables. For this reason, Red Eléctrica decided to promote a project aimed at restoring Posidonia oceanica seagrass meadows.

The Marine Forest is a worldwide pioneering innovation project. Between 2012 and 2016, the Company developed an R&D+i project in collaboration with the Mediterranean Institute of Advanced Studies (CSIC-IMEDEA) on the use of seeds or fragments of Posidonia oceanica in the restoration of degraded areas of its natural habitat. This contract has been renewed under the same terms and conditions for the period 2021-2025. The objective is the restoration of 2 hectares in the Bay of Pollensa following the methodology resulting from the research that was conducted.

The project employs an innovative technique that consists of using plant sections from natural fragmentation for subsequent replanting in the selected area. Regular monitoring is carried out to determine the survival rate, the degree of growth of each plant, CO_2 uptake, as well as the associated epifauna.

100% of the action area (2 hectares) was transplanted with Posidonia oceanica rhizome fragments. Periodic monitoring of the recovered area so far shows that the survival rate of the fragments is over 90%. The epifauna community associated with the plantation has been assessed periodically and no differences have been found in the community compared to the surroundings of the restored area.

To further raise awareness of the conservation of marine environments, Red Eléctrica participates in the promotion of various educational programmes:

- 'Bringing Posidonia into the classroom' in collaboration with the teaching community of the Balearic Islands and IMEDEA (Mediterranean Institute for Advanced Studies) to carry out informative sessions and field visits for students in the region.
- Collaboration with the Marine Interpretation Centre 'Aula de la Mar' in Majorca in a programme of workshops for schoolchildren.
- Presentation on Posidonia oceanica and the 'Red Eléctrica Marine Forest' in the media and a virtual exhibition on the topic published on the corporate website. To date, the virtual exhibition has registered 2,305 visits.

https://www.ree.es/en/sustainability/noteworthy-projects/environmental-projects/posidonia-oceanica

7.2.5.4. Innovation Projects in the Management, Protection and Conservation of biodiversity

The following projects were carried out in 2021:

Innovation projects regarding the management, protection and conservation of biodiversity	
Analysis of the efficiency of bird-saving devices	An initiative in collaboration with the Miguel Hernández University. The analysis of the data collected between 2014-2020 was carried out under a common methodology of accident monitoring. More than 13,000 pieces of data were analysed, a sufficiently large dataset to obtain results on comparisons between different types of bird-saving devices, the bird species prone to collision accidents, also the environmental and territorial situations more prone to the occurrence of such accidents, etc. A new model of photoluminescent bird-saving devices was installed in Tenerife with the aim of evaluating its effectiveness regarding crepuscular birds (2.7 km of line was marked with more than 400 devices). Field monitoring of these new models began in the last quarter of 2021.
LIFE BooGI-BOP[43]	Initiative that seeks to incorporate green spaces in urban and industrial environments into the network of ecological corridors. Although the *Biotransporte* project was halted in 2019 by the Innovation Committee and the Sustainability Committee, alternatives linked to this concept have been sought. In the *Biotransporte* project, a priori only the electricity lines were considered as biological corridors or islands of biodiversity, without stopping to consider the substations as spaces with great potential as biodiversity hotspots. The LIFE BooGI-BOP project gives the opportunity to showcase the potential that substations offer in terms of biodiversity. What is BooGI-BOP? It is a LIFE project with EU funding, implemented in the period 2018-2021 and its scope encompasses urban and/or semi-urban areas. The project, supported by seven European partners, promotes the design and management of business and industrial environments taking into account biodiversity and nature. The national partners are ECOACSA and the *Universidad Politécnica de Montes*. Biodiversity-Oriented Design of Business Premises (BOP) is a practical approach that contributes to the protection of biodiversity - especially in densely populated regions. BOP provides

[43] Aligned with the State Green Infrastructure Strategy and Ecological Connectivity and Restoration (EEIV) of the Ministry of Ecological Transition and the Demographic Challenge.

	solutions for shaping permanent or temporary habitats for local fauna and flora and contributes to the creation of biological corridors or green infrastructure. BOP enhances site functionality in a variety of ways and offers good opportunities to raise awareness and actively involve employees in improving biodiversity, enhancing the working environment and increasing the awareness of workers regarding the Company's values in this field. An initial assessment was made of different spaces: the substation in San Sebastián de los Reyes, the work centres at the head office in La Moraleja and the CAMPUS in Tres Cantos, and a proposal for their adaptation has been drawn up.
Biotransporte Project	The *Biotransporte* Project (Impact of the transmission grid on biodiversity) was a pilot experience carried out jointly with the Doñana Biological Station (EBD-CSIC), the regional government of Andalusia and private owners (2008-2018). This project analysed the viability of using power towers as biodiversity islands (or stepping-stones). The results obtained were very satisfactory: increase in the abundance and biodiversity of birdlife as well as in the number of micro mammals and invertebrates (7 out of 8 pollinators). In a subsequent internal analysis, this type of action was considered as an initiative that favoured the connection of around 60% of the spaces in the 2020 Natura Network, with many species of different groups benefiting directly, as well as many others indirectly by increasing the biodiversity of these areas. The article 'Transporting Biodiversity Using Transmission Power Lines as Stepping-Stones?' (Diversity 2020, 12, 439; doi:10.3390/d12110439) related with the results obtained through this case-study was published in 2020 (www.mdpi.com/journal/diversity). During 2021, the dissemination of the project continued through interviews and videos.
Allerion Project	System for detecting bird collisions with electricity lines via fibre optic cable. Technological innovation contract signed between Elewit, the University of Zaragoza and Aragón photonics, with the support from Basoinsa, S.L. and Fundación Migres for the control and monitoring of the natural environment.

7.2.5.5. Most Relevant Impacts on Vegetation

During the construction of lines, modification of facilities or their operation, the main impacts to be avoided are the alteration of the habitat of certain species of fauna and flora and the impact on vegetation resulting from the opening of safety corridors. Although avoiding areas rich in biodiversity is a priority criterion and all the necessary preventive and corrective measures are implemented to minimise the possible effects on habitats, it is sometimes impossible to avoid the impact.

The most relevant impacts on vegetation in 2021 were the following:

- The 220 kV Caletillas-El Rosario line: transplanting of an individual Canary Island spurge cactus plant (*Euphorbia canariensis*) to a special nature reserve built for *Hemicycla plicaria* (a type of gastropod from the Helicidae family).
- The 220 kV Jose María Oriol-Los Arenales Cross-border Biosphere Reserve 'Tajo/Tejo Internacional' line (Part of these impacts occurred in an area which is also a Special Area of Conservation / Special Protection Areas for Birds):
    - Felling of holm oaks (*Quercus ilex*): 6 trees with an average diameter of 45 cm and 23 trees with an average diameter of 18 cm.
    - Construction of 48 towers.

In addition, in 2021, an initial outbreak of fire was recorded, following the breakage of a conductor as a result of a tree alongside a line falling onto the cable in the Special Area of Conservation: ES2200020 Sierra de Aralar. It was extinguished without the need to use any special measures and only affected 100 m^2 of grassland that contained no species of environmental interest.

7.2.5.6. Most Relevant Impacts on the Marine Environment

The only relevant impact on the marine environment in 2021 was the following:

- 400 kV Tarifa-Fardioua submarine cable: spill of 3,500 litres of dielectric oil in Moroccan waters in the Strait of Gibraltar (at 22.5 km of the Spanish coast and at a depth of 200 metres). The leak has now been completely repaired. The area is not catalogued with any type of environmental protection, although UNESCO considers the Strait of Gibraltar as a Mediterranean Intercontinental Biosphere Reserve.

7.2.6. Fire Prevention

In order to minimise the risk of fire associated with the presence of transmission grid facilities, strict compliance with rules regarding safety distances between flora and infrastructure is critical. Red Eléctrica ensures this compliance through the proper design and maintenance of the safety corridors of overhead lines and of the perimeter areas around electricity substations located in forested areas.

The Company annually inspects all of its facilities and conducts periodic forestry (felling and pruning) work, applying best practices, respecting shrubs and small, slow-growing tree species, minimising actions on protected species and without using any form of chemical treatment.

In addition to projects aimed at optimising the treatment of vegetation, Red Eléctrica allocates numerous resources to minimising the risk of fires associated with its activities, having created a specific interdisciplinary working group to develop improvements in this area. In this regard, in 2021, various relevant tasks were carried out, such as internal training on forest fire prevention for more than 500 employees, the communication of requirements to contractors that could potentially cause forest fires during works, the preparation of action protocols for carrying out activities in times of high fire risk and the purchase of fire prevention and extinguishing equipment for field activities.

By the end of 2021 there had been no fires recorded in the vicinity of the facilities, except for one initial outbreak of fire following the breakage of a conductor as a result of a tree alongside a line falling onto the cable, and this had no significant environmental consequences.

In addition, noteworthy is the importance of the active and continuous collaboration of Red Eléctrica with the public administrations involved in forestry management. This cooperation is formalised through the signing of **collaboration agreements for the prevention and fight against forest fires**. There are currently 11 agreements in force, with a combined budget of 8.8 million euros every four years.

These collaboration agreements have resulted in the number of fires related to Red Eléctrica's facilities remaining extremely low.

Within the framework of these agreements, various relevant actions were carried out during 2021:

Territorial scope	Noteworthy projects in 2021 linked to collaboration agreements
Castilla-La Mancha	**Fire prevention and extinguishing equipment** Acquisition of fire prevention and extinguishing equipment for the emergency services of the Castilla La Mancha Regional Government. **6th Technical Conference on Forest Fires** The 6th Technical Conference on Forest Fires 2021 was held on the 15, 16 and 17 November in Toledo where the 'International Forest Fire Awards' were presented. These awards are included in the framework of the mission to study and develop knowledge, techniques and tools for the management of and response to forest fires, with prizes awarded to two candidates who carried out the best work on forest fires in recent years: • Prize for the best Master's Thesis • Prize for the best final year project for a Bachelor's Degree / High school / Higher Vocational Training. In addition, during this event, several Honourable Mentions in Recognition of their Professional Career in Forest Fires were awarded to personnel of the Forest Fire Fighting Operational Service (SEIF) of Castilla-La Mancha.

	These conferences have aroused the interest of various groups related to forest fires: operational groups, local administrations, universities, secondary education centres and public and private companies. These were broadcast live online, with more than 1,000 people following the conferences via streaming.
Extremadura	Acquisition of software and computer equipment for the support, development and maintenance of geographical mapping, prevention plans and other essential elements necessary for the prevention and fight against forest fires in Extremadura.
Region of Valencia	Within the framework of the fire prevention agreement with the Regional Government of Valencia, an agreement was signed in 2020 with the Technical Engineering University of Valencia (Universidad Politécnica de Valencia) to establish a four-year collaboration aimed at implementing the project for modelling and mapping of live fuel moisture content in the Region of Valencia. During 2021, work was carried out, consisting of the analysis of field data and zoning of the province of Valencia, the extraction of indexes for the models and the definition of the models for estimating the live fuel moisture content in the summer season in the province of Valencia.
Balearic Islands	Creation of self-protection firebreaks in Cala Deià and Puerto de Valldemossa. A total area of 16,400 m^2 was treated. The forestry work consisted of clearing the shrub-herbaceous stratum, intensively reducing the density, cutting back and pruning the tree stratum and eliminating plant remains. All the remains were shredded in situ and incorporated into the soil once they had been shredded, with the exception of some very small piles of usable firewood, which were collected and then chopped up for use.
Canary Islands	**Fire prevention and extinguishing equipment** Acquisition of fire prevention and extinguishing material (Personal Protective Equipment) for the emergency services of the Cabildo de La Palma.
Navarra	**Fire prevention and extinguishing equipment** Acquisition of fire prevention and extinguishing material for the emergency services of Navarra. **Clearing of scrubland in the highlands of Navarra as a preventive action** Clearance of 15 hectares in areas covered with scrub and at risk of forest fires. The work consisted of eliminating scrub in an area that is traditionally used as pastureland. The shrub species present were mainly gorse (*Ulex sp.*) and common heather (*Erica sp, Calluna vulgaris*...), which were not very mature plants (maximum height of 60 cm in the case of the gorse, in the case of the common heather, those plants were smaller).
The Basque Country	**Training geared towards fire safety, extinction techniques, investigation and the development of professional skills regarding forest fires** Training for 170 experts, forestry agents, forepersons and operators from the Department of Sustainability and Natural Environment of the Provincial Council of Vizcaya participated. The assistants acquired skills regarding human factors and safety, evaluation and forecasting of fire behaviour, initial attack strategies and practical examples of decision making. **Preventive clearing in the highlands of Vizcaya** Clearance in areas at risk of forest fires in the municipalities of Valle de Trapaga and Ortuella which had a lot of shrub coverage. The type of shrub to be cleared is classified as Atlantic Pistacia, a type of common gorse, and to a lesser extent dried out heath (Erica) with high density and an average height of scrub of 0.8m. **Fire prevention and extinguishing equipment** Acquisition of fire prevention and extinguishing equipment for the emergency services of Gipuzkoa and the Provincial Council of Alava. Provision of portable communication terminals and two-way radio dual-band walkie talkies for the province of Alava. **Meteorological information system for fire-related emergencies** Provision of a meteorological information service, simulations and alerts for the Alava Provincial Fire Department. The service provides a complete solution for the management of alerts and the integration of meteorological information. This service supports intervention teams and civil protection groups (fire brigades) in the prevention and management of fire-related emergencies. Quality meteorological information is essential for a precise and swift response.

- **Offsetting measures for tree felling works as a result of construction works for new facilities**

  Red Eléctrica has set itself the challenge of offsetting the loss of native forests affected by the construction of new facilities by carrying out an assessment of the areas of native forest affected by the construction of new transmission grid facilities.

  In 2019, a collaboration agreement was signed for the conservation of biodiversity through the reforestation and restoration of 53 hectares of habitat degraded by forest fires in the municipal area of Las Torrecillas-Puntal de Navarrete and the Llanos de Gaetano recreational area in the municipal area of Altura (Castellón), in order to offset the aforementioned loss of native woodland. The site was selected by the Regional Government of Valencia for the development of the project. In 2021, 31 hectares of habitat were restored.

  In addition, a new collaboration agreement was signed with the Provincial Council of Vizcaya and the local councils of Garai and Alonsotegui to carry out a reforestation and restoration project of approximately 100 hectares of the wilderness area of 'Añao' and the 'Ganekogorta' beech tree forest to be executed in 2022 for an estimated total of 200,000 euros.

7.3. Saving of resources: Water and Paper

Water consumption

	2019	2020	2021
Head Office (m^3)	10,196	**3,217**	**7,305**
Head Office (m^3/employee)[44]	10.54	**3.94**	**6.84**
Total work centres[45] (m^3)	20,347	**12,802**	**17,045**

Withdrawal by source (%)	2019	2020	2021
Rainwater collection tanks[46]	0	0	**0**
Cisterns	2.90	3.20	**2.68**
Wells	17.60	5.20	**16.20**
Municipal water mains	79.50	91.60	**81.12**

Paper consumption (office buildings)

	2019	2020	2021
kg	12,195	5,056	**4,192**
kg/employee[47]	5.69	2.58	**2.14**

The table below shows the evolution of paper consumption in publications in the period 2019-2021.

	2019	2020	2021
kg	7,348	6,039	**1,100**
% FSC[48]	100.00	0.00	**0.00**
% FSC 100% Recycled	46.00	0.00	**0.00**
% FSC 60% Recycled	5.00	0.00	**0.00**
% FSC Mixed	49.00	100.00	**100.00**[49]
% Ecological paper used in publications	0	0	**0**

[44] As of 2021, the calculation takes into account all personnel (employees of the Group, interns, temporary workers and collaborators – for a total of 1,068 people) working in the Head Offices -Moraleja and Albatros buildings. In previous years, only the Head Office Building in the Moraleja was included.

[45] The data provided has a coverage of 97.9%, in terms of personnel (taking into account all personnel that work in the different work centres in Spain: Group employees, interns and collaborators, as well as personnel contracted from temporary employment agencies). The data is not available for some centres, mainly those that are not owned by the Company (rented).

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

[47] Includes Red Eléctrica employees, interns and collaborators, as well as personnel contracted from temporary employment agencies: 1,928 people.

[48] Ecological paper certified to Forest Stewardship Council standards.

[49] All publications have used exclusively FSC Mixed paper.

7.4. Socio-Economic Environment

7.4.1. Protection of Archaeological and Ethnological Heritage

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

Before carrying out any earthworks, the Company carries out an **archaeological survey** of the land/terrain, the intensity and scope of which depend on the probability that there is material of interest in the area. According to the results, the need for the continuous presence of an archaeologist during the works is determined and, if necessary, the preventive measures to be applied during the works are defined. These measures mainly consist of avoiding or protecting certain elements of archaeological and ethnological heritage, although on some occasions cataloguing, excavation or even restoration work is carried out.

In 2021, **archaeological supervision was carried out in the construction of 20 new lines or for the adaptation of existing lines** (55% of the adaptations were carried out with the continuous presence of an archaeologist during the earthworks phase, in the entirety of or in part of the route) and in **9 substations or for enlargement works of existing substations** (100% were carried out with the continuous presence of an archaeologist during the earthworks).

Among the various projects conducted, noteworthy is the archaeological excavation carried out in the new 400/220 kV substation in San Fernando de Henares (Madrid), where the presence of a Roman rubbish dump has been confirmed and the remains of Celtiberian settlements were discovered after archaeological surveys were carried out. In addition, an archaeological site near an access track was fenced off prior to the commencement of works for the modification of the 220 kV Candelaria-Granadilla line. Furthermore, domestic utensils belonging to the 'Guanche' (indigenous inhabitants of the Canary Islands) were found during work to adapt the access routes to the 66 kV Granadilla-Abona line.

Red Eléctrica continues to collaborate actively with the public administration on heritage conservation. In 2021, in collaboration with the regional government, a Geographic Information System (GIS) of the cultural heritage of Castilla-La Mancha was developed, which allows access to more than 12,500 records of catalogued elements of interest and provides details regarding their protection.

Lastly, during 2021, the second phase of the *ArqueoRED* project was completed, with the contrast and correction of data in the field, of all those catalogued cultural heritage elements obtained in the first phase of the project. All the available documentary information has been compiled, corrected and contrasted in the field for the seventeen Spanish regions (autonomous communities).

7.4.2. Electric and Magnetic Fields (EMFs)

Thanks to the criteria applied by Red Eléctrica in the design of its 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: establishes exposure limit values for the general public in sites where they may remain for a period of time at 5 kV/m for electric fields and 100μT for magnetic fields). The main criteria applied 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, Red Eléctrica has a tool that uses specific line parameters to precisely calculate the maximum EMF levels that said facilities could generate, meaning that it is not necessary to carry out on-site measurements except when the values of the parameters necessary for the calculation are not available (as is the case of very old facilities for which a specific EMF measurement plan has already been carried out). In 2021, this tool was used to assess different situations linked to the facilities that form part of the proposed 2021-2026 Electricity Planning.

Red Eléctrica carries out one-off measurements at the request of interested parties.

In 2021, it performed measurements on five lines, results obtained were below the electromagnetic values recommended by the European Union for all except for the following lines:

- 400 kV Grijota-Vitoria line, in the Burgos municipal area. At the request of the town council due to inconvenience to cyclists, a measurement was carried out which showed values higher than the maximum recommended levels. As a solution, the towers were raised (7 metres) to increase the distance of the line from the cycle lane and significantly reduce the value of the electromagnetic field (to 4kV/m), with no further nuisance reported.
- 400 kV Almaraz-Morata 1 and 2 line, in the Yuncler municipal area, Toledo. In the month of December, the measurement requested by the town council due to inconvenience to cyclists passing under a point of the line was carried out, resulting in electromagnetic field values higher than the maximum recommended levels. The corrective measures will be carried out in 2022.

During the year, with the exception of the aforementioned cases, there were no incidents registered due to non-compliance with the regulations in this matter

In addition, the Company is fully aware that electromagnetic fields represent an issue for concern for those people living in the territories where electricity facilities are located and therefore it pays special attention to this issue and the following courses of action are carried out:

- Participation in national and international forums and working groups (ENTSO-e, CIGRE and EPRI) and collaboration with the public administration (MITERD) and prestigious entities such as the Salvador Velayos Institute of Applied Magnetism. In this respect, it is worth mentioning the contact with different experts at national and international level with the aim of establishing a consultative body to collaborate with environmental organisations in the design of guidelines for the assessment of new projects.
- Information is conveyed to stakeholders, by means of:
    - The corporate website: https://www.ree.es/en/sustainability/the-natural-environment/electric-and-magnetic-fields
    - The publication of new developments in scientific research in this regard. In 2021, the publication on the effects of electromagnetic fields on human health was updated.
    - Responding to enquiries received through the Corporate Dígame Service.

7.4.3. Noise Pollution

On occasions, electricity substations can be an annoyance for the neighbours, due to the noise generated by some of its elements. Red Eléctrica works on the implementation of the most effective measures for mitigating noise pollution.

In 2019, a noise analysis study was carried out on the 134 substations that have power transformers onsite, using a combination of direct measurements and the use of predictive software, fed with data from the ACURED innovation project (2016-2018).

As a result of this analysis study, it was identified that direct measurements should be taken at the 55 facilities with people living in their vicinity. These measurements have already been completed for 46 substations and the remaining ones will be completed during 2022. Despite adjustments made to some transformers to reduce their noise emission levels, there are still four substations that exceed the desired limits (self-imposed limits that are more restrictive than those required by regulations). These will be analysed in detail over the next year, using an acoustic camera to better define the measures to be implemented. In 2022, acoustic screens will also be installed at the La Eliana and Arkale substations.

On the other hand, no noise measurements were taken in 2021 as there were no complaints made by individuals nor requested by local administrations.

7.5. Circular Economy

As part of the path towards a sustainable energy model, the Company is committed to the integration of the circular economy in the development of its activities. In this regard, since 2018, the Group has been a member of the Pact for a Circular Economy.

The Company's commitment in this area was materialised in 2019 with the preparation of a Circular Economy Roadmap that will allow the Group to be a leading company in the circular economy in 2030. This is one of the eleven Sustainability Goals that the Company has set for the 2030 horizon.

The Roadmap establishes the objectives to be achieved and the different actions to be carried out in order to progress towards their fulfilment. During 2020, a monetisation process was carried out to quantify, under a single, objective criterion, the impacts derived from the implementation of each of the measures included in the Roadmap and of all the actions as a whole. In the assessment, both the impacts on the Company's profit and loss account (financial perspective) and the impacts on the environment and society (sustainability perspective) have been considered.

The most relevant dimensions are highlighted below:

- **MATERIALS**

Objectives of the MATERIALS Roadmap:

- Creation of a circular supply network
- Identification of the environmental impacts of equipment and materials from their point of origin (equipment and materials passport)
- Integration of circularity criteria in procurement tenders for equipment
- 20% of tenders for equipment with clauses involving suppliers in maintenance and end-of life management of the equipment
- 0% single-use plastics
- 100% eco-friendly packaging, recycled, recyclable or reusable packaging in the supply of equipment and materials
- Sustainable transformers (use of vegetable esters instead of mineral oils)
- Innovation and technological development (eco-friendly designed equipment and materials)
- Savings in materials associated with the new DIN2020 Standard.

- **ZERO WASTE**

Objectives of the ZERO-WASTE Roadmap:

- Zero waste to landfill
- 100% SF_6 waste reduction
- 100% reduction of waste from contaminated land (treatment of 100% of the soil affected by accidents)
- Reduction of waste generation associated with the new DIN 2020 standard.

- **SOILS**

Objectives of the SOILS Roadmap:

- Action plan for the prevention of hydrocarbon leaks and mitigation of their impacts
- Decontamination of 100% of the soils affected by hydrocarbons in accidents.
- 100% reduction in the use of phytosanitary products in substations.

- **WATER**

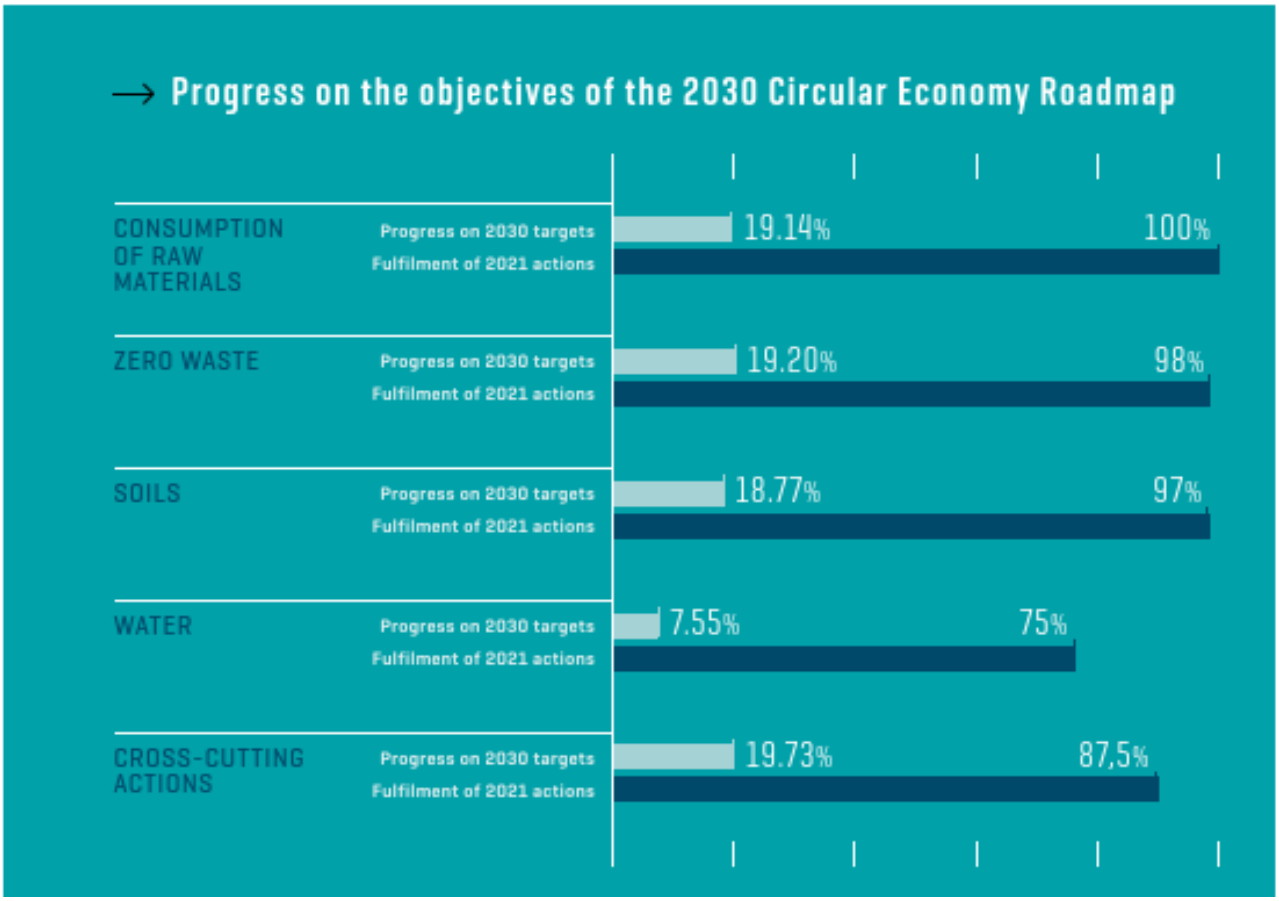
Objectives of the WATER Roadmap:

- Reduction of water consumption in all work centres to 6.5 m3/employee/year.

- CROSS-CUTTING ACTIONS

Objectives of the CROSS-CUTTING ACTIONS Roadmap:

- Integration of circularity criteria in all activities, incorporation in 100% of the internal regulations.
- Management of 100% of projects through the use of digital tools.



7.5.1. Zero Waste to Landfill Sites

The nature of the waste generating activities in Red Eléctrica makes it extremely difficult to predict the evolution of the quantities produced as they are closely linked to the number and type of construction and maintenance actions carried out each year. For example, the activity of renewing and adapting facilities generates a large amount of waste, but this cannot be limited, as this activity is linked to reducing environmental risks or increasing the safety of the system or facilities. However, the Company is working on finding innovative solutions that make it possible to reduce the quantity and hazardousness of the waste derived from its activities and on searching for the most sustainable alternatives in terms of their life cycle.

During 2021, an Action Plan was defined for the waste-to -energy recovery of 100% of the waste from all the companies of the Red Eléctrica Group and some measures were implemented, such as the incorporation of recycling/waste-to-energy recovery requirements in tenders regarding waste management and the provision of services, the installation of composters for organic waste in four work centres and the launch of awareness-raising campaigns.

The implementation of these measures has enabled up to 93% of hazardous waste and 95% of non-hazardous waste) to be recycled (this generic category includes reuse, recycling, composting, anaerobic digestion and regeneration processes).

7.5.2. Waste Management in 2021

Regarding the generation of 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.

In general terms, the amount of total waste generated by Red Eléctrica in 2021 increased by 307 tonnes regarding hazardous waste compared to 2020. The increase is due to the return to normality of maintenance activities and renovation and improvement projects; thus, the Company's waste generation volumes are returning to pre-pandemic values (2019).

With regard to the final destination of waste, it is also worth noting the slight increase in 2021 in the percentage of hazardous waste sent for elimination compared to 2020, from 5.89% to 6.78%, and the large decrease in the percentage of non-hazardous waste sent for elimination, from 29.71% in 2020 to 4.36% in 2021.

The fall in the percentage destined for elimination is linked to the implementation of some of the measures under the 'Zero-waste to landfill' project.

Detailed below is the data regarding waste and its evolution over the last three years:

Non-hazardous waste[50]	2019	2020	2021
Total (t)	718.6	564.1	520.6

Hazardous waste	2019	2020	2021
Total (t)	547.1	224.8	576.2

Total waste Non-hazardous + hazardous	2019	2020	2021
Total (t)	1,265.7	788.9	1,096.8

[50] Vegetable waste is not included as it cannot be quantified: most of it is incorporated into the land, or delivered back to the landowners, as this is the most appropriate form of management.

- Total amounts (tonnes) managed in 2021 by type of management

Waste management method (%) [51]

	Non-hazardous (%)	Hazardous (%)
Reuse	0.00	0.00
Recycling, Composting, Anaerobic Digestion	**95.64**	**78.24**
Regeneration	0.00	0.11
Energy recovery (Waste-to-Energy)	0.00	14.87
Elimination (by any method)	4.36	6.78

The Annex of this report provides more specific data on waste management and its final destination over the last three years.

7.5.3. Reduction in the consumption of raw materials

In order to reduce the consumption of raw materials and prioritise the use of recycled, recyclable or reusable materials, it is necessary to make progress on issues related to eco-design and the consideration of environmental impacts throughout the life cycle of equipment and materials. This will only be possible by working closely with other key actors, mainly suppliers, and by encouraging innovation and technological development.

In this regard, it should be noted that in 2021, the relevant circular economy criteria for the supply chain were identified and included in the general contracting conditions and tender specifications for large equipment (power transformers, disconnectors and transformers). The consideration of this set of criteria in purchasing decisions encourages the procurement of more efficient and sustainable services and equipment and thus helps to progress towards the Group's goal of having a circular procurement network by 2030.

On the other hand, the measure to reduce surplus stock brings with it very high savings in the purchase of equipment and spare parts and also entails a significant reduction in waste. A review of the stock in the Company's warehouses was carried out and its usefulness was defined, and a commitment was made to use existing stock, in as far as possible, prior to 2036. Stock that is classified as useful, but which does not have a planned use, in accordance with our aforementioned commitment, will be sold on to a third party for them to use.

[51] The management of the waste corresponds to that contained in the legal documentation of the same.

7.5.4. Sustainable Management of Soil/Earth affected by Oil and Fuel Spills

The electricity transmission activity performed by Red Eléctrica is carried out using equipment containing significant amounts of dielectric oil, including power machines (transformers and reactors), current/voltage/capacitor transformers and Oil-Filled cables. Despite the design of facilities, established measures and preventive maintenance work, it is difficult to completely eliminate the risk of incidents regarding oil leaks or spills.

When an oil leak or spill occurs, both the soil and groundwater can be affected, and it is necessary to act quickly and effectively in order to help reduce the impact as much as possible and to correct its impact, and to look for those actions that will ensure the sustainable recovery of the affected area.

Red Eléctrica has set, within the scope of the Circular Economy Roadmap, the objective that 100% of the soil affected by leaks and spills that occur in the facilities in 2030 will be treated in some way, in order to avoid the final destination of these affected soils going to landfills and as such contribute to the ambition of the Group to become a leading company in the circular economy in 2030.

For this reason, an innovation project has been developed, included within the scope of the framework agreement signed between Red Eléctrica, TAUW IBERIA and the University of Barcelona, whose final objective is to provide new specific treatment methods for the soils affected by the pollutants most used in Red Eléctrica's facilities, which allow them to be cleaned up firstly where the leak occurred 'in situ'[52], or in those cases where this is not possible, it is managed 'on site'[53],, and this replaces the alternatives used in the past. The alternatives used to date of excavation and the management as waste in landfill sites will be replaced in order to obtain a greater degree of sustainability from an environmental and economic point of view. This will allow the sustainable management of soils affected by oils and fuels.

Tests have been carried out with different types of mineral oil, as this can vary depending on the facilities and their application (insulating/cooling oils). The priority treatment tested was that of bioremediation, as a green technology, which in addition to detoxifying the soil, restores its ecological properties (soil as natural capital), by developing microbial consortiums whose specific degrading capacity is optimum for the oils used by Red Eléctrica in its equipment, with a view to possible future uses in real conditions.

In addition, alternative tests have also been carried out for the application of surfactants to increase oil extraction rates in recovery actions based on pumping out and treating the product and the affected groundwater, as well as chemical oxidation tests for the reduction/elimination of contaminants by injecting oxidants.

After the analyses carried out, the applicability of the techniques tested (biodegradation, application of surfactants and chemical oxidation) for the remediation of sites affected by the specific oils used has been confirmed. The tested techniques can be applied both 'in situ' in the field and 'on site', i.e., excavated and treated on site.

Once the laboratory tests have been completed, the next phase, consisting of the design of a pilot test, will be created. The performance of this test would make it possible to gain a deeper understanding of the behaviour of these oils and the results obtained by carrying out field test, and therefore in conditions that are more representative than those of the laboratory.

[52] Cleaned on the soil/floor itself (in-situ) without the need to excavate
[53] Excavated and treated on the facility itself (on-site)

7.6. Prevention of Contamination of Soil and/or Groundwater

Red Eléctrica includes among its environmental risks the risk of contamination of soil or groundwater from leaks or spills of oils, fuels and hazardous substances.

The activity of Red Eléctrica within the context of Royal Decree 9/2005 and through Order PRA/1080/2017, of 14 January, is set out in Annex I as 'Potentially soil contaminating activity', encompassed within the National Classification of Economic Activities (CNAE-2009: 35.12 and 35.13) with the following scope of activity: ***'Electricity substations and power transformers or reactors'***.

Numerous preventive and corrective measures have been put in place to prevent contamination of soil or groundwater by leaks or spills of oils, fuels and substances (protocols for response to incidents, containment systems, equipment maintenance, among other measures).

Red Eléctrica continues to work on the soil concept at various levels:

- **Purchase of new land or the execution of works to be carried out on existing facilities (substations) or adjacent areas.**

  Prior to the formalisation of the purchase of new land for the construction of a new substation, and in conjunction with the geotechnical studies, a soil and groundwater characterisation study is carried out in order to ascertain the state of the soil and groundwater and to be able to detect any possible impacts beforehand. It has also been established that whenever a geotechnical study is carried out on an existing facility, it should be accompanied by soil and/or water sampling in order to find out, easily and at a relatively low cost, the possible state of the land on which the substation or possible extension areas are located, in order to confirm or rule out the presence of contaminants in the subsoil, identify possible sources of contamination, and assess the possibility of anthropogenic effects resulting from activities that may have been carried out on the site previously.

  Seven characterisation reports were drawn up: the 400 kV La Plana substation (Enlargement), the 220 kV Olmedilla, the 400 kV Beariz, the 400/220 kV Fontefría, the 400 kV Platea, the 400 kV Torrejón de Velasco and the 220 kV Tierra Estella substations.

  No pollutant values been obtained that pose an unacceptable risk to health in any of the aforementioned sites.

- **Submission of preliminary soil reports (PSR/SR) and request for information/actions based on said reports**

  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 2021, 18 PSR/SR of transmission grid substations (Trillo, El Palmar, La Pinilla, Romica, Grijota, Puentes García Rodriguez, Santa María de Grado, Velilla, Almaraz CN, Arañuelo, Balboa, Bienvenida, Brazatortas, Brovales, Jose María Oriol, Manzanares, San Servan and Valdecaballeros) have been submitted.

- **Preventive and mitigating measures in the event of leaks or spills**

  The following table lists the specific soil characterisations carried out in 2021:

Soil characterisation of substations 2021
400 kV La Plana substation (Enlargement)
220kV Olmedilla substation
400 kV Beariz substation
400/220 kV Fontefría substation
400 kV Platea substation
400 kV Torrejón de Velasco substation
220 kV Tierra Estella substation

No pollutant values been obtained that pose an unacceptable risk to health in any of the aforementioned sites.

In addition, the following measures were carried out in 2021:

- Carrying out of a mock drill regarding a power transformer oil spill at the Don Rodrigo substation and the carrying out of training sessions at various work centres.
- Carrying out of a mock drill on an underground circuit with an Oil-Filled cable with the greatest environmental risk (220 kV Badalona-Guixeres).
- Drawing up of Contingency Plans for oil spills for all underground circuits with Oil-Filled cables.
- Drafting of an internal procedure for the elimination of environmental risk in decommissioned Oil-Filled cable circuits (procedure for the extraction of insulating fluid in Oil-Filled cables by purging through the injection of hydrogel).
- Drafting of an internal document of lessons learned regarding the repairs carried out on the Spain-Morocco interconnection following various breakdowns with an environmental impact.

Additionally, the implementation of an **Emergency Intervention Service** for land-based environments allows a prompt and effective response to accidental spillages and the urgent recovery of any potential environmental damage at the site of the incident, thus minimising possible risks and damage to the environment.

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

  - Environmental 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. REE followed the procedure for the voluntary environmental recovery of soil and groundwater. The extent of the impact (according to the latest estimated official data) is between 1,200-1,600 m2 of soil, while the area of groundwater affected is estimated at about 2,200-2,600 m2. The fault is located in an urban area near the sea where residential and tourist activities usually take place. Since it began operation in 2016, the remedial system put in place (treatment plant and the use of skimmers) has extracted a total of 37,201 litres of free phase oil.

    The pumping of groundwater and free phase oil, in addition to the extraction process for the separation and storage of free phase oil, entails the treatment of the water for its subsequent discharge (ensuring a discharge with no more than 600 µg/l (0.6 ppm)). A total of 20,301 m3 of groundwater has been treated. On the site there is still free phase oil of a few millimetres thick in the site's piezometers (residual phase) and there is also oil in a water-soluble state.

    The Cala'n Bosch Recovery Plan was submitted in 2021 to the General Directorate for Environmental Education, Environmental Quality and Waste. The Recovery Plan incorporates the decontamination techniques to be used and the definitive pollutant reduction targets. A response from the local administration is pending.

Periodic characterisations and monitoring of groundwater are still carried out in order to control the possible displacement of the groundwater plume. According to the sampling studies performed, the plume values remain stable without displacement or significant variation in the levels of free phase oil.

This Plan has a project management team assigned to it that is specialised in this field and that provides the necessary technical support for carrying out the pre-tests. Once the Recovery Plan is approved, the team will continue to provide support as necessary in order to carry out the implementation of the Plan.

- Other noteworthy actions in this field

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

  The project enabled greater knowledge to be obtained with respect to the internal risk on soil and groundwater (surface, subsoil and marine) of the portfolio of substations (657 facilities in 2017). Also, based on the risk obtained, a hierarchy ('ranking') was established according to the estimated severity of the environmental liabilities that gave way to the drafting of a 'risk map' of the facilities with all the information related to each site. In parallel, the external risk posed to the installation by the activities carried out by third parties in areas adjacent to the substations was also assessed.

  Based on the results of the model, a set of electricity substations, those with the highest risk, was selected, and a plan of specific actions was drafted for each site. All of the planned measures have been fully implemented.

  In 2021, the environmental risk assessment was updated and the internal risk levels of existing substations were redefined, taking into account all actions carried out in such substations that could have had an impact on the soil. In addition, the internal risk of the new substations commissioned since that date has also been assessed and defined.

7.7. Stakeholders

The main objective of the Red Eléctrica is to establish a lasting relationship, based on trust, with its stakeholders. This includes all those stakeholder groups impacted by the Company's services or activities, and those groups whose opinions and decisions influence the Company's financial results or may have an impact on its reputation.

Red Eléctrica's stakeholder management model incorporates the requirements set out in the rules and standards of reference in the field such as the AA1000, IQNet SR10, ISO26000 or the Global Reporting Initiative. This model ensures that relevant economic, social and **environmental** aspects, associated with Red Eléctrica's activities and services, that may have an impact on its stakeholders are adequately managed, thereby avoiding the risk of not promptly identifying issues that may affect the Company's relationship with its stakeholders.

This model encompasses the following phases:

- The stakeholder **identification and segmentation** phase which is carried out by analysing the interrelationships of the processes and activities of the Company with its socioeconomic environment.
- The **prioritisation** phase, which makes it possible to establish, through the application of a series of criteria, which of the stakeholder groups identified are most relevant for the Company.
- The **relationship framework** helps categorise the type of relationship with each stakeholder group and defines the most appropriate relationship channels.

In 2020, the Company started a project aimed at conducting a broad review of the stakeholder management model aimed, on the one hand, at defining common ways of working with regard to stakeholders in the different companies of the Group and, on the other, at ensuring that all of them have a prioritised inventory appropriate to the reality of their activity and their geographical location, which serves as a starting point for the definition of new frameworks for relationships with stakeholders, which is updated to the reality of the Group.

In the context of this initiative, the following activities were carried out in 2021:

- Reviewing and documenting the Company's stakeholder identification process.
- Updating the factors for their prioritisation, as well as the method for assessing this priority, based on the analysis of the Company's impact on the stakeholder, the influence of the stakeholder group on the Company and the possible factors that may cause a breakdown in the relationship.
- Drafting of documentation for both the current relationship framework and for the relationship channels between the Company and each stakeholder group.

These improvements to the management model have been applied, and as a result, the stakeholder inventory has been updated, which is now composed of the following categories: regulatory bodies and the public administration, the financial and economic ecosystem, the business ecosystem, suppliers, clients, employees and the social ecosystem.

Additionally, among the actions carried out in 2021 within the framework of the stakeholder management model, two main projects can be highlighted:

- **LISO project (SOcial LIcence)**

  The purpose of the project is to facilitate the development of new transmission grid facilities in order to meet the Group's energy transition objectives and its Strategic Plan, by reinforcing its legitimacy as a promoter of critical infrastructure within the territory.

  During 2021, new tools were defined and applied to the project portfolio to strengthen the LISO project; specifically, a new territorial diagnostic tool which, together with the bolstering of the management of priority stakeholder groups, will help promote and reach consensus on the key aspects of the projects.

- **Stakeholder management in investment projects.**

  The Company is working to integrate information on stakeholder management in projects into corporate tools, identifying the stakeholder group, the phase each project is in, and the details of the course of action applied to each stakeholder group, among others. Work will also be done on graphically showing the value of the classification of each stakeholder group, taking into account the following concepts: interest, impact and influence in order to be able to clearly identify those stakeholder groups whose needs must be met more swiftly and with greater attention.

7.7.1. Management of enquiries, claims and grievances

The *Dígame* service has guaranteed, since 2008, the professional management of enquiries related to Red Eléctrica's services regarding the operation of the national electricity system and the management of the transmission grid submitted by external stakeholders through the Group's various communication channels available (phone, e-mail, online web form and post or registered fax). This service is staffed by personnel from the Juan XXIII Roncalli Foundation, a non-profit organisation that facilitates the professional integration of people with some type of disability.

We monitor and attend to all enquiries and grievances/claims of an environmental nature which are sent to us by interested parties. All enquiries filed are classified by their nature (includes complaints, queries, suggestions, requests for information and recognition) or grievances.

In 2021, a total of **47** enquiries regarding environmental issues were received, **9** of them were classified as grievances.

The areas of concern which have led our stakeholders to contact Red Eléctrica in the last three years are broken down in the following table. Noteworthy were the enquiries received by the different organisational units as a result of felling and pruning works of flora and the grievances thereto.

	Evolution of enquiries[54]			Evolution of grievances[55]		
	2019	2020	2021	2019	2020	2021
Birdlife	4	4	6	0	0	1
Electromagnetic fields	17	6	9	0	0	1
Consumption/Energy efficiency	0	0	0	0	0	0
Environmental costs	0	0	0	0	0	0
Emissions/Climate change	0	0	1	0	0	0
Impact on the landscape	2	0	1	0	0	0
Facilities/Infrastructure	0	3	1	0	0	0
General environmental information	3	1	1	0	0	0
Waste	3	0	0	1	0	0
Noise	9	8	12	2	2	1
Environmental management system	3	0	1	0	0	0
Flora/Vegetation	37	25	15	22	12	6
Total	78	47	**47**	25	14	**9**

Currently, only one of the grievances is in progress, and the rest of the claims are closed.

7.7.2. 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.

In 2020, a reviewed and updated Supplier Code of Conduct of the Red Eléctrica Group came into force. The new version seeks to transfer to the supply chain new sustainability criteria (environment, ethics, occupational health and safety, well-being and diversity), to adapt it to best practices in relation to due diligence with third parties and ensure its alignment with the update of the Company's Code of Conduct and Ethics.

Red Eléctrica requires all those suppliers whose activity has 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; 100% of the suppliers are certified. In addition to the total number of suppliers registered with REPRO (REPRO is the energy sector pre-qualification system used in South America and Southern Europe), **69**% have a management system certified by a third party (ISO 14001 or EMAS).

With the aim of improving the environmental performance of the supply chain, Red Eléctrica has identified and prioritised the risks and impacts of an environmental nature of the supply chain, which has allowed the Company to establish controls to minimise them. These were identified within the scope of the project to identify the environmental impacts associated with each of the services contracted, and in the definition of the specific requirements that are requested from suppliers based on the type and relevance of said impacts (potential and actual).

[54] The result includes all the requests received (enquiry + claim). All demands that are not classified as a claim are classified in the same group called Attention. The different types of attention are: complaint, enquiry, suggestion, request, information notification and acknowledgement.

[55] The cases that may involve sanctions are detailed in another section of this Environmental Statement. Includes only grievances classified as **applicable** according to procedure IQ002.

There is therefore a matrix of impacts that covers most of the suppliers' activity and, therefore, the main risks associated. This matrix allows the Company to assess the probability of occurrence and the magnitude for each of the 20 types of impacts identified (nine of them of an environmental nature).

All the sustainability requirements have been identified and a matrix of impacts was drafted for the supply of **equipment and/or materials**, and another matrix for the provision of services and construction works.

Additionally, work was completed regarding the drafting of the impact matrix for suppliers that provide equipment and/or materials in countries that entail risk, mainly from a social-labour perspective, and the identification of corresponding mitigating requirements.

Specifically, within the environmental scope, progress continues to be made in the incorporation of minimum supplier requirements according to the impact of the activity/material provided taking into consideration the following aspects:

- Impact on biodiversity.
- Impact on soil and water.
- Climate change and air quality.
- Generation of non-hazardous and hazardous waste.
- Legal/regulatory non-compliance.
- Energy consumption
- Water consumption

Noteworthy is that, for the contracting of some services, the requirements, in terms of environmental training and specifications linked to the execution of the works, are part of the contractual documentation. In the case of the activities with the greatest potential impact, such as construction, enlargement and 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 a thorough monitoring of the established environmental requirements.

The company carries out a continuous review of the requirements established in sustainability (ESG Scoring), which makes it possible to identify the degree of maturity of a supplier in environmental, social and governance aspects, as well as to make a comparison with the average obtained by the suppliers that are members of the REPRO community.

Additionally, in 2021, new sustainable criteria regarding the purchasing process have been incorporated into the General Conditions of Contract, including issues related to circular economy and carbon footprint.

Furthermore, with the aim of improving the environmental performance of the supply chain, Red Eléctrica is developing specific programmes and actions related to key environmental aspects for the Company.

Noteworthy in 2021 is the progress made in the collaboration programme with suppliers for the reduction of Scope 3 emissions and the participation in the drafting of the 'Biodiversity in the Supply Chain' document on best practices in biodiversity, a whitepaper published by *Fundacion Biodiversidad*.

7.7.3. 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 2021 was 28.4% (compared to 7.9% in 2020), corresponding to 512 people and a total of 6,204 hours of training (compared to 315 in 2020).

Training represents 6.4% of the total training provided in 2021.

7.7.4. Stakeholder Relations

Participation in Working Groups

Working Groups (WG)	Organiser
Technical Council (Chairpersonship SC3- Chair of the Environmental Studies Committee)	CIGRE (International Council on Large Electric Systems)
Strategic Advisory Group (SAG)	
WG C3-9 (A) Sustainable Corridor management	
WG C3.12 Methodologies for Greenhouse gas inventory and reporting for electricity transmission and distribution companies	
WG C3.14 Impact of environmental liability on transmission and distribution activities	
WG C3.16: Interaction between electricity infrastructure and wildlife	
WG C3.17 Interaction between wildlife and emerging renewable energy sources and associated Insulated Cables	
WG C3.19 Responsible management of the Electric and Magnetic Fields	
WG C3.20 Sustainable Development Goals in the Power Sector	
WG C3.22 Vegetation management in substations	
WG C3.23 Eco-design methods for TSO/DSO under environmental transition	
JWG B1-C3.85 Environmental impact of decommissioning underground and submarine cables	
National CIGRE committee (Environment committee member)	
Environment Community. Member and belongs to WGs	AEC (Spanish Association for Quality)
WG Assets Implementation and Management (AIM), RDIC WG-1 (various SF_6 topics)	ENTSO-E
Working Group: SF_6: Common position, emissions and alternatives gases in HV equipment	ESAM
Whitepaper on reduction of GHG emissions	CEOS Group
SF_6 Voluntary Agreement Monitoring Group	UNESA, AFBEL and MAGRAMA

Working Groups (WG)	Organiser
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)
Spanish Green Growth Group. Various working groups	Spanish Green Growth Group
Climate Change Cluster Circular Economy Action Group	Forética
Working Group 'Spanish Enterprise and Biodiversity Initiative'	Biodiversity Pact
Environment and Sustainability Working Group	Spanish Maritime Cluster
Working Group of the Spanish Energy Sector	Natural Capital Factory

Congresses, forums and informative sessions

Congresses, forums and informative sessions	Organiser
CIGRE e-session 2021	CIGRE
CIGRE Spain 2021 Technical Conference	CIGRE España
Energy transition and biodiversity conservation	AEEIA
Environmental challenges of marine energy projects	AEEIA
Electrification, infrastructure and the future use of the circular economy in the Canary Islands	Association for the Energy Transition
11th Congress on Bird Ringing	SeoBirdlife

7.7.5. 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.

External communication

The corporate website is a communication tool that is developed under criteria of transparency and continuous improvement. Noteworthy in this field, are the following web-spaces that can be found in the 'Natural Environment' subsection of the 'Sustainability' section of Red Eléctrica's corporate website (www.ree.es/en):

- The Map of projects section includes, among other things, 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
- The section and subsections related to energy transition and climate change: https://www.ree.es/en/sustainability/decarbonisation-of-the-economy/energy-transition-and-climate-change
- The section dedicated to electromagnetic fields: https://www.ree.es/en/sustainability/the-natural-environment/electric-and-magnetic-fields

In 2021, the total number of users who visited the environment section of the corporate website was 25,748 (down 7% compared to 2020 (27,681) with a total of 33,699 pages viewed, which represents a decrease of 4% compared to the previous year. (www.ree.es/en).

Additionally, a total of 14 press releases with environmental content and 92 articles were written through the 'red 2030' blog. Furthermore, a special article on biodiversity was published on the web and 60 related tweets have been published.

Lastly, noteworthy is that the Company has published 12 videos related to biodiversity, 15 to climate change/energy efficiency and 5 to the circular economy and the 2030 agenda.

Internal communication

The Company has a corporate intranet '*NuestraRed*, for which data is available regarding the impact of '*NuestraRed* on internal environmental communication:

- News of an environmental nature (includes environmental management, biodiversity, climate change, energy efficiency, sustainable mobility, etc.) published in *NuestraRed* and #SAF:
- 33 news items published in the 'Carousel' (compared to 28 published in 2020).

7.8. Innovation

During 2021, expenditure on innovation of an environmental nature increased to 1.14 million euros). With the collaboration of all the areas involved, the following innovation projects stand out from the point of view of sustainability and the environment (some have already been mentioned in other sections of this EMAS Report):

Sustainable treatment methods for soil and groundwater affected by leaks or spills of dielectric oils or hydrocarbons	The final objective of the project is to provide new specific treatment(s) for the soils affected by the most commonly used pollutants at REE facilities, allowing them to be cleaned up in situ or, if this is not possible, 'on site' (excavated and treated on the site itself) and replacing the techniques used to date with a higher degree of sustainability from an environmental and economic point of view.
Vegeta	This project, based on algorithms for the efficient management of vegetation in the vicinity of electricity infrastructure, seeks to balance forestry conservation with the safety of the facilities, thus optimising the resources earmarked for this project. An algorithm was implemented throughout the national territory and was incorporated into the corporate maintenance management tools. In 2021, tests were carried out on several works to test the suitability and functionality of these developments. Currently, the marketing and sale of the development is underway in collaboration with Elewit.
PRODINT	A system developed by Red Eléctrica for the early detection of forest fires, using the transmission line towers and by means of sensors based on the Internet of Things (IoT) technology, which captures the radiation emitted by the fire and automatically sends warnings to the system operator. This makes it possible to reduce the arrival time of firefighting crews, with a consequent reduction in costs and damage to the environment and personal property. The PRODINT system, which takes advantage of the wide geographical coverage of Red Eléctrica de España's electricity lines and the considerable height of the towers, is proposed as an ideal platform for monitoring the appearance of wildfires in vast areas of critical forested areas. A prototype that has been both lab and field tested is now available and ready for full-scale deployment.
Beed WATCH®	Bseed WATCH® is a comprehensive forest fire risk management tool capable of calculating the risk of fire and its destructive potential up to 10 days in advance. It also has early detection systems, thanks to its temperature, CO and CO_2 sensors, which alert the citizens of the area and local emergency authorities within seconds. In the event of a fire, it provides high-quality information on weather conditions in the area, the location and progress of the fire in real time and control of evacuation routes, which is feely available to the population and those responsible for extinguishing the fire.
Development of a methodology for SF_6 leakage repair in GIS facilities	Project that allows the repair of faults in GIS substations without dismantling the faulty sections and therefore significantly reducing the workload.
SF_6 gas recovery system in indoor GIS	Development that allows the identification of different compounds with high affinity for SF6 whose behaviour and efficacy has been tested in a pilot developed in 2021.
Alternative SF_6 gas for GIS switchgear	The Company is working on the various innovation projects that offer alternatives to SF_6 in GIS switchgear (GIS substations). Two 66 kV cells that use alternative insulating gas were purchased and are installed in mobile generating units in the Canary Islands and is assessing the application of SF_6-free switches for this voltage level.
Sustainable water	Pursues the collection of atmospheric water by airflow cooling condensation techniques to provide water supply in substations.

8. 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 is implemented in accordance with the ISO 31000 standard on risk management principles and guidelines and is of a comprehensive and ongoing nature, with its management being consolidated per business unit, subsidiary and all support areas at corporate level.

Additionally, the Company has a Comprehensive Risk Management Policy (revised and updated in 2021) and a general Procedure for comprehensive risk management, based on the Comprehensive Risk Management Framework COSO (Committee of Sponsoring Organisations of the Treadway Commission) ERM-Enterprise Risk Management-Integrated Framework.

The General Comprehensive Risk Management and Control Procedure regulates the process of identification, analysis, assessment and management control of the relevant risks faced by Red Eléctrica. This process is developed in order to ensure that the different levels of responsibility of the Company are aware of and assess the risks that threaten the strategies and objectives, and that the management of such risks is carried out within the limits of the acceptable risk levels established.

The Company has a taxonomy or classification of risks in order to facilitate a more complete identification of the same and to allow a more detailed analysis. This structure allows the risks identified to be classified into three levels of aggregation (Operational, Financial and Strategic). Within the operational risks, environmental risks associated with in-service assets are include. These risks are mainly related to the environment in which activities are carried out.

The Risk Management System of the Red Eléctrica Group establishes a methodology for determining the level of risk. In this way, all risks identified are classified individually into three categories: high-level, medium-level and low-level.

In 2021, the overall acceptable risk levels for each of the four impact axes (electricity supply, achievement of the strategic plan, reputation and financial loss) were reviewed and updated to align them with the latest revisions of the 2021-2025 Strategic Plan. The overall acceptable risk level that the Group is willing to assume for each of the four axes of impact considered in the Comprehensive Risk Management System is approved by the Board of Directors.

The tables shown on the following page outline the main risks and actions identified from an environmental point of view.

Code	Risks arising from climate change	Main actions for the management of risks
1ESTR09	Climate change: Legal requirements related to Fluorinated Gases (F-Gases)[56]	• 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 management companies. • Development of leak repair methodology. • Renewal of equipment. • Training and accreditation of personnel. • R&D in the search for alternatives to SF6 gas. • Participation in working groups. • Monitoring and participation in regulatory development processes.

Code	Risk of impacts on the natural environment	Main actions for the management of risks
1OPE06	Risk of fires due to lines and in substations	• 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. • Environmental Management System certified in accordance with ISO 14001.
1OPE07	Impact on birdlife due to transmission grid facilities	
1OPE16	Contamination of soils and/or ground, surface or marine waters due to leaks or spills of oils, fuels and hazardous substances	
	Impact on archaeological and ethnological heritage.	
	Delays or stoppages during works due to non-compliance or inadequate environmental management.	

In 2021, the assessment of risks related to the environment and climate change was updated, with no significant changes in their assessment and classification compared to 2020.

During 2021, no operational risk with an impact on the environment materialised.

[56] Monetised risks. The annual financial impact for each of the risks is less than 2% of the Group's results. (The calculation of the impact takes into account the result of the mitigation measures implemented. For example, in the case of physical risks, the financial impact is significantly reduced thanks to insurance policies).

Emerging risks

During 2021, an identification and analysis of potential emerging risks was initiated, understood as those new risks whose origin differs from those traditionally managed, resulting from economic, social, technological, political and environmental transformation and with possible impacts of a special relevance for the organisation, which given their nature are difficult to predict, estimate and assess and their time horizon is uncertain.

This category of risks also refers to those that already exist and have been identified but which may undergo significant changes in the medium and/or long term, either due to their scope or to a considerable change in the consequences they generate.

All these risks resulting from the previous analysis will be assessed and addressed internally on a case-by-case basis during 2022.

Emerging risks: risks associated with climate change

On the other hand, regarding the risks associated with climate change, in 2019 a total of 45 potential risks were identified and assessed taking into account the criteria of exposure, sensitivity and capacity to adapt. Moreover, economic variables and other business indicators are taken into account in this risk assessment process. Additionally, as set out in the recommendations of the Task Force for Climate-Related Financial Disclosures (TCFD), various scenarios, differentiated for physical and transition risks, have been considered.

Scenarios and horizons considered for the assessment of climate risks

- **Physical risks:**
  The projections developed by the State Meteorological Agency (AEMET) have been considered for the most important scenarios of the AR5 of the IPCC (RCP 4.5 and RCP 8.5).[57]
  Horizon: 2030-2050-2070
- **Transition risks:**
  The trend scenario and the objective scenario included in the proposal for an Integrated National Energy and Climate Plan, submitted to the European Commission, are considered.
  Horizon: 2020-2030

The Company has defined and prioritised the most relevant risks for its business and has proceeded to monetise those for which a potential financial impact has been identified (*not all priority risks for the Red Eléctrica Group, given the condition of its regulated activity, necessarily imply* a financial impact for the organisation).

The relevant risks derived from climate change with an impact over a time horizon of one year have been incorporated into the **Corporate Risk Map**, so the same governance model applies to all the risks included within it. This is the case of risk 1A013R03 Climate change: *Legal requirements regarding fluorinated gases*. The process of identifying and evaluating risks associated with climate change is carried out annually.

[57] IPCC Fifth Assessment Report (2014) drawn up by scientists from various countries. RCP 4.5 is a target scenario and RCP 8.5 is a trend scenario contemplating greater changes in climate parameters.

	Relevant risks associated with climate change	Potential impact on the business	Mitigating actions
Physical risks	• Impact on outdoor facilities (electricity lines) due to extreme events (wind). * • Fires beneath the lines and in the vicinity of electricity substations. *	Damage to infrastructure. Increase in maintenance costs. Impact on the electricity supply. Reputational impacts (associated with power outages). Impacts on third parties or the environment (in the case of fire).	- MANINT project, to optimise the management of transmission grid assets. - Projects for the improvement and strengthening of transmission grid facilities. - Tree-felling and pruning back (forestry) plans. *Vegeta* project. - Innovation. PRODINT Project. - Contingency plans. - Insurance policies.
Transition risks	• Claims/grievances due to limitations to renewable production and incidents that may impact the security of supply in the Canary Islands, associated with the noteworthy increase in the share of renewables in the energy mix foreseen in the coming years. (it is foreseen that it will increase from 17% to over 50% in the 2030 horizon.* • Loss of staple generation sources associated with the closure of coal-fired, combined cycle and nuclear power stations.[58]	Increased difficulty in system operation (volatility of production, lack of monitoring…). Increased risk of incidents in system operation that may affect the supply. Increased production constraints and restrictions. Increase in the number of claims/grievances. Impact on reputation.	- Development of system operation tools and the safe integration of renewables (Control Centre of Renewable Energies, CECRE). Adaptation to more demanding monitoring and control requirements. - Development of prediction models regarding renewable generation. - Construction of new transmission lines to evacuate renewable energy. - Strengthening of international interconnections. - Promotion of demand-side management initiatives and smart grids. - Development of large-scale energy storage projects (Chira-Soria pumped-storage hydroelectric power station) and energy storage batteries in non-peninsular territories and in networks at an end user level (innovation projects). - Insurance policies.
	• Difficulties in commissioning the infrastructure needed for the energy transition (mainly linked to the social opposition to this type of infrastructure and the long periods of time needed to process the permits required for its development). * • This same risk is identified and analysed specifically in the case of international interconnections. *	Economic impact due to delays in incorporating the assets into the remuneration model, or total loss of remuneration due to not being able commission them. Increase in the number of claims/grievances. Effect on the Company's reputation (in the case of delays in the development of infrastructure required for the National Energy and Climate Plan).	- Communication plan regarding the transmission gird planning process. - Feasibility study regarding the infrastructure proposed for the transmission grid planning process. - Stakeholder management model related to transmission grid investment projects. - Development of public participation/consultation processes. - INTEGRA project, to facilitate the adequate planning for the supply of services and material needs.

[58] No financial risk for the organisation

	• Risks associated with the regulatory framework established for the construction and management of energy storage facilities in non-peninsular systems. • Remuneration framework associated with adapting the grid infrastructure to the needs arising from climate change.[59] •	Economic loss associated with an unfavourable regulatory framework. Costs associated with adapting infrastructure to the physical conditions resulting from climate change. Increase in costs linked to taxes related to the use of SF6 gas.	- Dialogue with the regulator. - Monitoring and participation in regulatory development processes.
	• Increased legal requirements associated with the use of fluorinated gases (SF_6). *	Increased costs associated with taxes related to the use of SF_6. Operational costs associated with increased requirements related to leakage monitoring and control. Technical difficulties and costs associated with potential restrictions on the use of SF_6.	- Voluntary agreement for the comprehensive management of SF_6 in the electricity industry, between the Ministry of Ecological Transition, equipment manufacturers (AFBEL), UNESA, REE and waste management companies. - Development of leakage repair methodology. - Renewal of equipment. - Training and accreditation of personnel. - R&D in the search for alternatives to SF_6 gas. - Participation in working groups. - Monitoring and participation in regulatory development processes.

Note: risks identified with ***** have been monetised. The annual financial impact for each of the risks is less than 2% of the Group's results. (The calculation of the impact takes into account the result of the mitigation measures implemented. For example, in the case of physical risks, the financial impact is significantly reduced thanks to insurance policies).

[59] No financial risk for the organisation

Risks arising from legal requirements and other requirements

The criminal and anti-bribery compliance system of the Red Eléctrica Group in Spain is in accordance with the provisions of article 31 bis of the Criminal Code and the Circular of the State Attorney General's Office 1/2016 on the criminal liability of legal persons, as well as the UNE 19601 and ISO 37001 standards on criminal and anti-bribery compliance management systems. In accordance with the provisions of the UNE 19601 and ISO 37001 standards on criminal and anti-bribery compliance management systems, respectively, during 2021 the requirement has been met for the organisation's personnel who are particularly exposed (management team), in addition to its governing body, to submit a statement at reasonable intervals confirming compliance with the Criminal and Anti-bribery Policy, incorporated in the Group's Compliance Policy.

One of the regulatory areas that underpins the compliance system is the **natural environment**. 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.

9. Objectives. Annual Environmental Plan

In order to ensure the continuous improvement of its environmental performance and processes, the Red Eléctrica Group annually defines an environmental plan which sets out the objectives derived from the different strategies of the Company and defines specific work actions aimed at minimising the environmental impacts generated by the Company's activity; said actions are linked to the commitments undertaken regarding the requirements established in the environmental policy of the Red Eléctrica Group.

The Environmental Plan includes the **voluntary** actions planned for the current year arising from the Environmental Management of Facilities, as well as those actions derived from the Multi-year Action Plans currently in force, as a result of the commitments undertaken by the Group in the field of Biodiversity and its Commitment to the fight against Climate Change.

All the defined objectives, and therefore the actions/projects identified, are aligned with the Strategic Plan and its 2030 Sustainability Commitment, as well as with the other various strategies and programmes that the Company currently has in force, thus highlighting the growing environmental dimension of the Company and contributing to making progress in the defined courses of action that will help guarantee the success and the achievement of common goals.

The areas of action included in the 2021 Environmental Plan are grouped into three defined and interrelated vectors that correspond to the Company's most relevant areas of environmental activity:

- **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.
- **Biodiversity.**
- **Climate Change.**

Both Biodiversity and Climate Change are also considered by the Company as material aspects and therefore require specific management, mainly to respond to the requirements of different stakeholder groups.

The main challenges for the Company regarding each of the vectors have been identified and the specific targets to be achieved have been defined. These targets are taken as a reference and help establish priorities and define the different tasks or projects to be included in the corresponding environmental plans.

Therefore, the Environmental Plan includes the actions derived from the approved Biodiversity and Climate Change action plans and the courses of action that have been defined to achieve the goals identified in relation to the Environmental Management vector.

The overall fulfilment of the 2021 Environmental Plan stood at 86% compared to 75.5% in 2020.

Regarding the degree of fulfilment, depending on the relevance of the tasks (classified as very relevant/high relevance/moderate relevance according to an internal methodology based on a series of parameters), it can be concluded that **75% of the very relevant tasks and 87% of those of high relevance have been fulfilled.**

Only 1.1% of the tasks have been cancelled/dismissed. The rest of the tasks could not start during 2021 (3.2%) or they have not reached the degree of achievement necessary to be considered as fulfilled (9.7%).

It is important to highlight that all these actions, as well as the rest of the actions not fulfilled in the 2021 Annual Plan, without counting those that have been cancelled or dismissed, have been carried over and included in the new Environmental Plan for 2022.

Some of the most relevant tasks carried out by Red Eléctrica in each of the vectors are highlighted in the following table:

Vector	Task	Results obtained
A. Environmental management of facilities	Implementation of the SF_6 data management process in SAP.	SF_6 data management process 100% implemented in SAP. A user guide is available for the tool used in the training sessions. Three training sessions have been held for specialists.
	Update of the substation environmental risk assessment (based on the assessment carried out in 2017).	The environmental risk assessment has been updated, redefining the internal risk levels of the existing substations. All actions carried out on these substations that could have an impact on soil have been taken into consideration, including the action plan derived from the risk assessment carried out in 2017. In addition, the internal risk of the new substations commissioned since that date has been assessed and defined.
	Implementation of an Emergency Intervention Service 24/7: Implementation of the Service, definition of an action protocol and dissemination actions. Mock spillage drills.	A protocol for action in the event of accidental spillage has been defined and a mock drill has been carried out at the Don Rodrigo substation (Southern Regional Office). As a result of this drill the need has been detected, among other things, to update the means of containment and to purchase inflatable stoppers.
	Environmental Risk Reduction for Oil-Filled Cables: Contingency plans for Oil-Filled land-based cables, mock drill and establishing a risk elimination procedure.	An Oil-Filled cable contingency drill has been carried out on the 220 kV Barcelona-Guixeres line. Nine contingency plans were drawn up for each of the Oil-Filled cables in service and a procedure for removing insulating fluid from such cables by purging through the injection of hydrogel (procedure for eliminating environmental risk in Oil-Filled cables).
	Zero Waste to Landfill: Waste to energy disposal of 100% of hazardous and non-hazardous waste (except organic waste) that can be recovered according to regulations. An Action Plan for Red Eléctrica de España has been defined.	The Zero Waste to Landfill actions and requirements have been included in all tenders for 2021 (North-eastern Regional Office and regarding switchgear on the Canary Islands) and will be included in tenders planned for 2022 (other regional offices). In addition, the action of reviewing the Waste Management Contracts prior to any waste being handled has been defined in order to verify that both management and documentation are correct.
B. Biodiversity	Natural Capital and Biodiversity: Roadmap for 2022-2027-2030. Have a proposed Biodiversity Roadmap drafted with a focus on natural capital.	A biodiversity roadmap has been designed, which will require the calculation of a baseline (during 2022) in order to be able to specify (technically, eco-nomically, etc.) the different actions proposed, and which will allow the Company to guarantee a net positive impact on natural capital/biodiversity.
	Offsetting action for felling works in the construction of new facilities. Offsetting (50%) of the felled area of native trees with investment projects in 2018 and 2019. Task 1: Altura Forest (Castellón). Planting of 46 ha in 2021. Task 2: Vizcaya Forest. Signing of an agreement for the recovery of 40-50 ha.	The Red Eléctrica Forest offsetting actions (through the planting of trees) for said project have been completed. In the end, 31.5 hectares were planted. There were areas that were in a better state of conservation than expected and these did not require replanting. Instead, an arboretum was built. The agreement for offsetting of felling works (new forest) in Vizcaya has been drawn up and signed by Red Eléctrica de España, the Provincial Government of Vizcaya, the Mayor of Garai and the Mayor of Alonsotegui.

	Implementation of the multiannual line marking plan 2017-2023 (line marking corresponding to 2021): 50 km of critical spans marked.	71.1% of the critical priority areas are already marked. 54.1 km of critical lines have been marked during 2021.
C. Climate Change	2022-2025 Climate Change Action Plan. Propose and implement measures to reduce CO_2 emissions in accordance with the policies of the Red Eléctrica Group.	The newly drafted 2022-2030 Climate Change Action Plan was approved by the Executive Committee, the Sustainability Committee and submitted to the Board of Directors.
	Intervention at the Compostilla substation to seal SF_6 leaks (Repair of compartment VVB220-JBP1A-TT-4, phase 4).	Two compartments repaired with the third compartment to be repaired by 2022 (LIT400-CRIL2-0-8902-3-0, phase 0).

In 2021, the degree of fulfilment of the goals has been analysed with a fulfilment of 67%, furthermore, the overall degree of fulfilment of the Plan for the 2017-2021 period, registered an overall fulfilment of 67.4%.

It can be seen that most of the goals have been met or show a positive trend with respect to their situation in previous years.

10. Accidents with Environmental Impacts

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 impact in the last three years is reflected in the following table:

Incidents reported	2019		2020		2021	
	Accident	Incident	Accident	Incident	Accident	Incident
Construction work activities	1	28	2	19	3	20
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 spills of oil due to error in the filling of transformers	0	0	0	2	0	0
Leaks and spills of oil and hydrocarbons due to minor breakdowns during the use of machinery in construction works	0	28	1	15	3	19
Leaks and spills of hazardous substance due to explosion of equipment	0	0	0	0	0	0
Leaks and spills of hazardous substance	0	0	0	2	0	1
SF_6 leaks	0	0	0	0	0	0
Effects on flora	1	0	1	0	0	0
Maintenance activities[60]	9	22	13	18	10	10
Fires due to fault in lines	2	0	2	0	2	0
Fires due to fault in substations	0	0	0	0	0	0
Towers brought down due to severe weather conditions	0	0	1	0	0	0
Leaks and spills of oil and hydrocarbons during the use and maintenance of substation equipment	4	20	7	17	4	9
Leaks and spills of oil due to breakdown of machinery	0	0	0	0	0	0
Oil **leaks** in lines	2	0	1	0	1	0
Floods	0	0	0	0	0	0
SF_6 leaks due to explosion of equipment or other accidents	1	0	2	0	3	0
Leaks and spills of hazardous substances	0	2	0	0	0	1
Effects on flora	0	0	0	1	0	0

A new category has been identified in order to improve the prevention of accidents and the management of environmental risks associated with accidental events. This category has been called *'Near Accident' which is defined in the internal regulations as: "that event that has the potential to cause an accident or incident of an environmental*

[60] Bird collisions with electricity lines in service and under construction are dealt with in a separate table.

nature without it actually materialising. It does not generate damage, but it has the potential to generate it". In 2021, no near accidents were registered.

- **Construction**

In the construction phase, there were 3 accidents with environmental consequences during 2021 and 20 incidents, representing 66% of the total environmental incidents (construction + maintenance) during the year. Nearly all the incidents correspond to leaks and spills of oils and hydrocarbons, the main causes being the rupture of flexible hoses or small leaks and drips from the machinery used in the construction of electricity lines and substations.

The most significant accident occurred in the enlargement of the Don Rodrigo substation when a lorry ran over a metal cover of a cable channel, lifting it up and perforating the fuel tank, causing an accidental spill of diesel oil (approximately 400 litres) onto the surrounding road and land.

Minor accidents occurred in the construction of the 400 kV Güeñes-Itxaso line when a hydraulic hose broke during the transport of a drilling machine, causing oil to spill onto the surface of the access road to tower 109. The other occurred in the construction of the 400 kV Carmonita substation when a piece of equipment containing oil (capacitor transformer) broke when it was hit by a crane, causing it to fall to the ground and spill all the oil it contained.

- **Maintenance**

In the maintenance phase there were 10 accidents and 10 incidents (representing 34% of the total).

The accidents were the following: three due to SF_6 leaks (30%), four due to leaks and spills of oils and hydrocarbons in substations (40%), one oil leak in a line (10%) and two fires due to line failure or incidents associated with the line (20%).

Two of the accidents were rated as major (20%), five as significant (50%), two as low relevance (20%) and one as minor (10%)[61].

There were two **major** accidents involving an accidental spillage from a submarine cable and another one that led to a fire:

- 400 kV Tarifa-Fardioua submarine cable (ESMA1-cable 4): Spill of 3,500 litres of oil due to the breakage of the outer sheath of the 400 kV Tarifa-Fardioua underwater cable (cable 4), located in Moroccan territorial waters, some 22.5 kilometres off the Spanish coast. The fault has been sealed. The strong currents in the area have made it impossible to detect oil on the surface and to cordon off the affected area. The area in which the spillage occurred is not catalogued with any type of environmental protection, although UNESCO considers the area of the Strait of Gibraltar as a Mediterranean Intercontinental Biosphere Reserve.
- Fire caused by the breakage of the conductor in span 157-158 of the 220 kV Itxaso-Orcoyen 1 line due a tree next to the line falling on the conductor. As a result, a small fire was generated, affecting an area of about 100 m^2 of grassland (herbaceous species) which was controlled without the need to use any type of extinguishing equipment. Spans 157-158 are located outside the boundaries of the Aralar Natural Park but in an area declared as protected (RN200), specifically the Special Area of Conservation: ES2200020 Sierra de Aralar.

Of those accidents classified as relevant, three were related to oil spills, one was due to a SF_6 gas leak and one to the initial outbreak of a fire:

- Spillage of 50 litres of oil from the explosion of a double-switch circuit breaker, affecting a surface area of 50 m^2 of the ground in the substation. The clean-up work has been completed (Tordesillas substation).
- Spillage of 500 litres of oil due to the failure of an oil-filled bushing located on the tower where the line passes from overhead to underground, affecting 40 m^2 of ground, clean-up work was completed (220 kV Albarellos-Castrelo line).

[61] Classification of accidents based on their severity according to the following scale 1 to 5 (minor-severe).

- Spillage of 70,000 litres of oil due to a crack generated by the deformation of the tank containing the oil from a power transformer. Practically all of the oil was contained in the collection tank, with only an area of 9 m^2 of the substation floor being affected. The cleaning up of both the collection tank and the floor was completed (Aguayo substation).
- Leakage of 10.75 kg of SF_6. Accident associated with a service contract with General Electric. A gas leak was detected in the SF_6 gas bottle from General Electric. After refilling the compartments, it was found that 10.75 kg of gas had leaked (Gramanet substation).
- Initial outbreak of fire. This occurred while carrying out land clearing works as part of the massive felling works in the security corridor of the 220 kV Regoelle-Vimianzo line, specifically regarding span 13-14. The swift action of the initial responders meant it was possible to control and extinguish the fire quickly. At the time the work was being carried out, the Daily Forest Fire Danger Index allowed normal work to be carried out, while ensuring extreme precautions were observed at all times.

There were two **minor accidents** corresponding to a small oil spill and a leakage of SF_6 gas:

- Spillage of 6 litres of oil due to the breakage of several outdoor terminals affecting a surface area of 9 m^2. Cleaning of the affected area was carried out. (Coslada substation).
- Leakage of 95.75 kg of SF_6. Rupture of the overpressure seal in the compartment in question of circuit breaker 522-12 phase 0, the SF_6 gas in the compartment escaped into the atmosphere (Fausita substation).

No serious accidents occurred in 2021.

In the case of incidents related to maintenance, the situation is very similar to that of construction. Of the 10 incidents, 9 correspond to oil and hydrocarbon leaks and spills during the use and maintenance of substation equipment, and the remaining one is related to the spillage of a hazardous substance.

Birdlife accidents

With regard to accidents related to birdlife in 2021, 37 deaths of bird species catalogued as vulnerable and/or endangered according to the regional catalogue, national catalogue and/or IUCN Red List were detected.

Threatened species affected	No. of birds affected
Egyptian vulture (*Neophron percnopterus*) [62] [63]	1
Bonelli's eagle (*Aquila fasciata*) [64]	1
Great bustard (*Otis tarda*) [65]	4
Houbara bustard (*Chlamydotis undulata*) [66] [67]	2
Black vulture (*Aegypius monachus*) [68]	1
Red kite (*Milvus milvus*) [69]	2
Scopoli's shearwater (*Calonectris diomedea*) [70]	24
European turtle dove (*Streptopelia turtur*) [71]	2
Total	**37**

[62] Vulnerable species according to the national catalogue of endangered species.
[63] Endangered species according to the IUCN Red List.
[64] Vulnerable species according to the national catalogue of endangered species.
[65] Vulnerable species according to the IUCN Red List.
[66] Vulnerable species according to the IUCN Red List.
[67] Species in danger of extinction according to the national catalogue of endangered species.
[68] Vulnerable species according to the national catalogue of endangered species.
[69] Species in danger of extinction according to the national catalogue of endangered species.
[70] Vulnerable species according to the national catalogue of endangered species.
[71] Vulnerable species according to the IUCN Red List.

11. Legal Compliance Assessment

In the case of legal, regulatory and other mandatory requirements, the Company assumes as a commitment, as part of the Environmental Policy the Red Eléctrica Group, to comply with the environmental legislation, regulations and other mandatory requirements applicable to the activities it carries out.

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, as well as the voluntary commitments that the organisation subscribes to (pacts, agreements, etc.)

For the **identification and evaluation of the legal environmental requirements** that apply to the different phases involved in the development and implementation of transmission grid infrastructure, in their respective scopes of applicability: European, national, regional and local, the following process is put in place:

- **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 applicable. 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. In addition, in those works where supervision needs to be both intensive and permanent in nature, monthly reports are drafted to monitor the work, which include the evaluation of the legal requirements that apply to the construction activity of the facility being supervised, ensuring legal compliance and the application of corrective and preventive measures in the course of the activity.
- **Maintenance of infrastructure/facilities**: during the maintenance of infrastructure/facilities, apart from the applicable regulations, environmental requirements derived from the Environmental Monitoring Programme 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 defined 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 are established or corrective actions are adopted that allow the activities to be adapted to that set out in the legal and regulatory requirements.

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.

The activities carried out by Red Eléctrica comply with the applicable environmental requirements of a European, national, regional and local nature, as well as the voluntary requirements undertaken.

Those possible practices considered inadequate by the Public Administration and that result in administrative proceedings (claims/cases) that are granted leave to be heard, are settled in all cases with administrative sanctions of a low monetary value.

The table on the following page details the type of infringement committed and the total cost of the same (as a result of the administrative proceedings **already settled** with a sanction) in the period **2015-2021** (the figures shown in red correspond to administrative proceedings resolved in 2021).

	2015		2016		2017		2018		2019		2020		2021	
Type of infringement[72]	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[73]	2	811	2	750.76					2[74]	370.46			1[75]	90.15
Unauthorised felling and pruning	2	200	2	7,060			2	1,451	2	1,667.04	1	10,800		
Felling, pruning and clearing without preventive measures														
Fire due to line discharge														
Waterway obstruction/works in areas without authorisation														
Activities that could contaminate soils														
Accumulation of biomass waste														
Fauna in captivity w/o authorisation														
Works in protected areas without authorisation									1	4,800				
Unauthorised works									1[76]	240,401*				
Opening up of a forest trail without authorisation	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	30,050.62	1	30,050.62										
Incorrect waste management	1	2,500												
Total No. of claims/cases/€	**8**	**36,561.98**	**5**	**37,861.38**			**2**	**1,451**	**6**	**247,238.50***	**1**	**10,800**	**1**	**90.15**

[72] This data is reviewed annually to include resolved cases that were initiated in previous years. Therefore, the data affected by claims/cases resolved in 2021 are marked in red.

[73] Risk of fire due to the lack of maintenance of vegetation or the abandonment of material.

* Claim/Case appealed in Contentious-Administrative Proceedings.

[74] PA-2020/35: 100€

[75] PA-2021/41

[76] PA-2019/76

12. Environmental Expenditure/Cost

In 2021, Red Eléctrica has made environmental investments totalling **3,338,603.91 euros** in new facilities, equating to 0.85% of the total amount invested in the transmission grid (393 million euros). 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 2021 expenditure totalling **22,686,787.68** euros was made in the improvement and protection of the environment, representing 2.68% of the total operating costs.

	2019	2020	2021
Investment	**1,740,988.77**	**4,912,976.00**	**3,338,603.91**
Engineering and construction of facilities[77]	1,740,988.77	4,912,976.00	3,338,603.91
Expenditure	**25,806,074.64**	**23,287,059.71**	**22,686,787.68**
Development of methodology and Systems[78]	137,976.75	199,109.00	180,677.00
Environmental studies and analyses	130,841.53	78,621.94	143,965.15
Environmental actions in facilities in service	22,901,500.30	19,916,317.10	19,153,184.58
Prevention of contamination[79]	1,960,966.65	1,302,741.16	1,353,148.04
Protection of biodiversity, landscape[80]	19,536,227.88	17,647,216.56	16,692,115.53
Climate change[81]	1,026,398.77	600,407.47	644,723.84
Waste reduction and management[82]	377,907.00	365,951.91	463,197.17
Research and development [83]	886,748.00	1,531,876.50	1,144,538.64
Training and communication	233,413.84	99,221.73	352,437.06
Environmental training and awareness programmes	54,094.84	16,064.73	30,361.06
Communication[84]	179,319.00	83,157.00	322,076
Environmental taxes and levies[85]	49,921.26	62,802.43	109,153.28
Cost of personnel dedicated to activities of an environmental nature	1,465,673.00	1,399,111.01	1,602,831.97
	27,547,063	**28,200,035.71**	**26,025,391.59**

[77] 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.

[78] Certifications, audits, environmental consultancy.

[79] Adaptation of facilities, repair of equipment, analysis, etc.

[80] 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.

[81] The Red Eléctrica Forest, offsetting of emissions, support for calculating the CO_2 footprint, verification of the Carbon Footprint, energy efficiency measures, climate change action plan and sustainable mobility (fleet of electric vehicles).

[82] Waste management of facilities and an office waste management service.

[83] R&D projects of an environmental nature; examples: sustainable transformer, PRODINT, VEGETA, towers unique designs, sustainable water, SF_6 sensors, SF_6 leakage repair methodology in substations with Gas Insulated Switchgear, etc.

[84] Publications, videos and dissemination of other informative materials of an environmental nature.

[85] Municipal taxes on waste, water, occupation of public utility woodland and felling works, ...

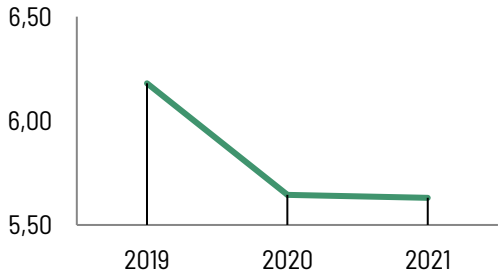
The following table shows the evolution of the environmental expenditure and investments in environmental aspects as a percentage of the total expenditure, and the investment in the transmission grid, respectively:

Percentage of investment and expenditure on the Environment		2019	2020	2021
Percentage of investment on the environment	Environmental investment / total investment in the transmission grid	0.44	1.28	**0.85**
Percentage of expenditure on the environment	Environmental expenditure / total operating costs	2.79	2.80	**2.68**

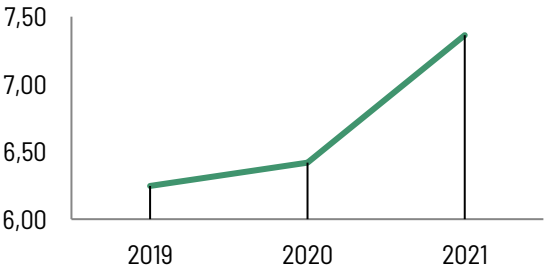
Key indicators

Energy

Electricity consumption at the Head Office			
A	MWh consumed		
B	No. employees at Head Office[86]		
Indicator	A/B		
Year	2019	2020	2021
A	7,367	6,323	7,320
B	1,305	1,123	1,068
Indicator	5.84	5.63	**6.85**

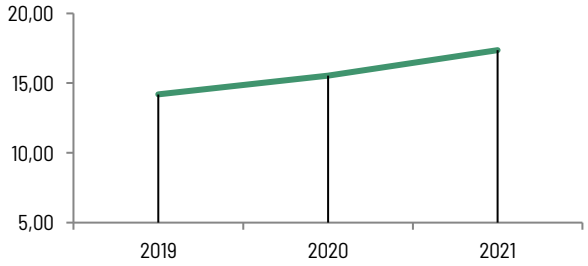


Red Eléctrica electricity consumption			
A	MWh consumed [87] [88]		
B	No. employees Red Eléctrica[89]		
Indicator	A/B		
Year	2019	2020	2021
A	13,516.96	12,569.77	14,195.71
B	2,164	1,958	1,928
Indicator	6.25	6.42	**7.36**



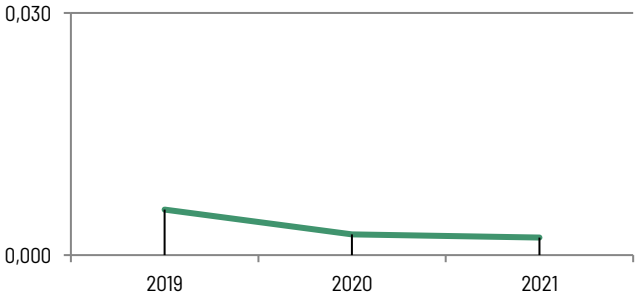
[86] La Moraleja and Albatros buildings. Includes interns and collaborators, as well as personnel contracted from temporary employment agencies, as they also consume electricity.
[87] Includes consumption of the Head Office, the electricity control centres (centres that operate 24/7 and have special energy consumption), work centres (regional offices/work centres and maintenance centres). The consumption of electric vehicles has also been included. (14,055.399.2 MWh for work centres and 140,313 MWh for electric vehicles).
[88] 80.6% of the energy consumed comes from renewable sources (Renewable Energy Guarantee of Origin (REGO) certificates).
[89] For the calculation, all personnel working in the work centres and corporate buildings (Group employees, interns and collaborators, as well as personnel contracted from temporary employment agencies) are taken into account.

Fuel consumption [90]			
A	GJ (Gigajoules) consumed[91]		
B	Total No. of employees[92]		
Indicator[93]	A/B		
Year	2019	2020	2021
A	25,014	27,272	31,276
B	1,762	1,755	1,801
Indicator	14.20	15.54	**17.37**



Materials

Paper consumption			
A	Tonnes (t) consumed		
B	Total No. of employees[94]		
Indicator	A/B		
Year	2019	2020	2021
A	12.200	5.056	4.192
B	2,164	1,958	1,928
Indicator	0.006	0.003	**0.002**

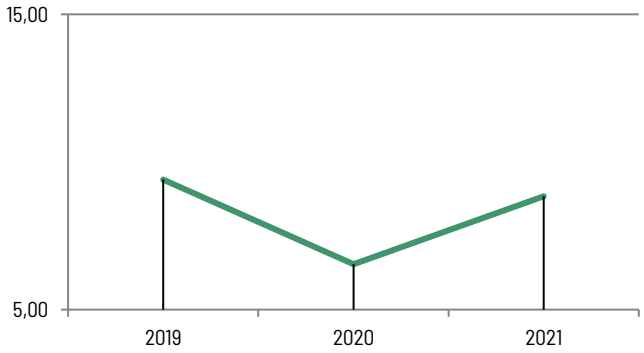


The activity of Red Eléctrica (electricity transmission and electricity system operation) is not one that consumes materials/raw materials in a direct manner. The possible consumption of materials is related to the use and maintenance of equipment/apparatus acquired from different manufacturers.
For this reason, only the consumption of paper used in office tasks is considered as possible material consumption DIRECTLY linked to the Company's activity.

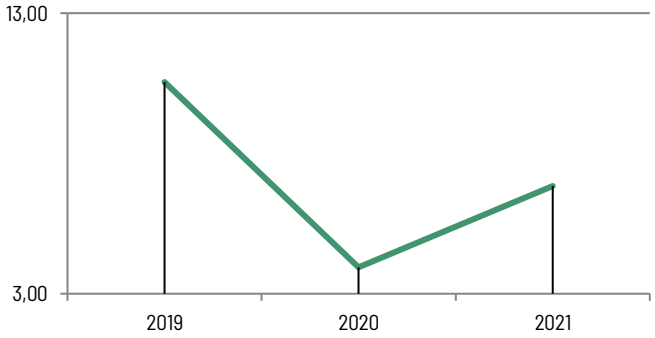
[90] Fuel consumed by Red Eléctrica vehicles (fleet, shared leasing and management/executive vehicles and the total amount of fuel consumed by mobile off-grid generator units).
[91] 1 kWh = 36 * 10^6 joules; 1 litre of diesel = 37 * 10^6 joules; 1litre of gasoline = 34 * 10^6, 1 litre of gas oil = 37 * 10^6 joules; 1 litre of biodiesel = 32.79 * 10^6 joules; 1 litre of LPG = 25.7 * 10^6 joules
[92] Number of employees on the workforce that can use vehicles (without taking into account interns or collaborators).
[93] Valor de REE
[94] Includes interns and collaborators, as well as personnel contracted from temporary employment agencies, as they may also consume paper.

Water

Total water consumption			
A	m^3 consumed		
B	Total No. of employees[95]		
Indicator	A/B		
Year	2019	2020	2021
A	20,347	12,802	17,045[96]
B	2,164	1,958	1,928
Indicator	**9.40**	**6.54**	**8.84**[97]

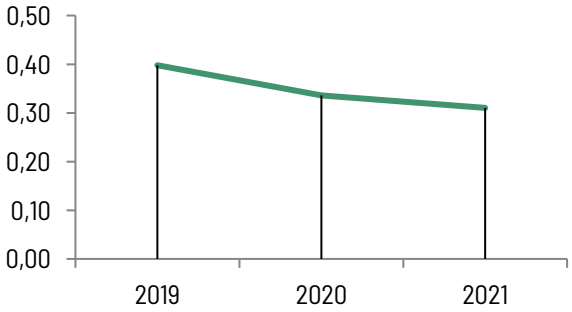


Water consumption at the Head Office			
A	m^3 consumed		
B	Total employees at Head office[98]		
Indicator	A/B		
Year	2019	2020	2021
A	10,196	3,217	7,305[99]
B	967	816	1,680
Indicator	10.54	3.94	**6.84**



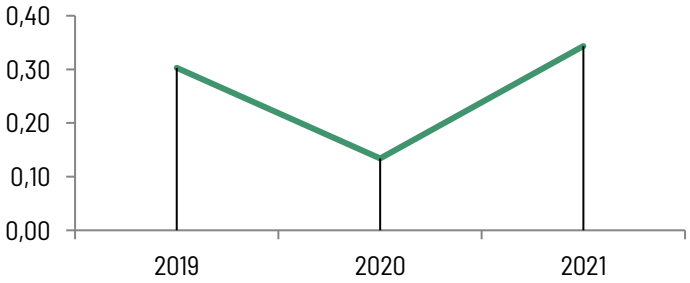
Waste

Non-hazardous waste			
A	Tonnes (t) of non-hazardous waste generated		
B	Revenue (millions of euros)		
Indicator	A/B		
Year	2019	2020	2021
A	718.986	564.118	520.567
B	1,807.0	1,668.3	1,677,5
Indicator	0.40	0.34	**0.31**



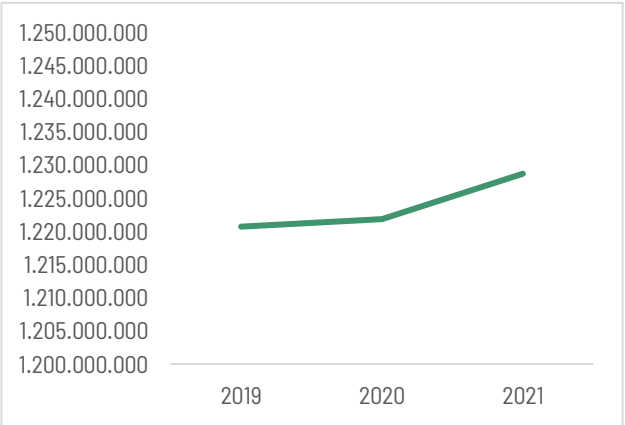
[95] Taking into account all the personnel that work in the various work centres: Group employees, interns and collaborators, as well as personnel contracted from temporary employment agencies.
[96] With a degree of coverage of 82.9% in terms of personnel (taking into account all personnel working in the various work centres: Group employees, interns and collaborators, as well as personnel contracted from temporary employment agencies). The figure is not available for some centres, mainly those not owned by the Company (rented/leased buildings).
[97] Water consumption per employee is **9.03** m^3/ for all water consumers, taking into account only the sum of consumption in buildings/centres where there are staff. The figure shown (8.84 m3/person) shows the consumption counting buildings with consumption without persons and counting persons in buildings where there is no data recorded regarding consumption.
[98] The 'La Moraleja' buildings including interns and collaborators, as well as personnel contracted from temporary employment agencies, as they are considered water consumers. The Albatross building has not been included.
[99] Consumption of the La Moraleja and Albatros buildings is included for 2021. In previous years, consumption only included the La Moraleja building.

Hazardous waste			
A	Tonnes (t) of hazardous waste generated		
B	Revenue (millions of euros)		
Indicator	A/B		
Year	2019	2020	2021
A	547.100	224.843	576.166[100]
B	1,807.0	1,678	1,677.5[101]
Indicator	0.30	0.13	**0.34**



Land occupation in relation to biodiversity

Biodiversidad: Uso total del suelo [102]			
A	Surface area occupied by LINES[103] (m^2)		
B	Surface area occupied by SUBSTATIONS[104] (m^2)		
TOTAL[105]	Total land occupation (m^2)		
	Facilities		
Year	2019	2020	2021
A	1,210,466,383	1,211,410,000	1,218,105,873
B	10,229,733	10,400,000	10,566,635
TOTAL	1,220,696,116	1,221,810,000	**1,228,672,508**



[100] The amount of waste generated has increased compared to the amount recorded in 2020. In the case of REE, there has been an increase of 351t of hazardous waste (576t managed in 2021) and a reduction of 44t of non-hazardous waste (520t in 2021). The increase is due to the return to normal/regular maintenance actions and renovation and improvement projects, thus showing waste generation figures similar to those registered in the pre-pandemic period (2019).

[101] Non-adjusted data. The value for 2020 was amended to the non-adjusted figure and the indicator was recalculated.

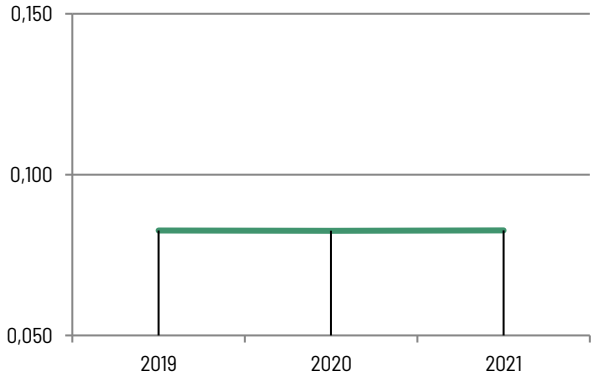
[102] The most up-to-date database published by MITERD is used to calculate the indicators. The mapping of in-service facilities is improved and updated annually, from which some variations can be derived in the calculations not related to the increase or decrease in the number of facilities.

[103] Surface area occupied by electricity lines: The area occupied by the lines has been calculated assuming an occupation of 20 metres on each side of the line. It is necessary to take into account that the occupation is overhead; there is only real occupation in the case of the towers. The area occupied by the submarine cables has been estimated at 1 metre on each side of the line.

[104] Actual area occupied by the complete set of electricity transmission substations calculated to include the safety perimeter around each one of the substations.

[105] The land occupied by corporate office buildings is not included as it is not considered relevant for the calculation of total land occupation. Of the 11 corporate buildings, only 5 of them (La Moraleja Head Office, Tres Cantos CAMPUS, Tres Cantos 1- CECORE, North-eastern regional office and Canary Islands-VEGUETA regional office) occupy land. The rest is floor space in office blocks that are owned or rented in buildings shared with other companies and where the building is not entirely owned by Red Eléctrica. .

Biodiversity: % occupation of Red Natura land[106]			
A	Surface area in Natura 2000 Network occupied by facilities[107] (m^2)		
B	Total surface area of Natura 2000 Network (m^2)[108]		
Indicator	A/B x 100		
	Facilities		
Year	2019	2020	2021
A	$184.811*10^6$	$184.580*10^6$	$184.580*10^6$
B	$223.682*10^7$	$223.682*10^7$	$223.682*10^7$
Indicator	0.083	0.083	**0.083**



As for the rest of the land occupation indicators, the following should be mentioned:

- *Total sealed area*

  In the case of transmission lines (*44,687 kilometres of circuit line with a total of 82,434 towers distributed throughout the Spanish mainland, Balearic Islands and Canary Islands*), the actual sealed area would be limited to the surface area occupied by the four truncated cone-shaped concrete footings of the towers used to carry the overhead lines (1.5-2 m^2 maximum occupation per footing). In the case of underground or submarine lines, we cannot consider these as sealed areas, but rather as areas 'occupied' by the cables themselves underground throughout their route.

  In the case of substations (705 substations in service in 2021), the areas that can be considered as truly sealed within the enclosed area of the facility depend on several factors. The main factor is the type of substation: AIS (Air Insulated Switchgear) or GIS (Gas Insulated Switchgear). In addition, in the case of AIS substations (normally outdoors) there are different conditioning factors that determine the actual sealed surface area in each one of them, which will depend on the number of asphalted or concreted access routes; the greater or lesser presence of telecommunications shelters, relay shelters; the presence or absence of a control or work centre, warehouse-workshop, waste shelters, hard-standing areas for waste, etc.

  Therefore, a case-by-case analysis would be necessary, which in turn would require a very high number of condition factors to be considered, in order to obtain a value regarding the **total sealed area,** without such a result being relevant, or at least indicative, for the assessment of actual environmental performance.

  Due to all the aforementioned reasons, Red Eléctrica has opted to not consider the calculation necessary as it is not a basic indicator, nor is it related to the Company's activity or the possible impact of the Company on the environment.

[106] The most up-to-date database published by MITERD is used to calculate the indicators. The mapping of in-service facilities is improved and updated annually, which may lead to some variations in the calculations that are not related to the increase or decrease of land occupied by facilities.

[107] Surface area occupied by lines and substations: The surface area of lines has been calculated assuming an occupation of 20m on each side of the line (total occupation of 40 metres). It is necessary to keep in mind that the occupation is overhead; there is only actual occupation in the case of the towers where each tower occupies approximately 8 to 10 m^2. The surface area occupied by submarine cables has been estimated at 0.5 metres on each side of the line (total of 1 metre).

[108] Natura 2000 Network includes: SCIs (Sites of Community Importance) and SPAs (Special Protection Areas).

- *Total nature-oriented area on site/Total nature-oriented area off site*

  With regard to nature-oriented areas, understood as those elements that promote biodiversity such as 'green' roofs, plant-covered façades, landscaping with native species, insectary plants, restoration of natural areas, etc., for the time being, the Company does not have any nature-oriented areas of this type, except for a small-landscaped roof garden in the Tres Cantos 1-CECORE corporate building (Tres Cantos - Madrid, Spain).

  Nevertheless, Red Eléctrica participate in an EU LIFE project called BooGI-BOP (https://www. https://www.biodiversity-premises.eu/en/eu-life-project.html). This initiative seeks to incorporate green spaces in urban and industrial environments into the network of green corridors by promoting the design and management of business and industrial environments taking into account biodiversity and nature.

  Biodiversity-oriented design (BOP) is a practical approach that contributes to the protection of biodiversity, especially in densely populated regions. BOP provides solutions for shaping permanent or temporary habitats for local fauna and flora and contributes to the creation of biological corridors or green infrastructure. BOP enhances site functionality in a variety of ways and offers good opportunities to raise awareness and actively involve employees in improving biodiversity, enhancing the working environment and increasing the employee's pride of belonging and raising their awareness regarding the Company's values in this field.

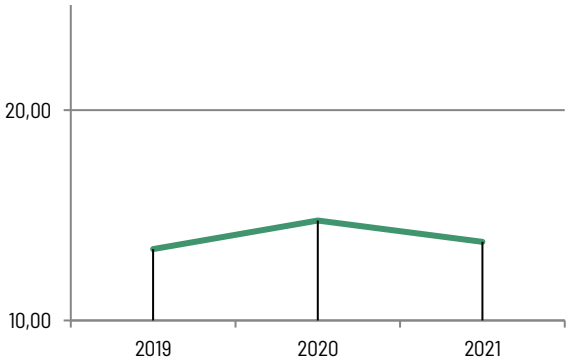
  This design concept gives Red Eléctrica the opportunity to showcase the potential of substations and corporate buildings in this aspect. Thus, in 2019, in the San Sebastián de los Reyes substation, an initial assessment of the situation of spaces was carried out and an adaptation proposal was drawn up. In addition, in the work centres of the Head office in the La Moraleja area of Madrid and in the CAMPUS in Tres Cantos, an initial assessment of the space has been carried out and an adaptation proposal is already available, which will be evaluated internally. Both proposals will be implemented through pilot projects over the next few years.

  In addition, Red Eléctrica participated in a pilot experience carried out jointly with the CSIC and the regional government of Andalusia through the project called *Biotransporte* which considered power lines and their supports as biological corridors or biodiversity islands. This project analysed the viability of using power towers as stepping-stones or as hotspots for biodiversity. The results obtained were very satisfactory and showed an increase in the abundance and biodiversity of birdlife as well as in the number of micro mammals and invertebrates (7 out of 8 pollinators). In a subsequent internal analysis, this type of action was considered as an initiative that favoured the connection of around 60% of the spaces of the 2020 Natura Network, with many species of different groups would benefit directly, as well as many others indirectly by increasing the biodiversity of these areas. The article 'Transporting Biodiversity Using Transmission Power Lines as Stepping-Stones?' (Diversity 2020, 12, 439; doi:10.3390/d12110439) related with the results obtained through this case-study was published (www.mdpi.com/journal/diversity) and in 2021 it was publicised through interviews and videos regarding the project.

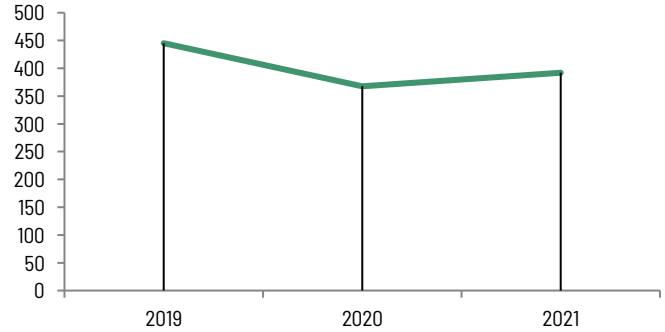
  Lastly, Red Eléctrica collaborates with the Autonomous University of Barcelona, with the aim of carrying out a study on biodiversity associated with electricity lines and their role as a reservoir of biodiversity in open areas. A bibliographic analysis and monitoring of floral density, abundance of pollinators and abundance and diversity of diurnal butterflies was carried out. With the results obtained so far from the monitoring of floral density, abundance of pollinators, abundance and diversity of diurnal butterflies and indirect sampling of macrofauna, it can be understood that electricity lines act as a reservoir of biodiversity in open spaces where the adjacent habitat is of a closed-canopy type area (areas under electricity power lines that has forestry management) and as a refuge for fauna where the adjacent habitat is impacted by anthropogenic actions.

Emissions

Direct emissions of greenhouse gases (SCOPE1) + Emissions from electricity consumption (SCOPE 2 without losses)[109]			
A	t CO_2 eq. SCOPE 1 + Emissions from electricity consumption		
B	Revenue (millions of euros)		
Indicator	A/B		
Year	2019	2020	2021
A	24,201.00	24,752.78	23,054.54
B	1,807.0	1,678.3	1.677.5[110]
Indicator	13.39	14.75	**13.74**

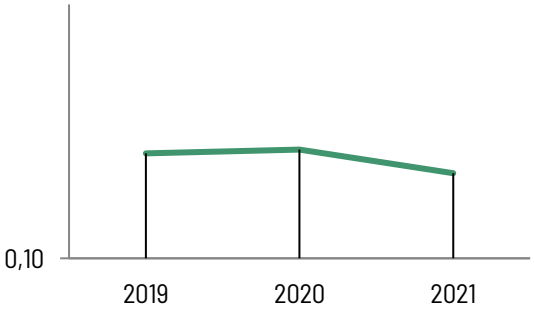


Emissions SCOPE 1 + SCOPE 2 including transmission grid losses[111]			
A	tCO_2eq (SCOPE 1 + SCOPE 2)		
B	Revenue (millions of euros)		
Indicator	A/B		
Year	2019	2020	2021
A	804,479	616,831	657,275
B	1,807.0	1,678.3	1,677.5[112]
Indicator	445	368	**392**



[109] Emissions of Scope 1 and 2 (not including transmission grid losses). Red Eléctrica considers it relevant to monitor this indicator, without including transmission grid losses (as it is not possible to act on them).
[110] Non-adjusted revenue data. The value for 2020 was amended to the non-adjusted revenue figure and the indicator recalculated.
[111] The emissions associated with the transmission grid losses, in the same way as for the emissions associated with the consumption of electricity, do not occur during the activities of Red Eléctrica as they take place at the various electricity generation points. For the calculation of these emissions, the emission factors corresponding to each system (Spanish mainland, Balearic Islands or Canary Islands) are calculated by Red Eléctrica based on the annual generation balance. The increase in emissions in 2021 is mainly due to the recovery of the demand and increased transmission grid losses.
[112] Non-adjusted revenue data. The value for 2020 was amended to the non-adjusted revenue figure and the indicator was recalculated.

% SF_6 emissions[113]			
A	t SF_6 emitted		
B	t SF_6 installed[114]		
Indicator	A/B*100		
Year	2019	2020	2021
A	0.93	0.97	0.89
B	479.821	491.165	519.149
Indicator	0.19	0.20	**0.17**[115]



Concerning the indicator '**Total annual air pollution emissions', with regard to SO_2, NOx and PM emissions**, it is necessary to indicate:

Emissions of this type of pollutants (SO_2, NOx and PM) into the atmosphere are not a direct consequence of the Company's production process (*Transmission of electricity and operation of the electricity system*) but are generated in auxiliary processes related to the main process. Although these processes are necessary for the correct execution of the activity, they are not considered by Red Eléctrica as relevant in terms of their repercussion or impact on the environment.

Specifically, emissions of these pollutants into the atmosphere are derived from:

- Fixed combustion sources: emissions from diesel consumption in **emergency** diesel generator units (off-grid).

  There is no other type of fixed combustion source. These units are located in corporate buildings (where office work is carried out) and substations. They are only used as back-up generators in the event of a loss of electricity supply in order to power the systems and avoid a shutdown of the facilities for the duration of the emergency. Generally, with some exceptions, the time these units are in operation correspond to the firing up of unit to verify it is in good working order and at times when maintenance tasks are scheduled.

- Mobile combustion sources: emissions derived from fuel consumption by Red Eléctrica vehicles.
    - Fleet vehicles: those vehicles owned by Red Eléctrica, which are used by technical staff located in the various regional areas in order to carry out maintenance work.
    - Shared leasing vehicles: used by technical staff in the various regional areas in the necessary travel required to perform their duties.
    - Executive vehicles: vehicles (Red Eléctrica's owned vehicles or those which are under a shared leasing scheme) used by executives in the performance of their duties (not including private use).

An efficient management of fleet vehicles is carried out by undertaking the commitment to using the best technologies currently available (100% of the new vehicles incorporated into the fleet are either hybrid, plug-in hybrid or electric cars) and to optimize their use through the application of CARS (Agile, Responsible and Safe Driving System), which facilitates the use of efficient routes and promotes responsible driving. Since 2015 Red Eléctrica has maintained the 'Ecological Fleet Accreditation' in its 'Master' category (the most demanding one) received from the Fleet Managers Association (AEGFA) and the Institute for Diversification and Energy Saving (IDAE). 79.5% of the Company's vehicles (including passenger cars, SUVs, vans, trucks, shared leasing, executive vehicles and the pool of electric vehicles) have an energy rating of 'A'.

[113] The most representative emissions of REE's activity are SF_6 emissions (direct) and emissions from transmission grid losses. The emission rate has been worked out based on the emission data calculated according to actual leakage records. To assess SF_6 gas emissions in relation to the total SF_6 gas installed, it is considered more appropriate to use tonnes of SF_6 emitted as the unit of measure, rather than calculate it in tonnes of CO_2 equivalent.

[114] The increase in installed gas is mainly due to the commissioning of new facilities and the replacement of old equipment for SF_6 insulated equipment.

[115] The rates shown are calculated based on actual data collected in the field and include, in addition to leakage during maintenance, the estimated emissions corresponding to the end of life of the equipment. The maximum leakage rates for equipment in service included in the voluntary agreement for SF_6 management, signed in 2015, are based on their age. Equipment commissioned since 2008 is associated with a leakage rate of 0.5% per year (older equipment is allowed higher leakage rates). The low emission rates reflect the Company's enormous effort to improve the management and control of SF_6 emissions, in particular, the decrease over the last few years reflects the repair work that has been carried out since 2018.

These reasons have led Red Eléctrica to not consider it necessary for the moment to calculate or estimate emissions as it is not an indicator directly related to its activity or the possible impact of the Company's activities on the environment. In any event, it is necessary to indicate that when calculating our emissions in tCO_2 eq. the impact of the aforementioned gases (SO_2, NOx and PM) on the possible greenhouse effect is included.

Emissions from Fleet Vehicles			
Kg of CO^2 /Km[116]			
Year	2019	2020	2021
	0.16	0.15	0.15

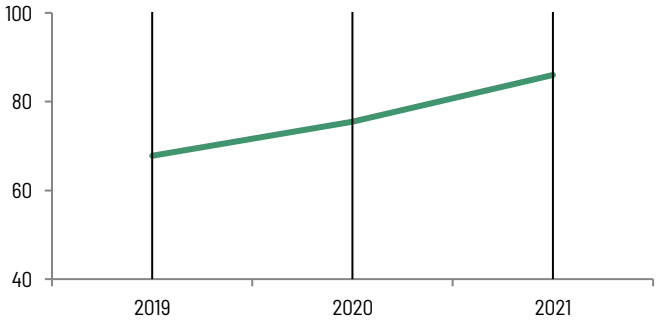
[116] Fleet vehicles + shared leasing vehicles (excludes executive vehicles).

Specific environmental performance indicators related to the activity

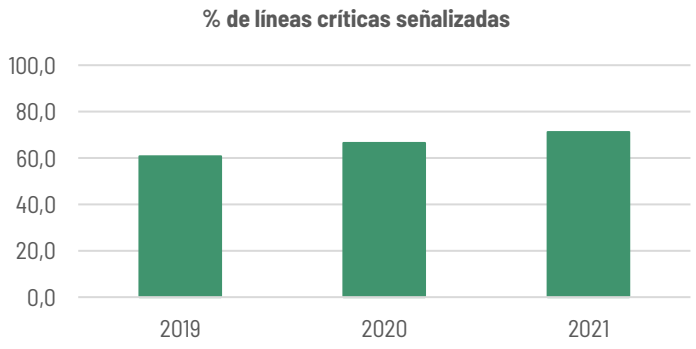
Shown below are specific environmental performance indicators related to Red Eléctrica's activity not already included as part of the key indicators. As there is no specific EMAS sector document of reference available for the High-Voltage Transmission and Electricity System Operation activity, the choice of specific indicators is based on:

- environmental indicators requested for said activity within the scope of the Global Reporting Initiative (GRI) guidelines for the preparation of sustainability reports incorporating the additional applicable information of the Electric Utility Supplement in its G4 version.
- direct and indirect environmental aspects related to the Company's core activity.
- other relevant aspects that reflect the evolution of Red Eléctrica's commitment in the environmental field.

% Fulfilment of the Environmental Programme			
A	Contribution of fulfilled environmental objectives		
B	Total contribution of the programme		
Indicator	A/B x100		
Year	2019	2020	2021
A	67.8	75.5	86.0
B	100	100	100
Indicator	67.8	75.5	**86.0**



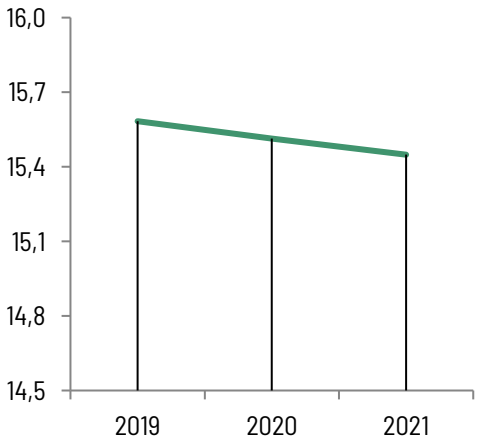
Biodiversity: % critical lines marked			
A	Km of line marked in critical areas[117]		
B	Km of line in critical areas[118]		
Indicator	A/B x 100 (% of line in critical area marked)		
Year	2019	2020	2021
A	459.7	508.4	562.5
B	757.1	764.6	791
Indicator	60.7	66.5	**71.1**

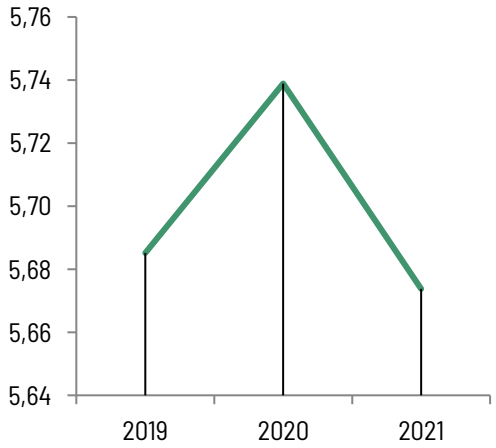


[117] Cumulative data at the end of each year. This data refers to the route, i.e., the length of the lines irrespective of the number of circuits they have.

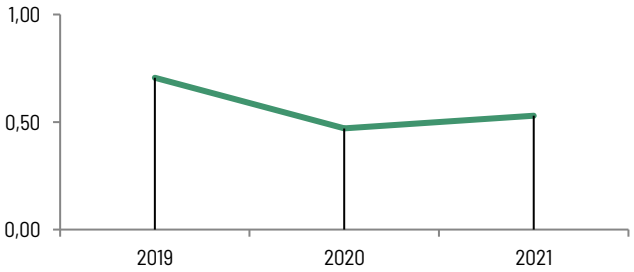
[118] The target value fluctuates slightly each year, depending on the variations in the transmission grid facilities (new lines and changes to existing lines) and the updating of birdlife accident data. The percentage of line marking refers to the target value defined in each of the years.

Biodiversity: Impact of facilities						
A	Km of line in Natura 2000 Network [119]			No. of substations in Natura 2000 Network		
B	Total Km of line			Total No. of substations		
Indicator	A/B x 100			A/B x 100		
	Lines			Substations		
Year	2019	2020	2021	2019	2020	2021
A	4,924.25	4,904.09	4,908.95	39	40	40
B	31,599.53	31,611.31	31,775.97	686	697	705
Indicator	15.6	15.5	**15.4**	5.69	5.74	**5.67**



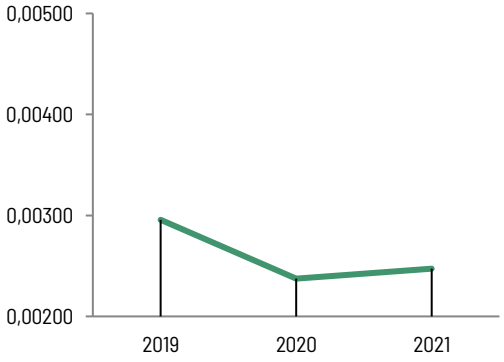


Biodiversity/Relationship with stakeholders			
A	No. of autonomous communities with biodiversity projects		
B	Total No. of autonomous communities		
Indicator	A/B		
Year	2019	2020	2021
A	12	8	9[120]
B	17	17	17
Indicator	0.71	0.47	**0.53**

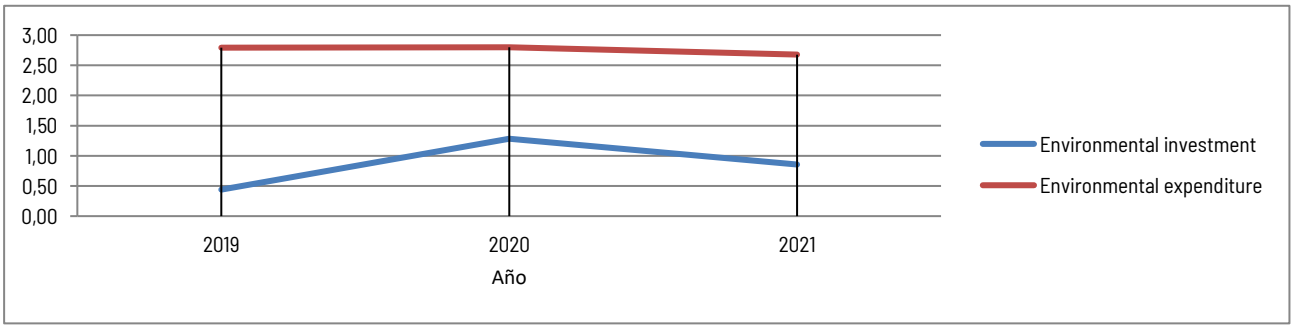


[119] Includes the total number of kilometres of submarine cable and those in Red Natura.
[120] Conservation projects have been carried out in a total of 9 autonomous communities: Andalusia, Balearic Islands, Canary Islands, Castilla y León, Catalonia, Extremadura, Navarra, Valencia and the Basque Country.

Emissions			
A	Indirect emissions derived from transmission grid losses (tCO_2eq)		
B	MWh transported		
Indicator	A/B		
	Emissions derived from transmission grid losses[121]		
Year	2019	2020	2021
A	780,865	592,078	634,211
B	264,132,778	249,411,925	256,387,046
Indicator	0.00296	0.00237	**0.00247**

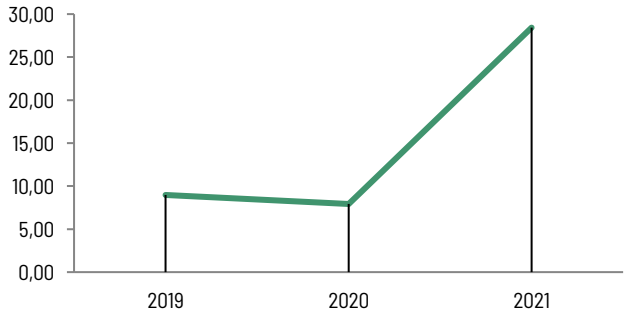


Environmental investment and expenditure						
A	Environmental investment			Environmental expenditure		
B	Total investment			Total expenditure		
Indicator	A/B x 100			A/B x 100		
	Environmental investment			Environmental expenditure		
Year	2019	2020	2021	2019	2020	2021
A	1,740,988.77	4,912,976.00	3,338,603.91	25,806,074.68	23,287,059.71	22,686,787.68
B	396,400,000	383,102,000	390,980,000	924,913,000	832,061,000	847,302,000
Indicator	0.44	1.28	**0.85**	2.79	2.80	**2.68**

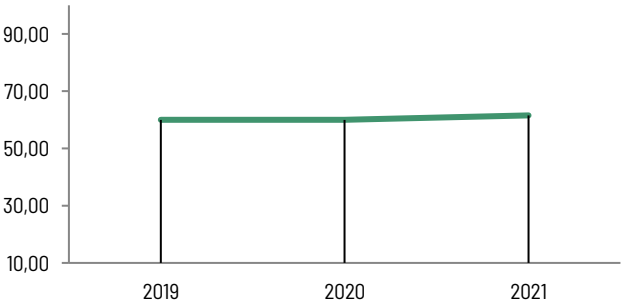


[121] The emissions associated with the transmission grid losses, in the same way as for the emissions associated with the consumption of electricity, do not occur during the activities of Red Eléctrica de España as they take place at the various electricity generation points. For the calculation of these emissions, the emission factors corresponding to each system (Spanish mainland, Balearic Islands and Canary Islands) are calculated by Red Eléctrica de España based on the annual generation balance. The increase in emissions in 2021 is mainly due to the recovery of the demand and increased transmission grid losses.

Training and awareness raising actions			
A	No. of employees who received environmental training		
B	No. of employees [122]		
Indicator	A/B x 100		
Year	2019	2020	2021
A	158	139	512
B	1,762	1,755	1,801
Indicator	8.97	7.92	**28.43**



Accidental spill of hydrocarbons			
A	No. of accidents involving oil or fuel spills from in-service transformers and equipment		
B	Total No. of accidents [123]		
Indicator	A/B x 100		
Year	2019	2020	2021
A	6	9	8
B	10	15	13
Indicator	60.00	60.00	**61.54**



[122] Only Red Eléctrica personnel
[123] Accidents not involving birdlife

14. Frequency of the Environmental 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 2021.

AENOR INTERNACIONAL, S.A.U. (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, Regulation (EU) 2017/1505 amending Annexes I, II and III to Regulation (EC) No. 1221/2009 and also Regulation (EU) 2018/2026 amending Annex IV to Regulation (EC) No. 1221/2009, 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 2023.

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. Red Eléctrica).*
Electrical 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 Red Eléctrica and UNESA, 1998)*
Environmental aspect	An element of the activities, products or services of an organisation which has, or which may have, 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)).*
Environmental policy	The general management and intentions of an organisation with respect to its environmental behaviour, put forward officially by its management teams, including 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. Red Eléctrica 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. Red Eléctrica).*
Red Natura 2000 (Natura 2000 Network)	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. Red Eléctrica).*
Waste	Any substance or object belonging to any of the categories established in the appendix to the Waste Act, in which the owner disposes of or has the intention to dispose of it. In all cases, the items listed in the European Waste Catalogue (CER) will be classified as such. (Law 10/1998, 21st April, on Waste). *(Law 22/2011, 28 July, on Waste and Contaminated Soils).*

Statement from the Verification Agency

Construction or modification of facilities

Protection of habitats and fauna species

Protection and conservation of habitats
Avoiding impacts on flora
Use of compressed air cannon and drone to hang conductors in leafy areas, such as riverside vegetation, in 4 spans of the 220 kV Lousame-Mazaricos line.
Helicopter-assisted hanging of conductors on more than 50 sections of line and with the use of a drone for 8 sections of line in the 400 kV Gueñes-Itxaso line.
Use of a helicopter in the dismantling of the 220 kV Trives-Aparecida line, for the removal of 27 towers, avoiding the opening up of access roads and saving over a month by not having to move machinery.
Hoisting by helicopter of 8 towers of the 220 kV Caletillas-El Rosario line.
Hoisting by sections of 31 towers and hanging conductors by hand in more than 20 sections of line on the 220 kV José María Oriol-Los Arenales line.
Surveys conducted and actions to mark the specimens were carried out for the protection of *Caralluma burchardii*, an endemic and endangered cactus-like species according to the Canary Islands Catalogue of Protected Species.
Protection of the lesser water-plantain (*Baldellia Ranunculoides*) a type of flowering plant: preparation of a botanical study, modification of accesses and the marking off of specimens.

Protection and conservation of fauna
Biological stoppages in 14 actions, during breeding periods, which in many cases lasted up to 7 months.
Surveys prior to the start of work on the 220 kV Atios-Montouto line, to confirm the non-presence of reed bunting (*Emberiza schoeniclus subsp. Lusitánica*).
Intensive surveys during the construction and operation phase on several works on lines.
Checks to detect the presence of nests on platforms and access roads prior to the start of dismantling work on the 220 kV Trives-Aparecida line. Before the nesting season, the area was cleared to avoid the occupation of the environment by species with a tendency to nest on the ground.

Biodiversity Action Plan (2017 - 2021): Biodiversity challenges

Improve the management of biodiversity in the Company, incorporating new approaches and expanding its scope			
Most relevant actions	Progress made in 2019	Progress made in 2020	Progress made in 2021
Definition of a new assessment methodology for investment projects. Promoting the management of biodiversity in the Group's subsidiary companies. Extending commitment to the supply chain.	Design of a methodology for the analysis and 'responsible' valuation of natural capital based in substations, in the most relevant substations regarding the conservation of biodiversity, in the electricity transmission grid, tested at the same time in a practical case at Red Eléctrica de España.	• Invitation to tender for EIA of new installations designed, does not include reference to methodology. Inclusion of the concept of net zero or positive impact on biodiversity, linked to the design of offsetting measures in Environmental Impact Assessments. Delivery of 2 training workshops on the methodology designed in 2019. Design of the Group's 2030 Biodiversity Roadmap was started. Supplier survey on biodiversity performance was sent out.	• 2030 Biodiversity Roadmap was designed. • Scope of the Roadmap (REC, REE, REICAN, REI, REINTEL, HISPASAT and ELEWIT. • Incorporation of sustainable procurement criteria. **100% fulfilment** Completion of the three proposed actions.
Make facilities compatible with biodiversity			
Most relevant actions	Progress made in 2019	Progress made in 2020	Progress made in 2021
Birdlife: Multi-year line marking plan.	60.7% of critical priority areas marked.	66.5% of critical priority areas marked.	71.1% of critical priority areas marked. **Fulfilment 71,1%** (Goal: 100% in 2023)
Forested areas: Signing of agreements for the prevention of forest fires.	10 agreements in force and 3 in the process of being renewed.	12 agreements in force . Agreement signed with DF Álava, renewed with Castilla-La Mancha and two in process of being renewed	11 agreements in force (nationwide) **Fulfilment 50%** (Goal: 21 agreements)
Habitat of high ecological value: HABITAT Project.	Standardisation of the mapping of the different autonomous communities and at a national level and its integration into GeoRED. It will enable indicators to be obtained and will help in establishing proposals for their management.	Design of pressure / state / response indicators and monitoring of the influence that the Company's activities have on habitats. Guidelines for preservation and improvement of conservation status by priority HCI-type defined. Mapping designed, field-validated state of conservation and management plans for the conservation of the habitats identified in all the autonomous communities . **Fulfilment 100%**	

Promote biodiversity conservation			
Most relevant actions	**Progress made in 2019**	**Progress made in 2020**	**Progress made in 2021**
Participation in wildlife conservation projects (especially birdlife) and flora.	• 15 birdlife projects (on focal species) in force.	• 14 birdlife projects, 13 on focal species in force.	• 12 projects on focal species over the period. **100% fulfilment** (Target: 6 projects per year, 5 of them on focal species).
Red Eléctrica Forest.	• 843 ha recovered (cumulative since the outset of the project). • Investment: 2,126,327 euros.	• 864 ha recovered (cumulative since the outset of the project). • Investment: 2,190,581.44 euros.	• 915 ha of surface area recovered, with an investment of 2,277,758 euros. **100% fulfilment** (Target: 1,000 ha reforested and an investment of 2,500,000 euros).
Red Eléctrica Marine Forest.	• 1.5 ha planted.	• 2 ha planted.	• The Posidonia forest: 2 ha. • Extension of scientific monitoring agreement with IMEDEA (CSIC). **100% fulfilment**
Boost Red Eléctrica's stance on biodiversity matters			
Most relevant actions	**Progress made in 2019**	**Progress made in 2020**	**Progress made in 2021**
Increase employee awareness.	• Publication of information related to biodiversity on the corporate intranet		• Publication of internal news and the carrying out of specific campaigns. **100% fulfilment**
Promote corporate volunteering in the field of biodiversity.	• Natura 2000 Network campaign; Libera project campaigns; Limne Foundation; Oceans Day; Scopoli's s Shearwater Release project.	Corporate volunteering actions: 1) *#stay in the nest* 2) what is urban biodiversity and how to help by making nesting boxes. 3)*#plant a new world from home*	• Corporate volunteering actions: The Diary of a Naturalist in conjunction with Telesforo Bravo-Juan Coello Canary Islands Foundation and a seed awareness workshop with Globe Nature Medioambiente. **100% fulfilment**
Increase the Company's externally visibility with regard to biodiversity.	• In addition: meetings with journalists, visit to the Red Eléctrica Marine Forest and visit to CIMA (International Bird Migration Centre), conference on birdlife.	Dissemination of projects in the press and via social networks, publication of brochures and videos, and participation in forums and specialised working groups.	• Mapping designed, conservation status validated in the field and habitat conservation management plans identified in all the autonomous communities. **100% fulfilment**
Promote innovation in biodiversity matters			
Most relevant actions	**Progress made in 2019**	**Progress made in 2020**	**Progress made in 2021**
Implementation of innovation projects that contribute to the achievement of biodiversity challenges.	• Vegeta Project • PRODINT Project. • Project for the assessment of natural capital	• Vegeta Project • PRODINT Project	• Projects: Natura en RED, Alerion, Vegeta, Bseed WATCH®. • 7 innovation projects developed in the period. **100% fulfilment** (Goal: Minimum of three innovation projects).

Waste management 2021

The data and the evolution of waste generation and its final destination in the last three years can be seen below.

	HAZARDOUS WASTE					
Treatment method	2019	2020	2021	2019	2020	2021
	kg	kg	kg	%	%	%
Elimination	252,612.00	13,250.00	39,048.00	46.17	5.89	**6.78**
Recycling	293,670.00	208,791.15	450,802.28	53.68	92.86	**78.24**
Regeneration	818.00	2,802.00	636.00	0.15	1.25	**0.11**
Reuse	0.00	0.00	0.00	0.00	0.00	**0.00**
Waste-to-Energy (Energy recovery)	0.00	0.00	85,680.00	0.00	0.00	**14.87**
Total	547,100.00	224,843.15	**576,166.28**	100.00	100.00	100.00

	NON-HAZARDOUS WASTE					
Treatment method	2019	2020	2021	2019	2020	2021
	kg	kg	kg	%	%	%
Elimination	152,968.00	167,576.00	22700	21.28	29.71	**4.36**
Recycling	534,993.50	396,342.00	497866	74.41	70.26	**95.64**
Regeneration	0.00	0.00	0.00	0.00	0.00	**0.00**
Reuse	30,400	0.00	0.00	4.23	0.00	**0.00**
Waste-to-Energy (Energy recovery)	625.00	200.00	0.00	0.09	0.04	**0.00**
Total	718,986.50	564,118.00	**520,567.00**	100.00	100.00	100.00