# Environmental Statement EMAS 2024

March 2025

redeia

# Contents

# 1 Who is Red Eléctrica

**Red Eléctrica de España S.A.** 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 **Redeia Corporación (Redeia),** as the parent company of **Redeia.**

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 (RE), to the parent company: Redeia Corporación (Redeia).

Red Eléctrica Corporación, S.A. changed its company name to Redeia Corporación, S.A. on 13 June 2023.

The main activity that falls under the responsibility of RE 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 peninsula system and in the non-peninsular systems.

In its capacity as manager of the high-voltage transmission grid, RE 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; 45,592 circuit kilometres of high voltage transmission line and 6,548 substation bays with a transformer capacity of 97,216 MVA.

| Evolution of facilities/infrastructure[3] | | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| Lines (km of line circuit) | Km of line circuit | 45,100 | 45,222 | 45,592 |
| | 400 kV | 22,013 | 22,057 | 22,216 |
| | 220 kV or less | 23,087 | 23,165 | 23,377 |
| Substations | Total number of bays | 6,213 | 6,356 | 6,548 |
| | 400 kV | 1,628 | 1,697 | 1,784 |
| | 220 kV or less | 4,586 | 4,660 | 4,764 |
| | Transformer capacity (MVA) | 94,221 | 94,981 | 97,216 |

[1] In this regard, since 2008, 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] Source: REData and the Spanish Electricity System Report. March 2025.

For the **complete** and adequate development of the described activity, the participation of both RE (Red Eléctrica) and Redeia (Redeia Corporación) 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 companies:**

- Transmission and Operation of the Spanish electricity system.
  - Activity carried out by RE according to **NACE[4] Rev.2 code: 35.12. Transmission of electricity.**
- Corporate services that support these activities.
- Activity carried out by Redeia 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.

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.** It is not possible to separate the data pertaining to RE 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 Redeia and its personnel regarding its corporate support function for such activities.

In order to make the reading process easier and improve understanding of the document, both companies are hereinafter referred to as **Red Eléctrica.**

The name **Redeia** is used in this EMAS report when reference is made to some aspect or subject that encompasses all the companies belonging to the holding company.

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

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

# 2 Environmental management and policy

## Environmental policy[6]

Redeia carries out all its activities taking into consideration environmental protection in accordance with the principles set out in its environmental policy, updated and approved by the Board of Directors in 2023. The policy includes commitments to preventing contamination, the principle of caution, and concepts that reinforce the company's dedication and establish the levers for improving environmental management. For example, the life cycle approach, stakeholder expectations, the extension of environmental commitment to the supply chain, and proactive compliance with environmental regulations.

### Purpose

To establish environmental principles that ensure Redeia's commitment to the conservation and improvement of the environment in all activities, facilities, or services provided throughout their life cycle, including distribution and logistics, while addressing stakeholders' needs and expectations.

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 Redeia's Code of Conduct and Ethics.

### Scope of application

This Policy applies to all majority-owned companies of Redeia. It is the responsibility of all persons forming part of Redeia 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 Redeia does not have effective control, principles aligned with those established in this Policy shall be promoted. Furthermore, the application of these principles will be promoted among Redeia's business partners, including temporary joint ventures, consortia, or any other equivalent associations. For contractors, suppliers, and those who collaborate with or act on behalf of Redeia, the company will equally promote the principles of this Policy.

### 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.

[6] Environmental policy applicable to all the companies that make up Redeia. Third Edition (E-PA011 replacing Edition 2 of Policy PC01) approved by the Board of Directors in May 2023.

- Consider **biodiversity and natural capital** as key factors in Redeia'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 Redeia's activities with a view to achieving responsible consumption and the sustainable use of resources.
- Guarantee **continuous improvement, risk control and management, the principle of caution, and the prevention of pollution** in the environmental management of Redeia's companies by implementing and maintaining management systems aligned with the requirements of international standards and consistent with the specificities thereof.
- Incorporate **environmental criteria** and consider environmental risks in **investment and procurement** decision-making processes, as well as in the planning and execution of activities.
- Promote behaviour in accordance with environmental requirements and the principles and commitments undertaken by Redeia 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 Redeia'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 Redeia's companies.
- Ensure the **collaborating companies** acting on behalf of any of Redeia's companies apply the principles of this Policy.

The Sustainability Committee of the parent company is responsible for periodically supervising and reviewing the content and compliance of this Policy, with the support of the corporate Sustainability Area, which manages Redeia's strategy in this field.

The Policy is published on Redeia's website and corporate intranet, as well as on the intranet of its subsidiary companies.

## Sustainability indexes

The presence of Redeia in the most internationally recognised sustainability indexes shows its firm commitment to sustainability and its commitment to responsible transparency and accountability towards stakeholders.

Additionally, the company is voluntarily adhered to various initiatives that strengthen its commitment to sustainability, among which noteworthy are the following: the United Nations Global Compact Principles, the New European Green Deal, Climate Ambition Alliance, Caring for Climate, the Biodiversity Compact, among others.

The firm and focused effort of Red Eléctrica to become a model company that is responsible, efficient, and sustainable has been recognised by the leading sustainability rating agencies, which has led to the company being included in some of the main sustainability indexes as a result of their performance in this field. Some of the most noteworthy indexes are:

- Dow Jones Sustainability Index.
- FTSE 4 Good.
- Euronext Vigeo Index (Euro 120, World 120, and Europe 120) of Moody's.
- MSCI (Morgan Stanley Capital International).
- ISS ESG.
- Sustainalytics.
- CDP climate change.

*Redeia has reaffirmed its place in the Dow Jones Sustainability World Index and has re-entered the Dow Jones Sustainability Europe Index, ranking as one of the five most sustainable companies worldwide.*

More information can be found at:

*https://www.redeia.com/es/publicaciones/informe-sostenibilidad-2024*

## 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 **ESMD000313** (previously ESSB000013).

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. The aforementioned management systems take into consideration all those regulatory aspects which have been defined as being potentially cross-cutting 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 environmental policy stems from the **Board of Directors** as the primary signatory of the same.

The sustainability policy also encompasses a comprehensive set of principles, guidelines, and specific criteria for action, ensuring that activities are conducted in a responsible manner to promote environmental stewardship. These guidelines are established by the **Boards of Directors** and are reinforced through their endorsement and commitment.

The management area responsible for defining and coordinating the development and monitoring of the environmental management system (hereinafter SIGMA) falls under the remit of the **Sustainable Development Area**, which is part of the **Sustainable Management Department.**

The Area 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 Redeia 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 Management of Facilities Development Support, which is part of the General Director of Transmission. 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** (REC).

The maintenance of environmental management system 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.

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 Redeia.

The Committee is responsible for the oversight of Redeia'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.

Redeia's management of internal regulations is effectively outlined by the general procedure R-GN01, entitled 'Management of Internal Regulations'. This procedure serves as a guiding framework that regulates various crucial aspects, including the development, review, approval, repeal, publication, dissemination, updating, and oversight of Redeia's internal regulations.

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

- **Corporate policies:** these encompass a set of fundamental principles that play a pivotal role in realising the organisation's mission and strategic objectives. These policies are designed to align with the values, principles, and business conduct guidelines outlined in Redeia's Code of Conduct and Ethics.
- **Action guides:** establish clear criteria, guidelines, and action steps for the development of processes and activities within the company. These guides facilitate the effective implementation of the principles outlined in corporate policies.
- **General procedures**[7]**:** regulate the organisation's processes. They describe the purpose, scope, responsibilities, and the activities and tasks to be followed in each procedure.
- **Technical instructions:** they describe in detail some of the activities of a process. Their purpose is to explain how the technical tasks are to be performed by Redeia's employees.
- **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 regularly requested from external suppliers.

[7] Prior to the current edition of the general procedure R-GN01 'Management of internal regulations', procedures were categorised into two types of documents: general and technical, depending on their scope. These documents will be adapted to the current categorisation as they are revised, becoming general procedures, technical instructions or any other regulatory element considered within the typology of internal regulations, where applicable.

- **Management manuals:** regulate activities related to certifiable or accreditable management systems, as well as control systems. These manuals are aligned with national or international benchmarks.

### Changes in the documentation of the environmental management system 2024

During 2024 many of the environmental management system documents[8] were modified in order to keep them updated on an ongoing basis and introduce improvements in the management thereof.

| Code | Title | Edition | Published | Approval date | Supersedes |
|---|---|---|---|---|---|
| E- ET050 | Geotechnical, hydrological, and environmental characterisation studies of soils and groundwater | 4 | 01-10-2024 | 01-10-2024 | Ed. 3 |
| E- GN15 | Comprehensive management and control of risks | 6 | 01-17-2024 | 01-17-2024 | Ed. 5 |
| R- IM040 | Self-protection and emergency plans | 2 | 01-25-2024 | 01-31-2024 | Ed. 1 |
| R- IN019 | Internal audits of certified management systems | 1 | 01-15-2024 | 01-15-2024 | |
| E- GX01 | Planning of the electricity transmission grid | 1 | 04-09-2024 | 04-13-2024 | |
| E- AT001 | Management of $SF_6$ gas | 2 | 06-20-2024 | 06-24-2024 | Ed. 1 |
| R- IN020 | Management of non-conformities, observations, and corrective/preventive actions | 1 | 05-16-2024 | 05-16-2024 | |
| R-IA015 | Environmental supervision of works on lines, substations, and buildings | 5 | 10-28-2024 | 11-04-2024 | Ed. 4 |
| R- IN018 | Operation of external stakeholder channels for Redeia | 1 | 11-07-2024 | 11-07-2024 | |
| E- IA019 | Vegetation management along the transmission grid | 2 | 11-25-2024 | 12-03-2024 | Ed.1 |
| E- IT492 | Resolution of clearance violations between conductors and wooded areas | 1 | 12-16-2024 | 12-16-2024 | Ed. 2 |

[8] The following have been cancelled: the R-MANSIG integrated manual for quality, environment, and corporate responsibility management systems and the TQ002 management of anomalies, corrective and preventive actions. The cancellation is due to the fact that these rules are no longer applicable.

# 3 Scope of EMAS register

Red Eléctrica has an environmental management system that complies with the requirements of Regulation (EC) No 1221/2009 (EMAS III), Regulation (EU) 2017/1505 amending Annexes I, II, and III of the Regulation, and Regulation (EU) 2018/2026 amending Annex IV of Regulation (EC) No 1221/2009, which sets the requirements for environmental reports, No. ESMD000313. Its scope covers all the company's activities (*NACE Rev.2: 35.12. Transmission of Electricity and NACE 64.20. Activities of holding companies):*

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

The abovementioned activities are carried out in:

- **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 1, REE Building. 28760. Tres Cantos (Madrid).
- **CAMPUS Tres Cantos:** Parque Tecnológico de Madrid, C/ Isaac Newton 2, REE Building. 28760. Tres Cantos (Madrid).
- **Regional Office and System Operation Department of Islas Baleares:** Camino Son Fangos, 100, Building A, Floor 2. 07007 – Palma de Mallorca (Islas Baleares).
- **Regional Office and System Operation Department of Islas Canarias** (Main Office in Las Palmas de Gran Canaria): C/ Juan de Quesada, 9. 35001 - Las Palmas de Gran Canaria (Las Palmas)
- **Regional Office and System Operation Department of Islas Canarias** (Main Office in Tenerife): Nuestra Señora de la Ternura (Los Majuelos). 38108 - San Cristobal de la Laguna (Santa Cruz de Tenerife)
- **Northern Regional Office:** Gran Vía, 38. Floor 2. 48009 - Bilbao (Vizcaya).
- **North-Eastern Regional Office:** Avenida Paralelo, 55. REE Building. 08004 - Barcelona (Barcelona).
- **North-Western Regional Office:** C/Gambrinus, 7, 2º Izq. 15008 - La Coruña (A Coruña).
- **Southern Regional Office:** C/Inca Garcilaso, 1. REE Building. 41092 - Isla de la Cartuja (Sevilla).
- **Eastern Regional Office:** Avenida de Aragón, 30, Floor 14. 46021 - Valencia (Valencia).
- **Ebro Regional Office:** Pl. Aragón, 10, Floor 2, Office 3. 50004 - Zaragoza (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).

- **Islas Baleares Regional Transmission Centre:** (Polígono industrial Marratxi) C/ Gerrers esquina Siurells, Floor 2. Marratxi (Palma de Mallorca).
- **Islas Canarias Regional Transmission Centre:** (Polígono industrial Mayorazgo) C/ Laura Grötte de la Puerta, 5. Polígono industrial Mayorazgo (Santa Cruz de Tenerife).

The following infrastructure/facility is excluded from the scope of the EMAS register specifically in those areas where it is located, or through which it crosses (municipalities indicated)[9]:

| Facilities | Municipality |
|---|---|
| Salto de Chira (Hydroelectric Power Station) | Mogán and San Bartolomé de Tirajana (Las Palmas) |

On the other hand, the following facilities or sections of line with sanctioning proceedings resolved during 2024 are excluded:

| Facilities | Municipality |
|---|---|
| Substation: 220 kV Tomeza electricity | Vilaboa (Pontevedra) |

[9] Completed proceedings are understood as those in which the following circumstances (all of them) occur together:

1. The company is declared responsible for the non-compliance.
2. The required amount has been paid.
3. No appeal has been filed or the option to file an appeal at a higher instance is open.
4. The company has made the decision to accept responsibility for what happened and has chosen not to appeal.

Also excluded from the scope of the EMAS register are those facilities or sections of line with sanctioning proceedings that have not yet be resolved (currently in processing):

| Facilities | Municipality |
|---|---|
| Line: 400 kV Barcina-Santa Engracia | Medrano (La Rioja) |
| Line: 220 kV Balsicas-El Palmar | Torre-Pacheco (Murcia) |
| Line: 220 kV Centelles-Sentmenat | Sentmenat (Barcelona) |
| Line: 400 kV Cartelle-Silleda | Carbanillo (Orense) |
| Guadaira 220 kV electrical substation | Dos Hermanas (Sevilla) |
| Turbine installed in the Formentera electricity substation[10] | Formentera (Islas Baleares) |
| Line: 400 kV Galapagar-Lastras | El Espinar (Segovia) |
| Line: 220 kV Cartelle-Castrelo 1 | Castrelo de Miño (Orense) |
| Line: 132 kV Puerto del Rosario-Gran Tarajal | Gran Tarajal (Fuerteventura) |

[10] 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. Objectives

Redeia's 2030 Sustainability Commitment, 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 governed by 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.redeia.com/es/sostenibilidad/nuestro-enfoque/compromiso-2030-plan-23-25*).

These goals, validated by the Sustainability Steering Committee, the Executive Committee, the Board's Sustainability Committee and approved by 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, associated with the commitment priorities, are the following:

**Decarbonisation of the economy**

| | |
|---|---|
|  **Climate change** | **Objective 2030**<br>55% reduction in Scope 1 and 2 emissions and 28 % reduction in Scope 3 emissions compared to 2019. |

**Responsible value chain**

| | |
|---|---|
|  **Biodiversity** | **Objective 2030**<br>To generate a positive net impact on the natural capital in the areas surrounding our facilities. |
|  **Circular economy** | **Objective 2030**<br>• Be a leading company in circular economy.<br>• Redeia: 0% waste to landfill.<br>• Redeia: 6.5 m³ water consumption per employee per year in work centres. |
|  **Suppliers** | **Objective 2030**<br>Be a driver of change for our suppliers: at least 25 supplies with a major impact on the transmission grid with circularity criteria (LCA – Life Cycle Assessment), climate change, and biodiversity. |

The 2030 Sustainability Commitment is deployed through multi-year plans. Within the 17 courses of action, there are several directly related to the environment, which encompass the following:

- **Climate change adaptation**

- **Reduction of the carbon footprint.**
- **Biodiversity and natural capital conservation. Promotion of biodiversity.**
- **Transformation to a circular economy.**

Aware that the role of companies is key to achieving the UN SDGs, Redeia, based on the nature of its activity and the countries in which it operates, carried out a process to identify the priority SDGs in which it can have an impact.

| Identification and Prioritisation of SDGs for the RE Group | |
|---|---|
| **SDGs** Priority |  |

Redeia prepares a specific annual report on its contribution to the SDGs (*Sustainability at Redeia*).

In 2022, with the aim of continuing to move forward with its 2030 Sustainability Commitment, the company updated its Materiality Study in order to identify its relevant issues in accordance with leading international opinion generators and standards on sustainability, noteworthy among which are the following: Directive (EU) 2022/2464 on Corporate Sustainability Reporting, IQNet SR10 for Social Responsibility Management Systems, ISO 26000 Social Responsibility Guidelines, Global Reporting Initiative (GRI), RobecoSAM, SASB (sector materiality map), and AA1000AS Assurance Standard (principle of materiality).

This analysis led to the identification of a total of **13 relevant issues**.

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 change**
- **Biodiversity**
- **Circular economy**
- **Integration of facilities into the landscape**

The environmental variable is also present in a fifth material issue:

- **Social Licence to Operate (SLO)**

The aforementioned material issues serve as the foundational pillars for the seven environmental courses of action that structure the 2023-2025 Sustainability Plan. As of 2023, this Plan incorporates objectives and actions aimed at continuous improvement set for 2025, specifically targeting the mitigation of environmental impacts resulting from the group's activities. These objectives and actions are closely linked to the commitments outlined in the Environmental Policy of the group.

The drafting, during 2022, of the 2023-2025 Sustainability Plan allowed for the definition of mid-term objectives to achieve Redeia's 2030 ambition and, consequently, to update and/or firm up the eleven already existing objectives.

Moreover, the Sustainability Plan is aligned with the group's Strategic Plan and the Sustainability Goals for 2030. The 2023-2025 Sustainability Plan, which includes environmental objectives from 2023 onward, is detailed in section 9.

# 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 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. In this sense, the main potential environmental impacts on the territory and landscape are related to where the substations are located and the territories through which the HV electricity lines run.

Redeia considers all environmental and social variables during all the stages of transmission grid development.

*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 they are to be located.*

In this regard, Red Eléctrica considers all environmental and social variables during all the stages involved in the development of the transmission grid. This includes carrying out a **viability analysis of the facilities** prior to their incorporation into the electricity transmission grid planning proposal that Red Eléctrica, as system operator, submits to the Ministry of Ecological Transition and the Demographic Challenge (MITERD).

Once the Transmission Grid Planning is approved (a process subject to the strategic environmental assessment), the company carries out a detailed study of the territory. It then **defines**, in a coordination 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's projects are legally required to carry out. In addition, those facilities that do not require an environmental procedure, in accordance with current legislation, are voluntarily submitted to consultations with those responsible for the Natura 2000 Network or with the public administration for the assessment of their possible environmental impact and to receive proposals regarding alternative mitigating measures that have deemed appropriate.

To ensure the implementation and effectiveness of the established measures, the company defines and conducts **environmental monitoring programmes.** 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 facilities in operation, the company conducts periodic reviews in order to verify compliance with environmental standards. It should be noted that the company has a **maintenance management and territorial observatory system** that integrates into the corporate mapping system all the environmental, social, cultural, and technical conditioning factors that must be taken into account when requesting authorisation to carry out maintenance works on facilities (more than 70 layers of digitalised information covering 200 metres on each side of electricity transmission lines).

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.

The following diagram schematically illustrates the main environmental criteria applied during the main transmission grid development phases.

**Development and implementation phases for transmission grid infrastructure**

| Infrastructure proposal *(Drawn up by Red Eléctrica)* | Electrical planning *(Drawn up By MITERD)* | Project design *(New installations and modifications)* | Construction or modification of facilities/infrastructure | Maintenance |
|---|---|---|---|---|
| **Environmental feasibility study:**<br>• Analysis of all proposals from an environmental point of view.<br>• Only includes environmentally viable projects. | **Strategic environmental assessment of plans and programmes.**<br>**Public consultation and participation of stakeholder groups** through the submission of comments, suggestions, and/or arguments. | **Prior dialogue with stakeholders** before defining the project (Autonomous Communities, local councils, and NGOs).<br>**Environmental impact assessment:**<br>1. Prior consultation with stakeholders.<br>2. Defining the alternative of the least impact.<br>3. Public information. Submission of comments, suggestions, and/or arguments by stakeholders.<br>4. Proposal for preventive and corrective measures.<br>5. Publication of results.<br>6. Environmental permits and authorisations. | **Implementation of preventive and corrective measures.**<br>**Environmental monitoring**<br>(monitoring of preventive and corrective measures).<br>**Monitoring the work of contractors** regarding compliance with environmental requirements.<br>**Environmental certification of works** taking into account compliance with environmental requirements. | **Environmental monitoring programmes** in the initial years of operation of a facility.<br>**Periodic inspections** of facilities to verify compliance with standards and identify improvement measures.<br>**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 2024:

## 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. The 2024 report has already been sent to MITERD, however, and as has been the case since 2016, they are not proceeding with its publication on their website.

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 March 2022, the **Electricity Transmission Grid Development Plan for 2021-2026** was approved.

Within this plan, the General Manager of Transmission Division had spent at least the previous two years conducting preliminary feasibility work for projects in collaboration with regional environmental authorities. This prior agreement enabled the processing of those activities not requiring an ordinary Environmental Impact Study (EsIA), including the annual birdlife cycles. This resulted in numerous environmental authorisations throughout 2022.

Over the last four years, the company has worked intensively on the infrastructure included in the 2021-2026 Electricity Transmission Grid Plan, approved in 2022, and has held numerous meetings with multiple

stakeholders, and made many visits to the areas being studied in order to reach a consensus on its future implementation.

In 2023, the bulk of the files included in the planning were processed once the necessary annual birdlife cycles for environmental impact studies were completed. However, throughout 2024, the number of processed documents has also been significant, specifically 17 Environmental Impact Assessments and 20 Environmental Documents or Red Natura 2000 Impact Reports.

In 2024, the environmental feasibility study for the upcoming 2025-2030 Plan has commenced, which marks the beginning of a new planning process in accordance with the previous framework that will be realised in the coming years.

## 2. Definition of projects

Environmental permitting processes were initiated for **37 investment projects**:

| | Permitting process initiated | | |
|---|---|---|---|
| | 2022 | 2023 | 2024 |
| Initial document | 0 | 0 | 0 |
| Environmental Impact Statement | 48 | 33 | 20 |
| Environmental Impact Assessment | 5 | 18 | 17 |
| **Total initiated** | **53** | **51** | **37** |

**Environmental impact assessments filed in 2024**

| Facilities | AC | Date |
|---|---|---|
| 400 kV Belinchón-Manchega line and 400 kV Montalbanejo substation with connection works | Castilla La Mancha | January 2024 |
| 220 kV Coscurita-Almazán line and 220 kV Coscurita substation | Castilla y León | January 2024 |
| 400/220 kV Saguntum substation, 400 kV Gaussa-Saguntum line, and connection works at the 220 kV Saguntum substation along the Saguntum-Morvedre DC line and the 220 kV Saguntum-Eliana line + Saguntum-Sagunto SC line; topology changes on 220 kV Eliana-Morvedre B and Morvedre B-Sagunto lines | Community of Valencia | April 2024 |
| 220 kV Benilloba substation and connection works on the Jijona–Catadau 220 kV line | Community of Valencia | April 2024 |
| 220 kV Santa Pola-Torrellano line | Community of Valencia | April 2024 |
| 400 kV Platea-Requena line | Aragón, Castilla La Mancha, and Community of Valencia | September 2024 |
| 400 kV line connection to Valdecaballeros from the Almaraz-Guadame line | Extremadura | January 2024 |
| 66 kV Breñas substation and connection works at Guinchos-Valle de Aridane | Islas Canarias | March 2024 |

| | | |
|---|---|---|
| 400 kV Villanueva del Rey substation and 400 kV Carmona-Villanueva del Rey line | Andalusia | January 2024 |
| 400 kV Riocaya-San Serván line | Extremadura | January 2024 |
| 220 kV Espinardo substation and connection works on the 220 kV Palmar-Murcia 1 line | Murcia | July 2024 |
| 220 kV Foradada substation and connection works on the 220 kV Mediano-Pont de Suert and Sesué-Escalona lines. | Aragón | January 2024 |
| 220 kV Saleres-Illora line | Andalusia | January 2024 |
| 220 kV Costa de la Luz-Puebla de Guzmán line | Andalusia | March 2024 |
| 220 kV Ventilla substation and connection works on the 220 kV Alhaurín-Jordana line | Andalusia | March 2024 |
| 220 kV Nuevo Cauce substation and connection works at Torrente-Patraix | Community of Valencia | February 2024 |
| 220 kV Olivos-Vallitos line | Islas Canarias | January 2024 |

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 | | |
|---|---|---|---|
| | 2022 | 2023 | 2024 |
| Positive Environmental Impact Statement | 10 | 5 | 7 |
| Negative Environmental Impact Statement | 0 | 0 | 0 |
| Environmental Resolution | 13 | 34 | 18 |
| **Total completed** | **23** | **39** | **25** |

There has been an increase in the granting of new environmental authorisations by competent environmental authorities over the past two years. This trend solidified from 2022, particularly in 2023 and 2024. With the new 2021–2026 planning approved, most of the projects were processed within this 2022-2024 timeframe.

In 2024, environmental authorisation was obtained for 25 projects.

| Positive environmental impact statement[11] |
|---|
| 66 kV Chío-Los Olivos line and cable |
| 220 kV Puerto Real line and Cartuja-Puerto de Santa Maria line |
| 220 kV Barranco de Tirajana-Santa Águeda line |
| Mercadal substation battery |
| San Antonio substation battery |

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

| |
|---|
| Santa Ponsa compensator |
| 220 kV Saguntum substation and connection works at the 220 kV Saguntum substation along the 220 kV Saguntum-Morvedre DC line and the 220 kV Saguntum-Eliana line + the Saguntum-Sagunto SC line; topology changes on 220 kV Eliana-Morvedre B and Morvedre B-Sagunto lines. |

| Environmental impact statement/Environmental resolution[12] |
|---|
| AC for the 220 kV Güeñes-Gatika line |
| AC for the 400 kV Aragón-Ascó line |
| 400 kV Pesoz substation and 400 kV Pesoz-Sanzo III line |
| Renovation of the 220 kV Rubí-Viladecans line |
| AC for the 400 kV Grijota-Herrera line |
| AC for the 400 kV Grijota-Mudarra line |
| AC for the 220 kV Almazán-Cariñena line |
| AC for the 220 kV Begues-Collblanc line |
| 220 kV Alcobendas-Fuente Hito compensator |
| Decommissioning of the 400 kV Gatika–Lemoiz I & II lines |
| 220 kV Tordesillas-Arroyadas line and compensator |
| AC for the 220 kV Peñaflor-Villanueva de Gállego line |
| Arucas substation compensator |
| 220 kV Calatorao substation |
| 400 kV Abegondo substation |
| Expansion of Villarino 220 kV substation |
| 220 kV Palma del Condado substation |
| Modification to the 220kV Bessons-Llubí line |

At the end of 2024, **72 investment projects** are at different stages of their environmental permitting process.

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

## 3. Construction or modification of facilities/infrastructure

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 2024: **127 substations** and **66 transmission lines**, covering **1,341 km of line** (1,248 km investment and 93 km for renovation and improvement 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 underway** (for a total of 204).

The **permanent environmental supervision**, aimed at intensifying the control and monitoring of measures, covered **87.25%** of total **works** performed.

| Environmental monitoring of construction works | | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| **Substations** | % Permanent environmental monitoring | 92.6 | 95.6 | 85.82 |
| **Lines (km)** | % Permanent environmental monitoring | 100 | 98 | 80.37 |

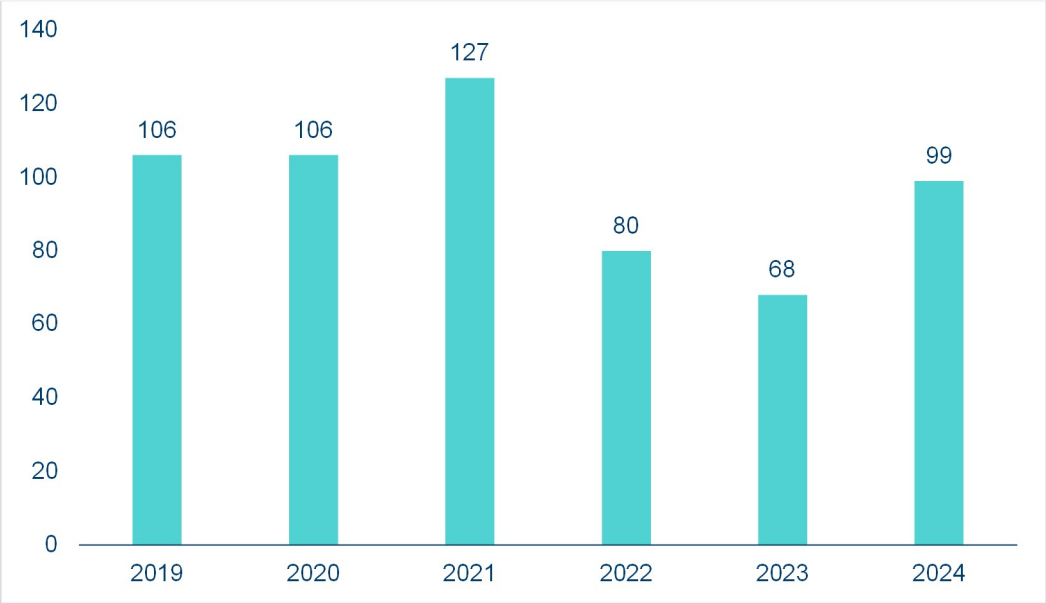
The main impacts to be avoided in works associated with the construction of lines or the modification of facilities are the alteration of the habitat of certain species of fauna and flora, and also the impact on vegetation due to the opening up of security corridors, necessary to prevent fires during the operation of the line.

The specific preventive, corrective, and offsetting measures carried out in this phase during 2024 can be consulted in the Annex: 'Environmental Actions 2024', shown at the end of this document.

## 4. Maintenance of facilities/infrastructure

Regarding the maintenance phase, in 2024, a total of **99 environmental inspections** were carried out in substations. This total represents 14% of all the substations in operation (716) in 2024.

**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 2024, a total of **98 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 that shall be adopted in the construction phase of each facility.
- **Construction or modification of facilities/infrastructure:** 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/infrastructure:** the environmental aspects detected during the maintenance activity are identified and evaluated periodically, under both normal and abnormal operating conditions and at different levels, depending on the status of the 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 |

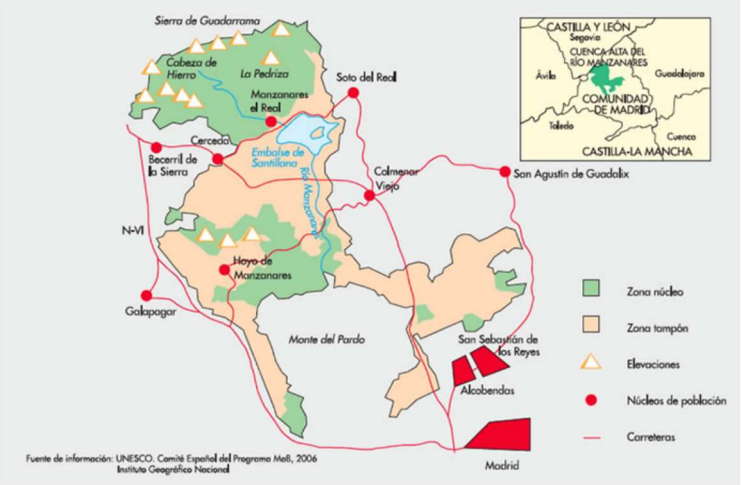
Although the environmental aspects associated to each of the works are specifically evaluated, those that generally have a significant impact on the construction of new lines and substations are detailed below:

| 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 soil and water |
| **Risk of oil and fuel spill during storage and transfer of oils and fuels** | Physical | Potential contamination of soil and water |
| **Risk of oil spill during assembly of equipment** | Physical | Potential contamination of soil and water |
| **Risk of affecting water during land movements** | Physical | Potential contamination of soil and water |
| **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 |

Corporate building works were carried out at the Tres Cantos Campus and Moraleja head office during 2024.

For the **Campus building**, minor exterior paving replacement took place. This was a small-scale project that only required supervision at the beginning and end of the work.

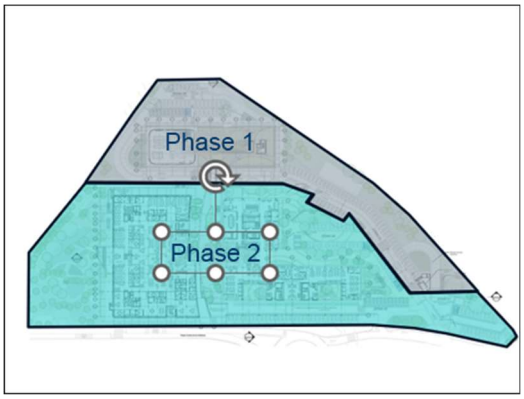
Due to its proximity to the Upper Basin of the Manzanares Regional Park, its specific characteristics and closeness to population centres were carefully considered during the environmental impact assessment of the construction work.




No significant environmental impacts were identified.

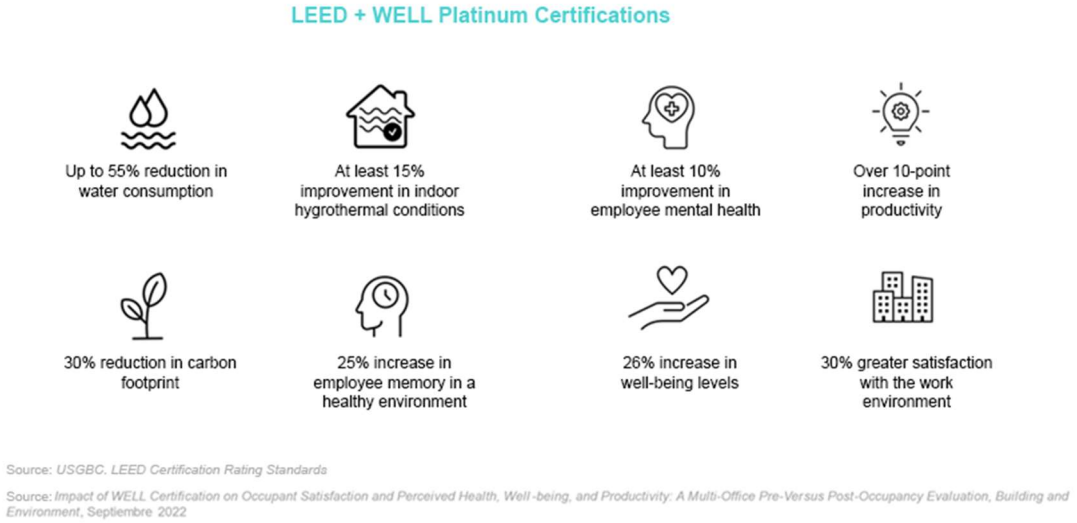
Regarding **La Moraleja head office** redevelopment, a major 4-year project is underway with three phases:

- Phase 0: this phase was developed during the last few months of 2024. site preparation and utility connections; monthly environmental supervision under IT IA011 'Criteria for environmental oversight in corporate building works.'
- Phase 1 (2025): new construction and installations for the entire campus, including access works. This phase will require biweekly environmental supervisions.
- Phase 2 : final development phase involving several urban zones, yet to begin.




This project was conceived with ambitious sustainability goals, having already achieved LEED and WELL Platinum precertifications during its design phases.

Generally, and considering these are currently theoretical goals, this project is expected to yield the following benefits:




Phase 0 started in October 2024. It focused on readying the site and establishing general utility connections for the construction projects expected for 2025. This phase has undergone monthly supervisions.

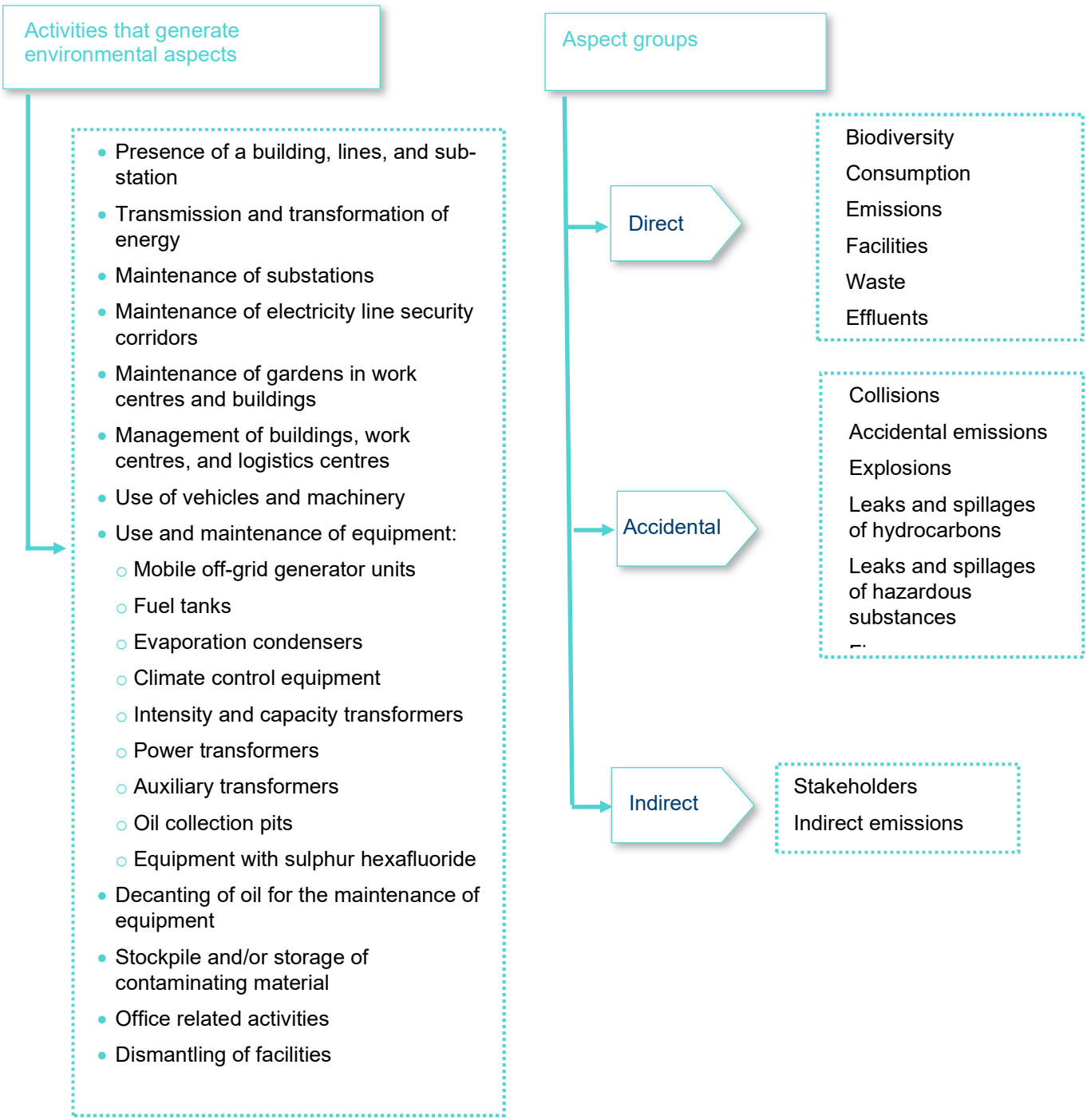
The significant environmental aspects were as follows:

| Aspect | Assessment Significant | Environmental aspect susceptible to impact | Impact | Remarks |
|---|---|---|---|---|
| **Waste** | | | | |
| Concrete | Moraleja head office site | Physical | Potential soil and water contamination from its storage and management | This environmental aspect is significant due to its magnitude, as the total constructed area is 5,000 m² or greater. |
| **Emissions** | | | | |
| Emission of fumes and combustion gases (NOx, SOx, CO, etc.) from mobile machinery, vehicles, mobile off-grid generator units, etc. | Moraleja head office site | Physical | Potential air contamination | This aspect is significant due to the project's duration exceeding 12 months and its proximity (500-1,000 m) to residential areas, social facilities, or healthcare centres. |
| Noise emission | Moraleja head office site | Physical | Potential air contamination | This aspect is significant due to the project's duration exceeding 12 months and its proximity (500-1,000 m) to residential areas, social facilities, or healthcare centres. |
| Dust emission | Moraleja head office site | Physical | Potential air contamination | This aspect is significant due to the project's duration |

| | | | | |
|---|---|---|---|---|
| | | | | exceeding 12 months and the nature of the soil. |
| **Consumption** | | | | |
| Energy consumption (electricity, fuels, etc.) | Moraleja head office site | Physical | Natural resource depletion | This environmental aspect is significant due to its magnitude (total constructed area is 5,000 m² or less) and the nature of the energy consumed (diesel). |
| Water consumption | Moraleja head office site | Physical | Natural resource depletion | This environmental aspect is significant due to its magnitude, as the total constructed area is 5,000 m² or less. |

## 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 2024 assessment:

| Aspect | Assessment Significant | Environmental aspect susceptible to impact | Impact | Remarks[13] |
|---|---|---|---|---|
| **Biodiversity** | | | | |
| Clearing, pruning, and felling | All Regional Areas | Biological | Potential impact on species | The most restrictive criterion was applied for evaluation due to a lack of detailed information and the fundamental nature of this environmental aspect of facility management. |
| Removal of bird nests | Islas Baleares and Islas Canarias | Biological | Potential impact on species | Regarding nature/sensitivity, only stork nests are considered. Since there are no such nests in Islas Baleares and Islas Canarias, evaluating nature/sensitivity as high makes this aspect significant. |
| **Consumption** | | | | |
| Paper consumption | Southern Office. Seville, Manager of Northern Regional Office (Zaragoza), Tres Cantos 1, Manager of Levante Regional Office. Valencia | Physical | Reduction of natural resources | These are significant in that consumption increased by 5% or more compared to last year's average value and reduction measures were not implemented or were insufficient. Specifically:<br>- Seville: 13% increase (2023, 78.99 kg; 2024, 89.55 kg). This is a circumstantial increase not associated with any specific process.<br>- Zaragoza: over 50% increase due to a rise in personnel (2023, 8.43 kg; 2024: 13.61 kg)<br>- Tres Cantos 1: 35% increase due to unassigned print jobs. The reason for this increase is unknown and currently under analysis (2023: 124.4 kg; 2024, 168.16 kg)<br>- Valencia: 28% increase resulting from the rise in the centre's staff (2023, 47.46 kg; 2024, 60.65 kg) |

[13] 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.

For the evaluation of environmental aspects associated with waste, the concept of prevention is applied. The highest value in the prevention evaluation is achieved if at least one instance of waste removal has had elimination as its final destination. 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.'

| | | | | |
|---|---|---|---|---|
| Power consumption | Southern Office. Seville, Manager of Vegueta Regional Office (Islas Canarias), Manager of Levante Regional Office. Valencia | Physical | Reduction of natural resources | These are significant in that consumption increased by 5% or more compared to last year's average value and reduction measures were not implemented or were insufficient.<br>- Seville: 39% increase (2023, 607,098 kWh; 2024, 843,212 kWh). Work was completed in February 2024, resulting in the activation of the second transformation centre.<br>- Vegueta: 8% increase (2023, 683,329 kWh; 2024, 744,041 kWh). Operator workstations were expanded in 2023.<br>- Valencia: 49% increase (2023, 8,198 kWh; 2024, 12,249 kWh). This building is rented, so consumption is estimated; there's no operational control. |
| Water consumption | Southern Office. Seville, Manager of Northern Regional Office (Zaragoza),<br>Manager of Islas Baleares Regional Office<br>Manager of Levante Regional Office. Valencia | Physical | Reduction of natural resources | These are significant in that consumption increased by 5% or more compared to last year's average value and reduction measures were not implemented or were insufficient.<br>- Seville: 22% increase (2023, 195.87 $m^3$; 2024, 238.8 $m^3$). The reasons for this water consumption are currently under investigation. A water audit has been conducted.<br>- Zaragoza: 14% increase. These data are estimates as the building is leased (2023, 13.96 $m^3$; 2024, 15.99 $m^3$)<br>- Islas Baleares: 24% increase. This was due to a community construction project, with consumption costs distributed among all tenants (2023, 291.7 $m^3$; 2024, 361.54 $m^3$)<br>- Valencia: 6% increase (2023, 64.13 $m^3$; 2024, 68.36 $m^3$). Small fluctuations are highly noticeable given the low overall consumption, leading to a high proportional impact. |
| Water consumption | East Regional Area | Physical | Reduction of natural resources | Timed faucets and a pressure pump have been installed in the Eliana building. An anti-return pipe should also be installed to prevent the meter from counting when pressure drops without faucet use. |
| **Hazardous waste** | | | | |
| Soil contaminated | Islas Canarias, North, East, Northwest, and South Regional Areas. | Physical | Potential soil and water contamination from its storage | due to an issue that has not been able to be valued. |

| | | | | |
|---|---|---|---|---|
| with hydrocarbons | | | and management | |
| Fluorescent and mercury vapour lamps | Manager of Western Regional Office (Barcelona) | Physical | Potential soil and water contamination from its storage and management | Generated in 2024, not in the previous year: |
| Hydraulic oil from the mobile off-grid generator units | Moraleja Western head office | Physical | Potential soil and water contamination from its storage and management | Generated in 2024, not in the previous year: |
| Lead batteries | Tres Cantos Campus | Physical | Potential soil and water contamination from its storage and management | This waste wasn't generated in 2023; its generation in 2024 is noteworthy. The batteries are linked to the UPS systems and are periodically replaced every 8 to 10 years once they reach the end of their lifespan. |
| Materials impregnated with hazardous substances (absorbent/filtering materials, rags, clothes) | Central, North, and East Regional Areas. | Physical | Potential soil and water contamination from its storage and management | Waste for elimination |

| Accidental aspects | | | | |
|---|---|---|---|---|
| Birdlife collisions | Canary Island, Central, East, Northwest, North, and South Regional Areas | Biological | Potential impact on species | Derived from collisions with unmarked electricity lines or with ineffective marking. |
| Fire | Northwest, North, Balearic, and East Regional Areas | Physical/Biological/Socio-economic | Potential degradation | Northern Regional Area. Two fires occurred: 400 kV Soto de la Ribera-Penagos line (Asturias) and 220 kV Aldeadávila-Villarino line (Salamanca). Both were caused by third parties. The origin of one fire is under investigation.<br>In other cases, the significance lies in the characteristics of the affected area. |
| Explosions of transformers and equipment (fire and oil spill). | South Regional Area | Physical | Potential contamination of soil and water | A recent event of this nature means the probability of occurrence is medium, making this a significant aspect. |
| Leaks or spills of hydrocarbons | Northwest and Balearic Regional Areas | Physical | Potential contamination of soil and water | More than two spills/leaks per year, specifically in the Northwest Regional Area (Grijota, Velle, and Mudarra) and in Islas Baleares (Valldurgent), thus resulting in a high probability of occurrence and significant aspects. |
| Leaks or spillages of hazardous substances | Central Regional Area. | Physical | Potential contamination of soil and water | Three incidents in 2024 involving broken machinery hoses, which makes this a significant aspect. |

# 7 Environmental performance in 2024

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 2023 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 2023 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
- Savings of resources: water and paper
- Socio-economic environment
- Circular economy and waste management
- Ground/soil
- Stakeholder groups
- Innovation

In the case of electricity and water consumption, in those months of 2024 for which actual data was not available at the closing date of this Statement, the value has been estimated[14].

## 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 is a **proactive and key player** in the transition towards an emission-free energy model, whose key elements shall be **overall efficiency**, the **electrification of the economy,** and **the maximum integration of renewables into the energy mix,** all while guaranteeing the security of supply at all times.

Redeia's activities are crucial for meeting Spain and Europe's climate and energy goals, both medium-term (2030) and long-term (2050 climate neutrality). This is reflected in the group's 2021-2025 Strategic Plan, which focuses on achieving the energy transition in Spain and driving green and digital transformation.

[14] In those cases where there was no value in the first place, the real data for that month of the previous year was used.

The mechanisms that will be decisive in advancing 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.

Since 2011, Redeia has maintained a **public and voluntary commitment to combating climate change**, embodied in its net zero commitment by 2050, emission reduction targets, and **Climate Change Action Plan**, updated to align with the global ambition of limiting the **average temperature increase to 1.5°C.** These targets follow the Science Based Targets initiative (SBTi) criteria.

**Redeia's emission reduction targets for 2030, approved by the Science-Based Targets initiative (SBTi)**

**Commitment to achieving net zero emissions by 2050 compared to 2019 levels**

| Objectives for 2030 | Objectives for 2050 |
|---|---|
| • 55% reduction of Scope 1 and 2 emissions compared to 2019.<br>• 28% reduction in Scope 3 emissions compared to 2019.<br>• Suppliers representing 2/3 of supply chain emissions must have science-based targets (approved by SBTi) in 2026. | • 90% reduction of Scope 1 and 2 emissions compared to 2019.<br>• 90% reduction in Scope 3 emissions compared to 2019. |

*Note: the targets cover 100% of emissions reported in the GHG inventory with no exclusions. Scope 2 emissions are considered under the market-based approach.*

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.

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**.

- ## Contribution to a sustainable energy model

The following are actions related to Red Eléctrica's activity as transmission agent and operator of the Spanish electricity system and which are necessary to achieve the targets 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.
- Red Eléctrica's activities are 100% aligned with the EU taxonomy, significantly contributing to climate change mitigation and adaptation objectives.

## Reduction of the carbon footprint

Redeia has set ambitious reduction targets for 2030, consistent with its long-term goal of achieving net zero emissions by 2050. This commitment and the one related to the contribution to a sustainable energy model, have been endorsed by the **Science Based Target initiative (SBTi)**. To drive and monitor progress towards these objectives, short-term goals (2025) are defined in the **Sustainability Plan** (2023-2025), detailed in this section.

## Adaptation to change

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, Red Eléctrica integrates the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD).** As established in said recommendations, the financial impacts of relevant risks and opportunities are quantified, incorporating the consideration of different physical and transitional scenarios.

## Positioning and communication

Red Eléctrica works to communicate with stakeholders and involve them in its commitment to climate change. The main objective is to **disseminate knowledge and provide complete and transparent** information on the electricity system and its role in the energy transition, as well as to promote different energy efficiency measures.

Redeia participates in multiple initiatives, including the 2021 publication with seven other European companies of an informative document on the role of Transmission System Operators (TSOs) in decarbonising the energy system.
It is worth highlighting initiatives dedicated to education such as Entreredes (an educational project for secondary school students), the interactive and digital exhibition 'Connected to the Future' which since 2022 has been taken to five Spanish cities (Las Palmas de Gran Canaria, Tenerife, Granada, Valladolid, and Madrid), and Hémera, a school created as a digital training tool within the framework of the Spanish Federation of Popular Universities (FEUP).
Redeia is also a member of the Spanish Green Growth Group, an association for the promotion of public-private collaboration to jointly advance the decarbonisation of the economy, working on aspects related to mitigation and adaptation to climate change and circular economy.

### 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, 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 Red Eléctrica's greenhouse gas emissions in the last three years is shown in the following tables:

| Greenhouse gas emissions ($tCO_2eq$)[15][16] | 2022 | 2023 | 2024 |
|---|---|---|---|
| $SF_6$ [17] | 18,292 | 26,660 | 22,787 |
| Climate control equipment (HVAC systems) | 465 | 221 | 586 |
| Fleet vehicles | 1494 | 1,674 | 1,578 |
| Mobile off-grid generator units | 287 | 315 | 330 |
| **Total direct emissions (Scope 1)** | **20,538** | **28,870** | **25,281** |
| Emissions associated with electricity consumption[18] | 308 | 273 | 222 |
| Emissions derived from losses in transmission[19] | 717,707 | 582,426 | 512,867 |
| **Total indirect emissions (Scope 2)** | **718,015** | **582,699** | **513,089** |
| **Total (SCOPE 1+2)** | **738,553** | **611,569** | **538,370** |

[15] The calculation of emissions is performed from an operational control perspective. Information on the scope and methodology of the inventory is available on the corporate website. The inventory has been independently reviewed in accordance with ISAE 3410 standard.

[16] Emissions expressed in $tCO_2eq$. Relevant emissions in 2024 of gases other than $CO_2$: $SF_6$ emissions in 2024: 937.74 kg; refrigerant gas emissions (HFCs): 218.56 kg of R-410 A; 34.87 kg of R-407C and 23.8 kg of R-32.

[17] The 100-year GWP from the sixth IPCC:24,300 report is used. The entire historical series has been recalculated considering the new GWP for $SF_6$. https://www.ree.es/es/sostenibilidad/descarbonizacion-de-la-economia/huella-de-carbono

[18] The emissions are calculated under the 'market based' approach, applying the emission factors associated with the market agents that supply the electricity. Emissions in 2024 calculated under the location-based approach were 514,521 $tCO_2eq$.

[19] 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, Islas Baleares or Islas Canarias) are calculated and taken into account by Red Eléctrica based on the annual balance. The reduction in emissions is mainly due to the improved emission factor of Spain's electricity mix, which in 2024 had a higher share of renewables than in 2023 (average factor 0.10 $tCO_2eq/MWh$ compared to 0.12 $tCO_2eq/MWh$), primarily associated with a 36% increase in hydroelectric power generation nationwide compared to 2023, a 15% increase in solar power generation nationwide, and decreases in combined cycle (23.6% less than in 2022) and coal generation (23.6% less than in 2022).

| Indirect emissions (Scope 3) ($tCO_2$ eq) | 2022 | 2023 | 2024 |
|---|---|---|---|
| Purchased goods and services[20] | 271,521 | 347,910 | 454,598 |
| Capital goods[21] | 123,689 | 114,271 | 150,909 |
| Energy generation (not included in Scope 1 and 2) | 809 | 1,192 | 526 |
| Waste | 48 | 96 | 9 |
| Transportation and distribution (logistics)[22] | 1,000 | 1,096 | 1,219 |
| Business travel[23] | 734 | 877 | 1,869 |
| Employee commuting | 3,205 | 2,044 | 1,730 |
| Leased assets[24] | 90 | 1,114 | 1,215 |
| Investments[25] | - | 58566 | 113,737 |
| **Total emissions Scope 3[26]** | **401,097** | **527,166** | **725,812** |

### 7.1.2 $SF_6$ emissions

The main direct emissions derived from Red Eléctrica's activities are those arising from the sulphur hexafluoride ($SF_6$) gas present in the equipment installed in the transmission grid it manages.

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, therefore, it has various gas reduction initiatives underway and which have been reinforced as part of the company's Climate Change Action Plan. The most important courses of action are the following:

- **$SF_6$ gas inventory**: improvement of the procedures for monitoring and recording leaks.

[20] For the correct interpretation of the data, it is necessary to consider that the emissions associated with the purchase of goods and services and capital goods depend on the characteristics of the specific goods and services/capital goods purchased each year (which entail different carbon emission intensities) and the volume purchased (annual expenditure).

[21] For the correct interpretation of the data, it is necessary to consider that the emissions associated with the purchase of goods and services and capital goods depend on the characteristics of the specific goods and services/capital goods purchased each year (which entail different carbon emission intensities) and the volume purchased (annual expenditure).

[22] Corresponds to emissions associated with internal logistics and other emissions regarding transport of materials.

[23] Includes trips made by train, plane, own vehicle, rental vehicle, and taxi.

[24] All emissions correspond to upstream-leased assets. The increase in emissions from 2023 is primarily linked to a change in methodology, which involves a reclassification of some emissions that were previously included in category 1 in past years. Emissions related to downstream-leased assets are zero for the historical series.

[25] Emissions from the group's participation in Argo Energia Empreendimentos e Participações S.A. and Compañía Operadora de Infraestructuras Eléctricas S.A. are now accounted for. Additionally, emissions from the company INELFE (Spain-France Interconnection) are also included. Since 2023, data corresponds to the RE+REC companies.

[26] In 2024, Scope 3 emissions have increased by 37.7%.

- **Training:** the company is legally authorised to provide training in gas handling. since 2013, 541 employees have been trained, of which 444 hold the official certification. Additionally, to optimise maintenance and leak repair work, specific technical training sessions in GIS technology have been conducted.

- **Renewal/replacement of control gear:** 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 renovation project for the 400 kV Litoral substation, initiated in 2022 and currently underway. This is one of the facilities where, due to its age and environmental conditions, the highest gas emissions have been produced in recent years.

- **Prevention, detection, and control of leaks:** preventive maintenance actions, the efforts made by the company to reduce leak detection and intervention times, as well as 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%.

  It is noteworthy that Red Eléctrica has its own methodology for the repair of $SF_6$ leaks in GIS facilities, which allows for the repair of faults in shielded GIS substations without disassembling the damaged sections, significantly facilitating the work. In 2024, 17 leaks were successfully repaired, mainly associated with corrosion or equipment ageing.

  The Climate Change Action Plan envisages enhancing the resources dedicated to these actions and includes additional, carried out in 2024 include:

  - Design of protective roofing for existing facilities to prevent degradation of materials due to atmospheric agents and, therefore, reducing leakage. In 2024, work commenced on the covering of the 400 kV GIS substation at Pola de Gordón, which will be carried out in 2025.
  - Incorporation of requirements in procurement tenders that help minimise gas losses (rapid intervention in cases of leakage and equipment design criteria, among others).
  - Sub-stitution of $SF_6$ gas for nitrogen ($N_2$) in equipment that has been stored as back-up units.

- **Reduction of $SF_6$ and the search for alternatives:** the company is committed to promoting alternatives to $SF_6$, which are currently under development. To this end, it participates in various technological monitoring groups and experience exchanges with other agents in the electrical sector, primarily with equipment manufacturers and other European TSOs, highlighting the 'Mission' project, which aims to share the results of field tests of different types of control gear with alternatives to $SF_6$.

  The company is developing relevant pilot projects such as the inclusion of an alternative gas in the 400 kV substation busbars and gas ducts. In addition, it should be noted that Red Eléctrica has two 66 kV cubicle-type GIS equipped with alternative gases, located in Islas Canarias for use as mobile substation units. Additionally, in 2024, an additional trigger was installed alongside the three $SF_6$-free AIS triggers (with $CO_2$ + $O_2$ technology) installed in 2023, and progress will continue in the technical qualification and approval of new gas-free models.

Nationally, Redeia collaborates with the public administration and other entities in the search of solutions aimed at controlling and reducing these emissions within the framework of the voluntary agreement, signed in May 2015 and currently being renewed, between the Ministry for the Ecological Transition and the Demographic Challenge and the manufacturers and suppliers of electrical equipment that use $SF_6$, electricity transmission and distribution companies and waste management companies that 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.

Furthermore, the company participates in various international working groups aiming to exchange best practices for emission reduction and experiences with $SF_6$ alternatives.

| REDUCTION TARGETS[27]: $SF_6$ emissions |
|---|
| 25% net reduction in $SF_6$ emissions compared to 2015 by 2030. |
| Maximum cumulative emissions in the period 2021-2030: 252,000 $tCO_2$. |
| **PROGRESS MADE IN 2024[28]** |
| **32%** reduction in $SF_6$ gas emissions compared to 2015. |

| | 2022 | 2023 | 2024 |
|---|---|---|---|
| $SF_6$ installed (kg) [29] | 518,425 | 523,009 | 541,014 |
| $SF_6$ emissions/$SF_6$ installed (%) (including accidents)[30] | 0.14 | 0.21 | 0.17 |
| **Total emissions (kg)** | **753** | **1,097** | **938** |

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

[28] Actions aimed at reducing $SF_6$ gas emissions are proving to be very effective. However, it should be considered that the probability of $SF_6$ leakage is 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 the installed equipment. Considering these circumstances, the expected trend is 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 with $SF_6$ insulated equipment. The commissioning of these facilities is essential for the development of the transmission grid necessary in order to undertake the energy transition. 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 the installed equipment. Considering these circumstances, the expected trend is an increase in emissions.

[30] The rates reflected are calculated using actual data collected in the field about leaks as a result of maintenance work. Furthermore, the estimated emissions corresponding to the end of the life cycle of the equipment. The maximum leakage rates for equipment in service, as estimated by manufacturers and included in the voluntary agreement for $SF_6$ management signed in 2015, depend on their age. For equipment commissioned from 2008 onwards, a leakage rate of 0.5% per year is assigned (higher rates apply to older equipment). The low emission rates reflect the enormous effort of the company to improve the management and control of $SF_6$ emissions, especially since 2015. The peaks in 2019 and 2023 are associated with accidents occurring in GIS substations (one each year) that led to an increase in emissions.

### 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. 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.

To identify areas with significant energy use and define measures for savings or renewable energy use, Redeia conducts energy audits every four years. The results are included into the Climate Change Action Plan, setting quantified energy efficiency targets and considering measures estimated to save over 1,700,000 kWh for the 2021–2030 period. The progress of these measures is reviewed bimonthly by a specific working group (Water and Energy), which establishes corrective actions as necessary.

In 2024, energy audits have been carried out in 20 workplaces and corporate buildings. As a result, at least 80 new viable savings measures have been identified (installation of solar slats, replacement of lights and heat pumps, presence detectors, etc.), which, with an approximate cost of 175,000 euros, would allow an estimated saving of 400 MWh/year. These actions will begin to be implemented during 2025.

#### 7.1.3.1 Electricity consumption – Reduction of electricity consumption

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

| | 2022 (kWh) | 2023 (kWh) | 2024 (kWh) |
|---|---|---|---|
| Total (kWh) | 14,763,374 | 14,179,164 | **14,034,411**[32] |
| Total (Joules) | $5.31*10^{13}$ | $5.10*10^{13}$ | **$5.05*10^{13}$** |

| REDUCTION TARGETS (COMPARED TO 2015): electricity consumption |
|---|
| Reduction of emissions associated with electricity consumption: 90% by 2030. |
| Reduction of electricity consumption in work centres: 30% by 2030. |
| **PROGRESS MADE IN 2024** |
| Reduction of emissions associated with electricity consumption in work centres: **95.4%.** |
| **13.2%** reduction in electricity consumption[33] in Red Eléctrica work centres compared to 2015. |

##### 7.1.3.1.1. Energy efficiency measures implemented in 2024

The main courses of action regarding the reduction of electricity consumption were the following:

[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 2024, 96% of contracted energy was from renewable sources.

[32] For the months in 2024 without actual energy consumption data as of 31 December 2024, values were estimated using the previous year's actual month data, invoices from that month, or the monthly average of available actual values if the former were unavailable.

[33] Throughout 2024, Redeia has continued to reduce its electricity consumption by implementing energy-saving and efficiency management measures in its buildings. This led to a 13.2% net electricity consumption reduction in workplaces compared to 2015, meeting the 2024 goal to achieve a 30% reduction in electricity consumption in Red Eléctrica workplaces by 2030. This expected value has been set considering that the efficiency measures are applied gradually and that it will be from 2025 when the measures with the most significant savings will be implemented (for example, changes in the thermal envelope, replacement of large equipment, etc.). The partial objectives for reducing electricity consumption and the associated emissions will be reviewed and updated in 2025, the year in which the Climate Change Action Plan will also be reviewed and updated.

| | |
|---|---|
| Buildings | • Progress in measures to reduce consumption in lighting and heating: replacement of HVAC equipment and lighting fixtures, and installation of occupancy sensors.<br>• The management measures established in 2023 are maintained: adjustments to the set temperature of buildings, switching off illuminated signs at night, activating automatic door closures at street entrances, adjusting air conditioning schedules to align with workspace usage, adjusting lighting in common areas and car parks, and reprogramming office equipment to reduce standby power consumption.<br>• Energy management system certified under ISO 50001 standard for buildings at the head offices and Redeia campus.<br>• 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, in accordance with NZEB (Nearly Zero Energy Buildings) criteria. The training campus also has a solar photovoltaic installation for self-consumption. Moreover, the main control building of the Salto de Chira pumped-storage hydroelectric power station is designed in accordance with the criteria of LEED Platinum certification (US Building Council).<br>• Awareness campaigns include specific presentations and monographs on energy consumption for responsible units, emphasising the importance of optimising and reducing energy use for employees. These trainings sessions, resulting in new savings proposals, will continue throughout 2024. |
| **IT Systems** | • Renewal of IT equipment and systems in accordance with maximum efficiency criteria.<br>• Application of efficient use policies in all end-user IT systems.<br>• Consolidation regarding the use of collaborative communication platforms that reduce the need for travel.<br>• Migration to and intensive use of virtual servers (since 2015), which improve energy efficiency if compared to physical. |
| **Substations** | • Rationalisation in the use of lighting. Thanks to the improvement in remote control systems for outdoor lighting currently there are 446 substations whose night-time exterior lighting does not switch on unless it is necessary. |

#### 7.1.3.1.2. Use of renewable energy

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 facilities. Most of the electricity supply contracts managed by the company include guarantees of renewable origin (GO) or international green energy certificates (IRECs), with only rented work centre supplies currently lacking these certificates.

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, and three buildings have HVAC installations based on geothermal energy. Furthermore, photovoltaic energy facilities are available at 17 work centres, and within the framework of energy audits conducted in 2024, 15 new viable installations have been identified with an approximate net generation of 300 MWh per year. The implementation of these facilities will be integrated into the new version of the Climate Change Action Plan scheduled for 2025.

Additionally, efforts are being made to advance the use of renewable energies in the backup generators of the facilities within the framework of R&D&I projects. Two pilot projects have been implemented using portable hybrid panels to power substations lacking a connection to the distribution grid (Platea and Aguayo substations in 2023). Efforts are also underway to replace diesel with 100% plant-based fuel (project developed in 2024).

Renewable energy use targets

- 100% renewable electricity contracted by 2024.
- Implementation of self-consumption installations in workplaces: *21.*

- Progress made in 2024:

» 96% of electricity consumed came from renewable sources. [34]

» Implementation of self-consumption installations in workplaces: *17.*

**Reductions in energy consumption** [35]

| Estimated annual savings | kWh/year | Joules/year |
|---|---|---|
| Efficiency measures in buildings: air conditioning and lighting (fixtures and timers) | 28,659 | $1.0 \cdot 10^{11}$ |
| Efficiency measures in substations: switching off of night-time lighting. | 234,303 | $37.8 \cdot 10^{12}$ |

**Reduction of greenhouse gas emissions**

| Net savings in 2023 | $tCO_2$ eq |
|---|---|
| Contracting an electricity supply with a Renewable Energy Guarantee of Origin (REGO) certificate[36] | 23,550 |
| Implementation of energy self-consumption facilities | 63.3 |
| Reduction of emissions as a result of works/actions to repair $SF_6$ leaks | 3,834 |
| Reduction of commuting emissions due to an increase in remote work | 621 |
| **Estimated annual savings**[37] | $tCO_2eq$/year |
| Reduction of $SF_6$ emissions by replacing old equipment with equipment with lower leakage rates. | 76.7 |
| Switching off of night-time lighting in substations. | 1,052 |

### 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 it. Among the most important measures carried out in recent years, noteworthy are the following:

- **Efficient management of fleet vehicles**. The company prioritises the best technologies currently available (hybrid, plug-in hybrid, and electric), considering the specific needs of each service and optimising their use through the application of CARS (Agile, Responsible, and Safe Driving System), which facilitates the use of efficient routes and promotes responsible driving.

[34] Some work centres do not have an electrical connection and are supplied from the transmission grid; thus, they are not considered in the evaluation of the objective compliance. In 2024, their consumption accounted for 2.34% of the total electricity consumption.
[35] The estimated annual reductions derived from the measures implemented in 2021 have been included.
[36] Electricity supply with a Renewable Energy Guarantee of Origin (REGO) certificate or International Renewable Energy Certificates (IRECs): 0 $tCO_2$/kWh.
[37] The energy efficiency measures that have been implemented in work centres result in insignificant emissions savings, given that most of the energy consumed (saved) is of renewable origin.

- **77%** of the company's vehicles (including passenger cars, SUVs, vans, derivatives, trucks, shared leasing, executive vehicles and the pool of electric vehicles have an **energy rating of 'A'**.
- 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).
- **Provision of a pool of 100% electric vehicles** to cover corporate needs.
- **Measures to optimise business travel** by promoting and improving online/virtual communication tools to reduce travel (video conferences and remote accessibility platforms) and the consideration of sustainability criteria in the company's travel policy.
- **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) over the past three years associated with company vehicles is as follows:

| | 2022 | 2023 | 2024 |
|---|---|---|---|
| Diesel (l) | 239,850 | 287,446 | **279,098** |
| Gasoline (l) | 417,175 | 445,419 | **410,986** |
| Biodiesel | 0 | 0 | **0** |
| LPG Autogas | 0 | 0 | **0** |
| Total vehicle fuel[38] (l) | 657,025 | 732,865 | **690,084** |
| Off-grid diesel generators[39] Consumption not associated with vehicles (l) | 172,139 | 146,673 | **166,423** |

### 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 company's indirect emissions (scope 3). Therefore, the company has initiated various actions to reduce these emissions, collaborating with key suppliers under two approaches:

• Development and implementation of the **calculation of emissions associated with the main supplies**,under LCA methodology and incorporation of circularity and climate change criteria in purchasing decisions. Since the start of the project in 2022, work has been carried out on 11 supplies (10 equipment and 1 service). Specifically, in 2024, the structures of substations, underground cables, insulators (glass and composite), disconnectors, and measuring transformers were analysed.

• **Specific collaboration programme**, which has been in progress since 2019 and currently involves 26 suppliers. Besides improving the information regarding its emissions, the goal is to extend Redeia's commitment to emission reduction to its supply chain, encouraging suppliers to set science-based targets (SBTi) and sharing best practices in emission calculation and reduction.

[38] Fuel consumed by Red Eléctrica vehicles (fleet vehicles, shared leasing, and management vehicles).

[39] Until 2019, the data corresponds to the diesel refilled in the fuel tanks in the year indicated. Since 2020, there has been a methodology change: the data reflects the total fuel consumed in the year.

## Targets for reducing the carbon footprint in the supply chain

» Suppliers representing 2/3 of supply chain emissions must have science-based targets (approved by SBTi) in 2026.

» Progress made in 2024:

» 35.3% of emissions covered with SBTI[40].

| Supplier collaboration programme on climate change. | 2023 | 2024 |
|---|---|---|
| % of supplier emissions covered by the collaboration programme[41]. | 43 | 34 |
| % of certified amount covered by the programme[42]. | 45.8 | 43.4 |

| 2023 | 2024 | |
|---|---|---|
| 25 | 25 | Suppliers who have completed the questionnaire |
| 15 | 18 | Suppliers with a verified carbon footprint |
| 13 | 21 | Suppliers that have the scope 3 carbon footprint calculated |
| 10 | 15 | Suppliers with short-term SBT targets validated (additionally, 7 have validated Net Zero targets) |
| 5 | 2 | New suppliers that have SBT targets committed |
| 17 | 22 | Have provided direct information that has been considered valid for the calculation of scope 3 |

[40] As expected, no emission reductions have materialised since the base year 2019. It is important to highlight that the initial actions in this area are primarily aimed at improving the knowledge and calculation of emissions to increase the percentage of actual data and the quality of information. These are essential issues for identifying and analysing the effectiveness of appropriate reduction measures. The training and awareness-raising work for suppliers carried out within the framework of the collaboration programme, despite having led to an improvement in the maturity of the participants, does not translate into a direct reduction in emissions in the short term. Furthermore, the increase in the company's activity (investment) also leads to a rise in emissions associated with the supply chain. However, thanks to the ongoing work, this increase is not proportional (emissions associated with the supply chain have increased by 6% compared to 2023, while the certified amount has increased by 55%).
[41] Scope: electric business activities and corporations in Spain and Reintel (for which the programme is being developed). The figure for 2024 considering the entire group is 27.5%
[42] Scope: the indicator considers the entire group. Despite working with the same number of suppliers, their impact in terms of emissions and certified amount varies depending on many factors: total emissions, type and volume of goods purchased, or services contracted. It is important to highlight the progressive reduction in weight in terms of emissions, mainly associated with improvements in the performance of suppliers that are part of the programme (as they reduce their emissions, they lose weight).

| Main indicators for supply chain emissions | 2023 | 2024 |
|---|---|---|
| Supply chain emissions ($tCO_2eq$)[43]. | 698,953 | 741,148 |
| % of total supply chain emissions calculated from direct data[44]. | 22.1 | 43.2 |
| % supply chain emissions covered with SBTi[45] | 30.8 | 35.3 |

[43] This value does not exactly match the scope 3 categories indicated in the emissions inventory. The value refers to the emissions associated with supplier activities that are reflected in various categories (1, 2, 4, and 15).
[44] Specific information on supplies (derived from LCA data) is considered alongside supplier information collected from the collaboration programme. In 2024, there has been a notable improvement in the supply chain emissions information.
[45] Scope: Redeia. The data incorporates emissions from all suppliers with SBTi, whether or not they are in the programme (the 2023 data has been recalculated according to what was published last year).

### 7.1.5 Offsetting emissions

In addition to the measures aimed at reducing emissions and to minimise the carbon footprint of the group as much as possible, specific actions have been implemented to offset emissions. In this regard, and as part of its strategy to move towards climate neutrality, Red Eléctrica is committed to offsetting all direct emissions that it cannot reduce as of 2023.

One of the main offsetting projects is the '**Redeia Forest**', which is described in the Conservation of Natural Capital section of this report.

In 2024, four forests have been registered in the absorption project section of the Spanish Office for Climate Change (MITERD): Nieva (Orense), Gamalleira (Lugo), Las Hormazas (Burgos) and Hoyos del Espino (Ávila), with 1,613 $tCO_2$ recorded at the start, representing a total of 8,873 $tCO_2$ expected absorptions over 50 years.

Additionally, the company has procured **25,000 VCUs** (Verified Carbon Units) from three initiatives: landfill gas (LFG) capture for electricity generation at Santa Marta in Chile (Gold Standard verification); Reforestation in Vichada, Colombia (Gold Standard verification); and Envira Amazonia in Brazil, focusing on avoided deforestation (VCS verification).

These credits, together with the absorption of the forest, allowed for the offsetting of 100% of emissions in 2023, as well as the emissions from Redeia's corporate events (the General Shareholders' Meeting and the 2nd Sustainability Conference sessions) in 2024.

It is worth highlighting that the economic cost of these offsetting projects serves as a reference for setting the internal carbon price for use as an internal rate, which in 2024 was 11.82 euros per $tCO_2$.

| EMISSION OFFSETTING TARGETS |
| --- |
| Offset 100% of Scope 1 emissions as of 2023 |
| **PROGRESS MADE IN 2024** |
| 100% of Scope 1 emissions + emissions from corporate events in 2022, 2023, and 2024. |

### 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 dissipated 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 directly controllable by Red Eléctrica, although it is worth noting that increased efforts to integrate more renewable energy into the energy mix results in a progressively lower emission factor and, consequently, 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[46], 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.

Regarding the use of the best technologies, the **'Dynamic Line Rating (DLR) of Red Eléctrica'** innovation project stands out, which allows calculating the transmission capacity in real time based on the prevailing weather conditions. This enables operating the electrical circuits based on specific conditions in each case, replacing more conservative average calculation hypotheses and generating significant energy savings for the electrical system. It is estimated that DLR values could exceed seasonal transmission capacities normally operated by up to 80% of the time. This project was awarded as the **best energy efficiency initiative in 2023** by the *Periódico de la Energía*.

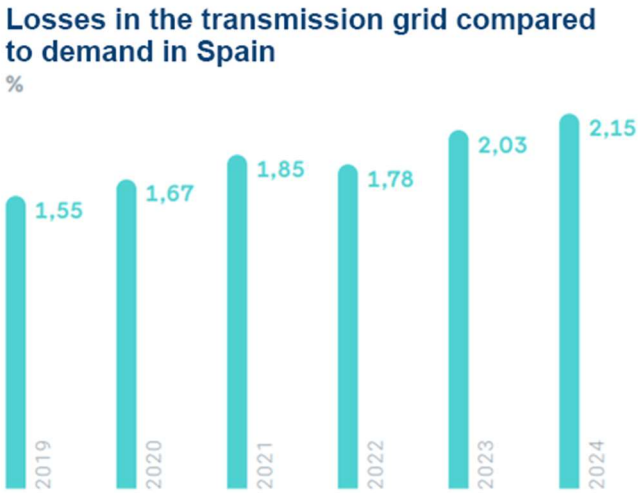
However, all these improvements have a minor impact on the evolution of energy losses, with those other aspects, not controlled by Red Eléctrica, having the greatest influence.

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, as operator of the electrical system, is carried out in accordance with specific and statuary operating procedures. In accordance with

[46] 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.

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.



## 7.2 Biodiversity-natural capital

**Biodiversity** is an essential part of the services and goods that ecosystems provide, which are necessary for life on the planet and, therefore, also fundamental for generating value for society and the economy. However, it is under increasing pressure: wildlife is disappearing, ecosystems are degrading, and finite resources are depleting at an unprecedented rate.

This concerning situation is intricately tied to socio-economic activities, the expanding global population, and the escalating demand for resources. As a result, approximately two-thirds of the Earth's marine area and 75% of its land area have been significantly impacted or altered by human activities[47].

The current state of biodiversity loss has reached such alarming levels that the point of no return or system collapse is rapidly approaching. Such is the interdependence between human beings and the natural environment that a collapse in the species we depend upon or the environment we inhabit could have more devastating consequences than economic or health crises, or the impacts of climate change.

The primary factors fuelling the decline and depletion of global biodiversity are the widespread alterations in land and ocean use, which encompass habitat loss and degradation; overexploitation; climate change; pollution; and the introduction of invasive species[48] also significantly contribute to this alarming trend. It is important to recognise that these threats predominantly arise from various socio-economic activities.

In light of the pressing issue of biodiversity loss, it is imperative for all businesses to embrace a commitment to foster an economic system that decouples economic growth from the degradation of natural resources. This entails recognising the need to operate within planetary boundaries while simultaneously ensuring social development.

Redeia is working on establishing a sustainable business model where biodiversity, natural capital, and the ecosystem services it provides to society is one of the pillars of its business strategy. The company is aware of the risks associated with biodiversity loss and directs its activities towards generating a positive biodiversity impact by adhering to the mitigation hierarchy.

In order to achieve its objectives, Redeia continually strengthens and optimises its efforts and resources in the realm of biodiversity and sustainability. The company is committed to maximising efficiency in its pursuit of the proposed goals, by leveraging its environmental policy and through its unwavering commitment to biodiversity conservation.

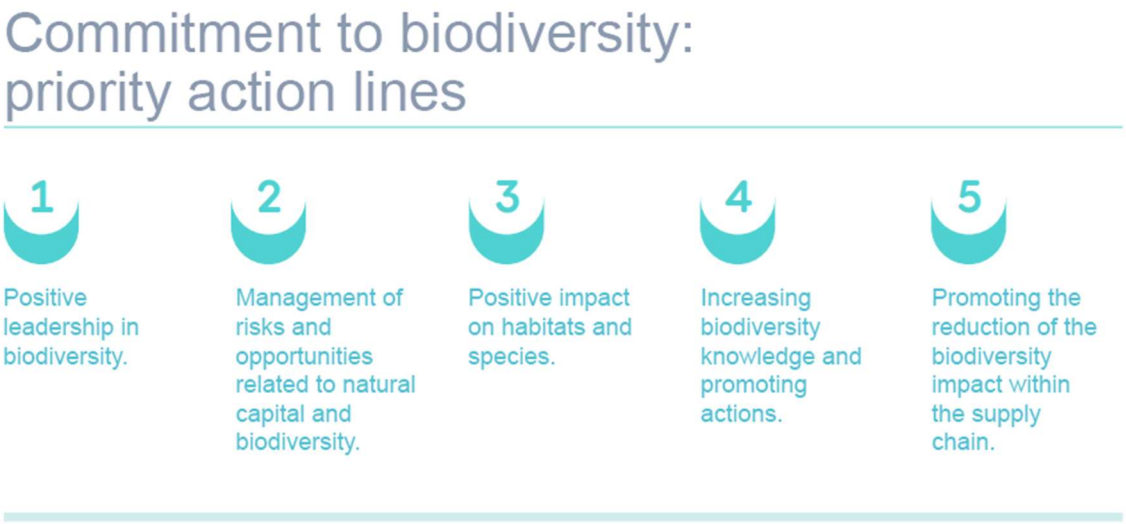
[47] Global Assessment Report on Biodiversity and Ecosystem Services (IPBES, 2019).

[48] Living planet report 2020 (WWF, 2020).

### 7.2.1 Commitment to biodiversity

The protection and conservation of biodiversity have always been a priority in the company's environmental management and a key factor in the group's strategy, as manifested in a **specific Biodiversity Commitment updated in 2023.** This commitment includes the goal of generating a positive impact on biodiversity in the areas where we operate by 2030, a challenge under the sustainability objective of achieving a net positive impact on natural capital surrounding new installations by 2030.

*Through its commitment to biodiversity, Redeia aims to achieve a positive impact on biodiversity and 'live in harmony with nature', in line with the 2050 vision of the United Nations Convention on Biological Diversity.*




In order to achieve its objectives, Redeia continually strengthens and optimises its efforts and resources in the realm of biodiversity. The company is committed to maximising efficiency in its pursuit of the proposed goals, both in terms of its own operations and those of its suppliers and partners, by leveraging its environmental policy and through its commitment to biodiversity.

Through the biodiversity commitment, Redeia aims to **contribute to a positive impact on biodiversity** and 'live in harmony with nature' in line with the United Nations Convention on Biological Diversity's 2050 Vision.

Explicitly, and as part of both its Biodiversity Commitment its Commitment to Combat Climate Change, Redeia also has a specific Commitment to protect vegetation and fight against deforestation in the execution of its activities and those of its supply chain.

### 7.2.2 Alliances

The company maintains alliances in the field of biodiversity conservation with the competent areas of the public administration and other organisations in the various autonomous communities. Other alliances with benchmark organisations are also worth mentioning.

**Commitments and memberships**

- Biodiversity and natural capital Pact. Red Eléctrica is part of the Spanish Business and Biodiversity Initiative (IEEB) promoted by the Ministry for Ecological Transition since 2013. A new commitment was signed in 2023 under the ACT Pledge.
- Business for Nature Initiative. *https://www.businessfornature.org/*
- Global Compact's Sustainable Ocean Principles.
- Transnational Strategy to fight against Cortaderia selloana (pampas grass) in the Atlantic Arc. *http://stopcortaderia.org/estrategia/*
- European Grid Declaration on Grid Development and Nature Conservation.
- European Marine Grid Declaration.
- Forest fire prevention agreements with 5 regions (autonomous communities).

**Working groups**

- Biodiversity working group with MITERD's Sub-directorate General for Terrestrial and Marine Biodiversity.
- Natural Capital in the Spanish energy sector, Natural Capital Coalition.
- Natural Capital of the Spanish Green Growth Group.
- ISO Committee CTN 328 Biodiversity.

**Collaboration Framework**

- IUCN (International Union for Conservation of Nature) Centre for Mediterranean Cooperation.
- SEO BirdLife (Spanish Ornithological Society).
- Global Nature Foundation.

As a notable event in 2024, Redeia and the International Union for Conservation of Nature (IUCN) signed a new agreement to enhance knowledge about the state of biodiversity and conservation actions, focusing on promoting a positive impact on biodiversity in the natural environment of Redeia's facilities in Spain.

### 7.2.3 Objectives related to biodiversity conservation

A series of objectives related to biodiversity have been defined with a scope extending to 2025, aiming to work towards the goal of achieving a positive impact **on biodiversity** by 2030.

| Scope of action | Objectives for 2025 |
|---|---|
| **Biodiversity impact measurement and assessment.** | • Implementation of a system for accounting and valuation of natural capital in biodiversity in Red Eléctrica.<br>• 100% of the group's companies in the electricity business with a baseline regarding the potential impact on biodiversity. |
| **Biodiversity-related risks and opportunities** | • Identification of risks and opportunities regarding natural capital and biodiversity in Red Eléctrica. |
| | • 100% of critical paths marked with bird-saving devices (Red Eléctrica). |
| **Habitat protection and restoration: protected areas or areas of high biodiversity value.** | • Development of offsetting projects associated with the commitment to protect vegetation and combat deforestation for 100% of the investment projects. |
| **Recovery and conservation of endangered and vulnerable species** | • Recovery projects for 10% of the fauna groups with target marine and terrestrial species. |
| **Eradication of invasive species associated with electricity transmission infrastructure** | • Development of prevention and control plans for invasive species for at least 30% of the identified area. |
| **Electricity infrastructure as a biodiversity reservoir** | • Definition of measures and criteria for sustainable management to promote biodiversity under the power lines identified through the IDBI indicator between 7 and 10 (potentially suitable) and design of a pilot project (in a previously selected area). It was amended by the Board in July 2024. |

### 7.2.4 Impacts, dependencies, risks, and opportunities in biodiversity

During 2024, Redeia worked on an approach aligned with the guidelines established by the TNFD (Task-force on Nature-related Financial Disclosures) for identifying and assessing the impacts, dependencies, risks, and opportunities related to nature arising from its activities.

The analysis has been conducted by identifying the sectors to which Redeia's activities belong using the ISIC reference[49] classification and cross-referencing it with the impacts and dependencies on nature by sector as indicated by the ENCORE tools[50] and SBTN materiality tool[51]. These tools consider the potential impacts of the company's own operations and those related to the upstream value chain.

For **upstream value chain activities**, although an initial relevance analysis has been carried out, there is no specific and reliable information on the impacts and dependencies in the supply chain. It is expected that there may be impacts and dependencies arising from the need to supply raw materials, materials, and equipment through the supply chain, which can create risks and opportunities. Redeia will address in the future to what extent these impacts and dependencies in the value chain are significant and whether they entail relevant risks or opportunities.

In addition, considering that the company's main activity is the transmission of electricity from the generation points to the distribution points for subsequent consumption, it would be the different use of electrical energy by both the distributors and the final consumers at the national level that would constitute the activities **downstream in the company's value chain**. It is such a broad and vast area that it is currently impossible to identify the potential impacts, dependencies, risks, and opportunities of this segment of the value chain.

#### LEAP-TNFD methodology

Redeia updates the identification of impacts, dependencies, risks, and opportunities following the **LEAP methodology** (acronym for Locate, Evaluate, Assess and Prepare) proposed by the TNFD:


#### Identifying nature's impacts and dependencies

*LOCATE: location of installations in sensitive areas*

Although there are key economic sectors that have a high impact on biodiversity, in the case of Redeia, specifically in the business activity of electricity transmission, it is not among the productive sectors that contribute the most to direct impacts on biodiversity. The information regarding the sensitivity of territories (sensitive areas) has been cross-referenced with the location of the facilities (overhead span, km of underground or submarine line, and/or substation), categorising the areas into four levels of sensitivity.

[49] International Standard Industrial Classification of All Economic Activities (SIC). United Nations.https://www.ree.es/es/sostenibilidad/descarbonizacion-de-la-economia/huella-de-carbono

[50] Exploring Natural Capital Opportunities, Risks and Exposure. https://www.ree.es/es/sostenibilidad/descarbonizacion-de-la-economia/huella-de-carbono

[51] Science Based Targets Network.https://www.ree.es/es/sostenibilidad/descarbonizacion-de-la-economia/huella-de-carbono

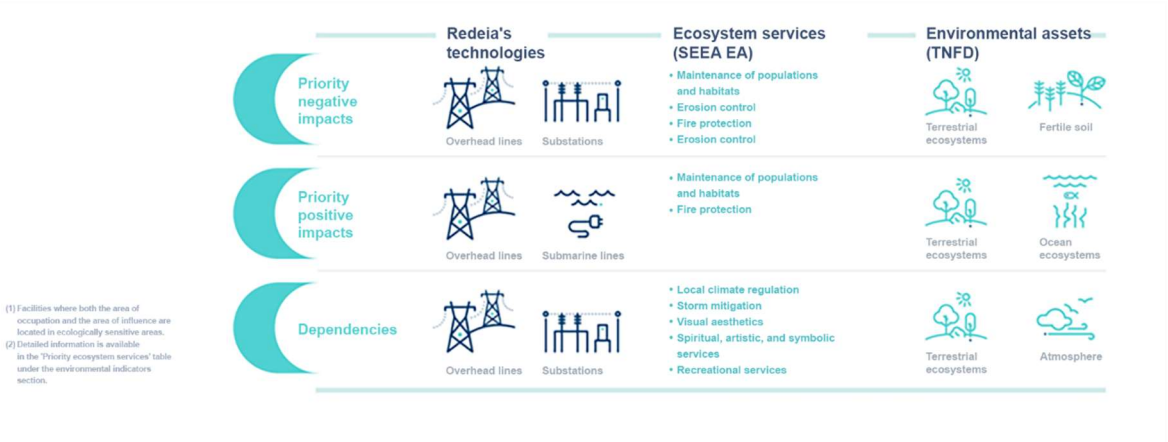
The following results have been obtained for highly sensitive facilities—those where both the occupation[52] and influence zones[53] are located in ecologically sensitive areas:

| | Overhead lines (number of spans) | Underground lines No. of lines | Underground lines km | Submarine lines (km) | Substations (units) |
|---|---|---|---|---|---|
| Total highly sensitive facilities (1) | 15.352 | 112 | 42 | 821 | 46 |
| %highly sensitive facilities out of total facilities | 17% | 4% | 5% | 52% | 6% |

Redeia is working to determine in the future whether the activities carried out at its facilities located in sensitive areas should be prioritised based on whether they negatively affect biodiversity and ecosystems.

*EVALUATE: identification, assessment and prioritisation of impacts and dependencies*

The actual impacts and/or dependencies related to technologies in the electric transmission business have been identified. The impacts have been analysed in relation to the five impact drivers and the dependencies on the twenty-five ecosystem services proposed by the TNFD at different stages of the life cycle of the facilities.



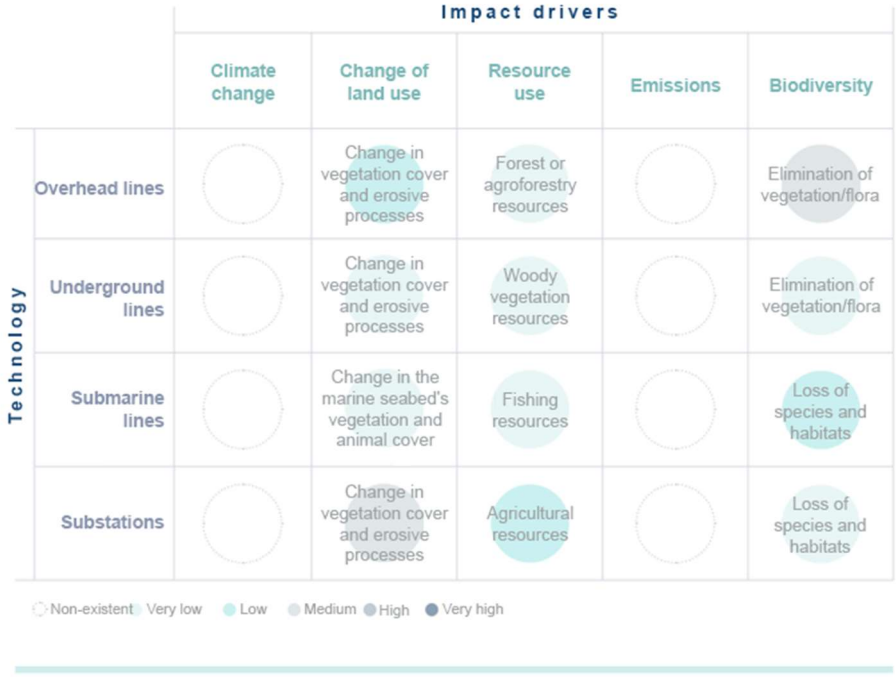

The identified impacts have been prioritised according to their significance, which has been obtained by qualitatively assessing the magnitude, scope, and irremediable nature with expert criteria.

- During the **construction phase**, the most significant impacts, although of medium materiality, are related to the land-use change impact driver caused by substations due to surface sealing and changes in vegetation cover. Additionally, they are linked to the biodiversity impact driver, as vegetation removal leads to habitat loss in overhead lines.

[52] The area of occupation refers to the area where the organisation's activities occur, including those where any type of management is performed. https://www.ree.es/es/sostenibilidad/descarbonizacion-de-la-economia/huella-de-carbono

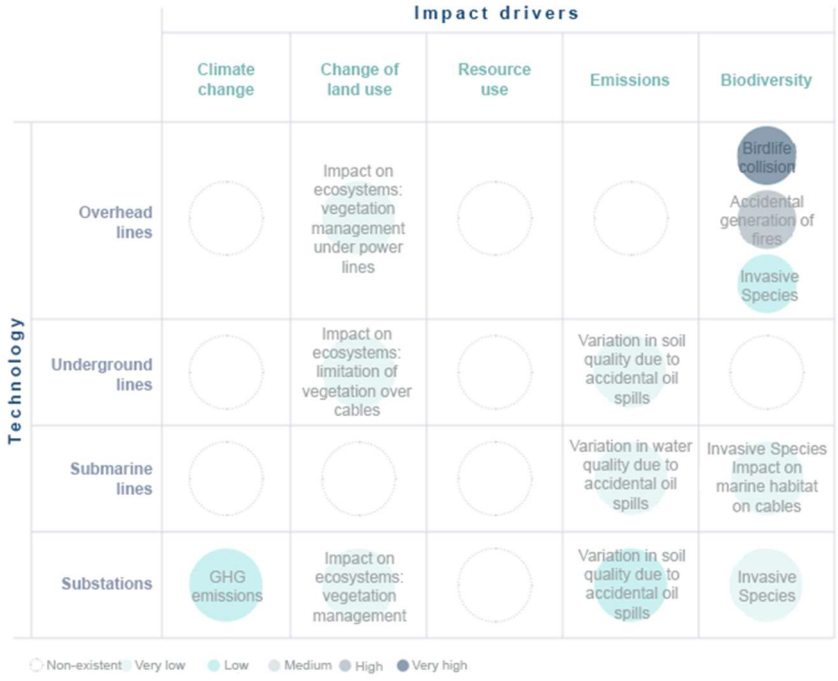
[53] An area of influence refers to a zone outside the areas of occupation where the natural environment may experience impacts due to the activities of the organisation. https://www.ree.es/es/sostenibilidad/descarbonizacion-de-la-economia/huella-de-carbono

## Prioritisation of negative impacts in construction



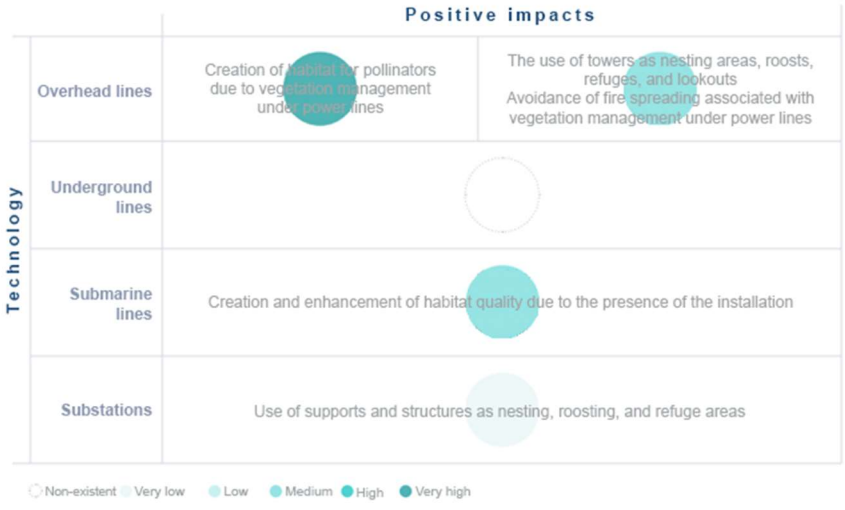

- **In the maintenance phase,** the most significant impact, with high materiality, is generated on the biodiversity engine in airlines, mainly due to the possible collision of birds with the grounding cables. Furthermore, other highly significant impacts associated with this engine include the potential accidental generation of fires on overhead lines.

## Prioritisation of negative impacts in maintenance




The activity also has **positive impacts** on nature, such as creating habitats for pollinators by opening security corridors under overhead lines or using the towers of overhead lines and substations as roosts, nesting areas, and shelters for some species. Additionally, managing vegetation beneath power lines creates a very beneficial firebreak effect to prevent the spread of fires.

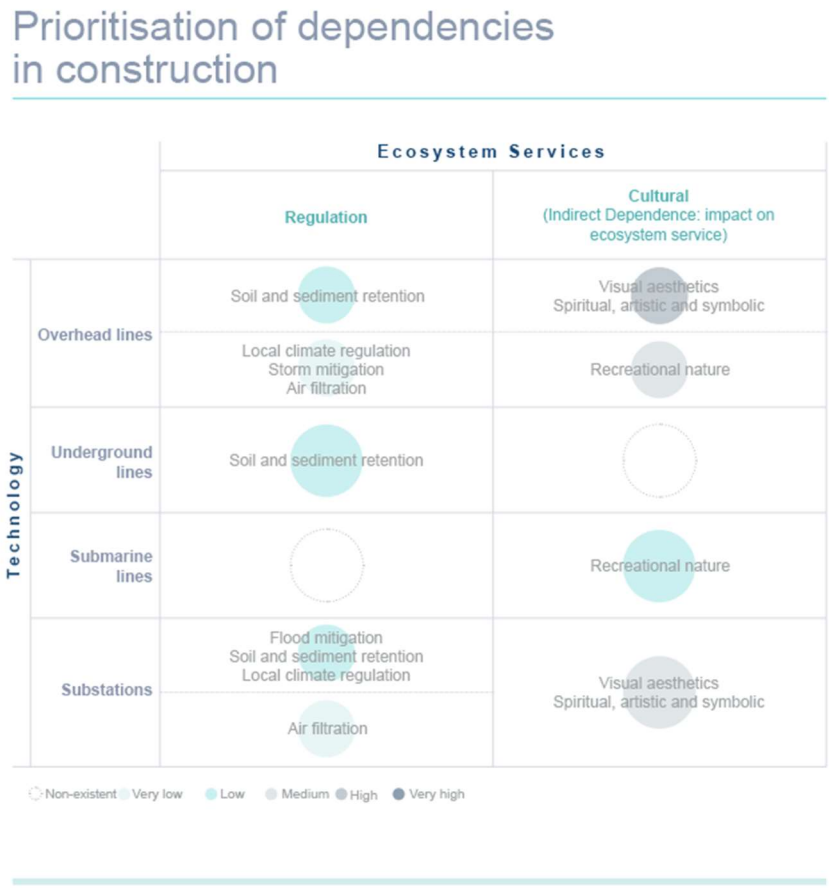
## Prioritisation of positive impacts



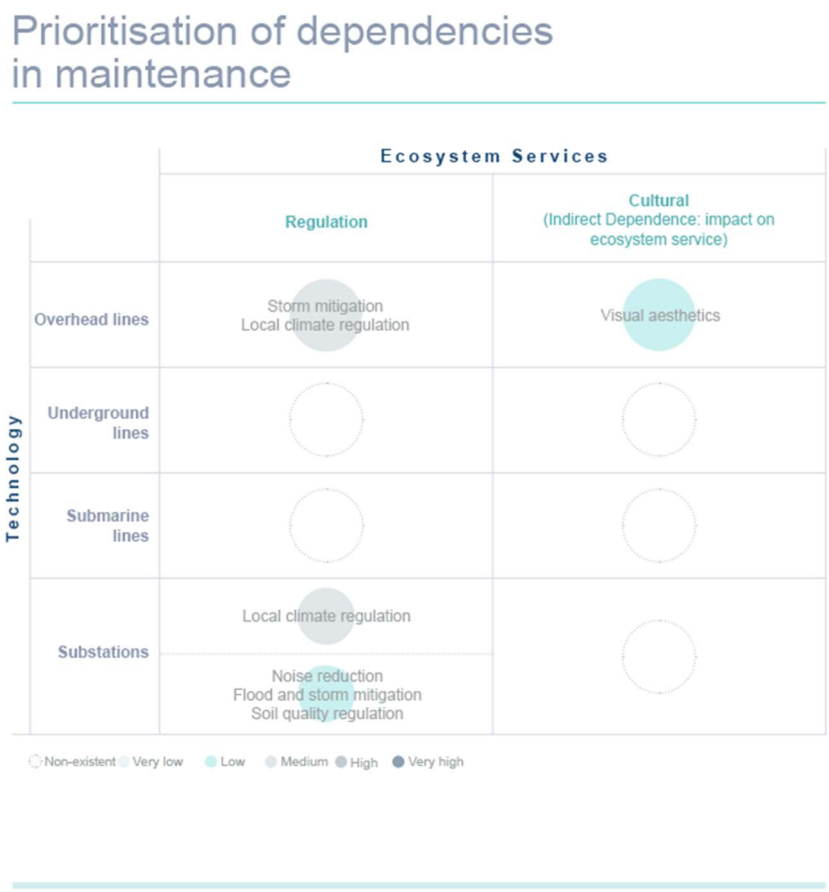

### Biodiversity dependencies

The identified dependencies have been prioritised according to their significance, which has been obtained by qualitatively assessing the severity:

- **In the construction phase,** it has been identified that regarding the cultural services provided by the natural asset of the landscape (visual, recreational, spiritual, artistic, symbolic, etc.), there is no direct dependence but rather a conditioning (or indirect dependence) on them caused by the impact of the installations on the asset. The same situation applies to the cultural service of visual aesthetics in maintenance.




- **During the maintenance phase,** the most significant dependencies are related to local climate regulation services, as the energy supply in overhead lines can be affected by low temperatures and extreme winds, and in the case of substations, by sustained high temperatures over the equipment.




## Risks and opportunities

*ASSESS: identification, assessment, and prioritisation of risks and opportunities*

Evaluating and managing biodiversity risks related to identified impacts and dependencies are integrated into the group's comprehensive risk management and control system. This approach aligns with ISO 31000 standards for risk management principles and guidelines, as well as the Task Force on Nature-related Financial Disclosures (TNFD) recommendations for identifying and assessing nature-related risks and opportunities.

A total of 20 potential risks have been identified, of which 5 are physical risks and 15 are transitional. No **systemic risks** have been detected stemming from direct operations as the material impacts and dependencies do not pose a threat of ecosystem collapse, species extinction, or depletion of natural resources in the short or medium term.

The risks **with the highest level of significance have a physical nature** and primarily affect overhead lines. The most significant risk relates to damage to overhead power lines caused by extreme winds. Additionally, the physical risks of damage to overhead lines and substations caused by potential fires as a result of extreme events are significant.

In the same way, it has been concluded that there are **transition risks** related to reputation and the legal aspect that are also significant for the company, such as the tightening of birdlife protection policies at both national and international levels with increased sanctions and litigation, or reputational loss for failing to meet society's expectations in relation to the care of biodiversity due to fires.

### Priority risks identified related to nature

| | Significance |
|---|---|
| • Damage to overhead power lines due to extreme winds. | High |
| • The hardening of birdlife protection policies at the national and international level, which results in an increase in sanctions and litigation. | Medium-high |
| • Damage to lines and substations due to fire (external events). | Medium-high |
| • Reputational loss due to societal expectations regarding biodiversity conservation and sensitivity to fires. | Medium-high |

The **opportunities** related to nature have low significance for Redeia. Some of those that have been identified are market-related, such as technological improvements designed by Redeia for managing bird-life collisions or fires, or reputational, such as vegetation maintenance actions carried out appropriately and in line with legal requirements.

## Scenario analysis

The scenario analysis[54] was conducted considering two timeframes aligned with Redeia's strategic plan and with the management horizons of climate risks:

• Short term (2024–2025) [55]

• Medium term (2026–2030).

The most plausible scenarios identified are those where, despite the potential for varying states of environmental degradation, there is a tendency for market and non-market forces to align.

The results of the scenario analysis conducted show that the company's exposure to **physical risks** related to extreme events will persist over time. Redeia already applies various risk management measures, ensuring a highly resilient short-term business strategy.

Among the **most significant transition risks,** the legal risks to which the company is exposed tend to increase over time in the most plausible future, while they decrease in the less likely scenarios. This increase in exposure is due to the expected inclusion of biodiversity in sectoral policies.

Regarding **reputational risks**, the situation is similar to that of legal risks where, in the plausible future, compliance with international frameworks involves a greater social awareness of the importance of nature, as well as the designation of more protected sites and enhanced species protection. Therefore, it is expected that exposure to these risks may increase over time in this scenario.

[54] Analysis based on the EU Biodiversity Strategy 2030, the Kunming-Montreal Agreement. European Nature Restoration Law and the Paris Agreement. https://www.ree.es/es/sostenibilidad/descarbonizacion-de-la-economia/huella-de-carbono

[55] Redeia's current strategic plan covers from 2021 to the end of the year 2025. https://www.ree.es/es/sostenibilidad/descarbonizacion-de-la-economia/huella-de-carbono

| | Exposure | Resilience | Mitigating actions |
|---|---|---|---|
| Likely future scenario |  |  | • Update of action plans against fires.<br>• Monitoring climate effects on infrastructure.<br>• Review of the application of the mitigation hierarchy.<br>• Funding provision for investment in new low-impact technologies, payment of penalties, and infrastructure adaptation.<br>• Implementation of systems for monitoring nature-related impacts and risks.<br>• Economic assessment of nature-related risks. |
| Unlikely future scenario |  |  | • No additional *a priori* measures are required |

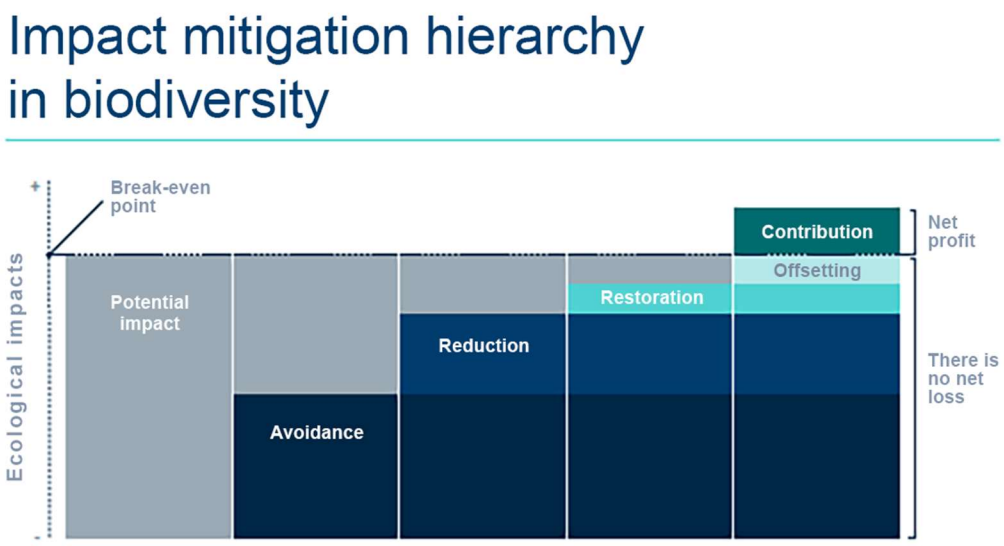
### 7.2.5 Biodiversity management: mitigation hierarchy

The potential effects on biodiversity from direct operations are associated with the presence of the facilities in the territory and with the construction and maintenance of the same. Biodiversity management is carried out using the hierarchy of impact mitigation approach to achieve a net positive impact.

**Avoiding** areas rich in biodiversity is one of the priority criteria taken into account and is the first considered in the location of the facilities both in the grid planning phase as well as the definition of each project. However, bearing in mind that 27% of the surface area of Spain[56] 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 reduce the possible impacts on habitats and species, including restoration measures of affected habitats, where possible, or regeneration measures that improve the biophysical function of existing processes and the productivity of the ecosystem.

Finally, the residual impacts that may persist after the implementation of the measures are compensated through various environmental improvement actions and projects aimed at enhancing biodiversity around the facilities. This involves promoting the development of measures and projects and collaborating with public administration, non-governmental organisations, research bodies, and other stakeholders. These measures and projects aim to offset impacts and generate positive biodiversity outcomes.




The main effects on biodiversity resulting from activities may occur on habitats and species. The former would be associated primarily with the impact on vegetation of felling and clearing to open up security corridors for lines necessary to prevent fires and the latter with the risk of birdlife colliding with the grounding cables.

Red Eléctrica uses a **methodology for quantitative valuation of impacts (negative and positive) on biodiversity.** This methodology is applied in the environmental impact studies of the **new projects for**

[56] The protected terrestrial area in Spain rises to 36.7% and 12.3% of the marine area, which will reach 21% once the latest proposal for Natura 2000 sites submitted to the European Commission is formally included. It is the European country that contributes the most to the Natura Network (27.4% of the country) and the one with the most biosphere reserves in the world (53). Source: Competent administrations and MITECO 2022 https://www.ree.es/es/sostenibilidad/descarbonizacion-de-la-economia/huella-de-carbono

**lines and substations** defining the impact baseline and making it possible to establish different measures in the design phase to generate a positive impact in terms of biodiversity throughout the life cycle.

The methodology has been implemented since 2023 in any new project within the transmission grid in Spain that are submitted for processing to obtain the environmental impact statement. During 2024, efforts have been made, retroactively using the same methodology, to obtain the necessary compensation for natural assets, habitats, and species in the projects[57] that were previously environmentally processed. The methodology enables measurement of progress using a bottom-up approach and ensures compliance with the objective of positive impact on biodiversity for 2030 established by the group with biodiversity (Redeia).

The process design is based on a vision of natural capital with which it is intended to offset the **residual impact** of the product on different natural **assets** permitting the projects to be designed applying criteria of positive gain in biodiversity.

This way of working on new energy transmission grid projects in Spain allows nature and biodiversity to be incorporated into the company's decision-making processes in line with stakeholder demands, recommendations and guidelines (regulatory, financial and voluntary) at the European and international level.

The valuation methodology enables the quantitative assessment of the residual impact of a project on natural assets with the aim of designing and implementing compensation measures that **achieve a net gain in biodiversity.**

The natural biodiversity assets on which Red Eléctrica has designed its impact assessment methodology and application of the mitigation hierarchy are those which may potentially have significant residual impacts throughout the life cycle of the project and contribute to the causes of biodiversity loss:

- Natural asset **Habitat** (Natural forest habitats, non-forest and agricultural habitats (vegetation) and land use).
- Natural asset **Species** (specifically birdlife).
- Natural asset **Atmosphere**.

Currently, Red Eléctrica's facilities occupy only **0.08%** of the Spanish Natura 2000 Network. Of all existing infrastructure, only **15.55%** of total lines and **5.59%** of substations are located in protected areas (Natura 2000 Network).

| Red Eléctrica Española | 2022 | 2023 | 2024 |
|---|---|---|---|
| Line km in Red Natura/total line km (%) | 15.45 | 15.40 | **15.55** |
| Number of substations in Red Natura/number of substations (%): | 5.51 | 5.63 | **5.59** |
| Surface area of facilities in Red Natura/total surface area in Red Natura (%) | 0.08 | 0.08 | **0.08** |

[57] Included in the 2021–2026 Electrical Plan. https://www.ree.es/es/sostenibilidad/descarbonizacion-de-la-economia/huella-de-carbono

## Mitigation measures

Throughout the life cycle of both its activities and the different development phases of its facilities, Red Eléctrica establishes a series of mitigation measures aimed at reducing the dependencies and impacts on biodiversity. The following are examples of the most important mitigation measures it carries out:

| Main mitigation measures | |
|---|---|
| **Avoid** | ***Main avoidance measures*** |
| | • Introduction of modifications in the design and layout of the facilities.<br>• Preliminary surveys to identify the presence of protected flora and fauna.<br>• Detailed field studies on specific issues related to biodiversity.<br>• Construction of decanting pools and filters to prevent contamination of waterways.<br>• Use of sensitivity and risk maps that identify both sensitive species and habitats (flight paths).<br>• Signalisation and protection of habitats and specimens of ecological value.<br>• Use of construction techniques that minimise earthworks and land occupation: hoisting with a boom crane, hanging of cables by hand or work with helicopters or drones.<br>• Recovery and setting aside of topsoil for use in final landscaping works.<br>• Transplanting of flora species that may be affected by the work to other areas to be replanted.<br>• Biological stoppages in 100% of the works during breeding or nesting periods.<br>• Stoppage of work in periods or situations of high fire risk.<br>• Provision of resources and specific training for the prevention of forest fires. |
| **Reduce** | ***Main reduction measures*** |
| | • Recovery of affected areas by restoring slopes, sowing, and planting.<br>• Carrying out selective pruning, avoiding felling of wooded and leafy areas and plant formations of interest.<br>• Preventive clearing in forested areas that represent a fire risk: elimination of scrub associated with pastures that have high density and height.<br>• HABITAT Project.<br>• Implementation of a multi-year (2016-2025) line marking plan for overhead transmission lines that involves the installation of bird flight diverters.<br>• Early detection system for the collisions of birds with high-voltage power lines (Proyecto ALERION).<br>• System for the early detection of forest fires by means of sensors based on the Internet of Things (PRODINT).<br>• Integrated management of each type of habitat identified to ensure proper monitoring and preservation during maintenance activities of our facilities.<br>• Optimisation of tasks for vegetation management (VEGETA project). |
| **Restore** | ***Main restoration measures*** |
| | • Projects for the conservation of focal birdlife species.<br>• Redeia Forest Project.<br>• Restoration of *Posidonia oceanica* in Pollensa Bay.<br>• Marine Forest platform..<br>• Restoration of agro-steppe habitats (El Planerón) with SEO BirdLife.<br>• Restoration of Laguna del Hito with Global Nature Foundation.<br>• Mareta del Río marsh/wetland restoration project (in Tenerife in collaboration with SEO BirdLife).<br>• Eradication of invasive species - Pampas Grass (*Cortaderia seollana*) – in collaboration with SEO BirdLife.<br>• Research on invasive species – microalgae (*Rugulopteryx okamurae*) – in collaboration with the University of Seville. |

**Regenerate**

***Main regeneration measures***

- BIORED-Green Infrastructure Project.
- Biotransport Project.
- Naturaleza en Red Project.
- Pastoreo en RED Project.
- Life BooGi-BOP Project.
- Marine Forest Platform (strategic alliance for the conservation and restoration of marine ecosystems).

## Main regeneration measures

Maintenance of vegetation beneath electricity lines encourages an increase in pollinators and butterflies that improve yields of crops dependent on pollinators, creating spaces for livestock grazing.

A highlighted regeneration measure is the Pastoreo en Red[58] project, which the company is implementing to enhance the biophysical function of existing processes and ecosystem productivity. The project promotes ecosystem services by improving natural resources and human well-being around transport facilities, focusing on **Nature-based Solutions (NbS). The Pastoreo en Red Project has been qualified as a nature-based solution according to the IUCN standard.**

The development of controlled vegetation management with extensive local livestock grazing in a way that is adjusted to the ecosystem's possibilities, provides an improvement in herbaceous composition and grassland cover by increasing the presence of pollinators. It also encourages water infiltration and erosion mitigation, which, stimulated by the relief and the nature of the materials, can be a determining factor in the landscape. The pastures sequester carbon from the atmosphere due to the large quantity of organic matter that builds up among the roots, and thanks to the grazing cattle and the organic matter, this has a positive impact on maintaining soil facility. All these control services are increased. The project makes it possible to evaluate pasture, bushes and herbaceous species. The project makes it possible to evaluate pasture, bushes and herbaceous species. This evaluation can also be carried out at the landscape scale, considering the possible implications of the project on a broader scale, and therefore including nearby municipalities and the natural processes with which they connect the area exposed to grazing.

A more elevated approach may include cultural aspects or services, such as the dissemination of the experience for training and educational purposes, its effects on the maintenance of recreational and leisure areas including the effects on the health of natural spaces. Equally noteworthy is the opportunity provided by the project to acquire a deeper understanding of managing vegetation cover, its enrichment in species, and possible reforestation activities with native species, which is relevant in the context of climate change, depopulation, and the risk of significant forest fires in mountain and difficult relief areas. The same applies to ecosystem service suppliers which could, for example, include gathering produce from the mountain (mushrooms, asparagus, etc.), going beyond the possible sale of grazing animals. In 2024, actions from the Pastoreo en Red project were developed in León and Galicia (Spain) covering a total of 65.5 hectares, using more than 2,900 heads of livestock.

## Restoration measures

The restoration measures aim to return an area to the original ecosystem that existed before the impacts. Redeia participates in projects where measures are established to accelerate the recovery of ecosystems concerning their health, integrity, and sustainability, achieving a permanent change in their state.

In 2024, noteworthy is Redeia's participation in two restoration projects:

- **Restoration of El Hito lagoon**

[58] This project has been qualified as a nature-based solution according to the IUCN standard. https://www.ree.es/es/sostenibilidad/descarbonizacion-de-la-economia/huella-de-carbono

Together with the Global Nature Foundation, under the LIFE El Hito project, efforts are being made to recover and restore the natural values of the El Hito Lagoon nature reserve and to halt the loss of biodiversity. The El Hito lagoon is a natural area covering 996 hectares, included in the Natura 2000 Network (ZEPA-SCI ES0000161) and regarded as a wetland of international importance by the Ramsar Convention of UNESCO.

It hosts an excellent representation of the saline steppe landscapes of the Mediterranean and contains priority habitats and unique endangered species. The lagoon is also the second most important wintering area for cranes (*Grus grus*) in Spain, and both the wetland and the surrounding salt flats and crops are of vital importance for numerous bird species, particularly for steppe birds.

The project restores the natural space, including 100% of its priority habitats.

- **Restoration of agro-steppe habitats (ornithological reserve 'El Planerón')**

In collaboration with SEO/BirdLife, restoration and conservation actions are carried out in the agro-steppe habitats of the El Planerón Ornithological Reserve and adjacent areas. The reserve is included in the Natura 2000 Network, declared as a Site of Community Importance (SCI) 'El Planerón' (ES2430032) and a Special Protection Area for Birds (SPA) 'Estepas de Belchite, El Planerón y La Lomaza' (ES0000136). This area highlights the presence of two priority habitats of community interest (1510* and 1520*[59]) which are habitats for various steppe birds*including the Dupont's lark (*Chersophilusduponti), the little bustard (*Tetrax tetrax), the pin-tailed sandgrouse* (Pterocles alchata), the black-bellied sandgrouse (*Pterocles orientalis*), as well as the great bustard (*Otis tarda*).

All of them are included as threatened species according to the IUCN Red List and/or the Spanish Catalogue.

### Transformation measures

As part of its commitment to biodiversity, Redeia undertakes actions aimed at driving cultural transformation and focused on contributing to change in the system and tackling the fundamental causes or factors that drive the loss of nature.

That's why the company has become involved in the **'ZERO Fires'** initiative. This is a climate change adaptation solution, developed within the framework and as a result of the LIFE SORIA ADAPT project carried out by the Fundación Global Nature. It facilitates the fight against biodiversity loss and revitalises rural areas by addressing the threat of wildfires.

Forest fires resulting from a lack of forest maintenance are a significant cause of biodiversity and nature loss. These can be exacerbated by the consequences of climate change, posing one of the main threats to forest preservation. Moreover, rural depopulation is playing a key role in the increase in biodiversity loss due to fires, as the preventive measures that rural society used to implement on the land, which protect us and could shield us from the impacts of the climate emergency and biodiversity loss, are being lost.

[59] 1510* Mediterranean salt steppe and 1520* Mediterranean gypsum vegetation. https://www.ree.es/es/sostenibilidad/descarbonizacion-de-la-economia/huella-de-carbono

The forest management preventive measures ('fire belts') are developed over the Red Natura 2000, specifically in the ZEC ES4170029 Sabinares Sierra de Cabrejas, which is the largest and best-preserved representation of Spanish juniper (*Juniperus thurifera*) in the entire Iberian Peninsula.

The preventive measures are:

- Clearing invasive scrubland.
- Controlling tree density.
- Pruning of lower branches to create vertical discontinuity.
- Removal and shredding of debris.
- Introducing extensive livestock farming for maintenance: as an ally and solution to create jobs and a rural lifestyle.

These measures create a transformative solution in the region aimed at tackling the root causes of fires that result in biodiversity loss, protecting nature while facilitating sustainable forest use, preserving the rural economy by involving the local population, and promoting the adaptation of forests to the impacts of climate change.

Lastly, Redeia has joined the global coalition Business for Nature (*https://www.businessfornature.org/*) and signed the appeal urging governments to implement policies to reverse nature loss in this decade. The coalition drives credible business actions and political ambitions to achieve a nature-positive economy for all by 2030.

Redeia collaborates with institutions such as the International Union for Conservation of Nature (IUCN), generating knowledge among its stakeholders as a lever for the transformation that society needs to align with the recovery of nature. In this regard, during 2024, work has been carried out on the translation into Spanish and adaptation to the Latin American context of the guide 'Wildlife and Power Lines: Guidelines for Preventing and Mitigating Wildlife Mortality Associated with Electricity Distribution Networks'. The guide will be fully completed and published during 2025.

In addition, together with the Club of Excellence in Sustainability (CES), the 'Guide to Integrating Biodiversity into Businesses' has been developed and published, with the aim of generating social change by helping companies integrate nature into both their business strategies and decision-making processes.

#### 7.2.5.1 Protection of birdlife

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

Thanks to the 'Birds and Power Lines: Mapping of Flight Corridors' project, the company has identified a set of focal species that are prone to collision, selected based on various criteria (52 taxa and 60 species). They have developed sensitivity maps (areas where these species may be found and must be considered for the planning of new power line routes) and risk maps (sensitive areas where there are additional factors influencing the likelihood of accidents).

Based on this information, the 2016-2025 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 39.7%.

Collaboration with regional administrations and different non-governmental organisations in the development of specific conservation projects makes it possible to update this line marking plan and incorporate risk areas or line sections to be marked when deemed necessary.

In 2024, it is important to highlight that as a result of the work carried out to improve the installation techniques of bird-saving devices, reflective rotating blade devices have been successfully installed on live power lines using drones.

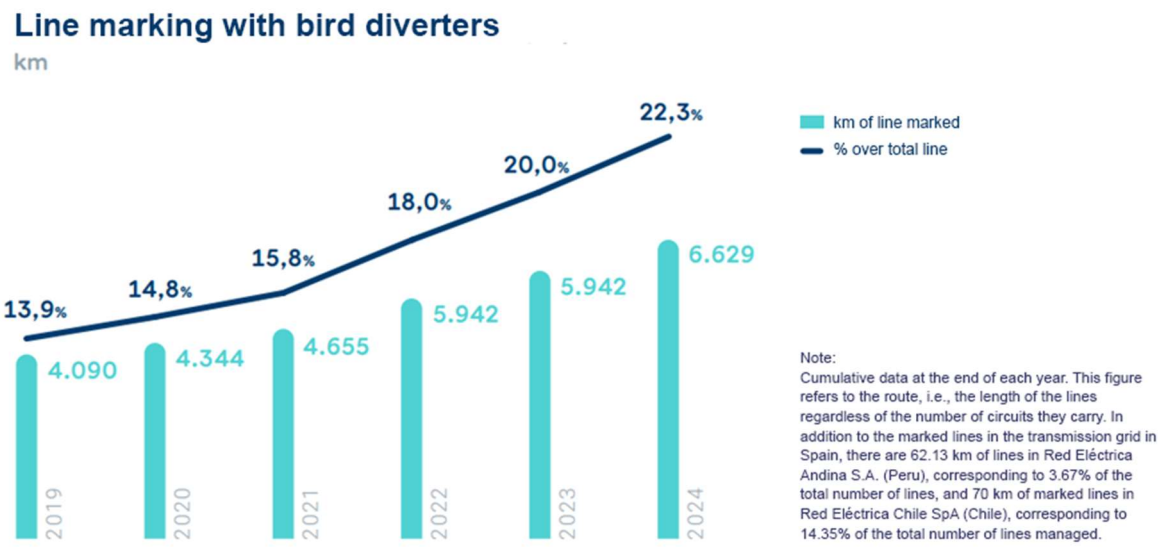
Equally noteworthy is the analysis of the flight paths and transit areas of the Bearded vulture, which was developed in collaboration with the Fundación Quebrantahuesos (Bearded vulture Foundation) and has resulted in the marking of over 160 km of line in the Picos de Europa area, the Pyrenees, El Maestrazgo and Sierra de Cazorla for the specific protection of this species.

Additionally, Redeia was invited to participate in congresses and events organised by NGOs to explain its contribution to reducing collisions, which includes a detailed example of data analysis of the Bearded vulture flight corridors conducted in 2022, 2023, and 2024. As a result, other organisations have wanted to follow suit and offer their data for analysis and to define a specific action plan. Additionally, the company organises training and outreach days with various audiences to inform them about birdlife protection measures, how they are applied, and the results obtained.

In addition, work is being carried out on the development of tools for collision detection, in particular, the ALERION project. Through devices installed on the fibre optic cable included in the grounding cable, it will be possible to obtain early information that could favour the recovery of individual birds that have collided with the lines and that are still alive.

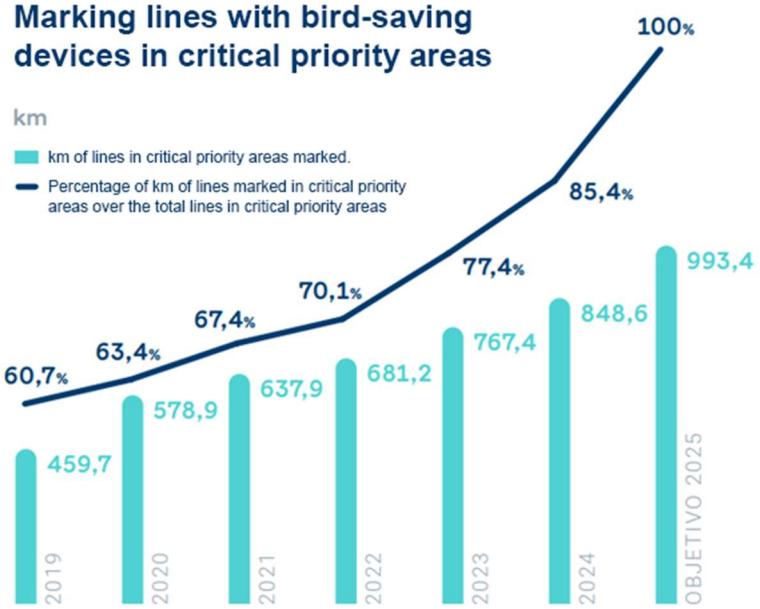
In 2024, 848.6 km of line were marked with bird-saving devices. The percentage of kilometres marked with respect to the total kilometres of overhead lines stood at **22.3**% (6,629 km of line marked).

## Line marking with bird diverters[60]




## Marking lines with bird-saving devices in critical priority areas

[60] Cumulative data at the end of each year. This figure refers to the route, i.e., the length of the lines regardless of the number of circuits they carry.




**Note**: this figure refers to the route, i.e., the length of the lines regardless of the number of circuits they carry.

(1) The percentage of marked lines refers to the target value defined in each of the years. The target value (of marking 100% of the km of line in critical priority areas) is slightly modified each year, depending on the variations in Red Eléctrica's facilities (new lines and modifications to existing ones) and the updating of the technical information of the bird flight paths project.

In 2022, there were variations associated with the consideration of new focal species (from 46 to 52) and variations in the distribution of some of these species, either because they appear in new areas or because more precise information is available than in the previous edition of the project. Consequently, in 2023 the marking data from 2021 and 2020 was recalculated based on information from the 2022 'bird flight paths' project and from the most recent and comprehensive information about distribution patterns of the species and the availability of new sensitivity and risk maps.

### 7.2.5.2 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 security corridors, necessary to minimise the risk of fires that may occur during the operation of the electricity line.

To guarantee the correct management and conservation of habitats of priority community interest (HCIs) and other plant formations of interest during maintenance work on the facilities, the **Habitat Project** (2015-2021) was carried out. In collaboration with the autonomous communities and experts in the field, all the habitats in the vicinity of 100% of the electricity lines of the transmission grid in Spain have been mapped, characterised and consolidated in a data layer compatible with the corporate geographic information system. Additionally, an integrated management scheme is available for each type of habitat, which facilitates decision-making when carrying out the work.

#### Highlighted actions for the protection of habitats and species 2024

- Project layout adjustments to minimise impact on HIC 92D0 (Tamarisk thickets) in Salto de Chira.
- Deviation and extension of horizontal directional drilling in marine environments to avoid affecting various species of Gorgonians.
- Transplantation of species listed in Annex II of the Order of 20 February 1991 in Islas Canarias. Collection of seeds from species more sensitive to transplantation.
- Marking and protection of *Caralluma burchardii* (Cuernúa), protection of habitats of community interest and subsequent marking in projects in Islas Canarias.
- Comprehensive surveys conducted before commencing the works to locate flora and protected species, as well as habitats of community interest, in search of potential nesting sites for birdlife of interest.
- Biological stoppages in around twenty ongoing actions, adjusting to the phenological periods of each species of interest.
- Installation of nesting boxes.
- Establishment of measures to enhance connectivity (restoration of riverbanks, revegetation, etc.) between critical, important, and favourable areas for the Iberian lynx.
- Surveys to identify the presence and control of the reservoir of *Hemicycla plicaria* (corrugated land snail), a critically endangered snail according to the IUCN Red List.
- Signalling/marking of the habitat of *Pimelia granulicollis* (granular sand beetle), an endangered beetle species, based on the results of the species' annual cycle study.
- Placement of a protective barrier for *Pimelia granulicollis* (granular sand beetle) to prevent the specimens from accessing the product water pipeline trench at Salto de Chira.

- Intensive prospecting of work areas and the installation of traps to remove as many specimens as possible of the invasive species California kingsnake (*Lampropeltis californiae*).
- Eradication of invasive exotic plant species in the Arguineguín ravine, including reeds, acacias, cat's tail, mairena, etc. Establishment of a nursery for native species to be used in the restoration project of the ravine and the 220 kV line associated with the project.
- Elimination of exotic species such as *Pluchea sp, Ricinus communis* (castor bean), *Cenchrus setaceum* (fountaingrass), *Nicotiana glauca (tree tobacco) and* Opuntia sp (prickly pears) in various projects across Islas Canarias.
- Transfer of protected species (*Euphorbia balsamifera, Asparagus arborescens, Reseda scoparia*) to a nursery for subsequent replanting and landscape restoration work.

### 7.2.5.3 Biodiversity and natural capital conservation

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

To this end, the group participates and collaborates with the public administration, NGOs, and other stakeholders in different projects that promote the development of the environmental and social environment. They are mainly focused on the issues most closely related to the impacts of the company's activities: the conservation of birdlife, specifically the focal species (those most prone to colliding with the lines) and the habitats protection and restoration.

Redeia has launched several projects focused on determining and enhancing its infrastructure's potential as biodiversity and natural capital resources. These initiatives also include actions to restore and conserve degraded habitats, highlighted the Redeia Forest and the 2-hectare restoration of Posidonia meadows in Islas Baleares.

In addition, the company maintains alliances in the field of biodiversity conservation with the competent areas of the public administration and other organisations in the various autonomous communities, as well as with leading national and international organisations in the field of nature conservation, and has participation in different working groups.

As a notable event in 2024, Redeia and the International Union for Conservation of Nature (IUCN) have signed a new agreement to enhance knowledge about the state of biodiversity and conservation actions, focusing on promoting a positive impact on biodiversity in the natural environment of Redeia's facilities in Spain and Latin America.

#### 7.2.5.3.1 Birdlife conservation

The main objective of birdlife conservation projects is to collaborate in the conservation or reintroduction of endangered species. It should be noted that the electricity transmission grid infrastructure plays an important role as dominant surveillance points, lookout points, refuge, resting and roosting areas and even as nesting sites for some species.

Below is a brief summary of the **noteworthy conservation projects—for focal and endangered species—carried out in 2024:**

- **Use of towers by the Golden Eagle (*Aquila chrysaetos*) in Navarra:** the radio-monitoring project of the Golden Eagle in Navarra (2015-2022) with the Regional Government of Navarra has confirmed the use of towers as dominant surveillance points, roosting areas and/or lookout points for stalking, by the three monitored eagle pairs.
- **Osprey nesting platforms (*Pandion haliaetus*)**[61] **in Andalusia (Cádiz)**: since 2010, four nesting platforms have been installed on Red Eléctrica towers in the Barbate reservoir (Cádiz) and chicks have been ringed, in collaboration with the Migres Foundation and the Andalusian Government. The osprey, which has not reproduced in Andalusia since the 1980s, is again nesting in the region. Since the installation of the nesting platforms in 2010, the hatching of 53 chicks has been recorded on Red Eléctrica towers. 10% of the breeding pairs and 12% of the chicks released in all of Andalusia would fly from Red Eléctrica's transmission grid supports.
- **Use of substations as roosts during the summer migration of the lesser kestrel (*Falco naumanni*)**[62] **in Aragón and Navarra**: the project carried out together with GREFA (Grupo de Rehabilitación de la Fauna Autóctona y su Hábitat) has the main objective of estimating the size of lesser kestrel roosts in electrical substations and determining if there is a differential use of the different elements of the facilities. In addition, the use of the habitat in the surroundings of the substations will be defined, and the possible benefits that the facilities can provide to the species regarding ecosystem services will be identified. In 2024, approximately 400 kestrels have been counted using a substation as a roost, specifically the Magallón substation (Zaragoza), and more than 200 in Tafalla (Navarra). It has also been identified that the behaviour of kestrels at dusk is characterised by the flocks first arriving at the electricity towers and cables, using them as perches, before later going to sleep inside the porches of the substations. The type of crop that is most abundant around the substations is cereal in the form of stubble and fallow land, and these are also where the highest number of observations of kestrels hunting have been detected. The substation where the most individuals have been observed hunting is Peñaflor (Zaragoza) with more than 50 sightings.
- **Adaptation of a comprehensive conservation area for the Bearded Vulture (*Gypaetus barbatus*)**[63] in the Sierra del Cuera. The project aims to understand the impact of climate change on biodiversity, specifically focusing on the bearded vulture as the main species in the mountain habitat of the Cantabrian Range. In particular, the exposure to new infectious diseases that may come from exotic vectors, such as insects arriving at the latitudes of the Cantabrian mountain range due to rising temperatures, is analysed. This is not limited solely to birdlife but also affects other bird species, the local livestock, and ultimately the entire mountain habitat.
- **Living Nature Educational Project – steppe birds installation:** improvement and continuation of the educational project associated with the steppe birds installation at the 'Living Nature' Centre, managed by the group for the Rehabilitation of Native Wildlife and its Habitat (GREFA), which is linked to the wildlife hospital and recovery centre. The installation will enable the stimulation of public awareness and involvement in biodiversity conservation, especially concerning native steppe birds that are in decline. It will also enable training for visitors to appreciate the economic, social, and environmental consequences of human intervention on the natural environment.

[61] Vulnerable species according to the national catalogue of endangered species. https://www.ree.es/es/sostenibilidad/descarbonizacion-de-la-economia/huella-de-carbono

[62] Vulnerable species according to the national catalogue of endangered species. https://www.ree.es/es/sostenibilidad/descarbonizacion-de-la-economia/huella-de-carbono

[63] Species in danger of extinction according to the national catalogue of endangered species. https://www.ree.es/es/sostenibilidad/descarbonizacion-de-la-economia/huella-de-carbono

- **Use of space and analysis of the behaviour of large eagles in the surroundings of electricity transmission infrastructures in the Valencian Community:** the project, developed together with the University of Valencia, determines and quantifies the foraging grounds and the use of space in seven territories of 14 marked specimens of Bonelli's eagle (*Aquila fasciata*)[64] and 11 golden eagles (*Aquila chrysaetos*) thereby increasing knowledge of the habits of these species. The possible risk situations are analysed considering the spans marked with bird-saving devices versus those not marked. The aim is to establish priorities for future corrective actions and to improve the environmental management of the facilities. The results have shown an increase in flight height when eagles fly over marked transmission lines (greater in males than in females). It should also be noted that the flight height of eagles over transmission lines also increases after they have been marked.

#### 7.2.5.3.2 Habitat conservation

##### o The Redeia Forest

The Redeia Forest is an ongoing project, initiated in 2009, which aims to offset part of the company's emissions through the planting of trees and the recovery of degraded natural areas on publicly owned land, thus contributing to the conservation of biodiversity. In addition, this initiative aims to support the development of local economies by contracting the work to companies or associations in the area, as well as to raise awareness of the importance of forests by involving the local population, mainly students, and company employees.

The company has contributed to restoring 24 forests in Spain since the project began. In 2024 alone, three new forests have been added in Las Hormazas (Burgos), Hoyos del Espino (Ávila), and Monte Naranco de Oviedo (Asturias). A total of 42,112 trees (pines, chestnuts, oaks, Pyrenean oaks, holm oaks, hawthorns, beeches, prunus, and birches) were also planted across 45.8 ha.

**The 'Redeia Forest' in figures (2009-2024)**

| | |
|---|---|
| Trees and shrubs planted | 894,658 units |
| Surface area recovered/restored | 1,086 ha |
| Emissions offset | 283,311 $tCO_2eq$ |
| Investment | €3,268,012 |

##### o Restoration of *Posidonia oceanica* meadows

The recovery of Posidonia meadows in the Bay of Pollensa (Islas Baleares) is a pioneering innovation project on a global scale.

the company developed an R&D+i project in collaboration with the Mediterranean Institute of Advanced Studies (IMEDEA- CSIC-UIB) on the use of seeds or fragments of *Posidonia oceanica* in the restoration of degraded areas of its natural habitat. Subsequently, an agreement was signed (CSIC-IMEDEA-UIB, the Islas Baleares Government and the Pollensa military air base) for the restoration of 2 ha of Posidonia in the Bay of Pollensa. The work was completed in 2020 using an innovative technique that involved utilising plant sections from natural fragmentation for subsequent replanting in the selected area.

[64] Vulnerable species according to the national catalogue of endangered species. https://www.ree.es/es/sostenibilidad/descarbonizacion-de-la-economia/huella-de-carbono

Currently, IMEDEA (CSIC-UIB) is monitoring the plantation to determine the survival rate, the growth rate of each plant, the uptake of $CO_2$, as well as the associated epifauna. The survival rates of rhizome fragments in 2024 continue to be at the upper end of those achieved in previous planting projects, with values exceeding 93%.

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

- Bringing Posidonia into the classroom' in collaboration with the teaching community of Islas Baleares 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' of Mallorca, developing a programme that makes available to schools and the public elements and contact activities with the coast and the marine environment.
- Virtual exhibition on Posidonia oceanica and the Red Eléctrica Marine Forest, available on the corporate website.

### o Marine Forest Platform

In 2024, Redeia launched the Marine Forest platform as part of its Comprehensive Impact Strategy.

*Redeia has launched the Marine Forest platform to restore marine ecosystems by 2030 with a project to revive the Posidonia oceanica meadows in the Valencian Community.*

The platform was born from a strategic alliance led by Redeia and aims to promote initiatives focused on the conservation and restoration of marine ecosystems, in line with the European Union's Nature Restoration Law.

**Its purpose** is to:

- Restore and conserve the greatest number of marine habitats by 2030.
- Foster a collaborative environment that serves as a meeting point between society, administrations, scientific knowledge, the private sector, and the third sector. Unite efforts to maximise impact.
- Share available scientific knowledge and techniques with any interested group.
- Bring the value of marine ecosystems closer to society.

To achieve these goals, the Platform structures its lines of action along two axes:

**Conservation and restoration of marine habitats:**

- Active restoration: restoration of the maximum number of marine habitat hectares possible by 2030. The initiative will begin in the Mediterranean to leverage the knowledge and experience in the restoration of *Posidonia oceanica*.

- Passive restoration: removal of barriers or stressors in marine habitats that hinder their regeneration with the support of allies, partners, and collaborators who contribute to the platform's objectives. Through public and private collaboration in ocean restoration, we seek to expand the potential reach of both species and marine sites to be protected.

- Research and Innovation: support for new research and innovation projects from scientific and academic institutions developing new techniques for the conservation and restoration of marine habitats.

- Dissemination: to promote the spread of acquired technical and scientific knowledge to amplify its impact and create scientific meeting spaces both through the web environment and via scientific seminars that share techniques and studies.

**Education and awareness:** development of actions and ID schedule of education and environmental awareness concerning the global importance of a healthy ocean.

The alliance includes the Ecomar Foundation, which has 25 years of experience in educational activities aimed at spreading knowledge, awareness, and respect for the marine environment.

#### 7.2.5.3.3 Invasive alien species

One of the main problems affecting the most vulnerable habitats and ecosystems is the presence of invasive species. They are a primary driver of environmental degradation and natural change. Biodiversity loss due to these species can generate other types of impact on agricultural and livestock activity and even on public health.

Redeia works to include criteria associated with the prevention and control of invasive species to ensure their proper management during forestry treatments around its infrastructures. This is done to prevent their spread and to avoid breaches of safety distances and/or biomass accumulation.

The most notable actions in this regard in 2024 include:

- **Pampas grass (*Cortaderia seollana*).** Red Eléctrica has adhered to the Transnational Strategy to fight against Cortaderia seollana in the Atlantic Arc, committing itself to work in the areas within its reach to control and eradicate this species to prevent it from spreading to areas of high environmental value. Through a pilot project, innovative methodologies and materials for the eradication and control of feather duster have been tested, removing 3 ha under the overhead lines. Combined methods of clearing, chemical treatment and planting of native vegetation have been employed, along with control treatments for two years. This pilot project has been developed within the scope of the LIFE STOP Cortaderia project. During the next years, Redeia will collaborate with this project in the following action: ***Control and elimination of Cortaderia in anthropic corridors: electricity infrastructure.*** This action will allow the elimination of an area of about 100 ha of feather dusters that are in areas where our infrastructures are located, thus controlling their dispersion and improving the environmental status of the land occupied by them.
- **Reeds (*Arundo Donax*).** Cleaning and Environmental Restoration of the Arguineguín Ravine Currently, an eradication of invasive exotic plant species is being carried out in the Arguineguín ravine, contributing to the restoration of potential riparian communities: the tamarisk in its lower and middle-lower sections, and the willow grove in the middle-upper section. In addition to reeds, other currently abundant exotic species such as acacias, cat's tail, maireana, etc., are being eradicated. A total of 217,722 m² have been eradicated out of the planned 268,065 m². This represents an 81.22% eradication of invasive species in the public hydraulic domain of the Arguineguín Ravine. Additionally, 3,000 m² of rhizome have been removed in the northeast of the Peninsula.
- **Black locust trees (*Robinia pseudoacacia*).** This fast-growing species impedes the regeneration of native vegetation. Treatment controls have been applied to electrical lines in the Basque Country over an area of 15,000 m².

- **California kingsnake (*Lampropeltis californiae*).** Intensive prospecting and the installation of traps to remove as many specimens as possible of the California kingsnake (*Lampropeltis californiae*). In collaboration with GESPLAN for the placement and monitoring of 46 traps.
- **Invasive algae/seaweed (*Rugulopteryx okamurae*).** An ecological study on this species on the coast of Tarifa is underway, in collaboration with the Marine Biology laboratory of the University of Seville via the Research Foundation (FIUS**).**
- **Fountain grass and feathertop grass (*Pennisetum setaceum* and *Pennisetum villosum*).** In 2024, efforts have been made to eradicate this species, identified as invasive in Islas Baleares, in the vicinity of an electrical substation. The company will collaborate with the administration to ensure that the control methods used to deal with the species are the correct ones. A surface area of 1,300 m² has been treated by manually removing the plants, placing them in bags to prevent seed dispersal, and appropriately managing their transport and final disposal.

In addition, the following species considered invasive have been managed in Islas Canarias, in construction and maintenance work, under the established protocols: *Ageratina adenophora* (crofton weed), *Ulex europaeus* (common gorse), *Pelargonlum spp*. (geranium), *Nicotiana glauca* (tree tobacco), *Opuntia sp* (prickly pear), *Acacia sp*., *Ricinus communis* (castor-oil plant), and *Cenchrus setaceus* (crimson fountaingrass).

#### 7.2.5.3.4 Innovation projects for the management, protection, and conservation of biodiversity

The **BIORED** framework considers the electricity transmission grid as a reservoir of biodiversity and a generator of natural capital.

The aim of this initiative is to identify, diagnose and assess the effectiveness of electricity lines (tower bases and security corridors) and substations as biodiversity reservoirs that facilitate the connectivity of fauna between the different protected natural areas.

The management of the areas below the electricity lines and in the vicinity of substations as 'biodiversity islands', and the use of electricity line corridors as a connecting element between biodiversity spaces, could be an optimal solution to facilitate the mobility of the various species currently under pressure due to the fractioning and reduction of their natural habitats. Additionally, other more general species (not affected by territorial dispersal movements) would benefit from the presence of a varied ecosystem, increasing the biodiversity in the area. Thus, what we know today as 'grey infrastructure' used essentially to supply power to the industry in general, could be perceived as 'green'.

| Innovation projects regarding the management, protection, and conservation of biodiversity | |
|---|---|
| **Biotransport** | Analysis of how to maximise the use of a given number of electricity transmission towers as biodiversity islands (stepping-stones) yielded very satisfactory results: an increase in the biodiversity of birdlife as well as in the number of micro mammals and invertebrates (mainly pollinators). This type of action has been considered as an initiative that favours the connection of around 60% of the spaces of the 2020 Natura Network, thus benefiting a multitude of species, both directly and indirectly. |
| **Naturaleza en RED** | The aim of the Naturaleza en Red project, in collaboration with the Autonomous University of Barcelona, is to assess the potential of the transmission grid as a corridor and reservoir of biodiversity associated with the security corridors and the base of the electricity line towers. The research data to date show that **forested areas under electricity lines act as islands of biodiversity, functioning as reservoirs of biodiversity of open space species**, which are very important in the global ecosystem and play a vital role in maintaining highly threatened populations.<br>In 2024, the sampling efforts and the number of monitoring points have been increased, linking the Naturaleza en Red project with the National Strategy for the Conservation of Pollinators of the Ministry for the Ecological Transition and the Demographic Challenge (*Ministerio para la Transición Ecológica y el Reto Demográfico* - MITERD), which currently uses the Spring/EU-POMS methodology.<br>the samplings, a point of high interest has been detected under the line for biodiversity conservation, revealing a previously unknown population of the 'Gentian Ant or Small Ant' (*Phenagris alcon*), a highly threatened species.<br>A cartographic model has been developed to evaluate the Integrated Biodiversity Index (IDBI), which allows for determining the importance of biodiversity in relation to open-space species in areas under power transmission lines compared to adjacent habitats. The scope of the model covers the entirety of the energy transmission grid in Spain. This model allows for the identification of areas with the highest biodiversity potential under the electricity transmission line, assisting in prioritising management and planning actions while establishing suitable quality environments for both pollinators and other species of fauna and flora.<br>The main results of the project include: between 200% and 2,000% more butterflies; 500%-700% greater abundance of pollinators; between 120% and 2,000% more diversity of butterflies and between 2,000%-4,000% more |

| | |
|---|---|
| | abundance of flowers under the electricity line with respect to the nearby forest area. |
| **Pastoreo en RED (Grazing across the GRID)** | Maintenance of vegetation beneath high-voltage electricity lines with extensive livestock farming. This project has been qualified as a nature-based solution according to the IUCN standard. |

#### 7.2.5.3.5 Most relevant impacts on birdlife

With regard to accidents related to birdlife in 2024, 28 deaths of bird species catalogued as vulnerable and/or in danger of extinction according to the regional catalogue, national catalogue and/or IUCN Red List were detected.

| Threatened species affected | No. of birds affected |
|---|---|
| Cory's shearwater (*Calonectris boralis*)[65] | 10 |
| Scopoli's shearwater (*Calonectris diomedea*)[66] | 6 |
| Houbara bustard (*Chlamydotis undulata*)[67] | 4 |
| Red kite (*Milvus milvus*)[68] | 2 |
| Black stork (*Ciconia nigra*)[69] | 1 |
| Black vulture (*Aegypius monachus*)[70] | 1 |
| Great bustard (*Otis tarda*)[71] | 3 |
| Iberian grey shrike (*Lanius meridionalis*) [72] | 1 |
| **Total** | **28** |

[65] Vulnerable species according to the IUCN Red List.

[66] Vulnerable species according to the national catalogue of endangered species.

[67] Vulnerable species according to the IUCN Red List. Species in danger of extinction according to the national catalogue of endangered species.

[68] Species in danger of extinction according to the national catalogue of endangered species.

[69] Vulnerable species 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.

[72] Vulnerable species according to the IUCN Red List.

#### 7.2.5.3.6 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 security 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.

### Most significant impacts on terrestrial vegetation

- *C/66 kV Chio-El Palmar (*terrestrial section): transplantation of species that appear in Annex II of the Order of 20th February 1991 on the protection of wild vascular plant species in the Autonomous Community of Islas Canarias.
- *220 kV Itxaso-Orcoyen 1 line* Fire caused by the fall of a tower. The affected area is located within the Sierra de Aralar Natural Park ZEC ES2200020 'Sierra de Aralar'. The incident affected 2,000 $m^2$ of herbaceous vegetation and shrubs without impacting the trees.
- *CHB Salto de Chira:* Eradication of invasive exotic plant species in the Arguineguín ravine (ZEC ES000013 Macizo de Tauro and ZEC ES7011004 Macizo de Tauro II), contributing to the restoration of potential riparian communities: the tamarisk in its lower and mid-lower reaches, and the willow grove in the mid-upper reach. Besides reeds (*Arundo donax*), other exotic-invasive species that are very abundant in the area have been removed, such as acacias (*Acacia cyclops*), fountain grass (*Pennisetum setaceum*), bluebush (*Maireana brevifolia*), among others.
- 21.77 ha out of a total of 26.80 ha have been eradicated, reaching 81.22% of the target area in the public hydraulic domain of the ravine. In 2024, planting began to restore areas affected by these species, starting with the creation of a nursery for native species, including: canary willow (*Salix canariensis*), canary tamarisk (*Tamarix canariensis*), white tajinaste (*Echium decaisnei*), pink aeonium (*Aeonium percarneum*), canary palm (*Phoenix canariensis*), and sweet tabaiba (*Euphorbia balsamifera*).
- *400 kV Ayora-Cofrentes line.* Restoration of native vegetation and renaturalisation of access routes following the dismantling of 44 towers and 20 km of power line with the presence of the priority Habitat of Community Interest (HIC*) 1520 Iberian gypsum vegetation (*Gypsophiletalia*).
- *La Serena 400 kV substation.* Establishment of connectivity measures (restoration of riverbanks, revegetation, etc.) between critical, important, and favourable areas for the Iberian lynx.

### Most significant impacts on marine vegetation

- *Chio-La Gomera 66 kV* line. In 2024, the cleaning and removal of bentonite (*) from the marine area at the sea exit point of the directed horizontal drilling on the island of Tenerife, which was spilled in 2023, was carried out using the Air-Lift system to prevent generation of environmental impact. The affected area was located within the ZEC ES702001 'Teno-Rasca Marine Strip'. During the environmental monitoring work, no protected or sensitive species were observed in the area.
    - Bentonite is a very fine-grained clay used in drilling to promote oiling of the drilling elements and provide stabilisation of the borehole walls. It is included in the list of substances approved for use at sea by the OSPAR Commission (Commission for the Protection of the Marine Environment of the North-East Atlantic) because of its low or no risk to the environment. Moreover, it is classified as non-hazardous waste according to the LER codification (European Waste List). When in contact with seawater, bentonite generates a mass that covers the seabed permanently and impedes the breathing of marine organisms, thus collapsing the different biological communities that have been buried.

- 132 kV Ibiza-Formentera cable. Restoration and regeneration measures are implemented for habitat HIC 1170 Reefs in the area affected by the used marine mattresses.

No incidents have been recorded inside protected areas/sites in 2024.

### 7.2.6 Protection of vegetation and combating deforestation

The correct selection of the location for the siting of infrastructure, the design of facilities and the application of the aforementioned preventive and corrective measures make it possible to avoid and reduce the impact on vegetation as much as possible, without causing a significant loss of forested areas and ensuring that the group's activities do not have a deforestation impact, and therefore, prevent an impact on biodiversity. This makes it possible for the company to maintain a **no gross deforestation commitment**, which applies to both its own activities and those of the supply chain.

Given that forest fires are one of the greatest threats to the preservation of forests, it is worth noting the company's intensive work on forest 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 security corridors of overhead lines and of the perimeter areas around electricity substations located in forested areas.

Despite the application of best practices of avoidance and prevention, respecting small, slow-growing tree species, the removal of species that are not compatible with safety, as well as highly flammable species or those contributing to a high rate of biomass, is sometimes unavoidable. Directly related to this topic, internal regulations have included criteria for managing shrub groupings based on not exceeding certain biomass levels under the security corridor, with the aim of further reducing any risk of fire spread.

The goal of forestry management is to reduce the risk of fire while considering sustainability and the protection of biodiversity.

Given these circumstances, the company offsets all the trees removed through specific actions aimed at preserving native forests, in addition to those carried out within the framework of the Redeia Forest project, which has been implemented since 2009.

It is noteworthy that, in facilities commissioned by Red Eléctrica in 2024, **no impact on tree cover has occurred.**

In 2024, as part of the Redeia Forest project, 45.8 hectares have been restored with 42,112 trees planted (including pines, chestnuts, oaks, Pyrenean oaks, holm oaks, hawthorns, beeches, prunus, and birches) in the provinces of Burgos, Ávila, and Asturias.

In addition, the company actively and continuously collaborates with the public administrations engaged in forest management via **collaboration agreements**, with six currently in force and five under renovation. These agreements involve different collaborative actions with each administration focused on the prevention and fight against forest fires.

## Key actions for vegetation protection and firefighting in 2024

**Forest fire prevention measures**

- Acquisition of software and computer equipment for the prevention, support, monitoring and planning of forest fire extinction in Extremadura.
- Procurement of fire prevention and extinguishing equipment for the emergency services in Álava, Guipúzcoa, Navarra, and La Palma.

**Training and awareness**

- Training and development of professional skills for 15 firefighters from the Provincial Council of Alava and 105 technicians of the forest fire prevention and extinguishing crews of the Forestry Service of the Provincial Council of Vizcaya.
- Training in educational centres and development of material to raise awareness and prevent forest fires in Islas Baleares.

## 7.3 Socio-economic scope

### 7.3.1 Landscape integration

The integration of electricity transmission infrastructures into the environment is one of the main challenges for Red Eléctrica. The use and continuous development of visual impact assessment tools allows comparisons to be made between different project alternatives, which facilitates the selection of the best design of the facilities and communication with stakeholders.

**Horizon 360: tool for advanced landscape integration**

This new tool for the landscape integration of installations allows users to preview and simulate the visual impact of future overhead lines and substations in the Peninsula and on the BalearicIslands using 3D tools.

Horizon 360 employs an innovative methodology that includes 360º panoramic images and digital twins, connected through hot spots, for intuitive navigation between observation points. These images and interactive videos, accessible from various devices, include additional information and a dynamic orthophoto map. The supports are modelled in 3D and are masked if they are behind forest masses, ensuring perfect visual integration. The proposed methodology includes site visits to conduct field photographic studies, using drone flights and 360º panoramas to assess visual impact. The locations of the observation points can be adjusted according to terrain and weather conditions, and will be coordinated with the line maintenance technicians to ensure safety.

Fieldwork involves collecting graphical data from various observation points, with drone flights at different altitudes to capture high-definition images and 4K videos. These images and videos will be used to create 3D integrations, particularly for the substations in Algeciras and Menorca, providing a detailed and accurate visualisation of the visual impact. Finally, a 3D model of the terrain and infrastructure will be created, integrating the supports with their correct coordinates and elevations. The resulting images will be processed in Photoshop, and the files will be delivered in editable formats to allow for future modifications. The interactive tool will be programmed to link all 360º panoramas, including viewing buttons for intuitive navigation.

| Tools | |
|---|---|
| Visibility analysis of power lines and substations | This analysis takes into account the height of the towers and other elements, incorporating the heights of the existing vegetation and buildings, extracted from LIDAR data and cadastral data. In this way, the surfaces from which the different alternatives will be visible are obtained, facilitating the decision-making process and allowing their optimal integration into the environment. INGEOIN is a module for the development of projects from the Red Eléctrica bespoke Geographic Information System. |
| Visibility analysis of power lines in a 3D environment | In Areas with a Particular Landscape Impact, the weighted visibility maps are completed with 3D simulations that are progressively improved to increase their realism and, therefore, their potential for being used in communication actions with stakeholders. |
| Design of the methodology for stakeholder management | Develop a methodology that involves stakeholder groups in the development of future projects for facilities in the transmission grid. |
| Virtual hyper-realistic photo montages: evolution to 'Horizon 360' | Visual simulations are advancing towards a new scope, with the aim of improving understanding of the impact of the works and to improve decision-making in different forums (local councils, autonomous governments, etc.). |

| Integration measures | |
|---|---|
| Restoration of affected areas | Following the finalisation of the works, topsoil was provided, slopes were prepared, and sowing and planting works were conducted. |
| Landscape integration of substations and power converter stations | Development and designs adapted to the environment, applying measures that allow them to blend in: selection of colours and textures in accordance with each area (buildings and enclosures), creation of gardened areas with vegetation screening, etc. |
| Standardisation and design of transmission towers that integrate better into the landscape | In frequently visited environments of outstanding natural beauty, the use of certain types of towers makes it possible to better integrate the facilities into the landscape and therefore favour their viability. |

### 7.3.2 Protection of archaeological heritage

It is essential to manage cultural heritage during the design, construction, and maintenance of transmission facilities. The focus is on the identification, protection, and conservation of cultural heritage that may be affected by these activities. To achieve this, they conduct detailed studies and work closely with the competent authorities and experts in cultural heritage.

During the design phase, the Environmental Department conducts cultural impact assessments to identify potential risks and plan mitigation measures. This includes conducting archaeological surveys and consulting cultural heritage databases to ensure that new infrastructure does not damage historical or archaeological sites. Additionally, technical solutions are implemented to integrate the facilities into the cultural environment without causing significant alterations.

During the construction phase, strict protocols are applied to protect the identified cultural heritage. This may include archaeological monitoring during excavations and the implementation of physical protection measures to prevent damage to sensitive sites. It also ensures that all involved workers are informed and trained on the importance of cultural heritage and the necessary protection measures.

Finally, during the maintenance of the facilities, the monitoring and protection of cultural heritage continues. This involves the periodic review of infrastructure and its surroundings to detect any potential negative impact and take the necessary corrective measures. Additionally, awareness and education about the importance of cultural heritage are promoted among employees and local communities, thus fostering a culture of respect and preservation of heritage.

In 2024, **archaeological supervision was carried out in the construction of 18 new lines or for the adaptation of existing lines** (97.3% 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 **7 substations or for enlargement works of existing substations** (85.71% were carried out with the continuous presence of an archaeologist during the earthworks).

To date, over **1,200 archaeological surveys** and 300 cultural impact studies have been conducted, among which the following stand out:

- At the Can Malat site in Ibiza, archaeological excavations have been carried out, allowing for the discovery and preservation of significant historical remains.
- In Fuerteventura, Redeia has worked on the restoration of casemates, defensive structures of great historical value, ensuring their conservation and enhancement for future generations.
- In Castro Valente (A Coruña), excavations have revealed significant archaeological findings that contribute to the understanding of local history.
- At the Villares de Andújar site (Jaén), interventions have been carried out to protect and study the discovered archaeological remains, ensuring their preservation.
- The discovery of a dinosaur footprint in Valtajeros (Soria) has been a remarkable find, and Red Eléctrica has worked to ensure its protection and study.

These projects demonstrate Redeia's commitment to the conservation of cultural heritage by integrating its energy infrastructure activities with the protection and enhancement of cultural assets.

### 7.3.3 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.
- 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).

Additionally, the company recognises that electromagnetic fields are a topic of significant interest in areas with electrical installations. Therefore, it addresses this issue with particular relevance, focusing on the following main lines of action:

- 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 regard, it is worth highlighting the project launched in 2022, financed by Red Eléctrica and led by the Ministry of Health in which various scientific groups and Universities are participating to determine the distribution and intensity of extremely low frequency (ELF) magnetic fields in various geographical locations. Knowing the values to which the population in Spain is exposed in different environments (urban, residential and rural) allows the degree of compliance with Recommendation 1999/519/EC to be verified and to have rigorous and recent data available to assess a possible legislative proposal to reduce the social controversy regarding electromagnetic fields. In 2023, the study was concluded; by 2024, a publication was prepared. Among its conclusions, it highlights that the typical values to which we are exposed in an urban environment are similar to those found in the vicinity of electricity transmission facilities.
  This study has been complemented by another based on the measurement, over 24 hours, of the industrial frequency electric and magnetic field values, using dosimeters to which a population of at least 100 volunteers is subjected. The results will be published in 2025.

- Information is conveyed to stakeholders by means of the corporate website for the publication of new developments in scientific research in this regard, and the publication of the effects of electromagnetic fields on human health, as well as responses to enquiries received through the corporate DÍGAME Service.
  In this regard, in 2024, a study was conducted on the values of electric and magnetic fields at industrial frequency (50 Hz) in the vicinity of the overhead-underground transition of the 220 kV high voltage lines Fortuna-Moraleja and Fregaderos-Leganés, known as Corralón de Fuenlabrada, at the request of the local residents' association. Specifically:
  - Measurement of electromagnetic fields in the courtyard of the house located at No. 11, Calle Suances, Fuenlabrada.
  - Measurement of electromagnetic fields in the courtyard of the house located at No. 19, Calle Suances, Fuenlabrada, and in a room on the second floor of said house.
  - Measurement of electromagnetic fields next to the perimeter fence opposite the underground pedestrian crossing of Los Naranjos school located at Avda. de las Comarcas, 70 in Fuenlabrada.
    In all cases, the measured values were well below the reference levels.

### 7.3.4 Noise pollution

Sometimes, electricity substations can be a nuisance to residents due to the noise generated by some of their elements. The company is working on implementing the most effective measures to mitigate it, although it complies with noise regulations.

Following the analysis of the noise produced by the 134 substations with power transformers, a programme of direct measurements was established in the 55 facilities with population in their vicinity, which was completed in 2022 with the measurement of nine substations. Despite adjustments made to some transformers to reduce their noise emission levels, there are still four substations that exceed the desired limits for land designated for residential use. In 2022, acoustic imaging cameras were used to identify the specific sources of noise in each case in order to establish the corresponding action plan in 2023.

Throughout 2024, work has commenced on installing two acoustic screens and a silencer on the two noise-producing machines at the La Eliana substation (Valencia), replacing the fans with more efficient ones in the San Jorge transformer (Islas Baleares), a task that was completed and verified in May 2024 after repeated measurements ensured legal compliance, and analysing the different options to be undertaken at the other two substations: Can Barba (Cataluña) and Grijota (Castile and León), where it has been proposed to replace the noisiest machines in the new planning exercise 2025-2030.

## 7.4 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**.

In order to become a leading company in circular economy by 2030, Red Eléctrica has a **Circular Economy Roadmap**, which establishes the objectives to be achieved and the actions to be carried out in order to progress towards their fulfilment.

This involves striving to achieve 100% circular supplies, meaning that equipment and materials used meet circular economy and eco-design criteria, which will be required from the supply chain. Redeia's goal for 2030 is to incorporate sustainability criteria into 25 critical supplies, thereby acquiring more sustainable equipment and materials and achieving 100% resource optimisation. This implies reducing, reusing, recycling, or energy-recovering all generated waste; sending zero waste to landfills by 2030; extending the lifespan of materials and equipment; and minimising water and energy consumption. Furthermore, reducing the risk of soil or groundwater contamination from hydrocarbon leaks or spills and remediating affected soils using sustainable techniques are also included among these actions. The objective is to have zero serious accidents in facilities and zero contaminated sites.

It should be noted that all the objectives set in terms of circular economy are voluntary and more ambitious than the legal requirements.

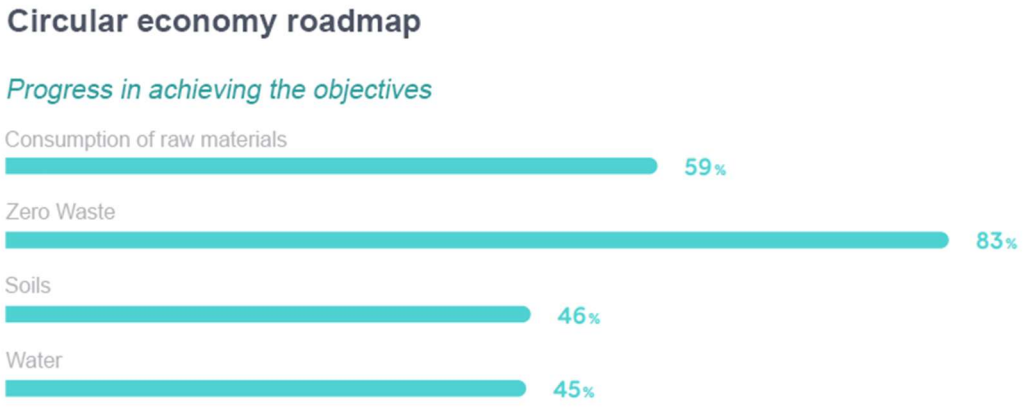
The most relevant dimensions are highlighted below:

**OBJECTIVES OF THE CIRCULAR ECONOMY ROADMAP**

| CONSUMPTION OF RAW MATERIALS | |
|---|---|
| **2025** | **2030** |
| • 10 supplies with the greatest impact on the transmission grid with circular criteria of climate change, security, diversity and biodiversity.<br>• 0% single-use plastics.<br>• 100% eco-friendly packaging, recycled, recyclable or reusable packaging in the supply of equipment and materials. | • Creation of a circular supply network (25 supplies with the greatest impact on the transmission grid with criteria of circularity, climate change, security, diversity and biodiversity).<br>• Identification of the environmental impacts of equipment and materials from their origin (LCA of supplies).<br>• Sustainable transformers (use of vegetable esters instead of mineral oils). |
| **ZERO WASTE** | |
| **2025** | **2030** |
| • 0% of Red Eléctrica's waste to landfill.<br>• Implementation of the $SF_6$ reuse procedure.<br>• Reduction of hazardous land waste with the strategy of zero accidents and zero contaminated sites. | • 0% waste to landfill.<br>• 100% $SF_6$ waste reduction.<br>• 100% reduction of soil waste. |
| **SOIL** | |
| **2025** | **2030** |
| • Zero serious environmental accidents at the facilities.<br>• Zero contaminated sites.<br>• Identification of alternatives to plant protection products. | • Action plan for the prevention of hydrocarbon leaks and mitigation of their impacts.<br>• Decontamination of 100% of the soils affected by accidental hydrocarbon spills.<br>• 100% reduction in the use of phytosanitary products in substations. |
| **WATER** | |

| 2025 | 2030 |
|---|---|
| • Reduction of water consumption in all work centres of Red Eléctrica to 6.5 m³/employee/year.<br>• 100% of the water from the Salto de Chira construction process to be reused. | • Reduction of water consumption in all workplaces to 6.5 m³/employee/year. |

Since its inception in 2020, Redeia has achieved an overall progress of 41% in its 2030 Circular Economy Roadmap.



### 7.4.1 Zero waste to landfill sites

The approach to waste focuses on proper waste management and eliminating and/or reducing its production whenever possible.

The generation of waste in the company is related to the number of construction and maintenance activities carried out each year, so it is difficult to predict the evolution of the quantities produced. Furthermore, the development of these activities is essential for the security of the electricity system or facilities and, in many cases, is also linked to the reduction of environmental risks, which is why they cannot be limited. Generally speaking, Redeia always analyses and tries to restructure or redesign all its processes in order to eliminate and/or reduce waste from the outset.
However, in many cases, it is not possible to reduce the annual net generation, especially if the volume of maintenance operations and facility renewal and improvement during the year increases. Residual waste is also generated in the buildings where companies operate.

The main generation of waste in the company is directly related to the number of construction and maintenance activities carried out by Red Eléctrica each year, which vary greatly from one year to another. Therefore, this makes it very difficult to predict the evolution of the quantities produced. Furthermore, the development of these activities is essential for the security of the electricity system or facilities and, in many cases, is also linked to the reduction of environmental risks. Generally speaking, Redeia always analyses and tries to restructure or redesign all its processes in order to eliminate and/or reduce waste from the outset. However, in many cases, it is not possible to reduce the annual net generation, especially if the volume of maintenance and renewal operations increases. Residual waste is also generated in the buildings where Redeia companies operate.


During 2024, there has been a notable decrease in the amount of hazardous waste generated compared to 2023, as 2024 was an anomalous year due to several renovation and improvement projects of substation equipment, which led to a significant increase in waste.

The group's targets, included in the **Zero Waste Programme**, are focused on managing all waste that ends up in landfills increasing recycling programs, among others, and on reducing certain types of waste, such as $SF_6$ waste and waste derived from contaminated soils, by promoting alternative and innovative treatments. To find economically and environmentally feasible technological solutions, it is necessary to have a high level of expertise in the nature and generation flows of waste, aspects on which the company has been working since 2018 through this waste management programme.

Since 2021, Redeia has implemented an **action plan** to reduce and recover 100% of waste from all the group's companies by 2030. Its implementation in 2024 has made it possible to increase the waste generated (hazardous and non-hazardous) to 98.4% whose final destination has been recycling (this generic category includes reuse, recycling, composting, anaerobic digestion and regeneration treatments).

Additionally, the company dedicates economic resources to minimising waste through R+D+i projects. An example of this is the sustainable treatment methods used for soil and groundwater contaminated by dielectric oils or hydrocarbons, which avoid sending contaminated soil to landfill.

Throughout 2024, the awareness campaign has been maintained through monographs and specific presentations related to the generation and management of waste to the responsible units, where employees have been informed about the importance of reducing waste at the source and ensuring correct management and final disposal. Redeia also focuses on its supply chain, requesting in its tenders that the equipment and materials it purchases be recycled, reused or recovered at the end of their useful life.

### 7.4.2 Waste management in 2024

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.

Waste generated by Red Eléctrica represents 83.12% of the total waste generated in the group.

The total amount of hazardous waste generated by Red Eléctrica in 2024 has decreased significantly by 3,291 tonnes compared to 2023 (an 85.32% reduction from 2023). Red Eléctrica's waste generation is associated with facility maintenance and construction tasks, work necessary to keep the assets in the best possible condition. These activities make it very difficult to predict the evolution of the quantities of waste produced, as they are linked to the number and type of actions carried out each year. This means that it is not possible to reduce waste without cutting down on the maintenance work required and the adaptation of the facilities.

Although the percentage of waste sent for disposal increased in 2024 (4.89%) compared to 2023 (1.01%), it should be noted that hazardous wastes legally mandated for landfill disposal (e.g., PCB waste) were excluded from the 'Zero Waste to Landfill' project. Also excluded from the target are asbestos waste, soil contaminated with hazardous substances and hazardous absorbent materials in those locations where there is no optimal waste management. These types of hazardous waste were designated for disposal in 2024.

The total amount no of hazardous waste generated by Red Eléctrica in 2024 has decreased significantly by 66.46 tonnes, a 12.63% reduction compared to 2023.

The final destination of non-hazardous waste in 2024 is similar to that of the previous year, with increases in the percentage of hazardous waste destined for recycling and regeneration and regeneration (2.51% increase, from 97.49% in 2023 to 100% in 2024).

The decrease in the hazardous and non-hazardous waste ratio compared to 2023 (76.60%) is due to the large number of equipment generated that year from renovation and improvement projects of substations, whose final destination was recycling. However, progress is being made as, compared to previous years, the recycling rate of waste is increasing thanks to the implementation of some measures from the 'Zero waste to landfill by 2030' project. These measures include the inclusion of recycling/recovery requirements in waste management and service procurement tenders, the installation and commissioning of composters for organic waste at workplaces, and the analysis of waste generation flows across all the organisation's companies. This has enabled Redeia to significantly reduce rates and not only meet the expected annual reduction[73] but practically achieve its 2030 target.

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

[73] Intermediate target set considering an annual linear reduction of 10% compared to 2019. Consequently, the expected target in 2024 would correspond to 50% less waste being sent to landfill compared to 2019.

| Non-hazardous waste[74] | 2022 | 2023 | 2024 |
|---|---|---|---|
| Total (t) | 750.6 | 525.9 | 459.4 |

| Hazardous waste | 2022 | 2023 | 2024 |
|---|---|---|---|
| Total (t) | 780.1 | 3,857.7 | 566.1 |

| Total waste<br>Non-hazardous + hazardous | 2022 | 2023 | 2024 |
|---|---|---|---|
| Total (t) | 1,530.7 | 4,383.6 | **1,025.5** |

- Total amounts (tonnes) managed in 2024 by type of management.

| Waste management method (%)[75] | Non-hazardous (%) | Hazardous (%) |
|---|---|---|
| Reuse | 0.00 | 0.00 |
| Recycling, Composting, Anaerobic Digestion | 100.00 | 95.11 |
| Regeneration | 0.00 | 0.00 |
| Recovery | 0.00 | 0.00 |
| Elimination (any method) | 0.00 | 4.89 |

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

[74] 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.

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

### 7.4.3 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 products, it is necessary to make progress on issues related to establishing **eco-friendly designs** and the consideration of environmental impacts throughout the life cycle of equipment and materials. This progress will only be possible through advances in the relations with suppliers and through collaborations with other key actors while promoting innovation and technological development.

In this context, it is important to highlight the effort made by the company, together with its supply network, in identifying the impacts of equipment and materials from their manufacturing process through a **life cycle analysis** methodology developed in 2022, with the aim of promoting eco-design and innovation in its equipment.

This methodology, developed with leading suppliers, evaluates factors such as the use of recycled and recyclable materials, their origin, durability, and reparability, as well as carbon and water footprints. This enables the quantification of key environmental impacts and aids in decision-making geared towards acquiring more efficient and sustainable supplies.

In 2024, six critical supplies and one service for Redeia have been analysed using this methodology, which, along with the four analysed in 2023, are part of the Circular Economy Roadmap. This roadmap aims to analyse and promote the implementation of sustainability requirements in ten supplies by 2025, thus advancing towards a more sustainable procurement network by 2030. Redeia will work in the future to enhance the circular design of supplies.

Moreover, it has been established that by 2025, 100% of packaging will be eco-packaging, recycled, recyclable or reusable packaging, and the consumption of single-use plastics will be 0%, with the aim of increasing the circular usage rate in the supply of equipment and materials.

### 7.4.4 Sustainable management of soil/earth affected by oil and fuel spills

Red Eléctrica's sustainable treatment methods for soils and groundwater contaminated by dielectric oils or hydrocarbons.

The aim is to find innovative and sustainable solutions for treating these pollutants in the field, enabling a complete clean-up on-site (excavated and treated on-site). Alternative procedures to excavation and depositing in landfill sites allow the volume of waste generated to be reduced, as they avoid sending contaminated soil to landfills. Laboratory work has been carried out and the applicability of the techniques tested has been confirmed, both in terms of bioremediation (technology that, in addition to detoxifying the soil, restores its ecological functions), identifying bacterial cultures with degrading capacity for the substances used by Red Eléctrica, as well as those based on the application of surfactants and chemical oxidation, thus avoiding sending it as waste to landfill.

A pilot trial for sustainable soil recovery and treatment *in situ* was carried out in 2023 and 2024 at a facility affected by an accidental leak. The results obtained allow us to affirm the applicability of *in situ* techniques in electrical substations with soils affected by oils from power machinery. It has been verified that both the product extraction technique using surfactant injection and the biological treatment technique through biostimulation and bioaugmentation are viable, demonstrating adequate performance levels in terms of their ability to degrade the oil spilled in the soil.

### 7.4.5 Saving of resources: water and paper

#### Water consumption[76]

| | 2022 | 2023 | 2024 |
|---|---|---|---|
| Head Office ($m^3$) | 8,237 | 8,662 | **8,587** |
| Head Office ($m^3$/employee)[77] | 7.41 | 7.50 | **7.15** |
| **Total work centres [78] ($m^3$)** | 21,153 | 21,917 | **18,640** |

| Withdrawal by source (%) | 2022 | 2023 | 2024 |
|---|---|---|---|
| Rainwater collection tanks[79] | 0 | 0 | **0** |
| Cisterns | 2.47 | 2.06 | **1.94** |
| Wells | 14.34 | 11.34 | **12.56** |
| Municipal water mains | 83.19 | 86.58 | **85.5** |

Water is not considered a material aspect for Redeia. The company has no production plants and does not use water in its operating processes. Therefore, the consumption of this resource, which comes from

[76] In the case of water consumption in those months of 2024 for which actual data was unavailable at the time of this report's closing, ~~estimates were made based on the average of previous months~~ or using the corresponding month's value from the prior year.

[77] As of 2021, the calculation takes into account all personnel (employees, interns, and collaborators—totalling 1,111 in 2022, 1,155 in 2023, and 1,201 in 2024) working in the Head Offices (Moraleja and Albatros buildings). In previous years, only the Head Office Building in the Moraleja was included.

[78] The data provided has a coverage of 100%, 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).

[79] 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.

the network (85.5%), cisterns (1.94%) or wells (12.56%), is very low, and is limited to domestic activities such as toilets or cleaning, human consumption, and garden irrigation.

Consequently, all the water consumed becomes effluent, does not result in wastewater, and is discharged through the municipal sewer system. In no case does the company discharge water into natural watercourses, so it is not necessary to undertake actions to improve the quality of wastewater. However, aware of the growing water scarcity and the risk it poses to society, in 2023 the company established the 'Redeia Water and Energy Working Group,' responsible for overseeing the Responsible Water Management Programme, which has been reviewed by the company's main governing bodies.

The company, within the ID schedule, examines the trends of its indicators and conducts annual audits of the monthly water consumption per facility to identify its source, main uses, and possible leaks or human errors. This information is used to establish responsible consumption measures within the **Water Management Plan**, which are implemented according to the defined timeline and priority, with regular monitoring to achieve the target of 6.5 m³/employee/year by 2030.

The ratio per employee has maintained a notable downward trend over the last four years. Currently, the Action Plan includes savings measures across the group's various facilities, including automatic leak alerts, installation of dual-flush toilets, taps with timers, flow meters, automated drip irrigation with water sensors, and the replacement of species with native ones. As a result of implementing the measures during 2024, a reduction of 3,277 m³ of water in workplaces and substations has been observed and a decrease of 1.77 points, compared to 2023, in the consumption ratio indicator per employee, reaching 8.97 m³/employee (including workplaces and substations).

Regarding **water reuse and recycling** measures, specifically those aimed at reusing produced wastewater, a pilot project has been launched to supply recycled water, both in quality and quantity, to the substations. In this regard, Redeia has patented a prototype unit for the capture and utilisation of atmospheric water, based on its own technology, which is currently in the development stage. Moreover, a set of equipment has been designed and assembled to quantify and reuse the condensate wastewater from air conditioning units. After applying treatment and purification **measures to improve the quality** of the waste water from these units, it is possible to use it in toilet cisterns and for irrigation purposes. This system has already been installed in the Almodóvar del Río, Santa Elvira, Puerto de Santa María, and Tabernas substations, achieving estimated savings of at least 1,000 m³.

Furthermore, in 2024, the awareness campaign regarding water consumption has continued through the presentation of monographs to the responsible units, where employees have been informed about the importance of reducing the use of this resource within the organisation. These training sessions have led to new proposals for savings measures and innovative ideas related to water recycling.

## Paper consumption (publications)

| | 2022 | 2023 | 2024 |
|---|---|---|---|
| kg | 5,290 | 5,719 | **5,327** |
| **kg/employee**[80] | 2.64 | 2.80 | **2.56** |

Office and per capita paper consumption continued its sustained decline over the past five years, driven mainly by digitalisation initiatives (digital office) and the COVID-19 state of emergency, which limited onsite staff presence in 2020 and partially in 2021.

However, a further decrease was observed in 2024 compared to 2023. Figures remain highly positive when compared to 2019.

[80] Includes RE and Redeia employees, interns and collaborators, as well as personnel contracted from temporary employment agencies: 2,077 people were registered.

| | 2022 | 2023 | 2024 |
|---|---|---|---|
| kg[81] | 809 | 891 | **1065** |
| % FSC[82] | 0.00 | 0.00 | **0.00** |
| % FSC 100% Recycled | 100.00 | 100.00 | **100.00**[83] |
| % FSC 60% Recycled | 0.00 | 0.00 | **0.00** |
| % FSC Mixed | 0.00 | 0.00 | **0.00** |
| **% Ecological paper used in publications** | **0** | 0 | **0** |

## 7.5 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'.

Red Eléctrica has put in place numerous preventive and corrective measures to prevent contamination of soil or groundwater by leaks or spills of oils, fuels and substances.

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.

24 characterisation reports were drawn up in 2024. None of said reports recorded any pollutant values that pose an unacceptable risk to health.

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

[81] Evolution of paper consumption in publications for the period 2022-2024.

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

[83] All publications have used exclusively FSC Recycled paper.

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 2024, six PSR/SR of transmission grid substations (Vic, Mailas, Can Jardi, Almazan, Rubi, and Meson Do Vento substations) have been submitted.

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

Furthermore, adequate equipment maintenance is carried out, and strict procedures are established to reduce the number of incidents, containment systems (especially in power transformers with large amounts of oil) are used, and response protocols are in place for possible mishaps, which will reduce the consequences of accidents, should they occur.

In 2024, the deployment of the **Emergency Intervention Service (SIU)** for land-based incidents was consolidated. This service 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.

Furthermore, simulations of oil spills were carried out and related training sessions on this topic were held.

In addition, the organisation has assessed the level of environmental risk regarding the impact on the soil of its facilities (substations and Oil Filled cables), identified environmental liabilities in all electricity substations and has implemented various measures to reduce, control or completely eliminate the potential risks identified.

These include the following:

- Characterisation of soil and groundwater in existing substations and new substations to identify incidents that occurred prior to Red Eléctrica's activity). The following table lists the specific soil characterisations carried out in 2024:
    - Pinar del Rey substation experienced the rupture of a reactor bushing, leading to the SIU intervention. Following remediation and cleanup, a report on the remaining soil was issued.
    - At the Guadame substation, soil characterisation was conducted after identifying historical infiltration from an old storage tank.
- In 2024, spill simulation drills involving power transformers continued at Santa Águeda, Porís, and Montearenas substations, as well as for the Albarellos-Castrello and Tarifa-Fardioua cables. Training sessions were also held at several operational centres. The Tarifa-Fardioua cable drill was Red Eléctrica’s first marine spill simulation. It involved deployment of marine containment resources outlined in the Maritime Internal Plan and was supervised by the Directorate General of the Merchant Marine.
- Intensification of inspections at high-risk facilities.
- Blue Filtering Project: installation of hydrocarbon separator filters at the outlet of oil collection tanks. This additional containment measure ensures the quality of the discharge and is applied to both new substations and existing substations. By 2024, it will be installed in a total of 33 new facilities.
- Execution of tests using different methodologies for the extraction of insulating fluid in OF (Oil Filled) cables with the aim of completely reducing the environmental risk of this type of cable once they are out of service. In 2024, efforts were made to compare different methods to identify the most suitable one from a cost-effectiveness perspective, while always aiming to eliminate the environmental risk of oil spillage to the exterior.

- Actions related to soil/groundwater as a result of accidents occurred 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. RE 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 $m^2$ of soil, while the area of groundwater affected is estimated at about 2,200-2,600 $m^2$. The fault is located in an urban area near the sea where residential and tourist activities usually take place. Since 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 $m^3$ 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 General Directorate for Environmental Education, Environmental Quality and Waste approved the Cala'n Bosch Recovery Plan in 2022.

In 2023, a recovery system was installed, while Phase 1—surfactant injection and product recovery—was carried out with satisfactory results, achieving the defined objectives.

In 2024, part of Phase 2 was implemented, involving a biological treatment for the biodegradation of dissolved-phase hydrocarbons using biostimulation with oxygen and nutrients. Work was conducted in two stages. The first stage concluded in July 2024, while the second began in areas where extracted water was oxygenated and continuously recirculated for at least three weeks, enhancing conditions for aerobic hydrocarbon biodegradation. By the end of 2024, Phase 2 of the Recovery Plan had not yet been completed and will continue into 2025.

## 7.6 Stakeholders

The aim of Redeia's Stakeholder Management Model is to achieve a relationship based on trust with a focus on the creation of shared value.

The design of this Model has taken into account the indications of the main reference norms and standards in stakeholder management, such as AA1000, ISO 26000, IQNet SR10 or the Global Reporting Initiative (GRI), in order to ensure that the company analyses the main impacts on its stakeholders derived from its business activities, as well as the influence that these stakeholders have, or could have, on the company. In this way, Redeia focuses its relationship on the creation of shared value, strengthening the positive impacts and quickly identifying the negative impacts that could affect the relationship, in order to minimise them.

In 2020, Redeia initiated the review of the group's Stakeholder Management Model, gradually implementing it within its various companies.

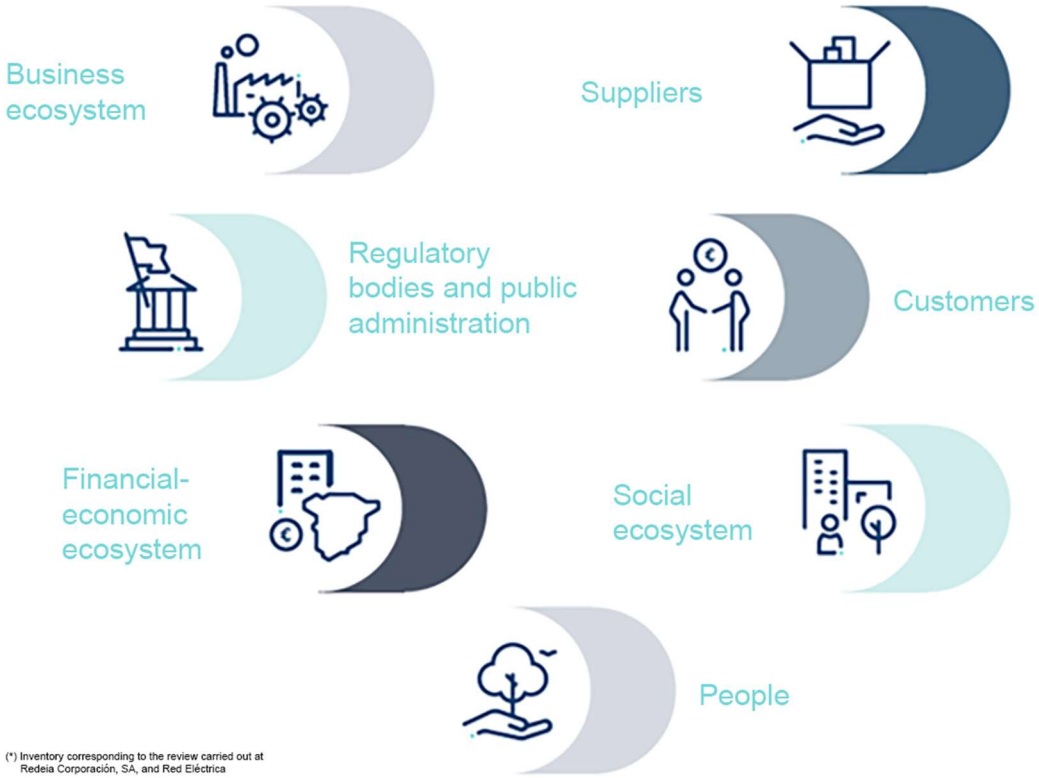
This model encompasses the following phases:

- Phase 1. Identify and segment. Identify the groups that constitute stakeholders, based on the analysis of the interrelationships between the company's processes and activities with the socio-economic environment, and segment them according to the reason why they are of interest.
- Phase 2. Prioritise stakeholders. Relevance is determined based on three prioritisation factors: the company's impact on the stakeholder group, the stakeholder group's influence on the company, and the level of tension. This results in a prioritised inventory.
- Phase 3. Define relationship framework (relationship levels, channels, commitments). The definition and deployment of the optimal stakeholder relationship framework will depend, firstly, on the commitments assumed by the company with the stakeholder and, furthermore, on its level of priority and the level of engagement considered appropriate.
- Phase 4. Review, establish, and define improvements to the relationship framework. Each of the companies and stakeholder supervisors will deploy and establish the relationship framework, promoting dialogue with the stakeholders, the creation of improvements based on the reason for the relationship, significant issues and needs and expectations, maximising positive impacts and minimising negative ones. Redeia transfers its sustainability commitment to all business areas and organisational levels of the company to ensure the creation of value for all our stakeholders.
- Phase 5. Evaluate stakeholder management. The evaluation of stakeholder management is based on the systematic and periodic identification of stakeholder requirements and expectations through different methodologies based on the framework of the relationship with each stakeholder group. From this assessment, action plans emerge, aimed at responding to the relevant issues, and to the needs and expectations identified.
- Phase 6. Evaluate and review the management model. Periodic review of the stakeholder management model, considering relevant changes in the company's external or internal context. This ensures the Model aligns with business operations and remains a useful management tool.

The stakeholder[84] 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.

[84] Inventory corresponding to the update carried out in Red Eléctrica Corporación, S.A. and Red Eléctrica de España, S.A.U.

## Stakeholders




- Nature-related stakeholders

In 2024, the Environmental Department identified nature-related stakeholders and designed a relational Action Plan. This involved defining strategic areas of action and tasks designed to foster closer relationships with the identified key stakeholders.

Our areas of action include:

- Environmental Studies: Investment projects
- Marine environment
- Birdlife
- Fires
- Electromagnetic fields
- Institutional

Primary actions include:

- Facility visits
  - CECOEL/CECRE
  - Hispasat
  - Campus
  - Premises
  - Training sessions

- Institutional gatherings
  - Meetings
  - Business lunches and breakfasts
  - On-site visits
  - Events and activities
- Collaborations and projects
  - Compensatory measures
  - Environmental projects
  - Technical presentations
  - Interventions and attendance at conferences
  - Agreements

In 2024, 61 actions were executed.

### 7.6.1 Management of enquiries and claims

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 claims of an environmental nature which are sent to us by interested parties. Enquiries submitted are classified either by their nature (includes complaints, queries, suggestions, requests for information and recognition) or as claims.

Red Eléctrica handled **31** enquiries regarding environmental issues in 2024 (vs 30 in 2023), with two of them resulting in formal complaints.

Stakeholder enquiries to Red Eléctrica in the last three years have centred on these areas:

| | Evolution of enquiries[85] | | | Evolution of applicable claims[86] | | |
|---|---|---|---|---|---|---|
| | 2022 | 2023 | 2024 | 2022 | 2023 | 2024 |
| Birdlife | 9 | 3 | 6 | 0 | 0 | 0 |
| Electromagnetic fields | 9 | 4 | 3 | 0 | 0 | 0 |
| Consumption/Energy efficiency | 0 | 0 | 0 | 0 | 0 | 0 |
| Environmental expenditure | 0 | 0 | 0 | 0 | 0 | 0 |
| Emissions/Climate change | 0 | 0 | 0 | 0 | 0 | 0 |
| Impact on the landscape | 1 | 2 | 2 | 0 | 0 | 0 |
| Premises | 0 | 2 | 0 | 0 | 0 | 0 |
| General environmental information | 0 | 0 | 2 | 0 | 0 | 0 |
| Waste | 2 | 0 | 1 | 1 | 0 | 0 |
| Noise | 12 | 13 | 5 | 6 | 3 | 1 |
| Environmental management system | 1 | 0 | 0 | 0 | 0 | 0 |
| Vegetation | 12 | 6 | 12 | 0 | 2 | 1 |
| **Total** | 46 | 30 | **31** | 7 | 5 | **2** |

We saw significant demands from different organisational units regarding vegetation impact, noise, and birdlife.

A complaint (DIRE2368743) concerning noise and the visual impact of the Bunyola-Inca power line, received in 2023 and open at the start of 2024, has now been closed.

[85] The data shown includes all requests received (enquiries + claims). All enquiries that are not classified as a claim are classified in the same group called Enquiry. The different types of enquiries are: complaint, query, suggestion, request for information and recognition.

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

## 7.6.2 Supply chain

Red Eléctrica considers its suppliers as an essential link in the execution of their activities and, therefore, its commitment to the environment extends to each and every one of them.

Red Eléctrica voluntarily participates in various initiatives and professional associations that strengthen the extension of its commitment to sustainability to suppliers, among which it is worth highlighting the commitment to the principles of the United Nations Global Compact.

Redeia's **Supplier Code of Conduct**—updated in 2023 and stemming from the company's Code of Ethics and Conduct—establishes the minimum ethical, social, and environmental requirements that every supplier must accept and adhere to in order to work with company to committing to extend these requirements to their own supply chain. It must be accepted by the supplier from the outset. As stated in the General Terms and Conditions of Contracting, the code is part of the contract documents.

The 2023 update introduced specific aspects. For employees and contractors relations, it now explicitly prohibits any form of harassment towards employees and requires training on physical and mental health. As for their relationship with the environment, there is a focus on efficient resource use, promoting energy savings, and implementing preventive measures to avoid or minimise deforestation and soil and environmental degradation.

The company mandates a **documented or third-party certified environmental management system from all suppliers** providing services or products that could affect the environment.

Currently, **29.4%** (i.e., 769) of the suppliers in the combined PRORED and REPRO databases hold ISO 14001 or EMAS certifications. [87]

One of Red Eléctrica's priorities has been to establish **criteria** that allow for incorporating **sustainability requirements into purchasing decisions**.

*Redeia aims to integrate sustainability criteria into at least 10 supply contracts by 2025 and 25 by 2030.*

The company continues to work on all initiatives included in its **Roadmap for the Circular Economy** 2030. In order to reduce the consumption of raw materials and prioritise the use of recycled, recyclable or reusable products, it is necessary to make progress on issues related to establishing eco-friendly designs and the consideration of environmental impacts throughout the life cycle of equipment and materials. This progress will only be possible through advances in the relations with suppliers and through collaborations with other key actors while promoting innovation and technological development.

In this context, it is important to highlight the effort made by the company, together with its supply network, in identifying the impacts of equipment and materials from their manufacturing process through a **life cycle analysis (LCA) methodology** developed in 2022, with the aim of promoting eco-design and innovation in its equipment. This methodology, developed with leading suppliers, evaluates factors such as the use of recycled and recyclable materials, their origin, durability, and reparability, as well as carbon and water footprints. This enables the quantification of key environmental impacts and aids in decision-making geared towards acquiring more efficient and sustainable supplies.

In 2024, six critical supplies and one service for Redeia have been analysed using this methodology, which, along with the four analysed in 2023, are part of the Circular Economy Roadmap. This roadmap aims to analyse and promote the implementation of sustainability requirements in ten supplies by 2025, thus advancing towards a more sustainable procurement network by 2030. The company will work to enhance the circular design of supplies.

[87] Until 2023, the REPRO supplier database was used. However, 2024 has seen improved supplier portfolio visibility through PRORED, which lists 2,619 suppliers compared to REPRO's 658.

Moreover, it has been established that by 2025, 100% of packaging will be eco-packaging, recycled, recyclable or reusable packaging, and the consumption of single-use plastics will be 0%, with the aim of increasing the circular usage rate in the supply of equipment and materials.

Additionally, equipment and materials that reach the end of their useful life in the company are dealt with treated as a priority with a focus on sustainable recovery, with the aim of them being reused. This type of initiative, as opposed to waste management scenarios, is a substantial improvement.

In the **fight against climate change**, in 2024, Red Eléctrica continued to carry out its **collaboration programme** with its suppliers. The actions included in the programme are aimed at making progress in meeting the targets that Redeia has set itself regarding Scope 3 emissions:

The **dedicated collaboration Programme**, which has been in development since 2019, currently involves 26 suppliers. These suppliers account for over 30% of the group's supply chain emissions covered by SBTi. Besides improving the information regarding its emissions, the goal is is to extend Redeia's commitment to emission reduction to its supply chain, encouraging suppliers to set science-based targets (SBTi) and sharing best practices in emission calculation and reduction.

The main **risks** are **dealt with through the management systems** in place and via **regular audits** and after which recommendations and improvement areas are identified, analysed, and implemented with a view to continually improving processes. In the case of identification of a high impact, the company can establish an action plan with the supplier, closely monitoring its implementation and reserving the right to take action if necessary.

The identification and prioritisation of risks and impacts of the supply chain have allowed the company to establish adequate controls to minimise them. In this regard, for each of the risks identified, the company works on the qualification, monitoring, training and development of suppliers.

The company has identified the impacts and effects on sustainability (ethics, occupational health & safety and the environment) associated with each of the incidents managed in order to have more information and the ability to gauge this type of incident.

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 relation to 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 thorough monitoring of the established environmental requirements.

Lastly, in 2021, a new **supplier evaluation model regarding sustainability was introduced, incorporating an updated ESG scoring system.** This model revolves around three core pillars of sustainability, represented by the acronym ESG (Environmental, Social, and Governance). The scoring process entails a comprehensive 58-point questionnaire, some of which will require the mandatory submission of supporting documentation or evidence, which will enable suppliers to be evaluated in terms of sustainability. This model will enable the identification of a supplier's degree of maturity in ESG aspects, as well as a comparison with the average obtained by suppliers belonging to the REPRO community.

Under Redeia's annual social audit Plan for ESG-risk suppliers, **21** audits were carried out in 2024 on identified ESG-risk suppliers (**88%** of the total).

### 7.6.3 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 2024 was 3.25% (compared to 19.9% in 2020), corresponding to 62 people and a total of 485 hours of training (compared to 1,033 in 2023).

1% of the total training provided in 2024 was dedicated to environmental topics.

## 7.6.4 Stakeholder relations

### Participation in working groups

| Working groups | Organiser |
|---|---|
| WG C3-9 (A) Sustainable Corridor management | CIGRE (International Council on Large Electric Systems) |
| WG C3.12: methodologies for greenhouse gas inventory and reporting for electricity transmission and distribution companies | |
| 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 TSOs/DSOs under environmental transition | |
| JWG B1-C3.85: environmental impact of decommissioning underground and submarine cables | |
| CIGRE: Technical Council (Chairpersonship SC3 - Chair of the Environmental Study Committee) | |
| Strategic Advisory Group (SAG-C3) | |
| National CIGRE committee (Environment committee member) | |
| Environment Community. Participation in 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 |
| Biodiversity Management Observatory Consultation Committee<br>Energy Efficiency Observatory Sustainable Mobility Observatory | CES (Excellence in Sustainability Club) |
| Spanish Green Growth Group. Various working groups: Natural Capital WG, Climate Policies WG | Spanish Green Growth Group |
| Climate Change Cluster and Circular Economy Action Working Group | Forética |
| Natural Capital and Energy Working Group of the Spanish Energy Sector | Natural Capital Factory |
| Workshop for the analysis and renewal of the corporate commitment for a new IEEB (Spanish Business and Biodiversity Initiative). | Biodiversity Foundation |
| ISO Committee. CTN 328 'Biodiversity'. | UNE |

### 7.6.5 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 (*https://www.ree.es/es*):

- The section on habitat restoration and compensation, which includes, among others, the projects: Marine Forest Platform and Flight Paths Recovery: *https://www.ree.es/es/sostenibilidad/medio-ambiente/restauracion-compensacion-habitats*
- The section on Carbon Footprint: *https://www.ree.es/es/sostenibilidad/medio-ambiente/huella-carbono*
- The section dedicated to electromagnetic fields: *https://www.ree.es/es/sostenibilidad/integracion-territorio/campos-electromagneticos*

In 2024, the total number of users who visited the environment section of the corporate website was 46,156 (a 258% increase compared to 2023 (17,875). Total page views also surged by 281%, reaching 73,808 compared to 26,218 the previous year. *(www.ree.es).*

Additionally, a total of 26 press releases with environmental content and 123 environmental news related to the company were written and published on the corporate website, and 89 articles through the 'red 2030' blog.

#### Internal communication

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

- News of an environmental nature (includes environmental management, biodiversity, climate change, energy efficiency, sustainable mobility) published in NuestraRED:
- 36 news items published in the 'Carousel' (compared to 50 published in 2023).

## 7.7 Innovation

With the collaboration of all the areas involved, the following innovation projects stand out from a sustainability and environmental point of view (some have already been mentioned in other sections of this report):

| Projects of an environmental nature | |
|---|---|
| **BIORED** | This initiative considers Redeia's electricity transmission grid as a reservoir of biodiversity and a generator of natural capital. The aim of this initiative is to identify, diagnose and assess the effectiveness of electricity lines (tower bases and security corridors) and substations as biodiversity reservoirs that facilitate the connectivity of fauna between the different protected natural areas.<br>The management of the areas below the electricity lines and in the vicinity of substations as 'biodiversity islands', and the use of electricity line corridors as a connecting element between biodiversity spaces, could be an optimal solution to facilitate the mobility of the various species currently under pressure due to the fractioning and reduction of their natural habitats. Additionally, other more general species (not affected by territorial dispersal movements) would benefit from the presence of a varied ecosystem, increasing the biodiversity in the area. Thus, what we know today as 'grey infrastructure' used essentially to supply power to the industry in general, could be perceived as 'green'. |
| **BIOTRANSPORT** | Analysis of how to maximise the use of a given number of electricity transmission towers as biodiversity islands (stepping-stones) yielded very satisfactory results: an increase in the biodiversity of birdlife as well as in the number of micro mammals and invertebrates (mainly pollinators). This type of action has been considered as an initiative that favours the connection of around 60% of the spaces of the 2020 Natura Network, thus benefiting a multitude of species, both directly and indirectly. |
| **NATURALEZA EN RED** | • The aim of the Naturaleza en Red project, in collaboration with the Autonomous University of Barcelona, is to assess the potential of the transmission grid as a corridor and reservoir of biodiversity associated with the security corridors and the base of the electricity line towers. The research data to date show that **forested areas under electricity lines act as islands of biodiversity, functioning as reservoirs of biodiversity of open space species**, which are very important in the global ecosystem and play a vital role in maintaining highly threatened populations.<br>• In 2024, the sampling efforts and the number of monitoring points have been increased, linking the Naturaleza en Red project with the National Strategy for the Conservation of Pollinators of the Ministry for the Ecological Transition and the Demographic Challenge (*Ministerio para la Transición Ecológica y el Reto Demográfico* - MITERD), which currently uses the Spring/EU-POMS methodology.<br>• The samplings have detected a point of high interest under the line for biodiversity conservation, revealing a previously unknown population of the 'Gentian Ant or Small Ant' (*Phenagris alcon*), a highly threatened species.<br>• A cartographic model has been developed to evaluate the Integrated Biodiversity Index (IDBI), which allows for determining the importance of biodiversity in relation to open-space species in areas under power transmission lines compared to adjacent habitats. The scope of the model covers the entirety of the energy transmission grid in Spain. This model allows for the identification of areas with the highest biodiversity potential under the electricity transmission line, assisting in prioritising management and planning actions while establishing suitable quality environments for both pollinators and other species of fauna and flora. |

| | |
|---|---|
| | • The main results of the project include: between 200% and 2,000% more butterflies; 500%-700% greater abundance of pollinators; between 120% and 2,000% more diversity of butterflies and between 2,000%-4,000% more abundance of flowers under the electricity line with respect to the nearby forest area. |
| **PASTOREO EN RED** | Maintenance of vegetation beneath high-voltage electricity lines with extensive livestock farming. This project has been qualified as a nature-based solution according to the IUCN standard. |
| **PRODINT** | A system developed by Red Eléctrica the early detection of forest fires, using the towers of the transmission lines and by means of sensors based on the Internet of Things technology, which captures the radiation emitted by the fire and automatically sends warnings to the system operator, reducing the reaction time of firefighting agents, with a consequent reduction in costs and environmental and personal damage. A laboratory and field-tested prototype is now available (installed on a section of line in Galicia) and is ready for large-scale deployment. |
| **Bseed 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 the control of evacuation routes, which is freely available to the population and those responsible for extinguishing the fire. |
| **MISSION Project:** | European R+D project funded by the European Commission aimed at researching and developing more environmentally sustainable triggers. Specifically, the efforts focus on researching and testing alternative technologies to $SF_6$. The project will investigate new alternative gases with zero or very low emissions and develop and test innovative high-voltage trigger technologies. The project consortium includes power trigger manufacturers, technological centres, and TSOs. This initiative started in January 2024, and Red Eléctrica has played a key role by defining deployment scenarios for $SF_6$ alternatives and outlining the technical requirements for the new power circuit breakers. |

# 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 conforms to the ISO 31000 standard on the principles and guidelines for risk management. Besides, it is ongoing and comprehensive in nature.

Additionally, the company has a Comprehensive Risk Management Policy (revised and updated in 2021) and a general Procedure for comprehensive risk management, whose latest version was approved in 2024. These are both built upon the Comprehensive Risk Management Framework COSO (Committee of Sponsoring Organisations of the Treadway Commission) ERM-Enterprise Risk Management-Integrated Framework.

This general procedure establishes the responsibility of the Department of Internal Audit and Risk Control to report on the status and development of relevant risks to the bodies responsible for their supervision and control (Executive Committee, Audit Committee, and Board of Directors) at least every six months and when required or when, because of the relevance of the matter, it is deemed appropriate.

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: strategic, financial, and operational. 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.

Based on the probability of occurrence and level of impact of each risk, the risk is located in the matrix automatically determined the level of risk, so all the risks identified are classified individually into three categories: high-, medium- and low-level risks.

The level of risk that Redeia is willing to accept is established in Redeia’s Comprehensive Risk Management Policy approved by the Board of Directors. The Board of Directors reviewed and approved Redeia's acceptable risk level in April 2024.

The risk identification, analysis, assessment, management, and control process at Redeia is a process done systematically, starting at the department level and extending supervision of the department to the different hierarchical levels of the organisation, before finally being referred to the Executive Committee, the Audit Committee, and the Board of Directors.

In the process of identifying, analysing, assessing and controlling risks, the necessary actions are established to reduce the risk and bring it into line with the acceptable risk level.

For the monitoring of risks, the Risk Management System currently includes the monitoring of action plans aimed at reducing the risk levels, along with indicators established to control their evolution. In 2024, a digital scorecard has been developed, making it possible to integrate and make more accessible the information generated in the integrated risk management system in support of the activities of control and monitoring of the risks carried out by the Risk Control department of Redeia.

Redeia has implemented an Internal Control System for sustainability information (SCIIS). In addition, the company has an external verifier that issues verification reports on all sustainability information.

In 2024, the assessment of risks related to the environment and climate change was updated in collaboration with the Risk Control, Compliance and Quality Department.

The main **environmental impact risks** identified for the company are those shown in the tables below; there are no relevant changes in their evaluation and classification with respect to the previous year. The risks associated with climate change are treated separately from the rest of the risks associated with the environment.

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

| Risks | Description | Potential impact | Main actions applied in the management of risks |
|---|---|---|---|
| | | | • Environmental policy.<br><br>• Application of strict environmental criteria in all phases of planning, development and maintenance of facilities.<br><br>• Environmental supervision of works. • Inspection of facilities (lines and substations).<br><br>• Biodiversity strategy and actions.<br><br>• Development of research projects and fire prevention plans.<br><br>• Projects for the conservation of bird life.<br><br>• Environmental training for field staff.<br><br>• Environmental awareness-raising among suppliers.<br><br>• Implementation of Environmental Site Certification.<br><br>• Establishment of collaboration agreements on environmental protection with the various autonomous communities.<br><br>• Plan of measures for the prevention of forest fires (2023-2025). • Fire protection plans.<br><br>• Contingency plans.<br><br>• Environmental management system certified according to ISO 14001.<br><br>• Emergency Intervention System (SIU) for oil spills due to breakdowns.<br><br>• Planning of preventive maintenance activities aimed at managing the risk of the asset (SAGA) |
| Environmental impact risks | • Impact on plant species.<br><br>• Impact on birdlife.<br><br>• Soil or water contamination.<br><br>• Impact on archaeological heritage.<br><br>• Risk of fire | Damage to the environment with relevant consequences that could involve sanctions, in addition to the costs associated with repairing the impacts caused by the event.<br><br>Redeia's reputational loss. | |

• VEGETA project to optimise annual vegetation treatment cycles.

• DALIA Project, which facilitates inspection work through image processing by means of artificial intelligence.

• Contracting environmental liability and third-party damage insurance policies.

Redeia's relevant risks are classified in three taxonomy levels, ensuring that are themes are analysed and assessed. The Risk Map includes a specific section to analyse and assess climate change risks.

### Risks associated with climate change

The company follows the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) in its management of climate risks and has a methodology for its identification, prioritisation and economic quantification, which it began to apply for the electricity business in 2019 and transferred it to its business activities in Latin America and the telecommunications business in 2021.

Redeia's risk analysis is done using three time horizons and considering different scenarios (physical and transition). Horizons have been defined bearing in mind the useful life of facilities (in the case of electricity infrastructure, it is 40 years) and strategic planning and regulatory periods.

The company has identified a total of **45 potential risks related to the electricity business** in Spain which are evaluated considering the criteria of exposure, sensitivity and adaptability. It should be noted that the procedure takes into account both economic variables and other business indicators (impact on electricity supply or impact on reputation). Furthermore, as included in the TCFD recommendations, different physical and transition scenarios are considered in the analysis.

As a result, risks are classified into 4 categories (low, medium-low, medium-high and high) with high and medium-high risks being considered relevant for the business, which will be monetised to quantify their financial impact. Given Red Eléctrica's status as a regulated activity, not all priority risks for Redeia necessarily imply a financial impact for the organisation. Physical & transitional risks are set out **below**.

| | Relevant risks associated with climate change | Potential impact on the business | Mitigating actions |
|---|---|---|---|
| Physical risks | • Impact on outdoor facilities (electricity lines) due to extreme wind.<br>• Damage to lines and substations due to fire. | - Damage to infrastructure.<br>- Increase in maintenance costs.<br>- Impact on the electricity supply.<br>- Reputational impacts (associated with power outages).<br>- Impacts on third parties or the environment (in the case of fire). | - Projects for the improvement and strengthening of the transmission grid.<br>- MANINT project, to optimise the management of transmission grid assets.<br>- Felling plans. Vegeta project.<br>- Innovation. Prodint Project and Bseed Watch.<br>- Contingency plans.<br>- Insurance policies. |
| | • Damage to equipment belonging to the transmission grid located outdoors due to high temperatures. | - Increase in costs of repair and replacement of equipment and reduction of its useful life.<br>- Increased cost of equipment due to design modifications to increase resilience. | - Detailed review of technical specifications (design) of equipment.<br>- Incorporation of additional technical requirements, if necessary.<br>- Insurance policies. |
| | • Decrease in efficiency of photovoltaic generation due to rising temperatures.<br>• Decrease in water resources for hydroelectric generation. | - Impact on the operation of the electricity system operation when reducing the availability of generation.<br>- Impact on the operation of the electricity system, reduction of the availability of generation, lack of firm power and due to lack of resources for pumping (flexibility tool). | - Improvement of prediction systems.<br>- Availability of alternative to meet the demand.<br>- Development of flexibility measures: storage, reserves and other. |
| | • Increase in work absenteeism associated to climate change. | - Availability of personnel to perform generation works. | - Consolidation of health and well-being policies.<br>- Structural changes in HR policies and labour practices to adapt to chronic absenteeism. |

| | Relevant risks associated with climate change | Potential impact on the business | Mitigating actions |
|---|---|---|---|
| Transition risks | • Lack of information to operate the system in real time due to the increase of renewable energy generation facilities of less than 1 MW (current observation threshold set by the System Operator).<br>• Generation disconnections due to high penetration of renewables without the necessary technical capabilities to adequately respond to disturbances. | - Increased difficulty in system operation (volatility of production, lack of monitoring, etc.).<br>- Increased risk of incidents in system operation that may affect the supply.<br>- Increased production constraints and restrictions.<br>- Increase in complaints.<br>- Impact on reputation. | - Development of system operation tools and the safe integration of renewables (Control Centre of Renewable Energies, CECRE).<br>- Strengthening of monitoring and control systems.<br>- Development of prediction models regarding renewable generation.<br>- Collaboration in the development of the relevant regulations that allow more flexibility and requiring adequate technical skills to the different industry agents. Adaptation to Operation Procedures (OP) Dialogue with regulators.<br>- Development of the grid to adapt it to higher penetration of renewable energies.<br>- Development and inclusion of other elements, such as synchronous compensators in the electricity systems in island territories. |
| | • Increased limitations on renewable production and incidents that may impact the security of supply in Islas Canarias, associated with the noteworthy rise 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. | - Increased difficulty in system operation (volatility of production, lack of monitoring...).<br>- Increased risk of incidents in system operation that may affect the supply.<br>- Increased production constraints and restrictions.<br>- Increase in complaints.<br>- Impact on reputation. | - Development of system operation tools and the safe integration of renewables (Control Centre of Renewable Energies, CECRE).<br>- Strengthening of monitoring and control systems.<br>- Development of prediction models regarding renewable generation.<br>- Collaboration in the development of the relevant regulations that allow more flexibility and requiring adequate technical skills to the different industry agents. Adaptation to Operation Procedures (OP) Dialogue with regulators. |

| | | | |
|---|---|---|---|
| | | | - Development of the grid to adapt it to higher penetration of renewable energies.<br>- Development and inclusion of other elements, such as synchronous compensators in the electricity systems in island territories. |
| Transition risks | • Loss of inertia and stability performance associated with the decrease in conventional generation. | - Greater difficulty in the operation of the system (reduction of firm power and balance capacities).<br>- Increased risk of incidents in system operation that may affect the supply.<br>- Impact on reputation. | - Strengthening of international cross-border connections.<br>- Promotion of demand-side management initiatives and smart grids.<br>- 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).<br>- Development of solutions based on power electronics (Road2GFM project). |
| | • Overload of grid access procedures due to high interest from developers of renewable energy facilities, as well as consumption and storage facility development. | - Increase in complaints and demands. Potential penalties and reputational impact. | - Support and collaboration in the development of the regulatory framework. Collaboration and contact with the regulator.<br>- Progress in digitalisation and automation of processes. |

| | Relevant risks associated with climate change | Potential impact on the business | Mitigating actions |
|---|---|---|---|
| Transition risks | • Extended timelines for commissioning the infrastructure needed for the energy transition, particularly international interconnections (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). | - Economic impact due to delays in incorporating the assets into the remuneration model, or total loss of remuneration due to not being able to commission them.<br>- Increase in complaints.<br>- Impact on the company's reputation - in the case of delays in the development of infrastructure required for Spain's National Energy and Climate Plan (NECP). | - Communication plan regarding the transmission gird planning process.<br>- Feasibility study regarding the infrastructure proposed for the transmission grid planning process.<br>- Stakeholder management model related to transmission grid investment projects.<br>- Development of public participation/consultation processes.<br>- INTEGRA project, to facilitate the adequate planning for the supply of services and material needs. |
| | • Increased legal requirements associated with the use of fluorinated gases ($SF_6$). | - Increase of costs associated to taxes related to the use of gas/gases.<br>- Increase in operational costs associated with increased requirements related to leakage monitoring and control.<br>- 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, Red Eléctrica, and waste management companies.<br>- Development of leakage repair methodology.<br>- Renewal of equipment.<br>- Training and accreditation of personnel.<br>- R&D to find alternatives to gas.<br>- Participation in working groups.<br>- Monitoring and participation in regulatory development processes. |
| | • Cybersecurity threats in a more digitalised system. | - Increase in operational. | - Technology watch in relation to alternatives.<br>- Monitoring of regulatory processes. |

The management of climate-related risks is integrated into the company's risk management system, which is why the established governance model applies to these types of risks. In addition to being **supervised by the Board's Audit Committee**, as befits its oversight function regarding the comprehensive risk control System, climate risks are escalated to the **Sustainability Committee**. Among the functions of this commission is to review the corporate responsibility and climate change policies, which must facilitate the integration of the results of the analysis of risks and opportunities arising from climate change into the group's decision-making process.

It should be noted that, in the case of climate risks, the Internal Audit and Risk Control Management Area and the Corporate Sustainability and Research Area share the following functions: supporting the organisational units in the identification, assessment, and management of risks; monitoring the level of risk and its evolution; and informing the bodies responsible for its control and units responsible for its management. The process of evaluating risks associated with climate change is carried out annually by the Sustainability Area and the organisational units responsible for such risks. Relevant risks arising from climate change with an impact on a short term have been included in the Corporate Risk Map according to the comprehensive risk control system. Relevant risks are reviewed on a six-monthly basis.

### Risks arising from legal requirements and other requirements

The anti-bribery and crime prevention compliance system of the Redeia in Spain complies 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.

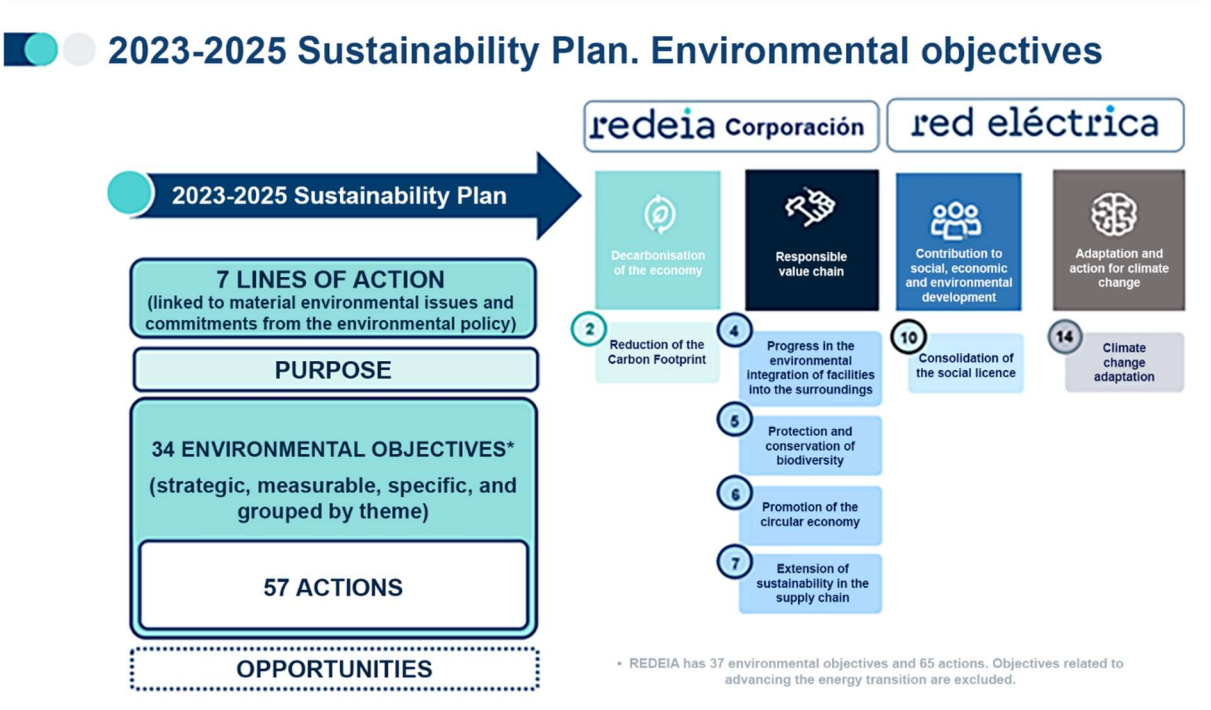
Red Eléctrica's Criminal and Anti-bribery Compliance System is certified in accordance with the UNE 19601 and ISO 37001 standards. The entity AENOR has done the certification process, and it has certified Red Eléctrica Corporación and Red Eléctrica's Criminal and Anti-bribery Compliance System, in accordance with said standards. In 2024 the company successfully passed the follow-up audit carried out by this entity, verifying the conformity and efficacy of its System.

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. Sustainability Plan.

Redeia's **Sustainability Plan 2023-2025**—specifically its **environmental aspects**—[88]outlines continuous improvement objectives and actions to minimise the company's operational environmental impacts. These align with the commitments and requirements set forth in Redeia's Environmental Policy from 2023 onwards.

7 of the 14 lines of action are directly related to material environmental matters and/or the company's environmental policy commitments. The lines of action are broken down into **environmental objectives** and, in turn, are carried out through **voluntary actions**.




Rather than detailing every environmental activity, the Sustainability Plan provides an overview of Redeia's primary efforts. The plan is fed by, **coexists with, and is complemented by additional actions** derived from continuous improvement processes of Management Systems, direct stakeholder relations, and those included in specific plans.

Both Circular Economy and Biodiversity, along with Climate Change and the Integration of Facilities into the Environment, are considered material issues. They require specific management, mainly to meet the demands of different stakeholder groups.

For this purpose, the company has two specific commitments: The Commitment to Biodiversity (updated in 2020) and the Commitment against Climate Change, supported by different roadmaps and action plans.

- Climate Change Action Plan (2022-2030).
- Biodiversity Action Plan (2023-2025).
- Roadmap for the Circular Economy 2030.
- Action Plan for Integration of Facilities into the Environment (2023-2025).

[88] Climate change, Biodiversity, Circular Economy, Integration of facilities into the landscape, and Social Licence.

The objectives and main actions for their achievement are included in these plans, which have been designated as RELEVANT. The specific actions for each year are then defined and incorporated into the Sustainability Plan. This change will make it possible to bring together, through a single plan, the fulfilment of all issues related to sustainability in the company, in addition to a single, centralised monitoring of the same.

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 company has identified among its material issues, the following with a more significant environmental component for the achievement of the company's long-term objectives:

- **Climate change**
- **Biodiversity**
- **Circular economy**
- **Integration of facilities into the landscape**
- **Social Licence to Operate (SLO)**

These issues form the basis of the 7 environmental courses of action that are instrumental to articulating the 2023-2025 Sustainability Plan in its environmental aspect.

*The lines are broken down into 34 environmental objectives. As at 2024, 91% of these objectives have been met or are progressing as planned (compared to 82% in 2023 and 68.6% in 2022).*

*Red Eléctrica's environmental objectives encompass 55 tasks grouped under 7 strategic lines of action, each with linked priority objectives. In 2024, 100% of these tasks were either completed or are advancing according to the established plan (compared to 96.3% in 2023 and 80.3% in 2022).*

Some of the most relevant tasks carried out in 2024 by Red Eléctrica in each of the vectors are highlighted below.

| Line | Tasks/activities | Results obtained |
|---|---|---|
| **Reduction of the Carbon Footprint** | Reduce electricity consumption in facilities and increase renewable energy. | In 2024, energy audits have been carried out in 20 workplaces and corporate buildings. As a result, at least 80 new viable savings measures have been identified (installation of solar slats, replacement of lights and heat pumps, presence detectors, etc.), which, with an approximate cost of 175,000 euros, would allow an estimated saving of 400 MWh/year. These actions will begin to be implemented during 2025.<br>A feasibility study for photovoltaic installations aimed at increasing renewable energy has been completed, while a quote for their construction will be requested in 2025. |
| | Reduce and control $SF_6$ leaks.<br>Subtask: Inclusion of criteria in specifications that contribute to or imply a subsequent reduction in $SF_6$ emissions:<br>- Greater supplier availability in providing control gear to accelerate intervention times in case of leaks—especially during warranty periods. GIS 2023 and AIS 2024. | The AIS Technical Specifications now include a requirement for suppliers to reduce their intervention times for leaks during warranty periods. |
| **Progress in the environmental integration of facilities into the surroundings** | 59. Define the Action Plan for alternatives to phytosanitary products. | In 2024, pilot projects were launched in three substations. Each of them involved seven different tests, lasting one year to obtain the final report. We're now starting to analyse these initial results. |
| | Design unique support towers with greater social acceptance.<br>Phase 1 (completed in 2023): technical-economic feasibility study.<br>Phase 2 (2024–2025): | full development of the unique support tower. Detailed engineering studies for support towers and foundations are currently underway. |
| | Enhancing remediation actions in areas impacted by accidental oil (and diesel) spills at substations: pilot trial. Development of a pilot test for alternative techniques to treat hydrocarbon-contaminated soils. | Phase 2 was carried out in 2024: Biological treatment: oxygenation, bacterial culture injection, and detailed periodic operational control, monitoring, and maintenance steps outlined in the test were fully completed. All necessary samples were taken. The system was disassembled at the substation in early September. Data analysis, treatment, and the final report were completed in November. |

| Line | Tasks/activities | Results obtained |
|---|---|---|
| Protection and conservation of biodiversity | Design and implementation of a system for accounting and valuation of natural capital in biodiversity in Red Eléctrica. | A foundational biodiversity accounting system (covering biotic natural capital) has been deployed for any project under the H2021-2026 plan. This system tracks new annex I projects undergoing environmental processing since July 2023. In 2024, work progressed on securing the necessary compensations for Annex I projects prior to June 2023 (within the 21–26 plan). To that end, we drafted a document detailing residual impact on Habitat and Species, along with proposed compensation measures. |
| | Implement Nature-Based Solutions (NbS) or Nature Management-Based Solutions (NbM). | The project is on schedule. The Pastoreo en RED initiative between Agrovidar, Global Nature Foundation, UNED Ponferrada, and RE was signed in July. This is a laboratory project in the Leonese Mountains. The II Grazing on the Grids Conference was held on 4 and 5 July. Farmer agreements participating in the Pastoreo en las Redes project began in August. A knowledge exchange network on extensive directed grazing & vegetation treatment in power lines (high-voltage lines) has been created. |
| | 100% of the critical spans are marked (Red Eléctrica). | Planning targets are being met (89% of the 972 km target set in 2023 for total level 5 km to be marked). All critical spans planned for 2024 have been marked. |
| | Map in-service transmission grid facilities that could be biodiversity reservoirs and corridors. | Facility mapping with a definitive IDBI layer is available. A UAB meeting explained the layers of the facility mapping that could be reservoirs across Spain. This action concluded in 2024. |
| Promotion of the circular economy | Develop and comply with the Action Plan for water consumption optimisation. | A report on high-consumption premises has been drafted, while concrete actions for reduction have been budgeted. |
| Extension of sustainability in the supply chain | At least 10 supplies with major impact on the transmission network with circularity criteria (ACV), climate change, security, diversity and biodiversity. | In 2023, 4 supplies were incorporated. In 2024, six supplies (composite insulators, substation metallic structures, underground Cables, measurement transformers, disconnectors, glass insulators, and full overhead line assembly) were analysed using the life cycle analysis methodology developed in 2022. Seven supplies have been incorporated into the sustainable procurement model, with three active group initiatives. |
| Climate change adaptation | Develop a wind map for 2060–2070 climate scenarios. Results considered in risk analysis. Proposal of adaptation measures, if applicable. | 2060–2070 wind map data is available for loading into GeoRED. The final report was drafted in the first quarter of 2024. |

# 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 | 2022 | | 2023 | | 2024 | |
|---|---|---|---|---|---|---|
| | Accidents | Incidents | Accidents | Incidents | Accidents | Incidents |
| **Construction work activities** | **4** | **15** | **4** | **37** | **0** | **26** |
| **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 handling, transfer, and storage activities | 0 | 0 | 0 | 0 | 0 | 3 |
| **Leaks and spills** of oil and hydrocarbons due to minor breakdowns during the use of machinery in construction works | 1 | 12 | 0 | 20 | 0 | 16 |
| **Leaks and spills** of oil due to incorrect machinery use | 0 | 0 | 0 | 1 | 0 | 0 |
| **Leaks and spills** of oil due to explosion of equipment | 3 | 2 | 0 | 1 | 0 | 2 |
| **Leaks or spills** of fuel due to machinery breakdown | 0 | 0 | 0 | 3 | 0 | 0 |
| **Leaks or spills** of fuel due to handling, transfer, and storage activities (including equipment breakdown/rupture) | 0 | 0 | 1 | 6 | 0 | 4 |
| **Leaks and spills** of hazardous substances due to incorrect machinery use | 0 | 0 | 0 | 1 | 0 | 0 |
| **Leaks or spills** of hazardous substances due to machinery breakdown | 0 | 0 | 0 | 2 | 0 | 0 |
| **$SF_6$ leaks** | 0 | 0 | 0 | 0 | 0 | 0 |
| **Impacts on vegetation/fauna (not birdlife)** | 0 | 1 | 3 | 3 | 0 | 1 |
| **Maintenance activities** | **11** | **28** | **13** | **28** | **7** | **20** |
| **Fires** due to fault in lines | 2 | 0 | 0 | 0 | 0 | 0 |
| **Fires on power lines caused by adverse meteorological conditions** | 0 | 0 | 0 | 0 | 0 | 1 |
| **Fires on power lines due to other accidental causes** | 0 | 0 | 0 | 0 | 1 | 2 |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Fires** due to fault in substations | 1 | 0 | 1 | 0 | 0 | 0 |
| **Towers brought down** due to severe weather conditions | 0 | 0 | 0 | 0 | 0 | 0 |
| **Leaks and spills of oil** due to handling, transfer, and storage activities | 0 | 0 | 0 | 0 | 0 | 1 |
| **Leaks and spills** of oil and hydrocarbons during the use and maintenance of substation equipment | 7 | 26 | 0 | 4 | 0 | 0 |
| **Leaks and spills** of oil due to explosion/rupture of equipment with oil | 0 | 0 | 2 | 1 | 3 | 6 |
| **Leaks and spills** of oil due to breakdowns | 0 | 0 | 0 | 12 | 0 | 8 |
| **Oil leaks** from the hydraulic section of cables | 0 | 0 | 1 | 0 | 0 | 0 |
| **Leaks and spills** of oil due to explosions | 0 | 0 | 2 | 3 | 0 | 0 |
| **Leaks and spills of hydrocarbons** due to handling, transfer, and storage activities | 0 | 0 | 0 | 1 | 1 | 2 |
| **Leaks and spills of hydrocarbons** due to breakdowns | 0 | 0 | 0 | 2 | 0 | 0 |
| Oil **leaks** in lines | 0 | 0 | 0 | 0 | 0 | 0 |
| **Floods** | 0 | 0 | 0 | 0 | 0 | 0 |
| **$SF_6$ leaks** due to explosion of equipment or other accidents | 1 | 0 | 4 | 0 | 0 | 0 |
| **$SF_6$ leaks** due to equipment breakdown or failure | 0 | 0 | 3 | 1 | 2 | 0 |
| **Leaks and spills** of hazardous substances | 0 | 0 | 0 | 4 | 0 | 0 |
| **Impacts on vegetation/fauna (not birdlife)** | **0** | **2** | **0** | **0** | **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 nature without it actually materialising. It does not generate damage, but it has the potential to generate it’. In 2024, no near accidents were registered.

## Construction

No accidents with environmental impacts occurred during the construction phase in 2024. During 2024, there were 26 incidents. This represents 56% of the total environmental incidents (construction + maintenance).

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.

## Maintenance

In the maintenance phase there were 7 accidents and 20 incidents.

The accidents are categorised as follows: 2 are related to $SF_6$ Leaks (29%), 4 to oil and hydrocarbon leaks and spills (57%), and 1 to a line fire (14%).

One of the accidents was classified as major (14%), three were classified as relevant (43%), one was classified as low relevance (14%), and two were classified as minor (29%).

The accident classified as major was the following:

- **Oil spill.** Rupture of a reactance bushing at the Pinar del Rey Substation. An oil spill occurred, with the majority falling onto the machine's base (2500–3000 litres). Still, 250 litres affected 25 $m^2$ of external ground and concrete. The SIU was activated to attend the installation for initial cleanup of surface oil and impact assessment. Subsequent deep cleaning and soil sampling yielded clean results.

The three accidents classified as relevant are the following:

- 100 L oil spill: near Valldurgent substation's waste platform, caused by nearby control gear/equipment rupture. Affected soil was excavated and removed, completing remediation.
- 300 L fuel spill: from a mobile off-grid generator unit due to a broken hose sleeve. The diesel was collected and managed. Both the generator and the spill tray were cleaned.
- Line fire: caused by the fall of support tower no. 143 due to external causes (under investigation). Approximately 2,000 $m^2$ of grass and scrub were affected, without impacting trees, in Arbizu (NAVARRA) within the Sierra de Aralar Natural Park. The line was de-energised for firefighter intervention.

A minor oil spill occurred around pit no. 1 (power machine oil collection) at the Guadame substation; soil remediation, pit inerting, and new pit construction are underway. Two minor accidents involved $SF_6$ leaks at the Aragón, Montetorrero, and Espartal substations.

In the case of incidents, the situation is very similar to that of construction. Of the 20 incidents, most correspond to oil and hydrocarbon leaks and spills during the use and maintenance of substation equipment and machinery breakdowns.

No serious accidents occurred in 2024.

# 11 Legal compliance assessment

In the case of legal, regulatory and other mandatory requirements, the company assumes as a commitment, as part of Redeia's Environmental Policy, 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 following table 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 **2018-2024** (the figures shown in blue correspond to administrative proceedings resolved in 2024).

| Type of sanctioning procedure | 2018 | | 2019 | | 2020 | | 2021 | | 2022 | | 2023 | | 2024 | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No. | Amount (€) | No. | Amount (€) | No. | Amount (€) | No. of | Amount (€) | No. of | Amount (€) | No. of | Amount (€) | No. of | Amount (€) |
| Risk of fire | | | 2 | 370.46 | | | 1 | 90.15 | | | 4 | 1,262.14 | | |
| Unauthorised felling, pruning, and clearing | 2 | 1,451 | 2 | 1,667.04 | 1 | 10,800 | | | | | | | | |
| Degradation of priority habitat for protected species | | | | | | | | | 1 | 3,001 | | | | |
| Works in protected areas without authorisation | | | 1 | 4,800 | | | | | | | | | | |
| Unauthorised works | | | 1 | 24,001(**) | | | | | | | | | | |
| Opening up of a forest trail without authorisation | | | | | | | | | | | | | | |
| Use of a helicopter in a critical birdlife area without authorisation | | | | | | | | | | | | | | |
| Electricity line crossing livestock trail without authorisation | | | | | | | | | | | | | | |
| Incorrect waste management | | | | | | | | | | | | | | |
| Environmental liability | | | | | | | | | | | | | | |
| Non-compliance with waste permit | | | | | | | | | 1 | 1,020 | | | | |
| Non-compliance with the terms and conditions of the Culture Resolution | | | | | | | | | | | 1 | 1,000 | | |
| **Total No. of claims/cases** | **2** | **1,451** | **6** | **30,838.5 (**)** | **1** | **10,800** | **1** | **90.15** | **2** | **4,021** | **4** | **2,262.14** | **0** | **0** |

(**) Case pending judicial review (appeal).

# 12 Environmental expenditure

In 2024, Red Eléctrica has made environmental investments totalling **5,638,777.7 euros** in new facilities, equating to **0.58%** of the total amount invested in the transmission grid (976 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 2024 expenditure totalling **26,200,542.97** euros was made in the improvement and protection of the environment, representing **2.65%** of the total operating costs.

The following table shows the evolution of environmental expenditure over the last three years:

| | 2022 | 2023 | 2024 |
|---|---|---|---|
| **INVESTMENTS** | 4,268,491.16 | 2,938,138.94 | **5,638,777.7** |
| Engineering and construction of facilities[89] | 4,268,491.16 | 2,938,138.94 | 5,638,777.7 |
| **EXPENDITURE**[90] | 22,598,459.06 | 24,946,751.42 | **26,200,542.97** |
| **Development of methodology and Systems**[91] | 265,239.00 | 294,753.44 | 334,461.9 |
| **Environmental studies and analyses**[92] | 12,459.00 | 47,680.00 | 149,297.79 |
| **Environmental actions in in-service facilities** | 19,230,121.38 | 22,238,974.57 | 20,335,421.13 |
| Prevention of contamination[93] | 1,662,210.15 | 1,872,388.04 | 1,129,792.14 |
| Protection of biodiversity, landscape[94] | 16,217,446.5 | 19,181,560.65 | 17,640,793.28 |

[89] Corresponds to the cost of engineering and construction of facilities. Environmental documentation of projects (Environmental Impact Studies, Environmental Studies, Landscape Simulations, Archaeological Studies...), processing of Environmental Impact Statements (EIS), environmental supervision of works and environmental monitoring programmes.

[90] Corresponds to the sum of the costs of '1. Development of methodologies and systems'; '2. Environmental studies and analysis'; '3. Environmental actions in in-service facilities'; '4. R + D'; '5. Training and communication'; '6. Environmental taxes and levies; '7. Personnel expenses and other costs dedicated to environmental activities'.

[91] Management system certification audits (ISO 14001 and EMAS); Maintenance and evolution of the environmental management software tool (SACORP). Support for corporate management systems and self-managed global team.

[92] Development and maintenance of the company's Geographic Information Systems and Environmental Planning Reports.

[93] Environmental management of maintenance, environmental supervision of substations and buildings.

[94] Projects associated with Biodiversity agreements, projects linked to specific agreements, Natural Capital Conference, projects associated with forest fire prevention agreements, regulatory maintenance of security corridors/accesses (opening up of corridors) and inspections of electricity lines, marking of electricity lines, environmental conditioning of facilities and making good of access roads.

| | | | |
|---|---|---|---|
| Climate change[95] | 802,401.76 | 620,867.46 | 831,275.42 |
| Waste reduction and management[96] | 548,062.97 | 564,158.42 | 733,560.29 |
| **Research and development** | 1,779,647.47 | 106,451.52 | 2,098,410.61 |
| **Training and communication** | 353,109.70 | 336,504.74 | 518,833.60 |
| Environmental training and awareness programmes | 30,790.70 | 24,513.91 | 11,756.6 |
| Communication[97] | 322,319.00 | 311,990.83 | 507,077.1 |
| **Environmental taxes and levies[98]** | 797,022.18 | 53,619.42 | 414,729.33 |
| **Cost of personnel dedicated to activities of an environmental nature** | 1,940,507.65 | 1,868,767.71 | 2,349,388.51 |
| | 26,866,950.22 | 27,884,890.36 | **31,839,320.67** |

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 | | 2022 | 2023 | 2024 |
|---|---|---|---|---|
| Percentage of investment on the environment | Environmental investment/total investment in the transmission grid | 0.8 | 0.34 | **0.58** |
| Percentage of expenditure on the environment | Environmental expenditure/total operating costs | 2.49 | 2.43 | **2.65** |

[95] The Redeia 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).

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

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

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

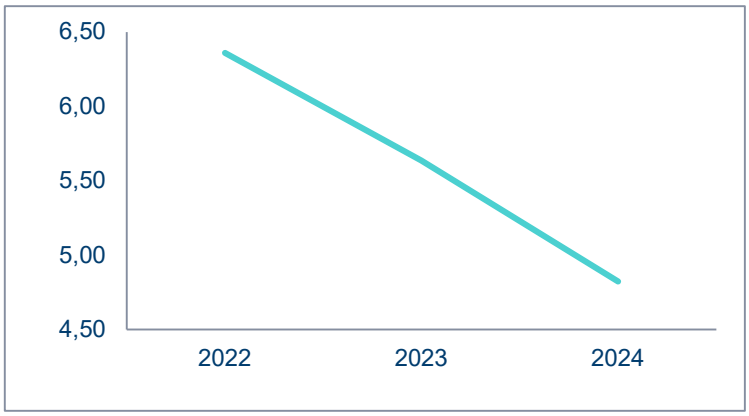
# 13 Indicators

## Main indicators

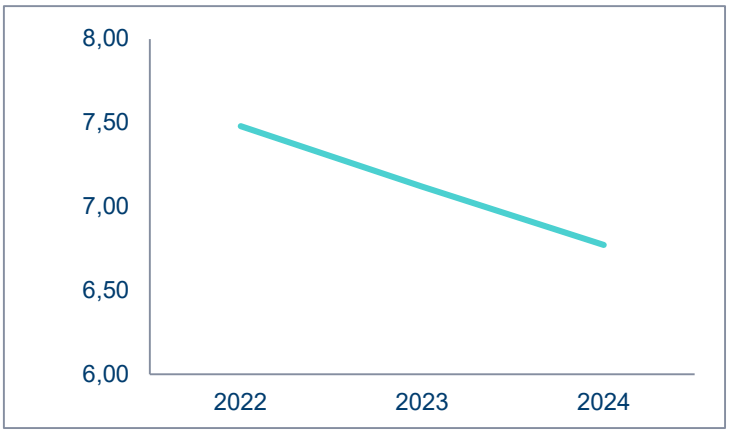
*In the case of electricity and water consumption in those months of 2024 for which actual data was not available at the closing date of this Statement, the value of the electricity and water consumption has been estimated*[99].

### Energy

| Electricity consumption at the Head Office | | | |
|---|---|---|---|
| A | MWh consumed | | |
| B | Total employees at Head office [100] | | |
| Indicator | | | A/B |
| **Year** | **2022** | **2023** | **2024** |
| A | 7,065 | 6,509 | 5,794 |
| B | 1,011 | 1,155 | 1,201 |
| Indicator | 6.36 | 5.64 | **4.82** |




| Red Eléctrica electricity consumption | | | |
|---|---|---|---|
| A | MWh consumed[101] | | |
| B | No. employees in Red Eléctrica[102] | | |
| Indicator | | | A/B |
| **Year** | **2022** | **2023** | **2024** |
| A | 14,974.33 | 14,520.85 | 14,063.70 |
| B | 2,002 | 2,040 | 2,077 |
| Indicator | 7.48 | 7.12 | **6.77** |



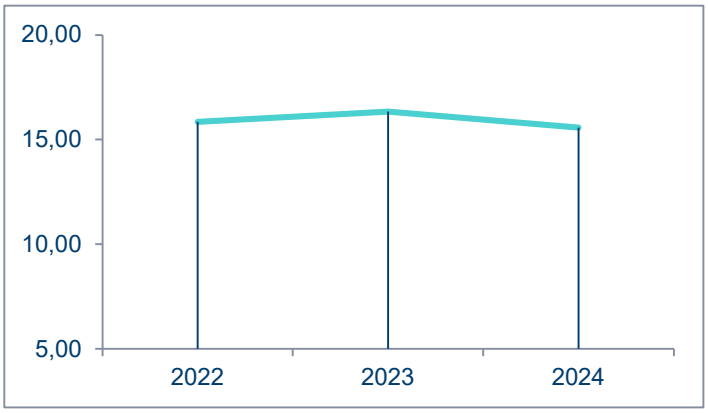

[99] In those cases where there was no value in the first place, the real data for that month of the previous year was used. In the event that there was no real data for the previous year, the direct value of the invoice was taken. If there was no real data or invoice data, the average for the year was calculated by selecting the months that had real data.

[100] La Moraleja and Albatros buildings. Includes interns and collaborators, as well as personnel contracted from temporary employment agencies, as they also consume electricity.

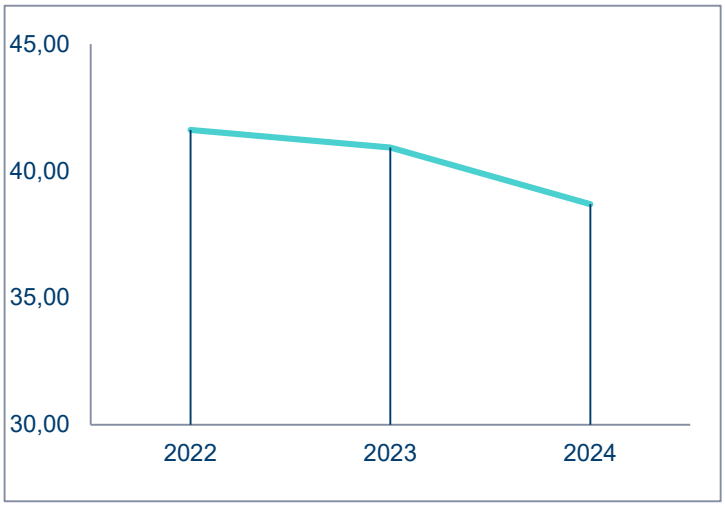
[101] Includes consumption of the Head Office, the electricity control centres (centres that operate 24/7 and have special energy consumption), work centres (regional offices/work centres and maintenance centres). The consumption of electric vehicles has also been included.

[102] For the calculation, all personnel working in the work centres and corporate buildings (employees, interns and collaborators, as well as personnel contracted from temporary employment agencies) are taken into account.

| Fuel consumption[103] | | | |
|---|---|---|---|
| A | GJ (Gigajoules) consumed[104] | | |
| B | Total No. of employees[105] | | |
| Indicator[106] | | | A/B |
| **Year** | **2022** | **2023** | **2024** |
| A | 29,427 | 31,207 | 29,727 |
| B | 1,858 | 1,910 | 1,909 |
| Indicator | 15.84 | 16.34 | **15.57** |




| Total energy consumption[107] | | | |
|---|---|---|---|
| A | GJ (Gigajoules) consumed[108] | | |
| B | No. employees in Red Eléctrica[109] | | |
| Indicator[110] | | | A/B |
| **Year** | **2022** | **2023** | **2024** |
| A | 83,335 | 83,482 | 80,356 |
| B | 2,002 | 2,040 | 2,077 |
| Indicator | 41.62 | 40.92 | **38.69** |




[103] 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).

[104] 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

[105] No. of employees on the workforce that can use vehicles (without taking into account interns or collaborators).

[106] Red Eléctrica value

[107] Electricity consumption and 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).

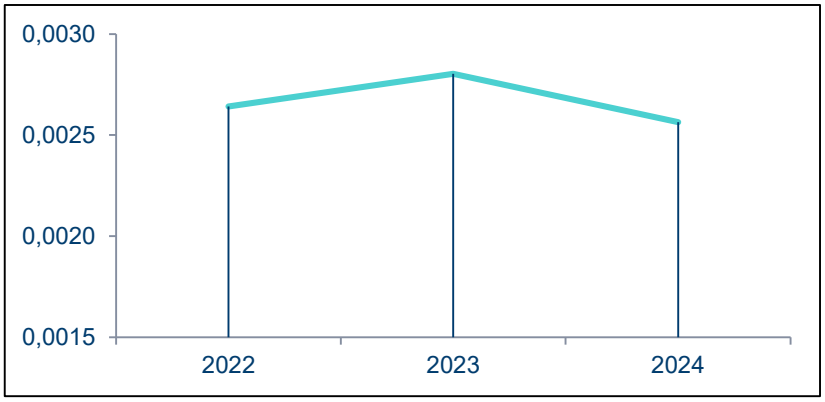
[108] 1 kWh = 36 * $10^6$ joules; 1 litre of diesel = 37 * $10^6$ joules; 1litre of gasoline = 34 * $10^6$, 1 litre of gas oil = 37 * $10^6$ joules; 1 litre of biodiesel = 32.79 * $10^6$ joules; 1 litre of LPG = 25.7 * $10^6$ joules

[109] For the calculation, all personnel working in the work centres and corporate buildings (employees, interns and collaborators, as well as personnel contracted from temporary employment agencies) are taken into account.

[110] Red Eléctrica value

## Materials

| Paper consumption | | | |
|---|---|---|---|
| A | | | Tonnes (t) consumed |
| B | | | Total No. of employees [111] |
| Indicator | | | A/B |
| **Year** | **2022** | **2023** | **2024** |
| A | 5,290 | 5,719 | **5,327** |
| B | 2,002 | 2,040 | **2,077** |
| Indicator | 0.003 | 0.003 | **0.003** |



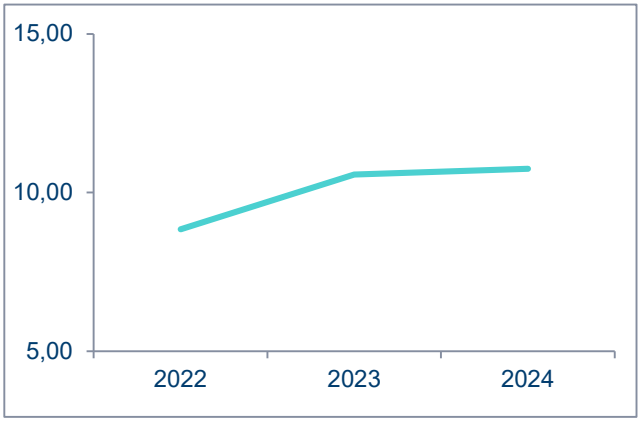

*The activity of Red Eléctrica (electricity transmission and electricity system operation) is not one that consumes materials/raw materials in a direct manner. The possible consumption of materials is related to the use and maintenance of equipment/apparatus acquired from different manufacturers.*

*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.*

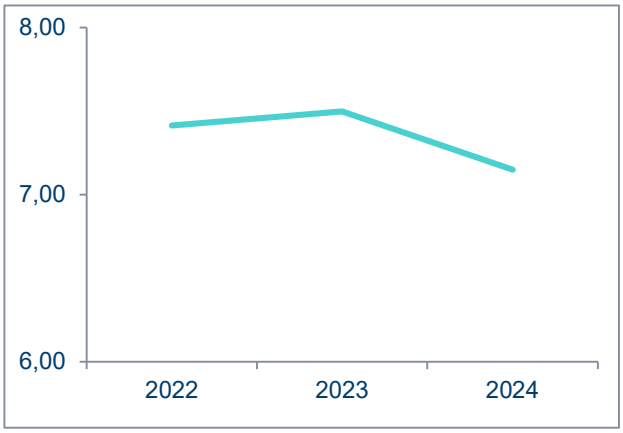
[111] Includes interns and collaborators, as well as personnel contracted from temporary employment agencies, as they may also consume paper.

## Water

| Total water consumption | | | |
|---|---|---|---|
| A | | | $m^3$ consumed |
| B | | | Total No. of employees[112] |
| Indicator | | | A/B |
| **Year** | **2022** | **2023** | **2024** |
| A | 21,153 | 21,917 | 18,640[113] |
| B | 2,002 | 2,040 | 2,077 |
| Indicator | 10.57 | 10.74 | **8.97**[114] |




| Water consumption at the Head Office | | | |
|---|---|---|---|
| A | | | $m^3$ consumed |
| B | | | Total employees at Head office [115] |
| Indicator | | | A/B |
| **Year** | **2022** | **2023** | **2024** |
| A | 8,237 | 8,662 | 8,587[116] |
| B | 1,111 | 1,155 | 1,201 |
| Indicator | 7.41 | 7.50 | **7.15** |




[112] Taking into account all the personnel that work in the various work centres: employees, interns and collaborators, as well as personnel contracted from temporary employment agencies.

[113] The data provided has a coverage of 100%, 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).

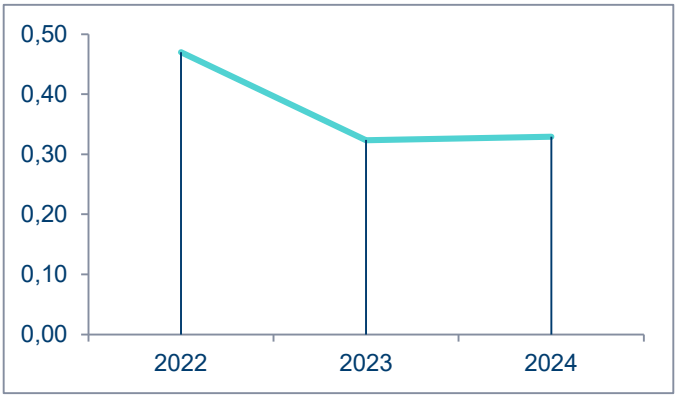
[114] The figure shown (8.97 $m^3$/person) shows the consumption counting buildings with persons and counting persons in buildings where there is no data recorded regarding consumption.

[115] The Moraleja building, 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.

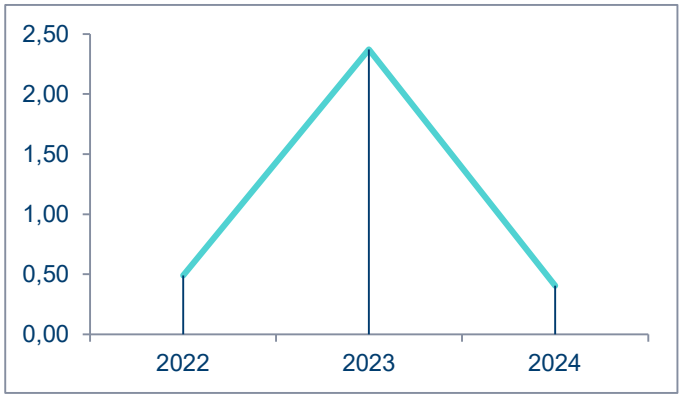
[116] Consumption of the La Moraleja and Albatros buildings is included as of 2021. In previous years, consumption only included the La Moraleja building.

## Waste

| Non-hazardous waste | | | |
|---|---|---|---|
| A | Tonnes (t) of non-hazardous waste generated | | |
| B | Revenue (millions of euros) | | |
| Indicator | | | A/B |
| **Year** | **2022** | **2023** | **2024** |
| A | 750.552 | 525.895 | 459.431 |
| B | 1,596.3 | 1,625.2 | 1,396.3 |
| Indicator | 0.47 | 0.32 | **0.33** |




| Hazardous waste | | | |
|---|---|---|---|
| A | Tonnes (t) of hazardous waste generated | | |
| B | Revenue (millions of euros) | | |
| Indicator | | | A/B |
| **Year** | **2022** | **2023** | **2024** |
| A | 780.15 | 3,857.67 | 566.090[117] |
| B | 1,596.3 | 1,625.2 | 1,396.3[118] |
| Indicator | 0.49 | 2.37 | **0.41** |

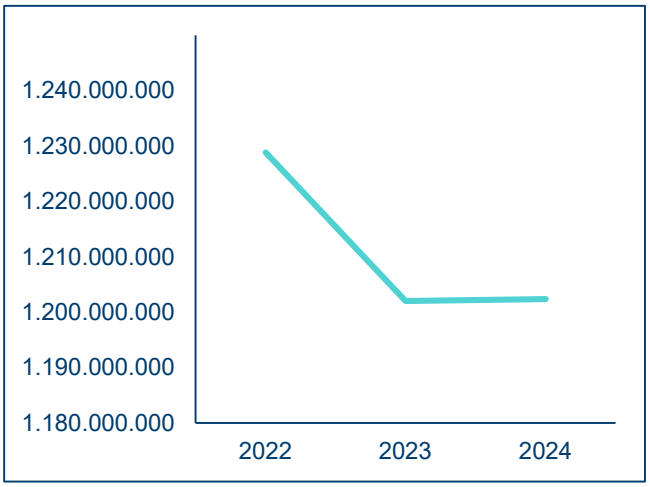



[117] The amount of waste generated has decreased compared to the amount recorded in previous years: by 3,291.58 tonnes of hazardous waste compared to 2023, and by 66.46 tonnes in the case of non-hazardous waste. The reduction in waste generation compared to 2023 is due to the large number of equipment generated that year from renovation and improvement projects of substations, whose final destination was recycling. However, progress is being made as, compared to previous years, the recycling rate of waste is increasing thanks to the implementation of some measures from the 'Zero waste to landfill by 2030' project. These measures include the inclusion of recycling/recovery requirements in waste management and service procurement tenders, the installation and commissioning of composters for organic waste at workplaces, and the analysis of waste generation flows across all the organisation's companies.

[118] Non-adjusted data.

## Land occupation in relation to biodiversity

| Biodiversity: Total land occupation[119] | | | |
|---|---|---|---|
| A | Surface area occupied by LINES[120] ($m^2$) | | |
| B | Surface area occupied by SUBSTATIONS[121] ($m^2$) | | |
| Indicator[122] | Total land occupation ($m^2$) | | |
| | Installations | | |
| **Year** | **2022** | **2023** | **2024** |
| A | 1,218,302,352 | 1,191,460,000 | 1,191,820,000 |
| B | 10,566,635 | 10,540,000 | 10,610,000 |
| Total | 1,228,868,987 | 1,202,000,000 | 1,202,360,000 |




[119] 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.

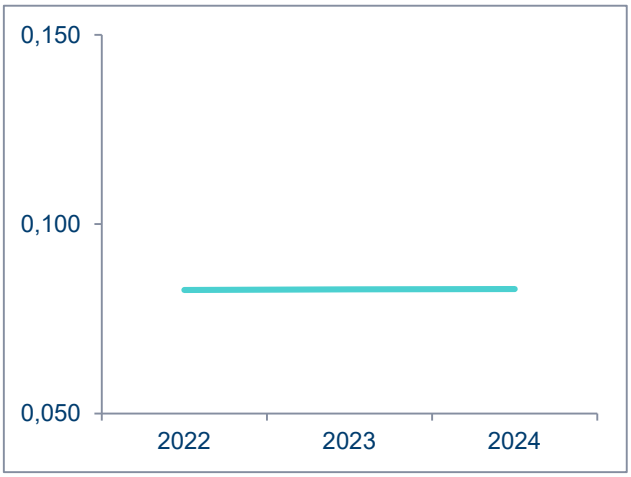
[120] Surface area occupied by lines: The area occupied by lines has been estimated based on a 20-metre buffer on each side of overhead lines (40 metres wide), a 1-metre buffer on each side of each underground line (2 metres wide), and a 0.5-metre buffer (1 metre wide) for submarine cables. It's important to note that for overhead lines, actual occupation is limited to the support towers, where each tower occupies approximately 8-10 m². The methodology for calculating occupation was updated in 2023 to provide a more accurate representation of the surface area for each type of installation. Consequently, a reduction in line land occupation is observed between 2021–2022 and 2023.

[121] Actual area occupied by the complete set of electricity transmission substations calculated to include the safety perimeter around each one of the substations. This figure is determined using the perimeter of the in-service substations. The process of delimiting substation perimeters is continuously updated, aiming to provide the actual land area occupied by Red Eléctrica's facilities. Improvements in facility demarcation during 2023 account for the observed reduction in occupied surface area for this indicator between 2021–2022 and 2023.

[122] 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 15 corporate buildings, only 5 of them (La Moraleja Head Office, Tres Cantos CAMPUS, Tres Cantos 1-CECORE, North-eastern regional office and Islas Canarias-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[123] | |
|---|---|
| A | Surface area in Natura 2000 Network occupied by facilities[124] ($m^2$) |
| B | Total surface area of Natura 2000 Network[125] ($m^2$) |
| Indicator | A/B x 100 |

| Installations | | | |
|---|---|---|---|
| Year | 2022 | 2023 | 2024 |
| A | $184.580*10^6$ | $185.450*10^6$ | $185.670*10^6$ |
| B | $223.682*10^7$ | $223.688*10^7$ | $223.974*10^7$ |
| Indicator | 0.083 | 0.083 | **0.083** |




[123] 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.
[124] Surface area occupied by electricity lines and substations: The area occupied by lines has been estimated based on a 20-metre buffer on each side of overhead lines (40 metres wide), a 1-metre buffer on each side of each underground line (2 metres wide), and a 0.5-metre buffer (1 metre wide) for submarine cables. It's important to note that for overhead lines, actual occupation is limited to the support towers, where each tower occupies approximately 8-10 m². The actual area of substations is calculated using the perimetre delineation of in-service substations. The process of delimiting substation perimeters is continuously updated, aiming to provide the actual land area occupied by Red Eléctrica's facilities. Improvements in facility demarcation during 2023 account for the observed reduction in occupied surface area for this indicator between 2021–2022 and 2023.
[125] Natura 2000 Network includes: SCIs (Sites of Community Importance) and SPAs (Special Protection Areas).

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

- **Total sealed area**

In the case of transmission lines (45,592 kilometres of circuit line with a total of 84,355 towers distributed throughout the Spanish peninsula, Islas Baleares and Islas Canarias), 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 (716 substations in service in 2024), 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.

- **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.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 was carried out and during 2022 the measures were implemented in the gardened areas of both work centres.

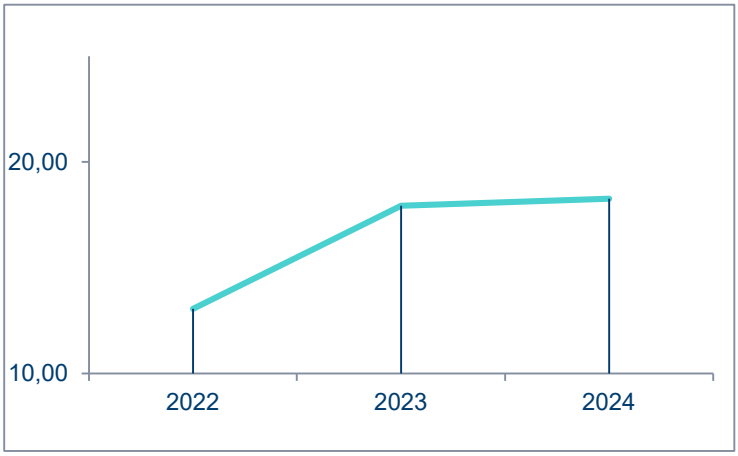
In addition, Red Eléctrica participated in a pilot experience carried out jointly with the CSIC and the regional government of Andalusia through the project called Biotransporte which considered power lines and their supports as biological corridors or biodiversity islands. This project analysed the 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 micromammals 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*). In 2022, the project was awarded the Good Practice of the Year prize by the Renewables Grid Initiative (RGI) in the environmental protection category.

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. A biodiversity monitoring protocol has been designed for transmission grid facilities and a guide has been designed to evaluate the ecosystems generated beneath overhead electricity lines.

## Emissions

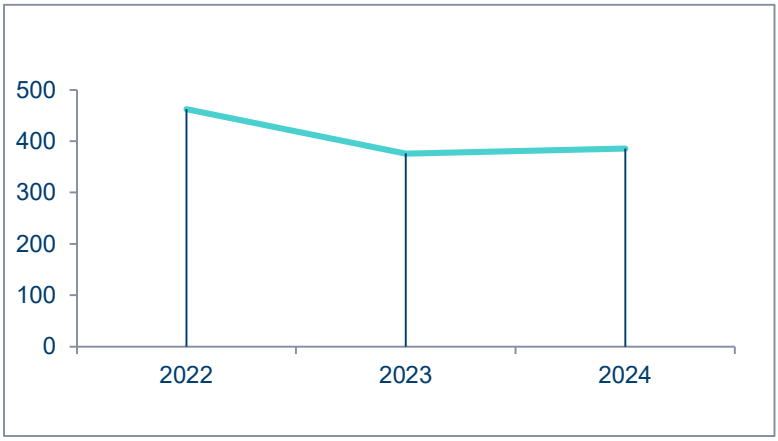
**Direct emissions of greenhouse gases (SCOPE 1) + Emissions from electricity consumption (SCOPE 2 without losses)**[126]

| | | | |
|---|---|---|---|
| A | $tCO_2eq$. SCOPE 1 + Emissions from electricity consumption | | |
| B | Revenue (millions of euros) | | |
| Indicator | | | A/B |
| **Year** | **2022** | **2023** | **2024** |
| A | 20,846.15 | 29,143.29 | 25,503.36 |
| B | 1,596.3 | 1,625.2 | 1,396.3[127] |
| Indicator | 13.06 | 17.93 | **18.26** |




**Emissions SCOPE 1 + SCOPE 2 including transmission grid losses**[128]

| | | | |
|---|---|---|---|
| A | $tCO_2eq$ (SCOPE 1+SCOPE 2) | | |
| B | Revenue (millions of euros) | | |
| Indicator | | | A/B |
| **Year** | **2022** | **2023** | **2024** |
| A | 738,553 | 611,569 | 538,369 |
| B | 1,596.3 | 1,625.2 | 1,396.3[129] |
| Indicator | 463 | 376 | **386** |



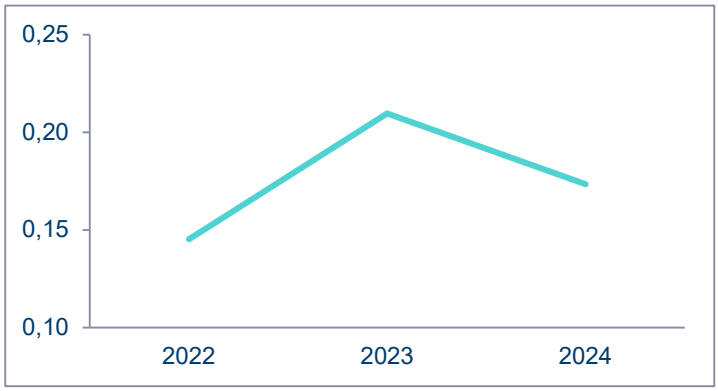

[126] Scope 1 and 2 Emissions (not including transmission grid losses). Red Eléctrica considers it relevant to monitor this indicator, without including transmission grid losses (as it is not possible to act on them). $SF_6$ emissions have been calculated using the 100-year GWP from the sixth IPCC:24,300 assessment report. The entire historical series has been recalculated considering the new GWP for $SF_6$.

[127] Non-adjusted revenue data.

[128] The emissions associated with transmission grid losses, in the same way as for the emissions associated with consumption of electricity, do not occur as part of the company's activities as they take place at the various electricity generation points. The emission factors corresponding to each system (Spanish peninsula, Islas Baleares or Islas Canarias) are calculated and taken into account by Red Eléctrica based on the annual balance in the generation mix and the country's emission factors. The reduction in emissions is mainly due to the improved emission factor of Spain's electricity mix, which in 2024 had a higher share of renewables than in 2023 (average factor 0.10 $tCO_2eq/MWh$ compared to 0.12 $tCO_2eq/MWh$), primarily associated with a 36% increase in hydroelectric power generation nationwide compared to 2023, a 15% increase in solar power generation nationwide, and decreases in combined cycle (23.6% less than in 2022) and coal generation (23.6% less than in 2022). $SF_6$ emissions have been calculated using the 100-year GWP from the sixth IPCC:24,300 assessment report. The entire historical series has been recalculated considering the new GWP for $SF_6$.

[129] Non-adjusted revenue data.

| % $SF_6$ emissions[130] | | | |
|---|---|---|---|
| A | | | $tSF_6$ emitted |
| B | | | $tSF_6$ installed[131] |
| Indicator | | | A/B*100 |
| **Year** | **2022** | **2023** | **2024** |
| A | 0.75 | 1.10 | 0.94 |
| B | 518.425 | 523.009 | 541.014 |
| Indicator | 0.15 | 0.21 | **0.17**[132] |




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

Emissions of this type of pollutants ($SO_2$, $NO_x$ 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).

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 optimise their use through the application of CARS (*Agile, Responsible and Safe Driving System*), which facilitates the use of efficient

[130] 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.

[131] 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.

[132] The rates reflected are calculated using actual 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 rates for equipment in service, as estimated by manufacturers and included in the voluntary agreement for $SF_6$ management signed in 2015, depend on their age. For equipment commissioned from 2008 onwards, a leakage rate of 0.5% per year is assigned (higher rates apply to older equipment). The low emission rates reflect the enormous effort of the company to improve the management and control of $SF_6$ emissions, especially since 2015. The peaks in 2019 and 2023 are associated with accidents occurring in GIS substations (one each year) that led to an increase in emissions.

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). 80.6% 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'.

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 $tCO_2eq$. The impact of the aforementioned gases ($SO_2$, $NO_x$ and PM) on the possible greenhouse effect is included.

| | Emissions from fleet vehicles | | |
|---|---|---|---|
| | Kg of $CO_2eq/Km$[133] | | |
| Year | 2022 | 2023 | 2024 |
| | 0.13 | 0.16 | **0.15** |

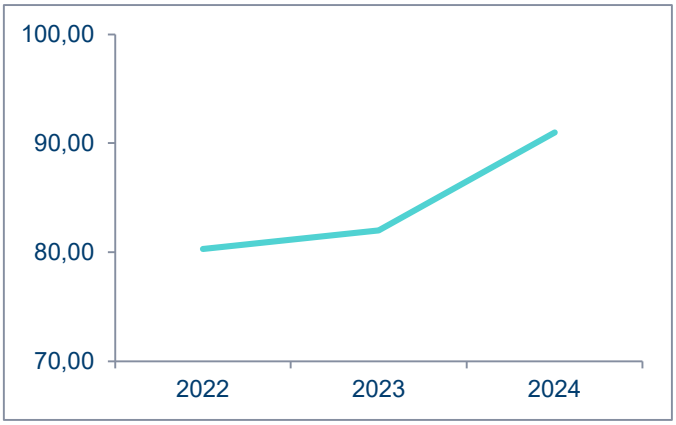
[133] Fleet vehicles + shared leasing (excludes directors' vehicles).

## Specific environmental performance indicators related to the activity

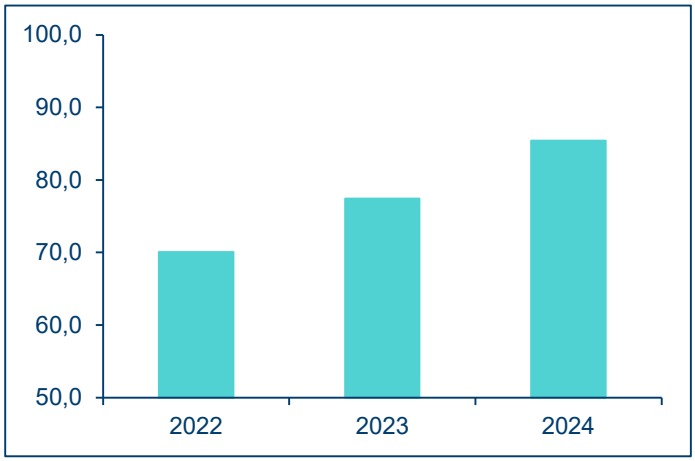
Shown below are specific environmental performance indicators related to Red Eléctrica's activity not already included as part of the key indicators. As there is no specific EMAS sector document of reference available for the High-Voltage Transmission and Electricity System Operation activity, the choice 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** | **2022** | **2023** | **2024** |
| A | 80.3 | 82 | 91 |
| B | 100 | 100 | 100 |
| Indicator | 80.3 | 82 | **91**[134] |




| | Biodiversity: % critical lines marked | | |
|---|---|---|---|
| A | Km of line marked in critical areas[135] | | |
| B | Km of line in critical areas[136] | | |
| Indicator | A/B x 100 (% of line in critical area marked) | | |
| **Year** | **2022** | **2023** | **2024** |
| A | 681.2 | 767.4 | 848.6 |
| B | 972.1 | 990.9 | 993.4 |
| Indicator | 70.1 | 77.4 | **85.4** |



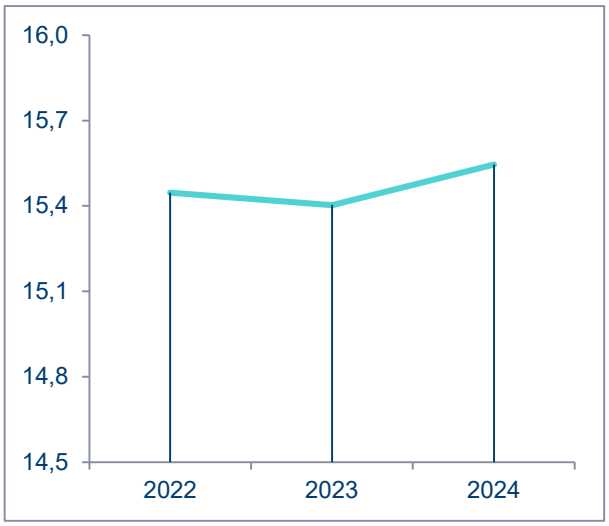

[134] From 2023 onwards, this reflects the fulfilment of the Sustainability Plan's environmental objectives.

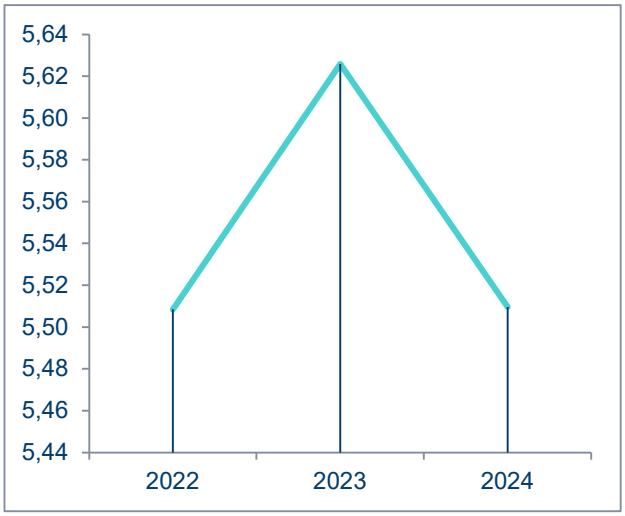
[135] Cumulative data at the end of each year. This figure refers to the route, i.e., the length of the lines regardless of the number of circuits they carry.

[136] 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.

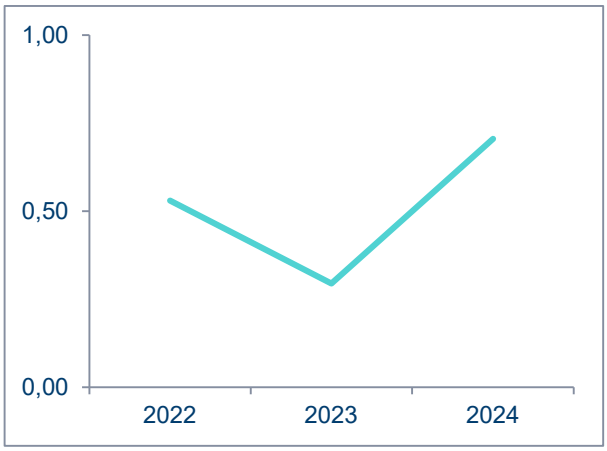
| Biodiversity: Impact of facilities | | |
|---|---|---|
| A | Km of line in Natura 2000 Network[137] | No. of substations in Natura 2000 Network |
| B | Total km of line | Total No. of substations |
| Indicator | A/B x 100 | A/B x 100 |

| | Lines | | | Substations | | |
|---|---|---|---|---|---|---|
| Year | 2022 | 2023 | 2024 | 2022 | 2023 | 2024 |
| A | 4,909.19 | 4,918.43 | 4,978.76 | 39 | 40 | 40 |
| B | 31,781.09 | 31,930.68 | 32,025.73 | 708 | 711 | 716 |
| Indicator | 15.4 | 15.4 | **15.55** | 5.51 | 5.63 | **5.51** |




| Biodiversity/Relationship with stakeholders | | | |
|---|---|---|---|
| A | No. of autonomous communities with biodiversity projects | | |
| B | Total No. of autonomous communities | | |
| Indicator | | | A/B |
| Year | 2022 | 2023 | 2024 |
| A | 9 | 5 | 12[138] |
| B | 17 | 17 | 17 |
| Indicator | 0.53 | 0.29 | **0.71** |



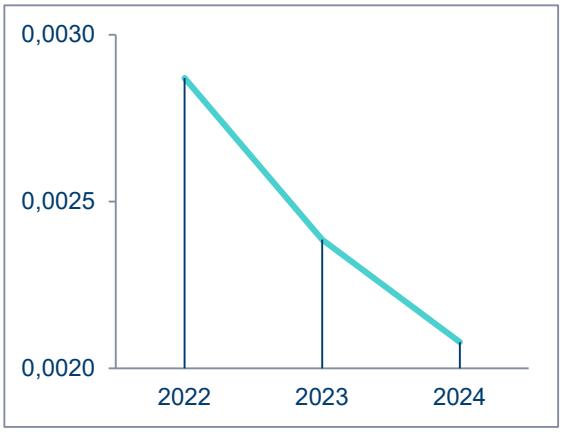

[137] Includes the total number of kilometres of submarine cable and those in Red Natura.

[138] Conservation projects have been carried out in a total of 12 autonomous communities: Galicia, Asturias, Islas Canarias, Aragón, Cataluña, Valencia: Castila y León, Castila-La Mancha, Navarra, Islas Baleares, Community of Madrid, and Andalucía.

| Emissions | |
|---|---|
| A | Indirect emissions derived from transmission grid losses ($tCO_2eq$) |
| B | MWh transported |
| Indicator | A/B |

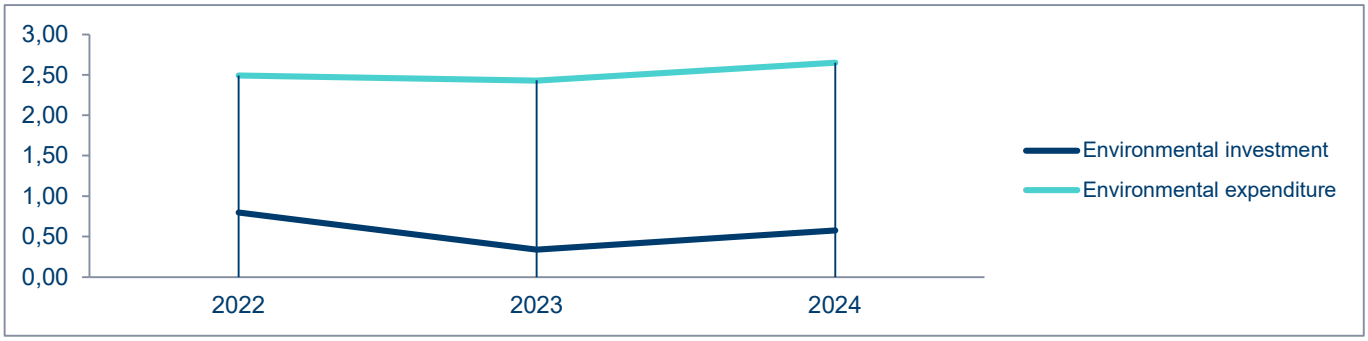
**Emissions derived from transmission grid losses** [139]

| Year | 2022 | 2023 | 2024 |
|---|---|---|---|
| A | 718,015 | 582,698 | 512,867 |
| B | 250,029,768 | 244,276,077 | 246,760,725 |
| Total | 0.00295 | 0.00240 | **0.00207** |




| Environmental 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 | 2022 | 2023 | 2024 | 2022 | 2023 | 2024 |
| A | 3,338,603.91 | 2,938,138.94 | 5,638,777.7 | 22,686,787.68 | 24,946,751.42 | 26,200,542.97 |
| B | 390,980,000 | 864,158,512 | 976,339,951 | 847,302,000 | 1,026,615,284.77 | 988,452,820 |
| Indicator | 0.85 | 0.34 | **0.58** | 2.68 | 2.43 | **2.65** |

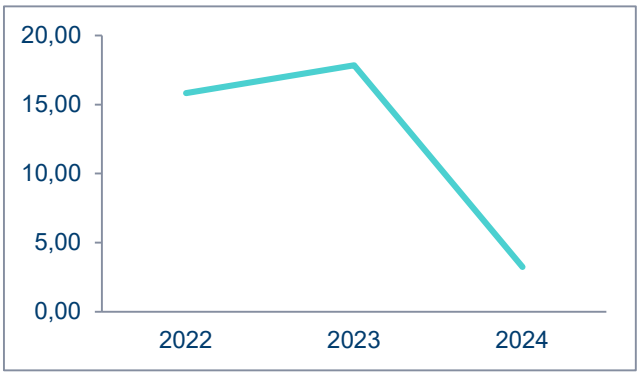



[139] The emissions associated with the transmission grid losses, in the same way as for the emissions associated with the consumption of electricity, do not occur during the activities of Red Eléctrica de España as they take place at the various electricity generation points. For the calculation of these emissions, the emission factors corresponding to each system (Spanish peninsula, Islas Baleares and Islas Canarias) are calculated by Red Eléctrica de España based on the annual generation balance.

## Training and awareness

| | |
|---|---|
| A | No. of employees who received environmental training |
| B | No. of employees[140] |
| Indicator | A/B x 100 |

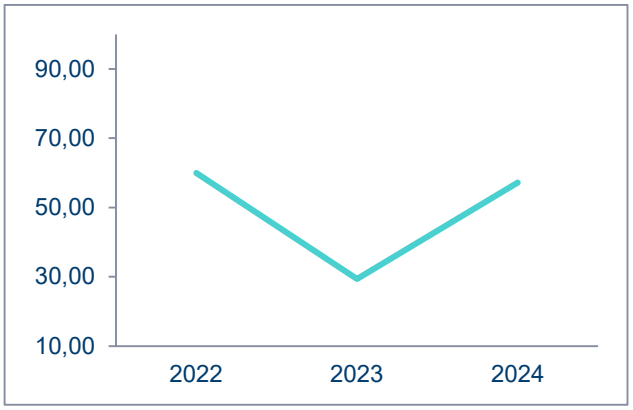
| Year | 2022 | 2023 | 2024 |
|---|---|---|---|
| A | 294 | 341 | 62 |
| B | 1,858 | 1,910 | 1,909 |
| Indicator | 15.82 | 17.85 | **3.25** |




## Accidental spill of hydrocarbons

| | |
|---|---|
| A | No. of accidents involving oil or fuel spills from in-service transformers and equipment |
| B | Total No. of accidents[141] |
| Indicator | A/B x 100 |

| Year | 2022 | 2023 | 2024 |
|---|---|---|---|
| A | 9 | 5 | 4 |
| B | 15 | 17 | 7 |
| Indicator | 60.00 | 29.41 | **57.14** |




[140] Only Red Eléctrica personnel
[141] 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 2024.

The Spanish Association of Standardisation and Certification (AENOR INTERNACIONAL, S.A.U.), 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 2026.**

# Glossary of terms

| | |
|---|---|
| Environmental aspect | An element of the activities, products or services of an organisation which has, or which may have, an impact on the environment.<br>*(Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation by organisations in a Community Eco-Management and Audit Scheme (EMAS)).* |
| Significant environmental aspect | An environmental aspect that has, or which may have, a significant impact on the environment.<br>*(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)).* |
| 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).<br>*(50 Hz electrical and magnetic fields. Red Eléctrica and UNESA, 1998).* |
| 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).<br>*(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.<br>*(Own definition. Red Eléctrica).* |
| 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.<br>*(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.<br>*(Standard UNE-EN ISO 14031 Environmental management. General Guidelines).* |
| 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.<br>*(Directive 92/43/EC, of May 21, on the Conservation of Natural Habitats and Wild Fauna and Flora).* |
| Environmental objective | A general environmental objective, which originates from the Environmental Policy and is set out as a goal to be fulfilled by the organisation and which, insofar as is possible, is measured.<br>*(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.<br>*(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)).* |
| 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.<br>*(Law 42/2007 of 13 December, on Natural Heritage and Biodiversity).* |
| 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.<br>*(Law 22/2011, 28 July, on Waste and Contaminated Soils).* |
| 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.<br>*(Own definition. Red Eléctrica).* |
| 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.<br>*(Own definition. Red Eléctrica).* |
| 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.<br>*(Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation by organisations in a Community Eco-Management and Audit Scheme (EMAS)).* |
| Special protection area for birdlife (SPA) | 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. |

# Statement from the verification agency

# Annex: Environmental actions 2024

The most **significant preventive and corrective measures** carried out during 2024 for the construction or modification of facilities are described below.

## Habitat preservation

- Minor realignments of the product water impulsion pipeline (part of the Salto de Chira pumped-storage hydroelectric power plant project) to minimise impact on HIC 92D0 (Tamarisks).
- Deviation and extension of horizontal directional drills in Ceuta (132 kV Algeciras–Virgen de África cable) to safeguard various gorgonian species. The drills were extended by 50 m and diverted 50 m south, resulting in a 70-metre change in a southeast direction.
- Marking and protection of endangered species (*Caralluma burchardii*) and community habitats on the 132 kV Puerto del Rosario–Gran Tarajal line.
- Marking of cardon cacti and transplanting/seed collection of protected species on the 66 kV Chío–El Palmar line.
- Protected flora and habitat prospecting and marking on the 400 kV Ayora–Cofrentes line and Antas substation.
- Protection of priority habitat 4020* (Temperate Atlantic Wet Heaths with *Erica ciliaris* and *Erica tetralix*) during clearing on the 400 kV Beariz–Fontefría line.
- Crane lifting on 220 kV Lousame–Tibo and 400 kV Beariz–Fontefría lines.
- Manual stringing across multiple spans of several lines.
- Helicopter stringing of 18 support towers on the 220 kV Santa Agueda–Soria line. Helicopter-lift concreting for specific support towers on 132 kV Puerto del Rosario–Gran, Tarajal, and 220 kV Lousame–Tibo lines.
- Restoration of slopes at multiple support towers or substation perimeters (e.g., 400 kV Ayora–Cofrentes line, 400 kV Cofrentes-Ayora dismantling towers/accesses, and 400 kV Beariz substation and 400 kV Fontefría substation work areas).
- Installation of bentonite containment barriers during Ceuta submarine cable drills (132 kV Algeciras–Virgen de África) to minimise impact on marine habitats, including a protocol for minimising bentonite spills into the sea.
- Environmental cleaning and restoration project for Barranco de Arguineguín (CHB Salto de Chira). The initiative involved eradicating invasive alien flora species in the ravine bed, based on approved protocols. This will contribute to restoring potential riparian communities: tamarisk (lower/mid-lower sections) and willow (mid-upper section). Over 200,000 m² (81% of invasive species in the ravine's public hydraulic domain) of invasives (including reeds, acacias, foxtail grass, and *maireana*) have been eradicated.

## Fauna preservation

- Biological stoppages implemented on over 16 projects.
- Expansion of spans to be marked with bird diverters.
- Nesting boxes installed in over 4 projects.

- Protective barrier for *Pimelia granulicollis* erected at CHB Salto de Chira preventing access to the water impulsion trench.
- Pre-construction prospecting and *Hemicycla plicaria* reservoir control on the 220 kV Candelaria–Buenos Aires line.
- Pre-construction prospecting, marking of sensitive areas, and perimeter fencing for the spur-thighed tortoise at the 400 kV Antas substation.
- Pre-construction prospecting for the chameleon for the 220 kV Puerto Real line project (rearrangement).
- Project calendar and GIS modification for the 220 kV Luminabaso substation due to its location in a European mink influence area.

# Waste management in 2024

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

| | HAZARDOUS WASTE | | | | | |
|---|---|---|---|---|---|---|
| | 2022 | 2023 | 2024 | 2022 | 2023 | 2024 |
| Treatment method | kg | kg | kg | % | % | % |
| Disposal | 52,964.00 | 38,863.00 | 27,689.00 | 6.79 | 1.01 | **4.89** |
| Recycling | 700,389.00 | 3,477,628.00 | 538,401.35 | 89.78 | 90.15 | **95.11** |
| Regeneration | 26,797.00 | 341,180.00 | 0.00 | 3.43 | 8.84 | **0.00** |
| Reuse | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **0.00** |
| Waste-to-Energy (Energy recovery) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **0.00** |
| **Total** | 780,150.00 | 3,857,671 | **566,090.35** | 100.00 | 100.00 | **100.00** |

| | NON-HAZARDOUS WASTE | | | | | |
|---|---|---|---|---|---|---|
| | 2022 | 2023 | 2024 | 2022 | 2023 | 2024 |
| Treatment method | kg | kg | kg | % | % | % |
| Disposal | 57,200 | 13,200 | 0.00 | 7.62 | 2.51 | **0.00** |
| Recycling | 690,991 | 502,395.47 | 459,431.6 | 92.06 | 95.53 | **100.00** |
| Regeneration | 2,360 | 10,300 | 0.00 | 0.31 | 1.96 | **0.00** |
| Reuse | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **0.00** |
| Waste-to-Energy (Energy recovery) | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | **0.00** |
| **Total** | 750,551.00 | 525,895.47 | **459,431.6** | 100.00 | 100.00 | **100.00** |

redeia

Valuing the essentials