



RED
ELÉCTRICA
CORPORACIÓN

Climate Change Commitment

31 March 2017



INTRODUCTION

Definition

Climate Change is the term used to describe the changes seen in the climate in comparison with past climate history on a global or regional scale.

The **United Nations Framework Convention on Climate Change** uses the term 'climate change' solely to refer to changes caused by human activity:

"Climate change' means a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods."

Background

Climate change is unquestionably one of the most important environmental issues at this moment in time, since it has given rise to great concerns at a political, scientific and social level. In the financial and business arena, this issue has taken on great importance with regard to both safety and profitability when undertaking investment, and it is one of the main factors evaluated by sustainability analysts and ratings agencies.

Based on the scientific evidence, the international community has acknowledged the urgency of keeping global warming below the 2° C threshold compared to pre-industrial levels, which is the commitment that has been acquired through the Paris Agreement. In addition, the Agreement includes the need to continue efforts to limit that increase in temperature to 1.5° C.

In order to achieve the Green House Gas (GHG) emission reduction targets to prevent further increases in global temperature, it is necessary for all the players involved to adopt extremely ambitious commitments and make profound changes in accordance with their situation and responsibilities.

The European Union believes that there must be an integrated energy and climate change policy if we are to allow for the development of an economy that is both sustainable and respects climate, based on the integration of technology and energy sources with low levels of carbon emissions that will strengthen the security of the electricity supply and increase



competitiveness.

As a consequence, in 2008, the first package of measures on climate and energy was approved establishing the 20/20/20 targets for 2020. In 2014, the 2021-2030 Energy and Climate Change Policy Framework was established setting out the following objectives: 40% reduction of emissions, 27% increase in the share of renewable energies and 27% improvement in energy efficiency (revisable to 30%). In addition, the objective to achieve an electricity interconnection target of 10% by 2020 and 15% by 2030 was also included.

The European Union also has a long-term outlook and has drafted the 'Roadmap for moving to a competitive low-carbon economy in 2050' which sets a target of reducing emissions by 80% compared to 1990.

Red Eléctrica, as a responsible company that is committed to sustainable development, and as an energy company whose role in electricity transmission and electricity system operation is fundamental in the shaping of the various energy policies, in 2011 decided to formalise its commitment to the fight against climate change, defining its climate change strategy and establishing a plan of action with regard to this issue.

Based on the experience gained from its work in recent years, and bearing in mind the fact that 2020 is fast approaching, Red Eléctrica has decided to revise its strategy and introduce any necessary updates, reaffirming its commitment in this area.

Purpose

The purpose of this document is to formalise the Company's commitment on climate change issues, describe the main courses of action to be taken and establish the need for an Action Plan that sets out the goals to be achieved and the actions to be undertaken.

Scope

Encompasses all the activities of the Red Eléctrica Group.



RESPONSIBILITIES

EXECUTIVE COMMITTEE

- Approve and promote the Company's Climate Change Commitment and revisions thereto.
- Approve the Climate Change Action Plan and revisions thereto.

CORPORATE DIRECTOR OF SUSTAINABILITY, INNOVATION AND INSTITUTIONAL COORDINATION

- Lead and promote the drafting of this Commitment and revisions thereto.
- Lead and promote the drafting of the Climate Change Action Plan and revisions thereto.
- Lead and promote the actions and best practices necessary for the implementation of the principles of the Climate Change Action Plan and the relevant courses of action for its execution.

SUSTAINABILITY AND INNOVATION AREA

- Coordinate the drafting (working with all areas involved) of the Climate Change Commitment and the Climate Change Action Plan.
- Ensure that the actions set out in the Climate Change Action Plan are carried out.
- Inform the Sustainability Steering Committee of progress made regarding the implementation and the degree of fulfilment of the Climate Change Action Plan.

SUSTAINABILITY STEERING COMMITTEE

- Monitor the progress of the implementation and the degree of fulfilment of the Climate Change Action Plan.



GENERAL DEPARTMENTS OF THE RED ELÉCTRICA GROUP

Support the principles contained in this Commitment during the performance of their duties and responsibilities at the Company, and raise awareness among all employees on this Commitment.

- Promote the implementation of the principles and guidelines contained in this Commitment within their individual areas of action.
- Execute the actions set out in the Climate Change Action Plan.

GROUP EMPLOYEES

- Undertake the Company's commitment in relation to biodiversity issues and collaborate on its implementation and consolidation in the individual areas in which each employee works.

PRINCIPLES

The core principles that define the commitment of the Red Eléctrica Group on climate change issues are the following:

- **Integration of renewable energy into the system** through the infrastructure necessary for its evacuation and the optimisation of its integration into the system via the Control Centre of Renewable Energies (CECRE).
- Backing **energy efficiency** as a fundamental tool for combatting climate change in the carrying out of the Company's own activities and raising awareness in society regarding energy efficiency.
 - Promoting the '**Red Eléctrica eficiente**' seal as a means of promoting all actions related to energy efficiency.
- **Reduction of Green House Gas emissions (GHG)** generated by the Company's activities: particularly direct SF₆ emissions and emissions arising from the Company's own consumption of electricity and fuel.



- Protection of **wooded areas**, minimising the loss of such areas associated with the Company's activities (through appropriate project design, the proper maintenance of safety corridors and the prevention of forest fires) and driving reforestation projects to offset some of the emissions generated by Red Eléctrica.
- Participation in and promotion of **projects for the adaptation** of the electricity system to the requirements that could arise from climate change issues (the physical effects of facilities and changes to the energy generation mix and in consumption patterns).
- Engaging **stakeholders** so that they also respect and adopt the commitments undertaken by Company:
 - Maximum level of transparency in the communication of information regarding the Company's carbon footprint and the progress made towards achieving the reduction targets set.
 - Collaboration on initiatives to combat climate change promoted by the public administration and non-governmental organisations.
 - Carrying out training and awareness actions among employees and the general public.
 - Implementation of the mechanisms necessary to pass Red Eléctrica's commitments on to its suppliers and contractors.



Courses of action

The courses of action taken by Red Eléctrica in relation to climate change can be divided into three large groups.

- A. Those linked to Red Eléctrica's business activities (as transmission agent, manager and operator of the electricity system): Red Eléctrica actively contributes to the development of a more sustainable energy model.
- B. Those linked to controlling and reducing the emissions resulting from its activities: Red Eléctrica constantly works on identifying and reducing its carbon footprint.
- C. Those linked to promoting the participation of the Company in initiatives relating to climate change.

A. Contribution to a more sustainable energy model.

1. Development of the electricity transmission grid

One of Red Eléctrica's main activities is the development and strengthening of the infrastructure of the Spanish electricity transmission grid. The main objectives of its work in this area are the following:

- **Foresee and provide the necessary infrastructure for the evacuation of renewable energy coming from new facilities:** This will make it possible to reduce the emission factor in the electricity generation mix.
- **Foresee and provide the necessary infrastructure in order to facilitate the electricity supply required to feed the new high-speed train lines:** Thus, contributing to the consolidation of a more sustainable mobility.
- **Improve grid meshing and strengthen international interconnections:** Thus, increasing grid efficiency (reducing losses), security of supply and taking full advantage of renewable energy sources.
- Contributing to the **electrification of the Spanish electricity system**, which in turn will facilitate the use of renewable energy in a broader range of uses.



- Maximising the use and capacity of the electricity infrastructure, making it more efficient.

2. Operation of the electricity system

2.1 Integration of renewables

One of the cornerstones of the energy policy of EU member states is the **incorporation of renewable energies**.

As the Spanish system operator, Red Eléctrica continuously works to integrate the largest possible amount of renewable energy into the system under secure conditions. This type of energy is controlled and monitored via the **CECRE** (Control Centre of Renewable Energies). This Centre makes it possible to reduce CO₂ emissions, thanks to the fact that demand can be covered using this kind of energy without the security or quality of the supply being affected.

On the other hand, in order to facilitate the incorporation of non-manageable energies and prevent the wastage of energy generated when demand is low, Red Eléctrica is working on the development of **energy storage** tools, based not only on pumped-storage hydroelectric systems but also on other technologies (R&D+i). To this end, it is carrying out prospective assessments on the possible impact of new storage facilities that favour the integration of renewables, identifying the technical or system management aspects required in order to ensure a higher penetration of renewable energy. As a result of the latter, it submits legal and regulatory proposals to the relevant authorities.

These systems will also contribute to a notable improvement in the efficiency of the electricity system as a whole and will help optimise the use of the electricity infrastructure.

2.2 Energy efficiency: Demand-side management and electric mobility

Energy efficiency is another key pillar of European climate change policy.

Red Eléctrica is promoting strategies designed to contribute to the achievement of this objective.





Demand-side management

This work involves planning and implementing measures aimed at influencing the way in which electrical energy is consumed, with a view to bringing about the following changes in the demand curve:

- a reduction in the overall energy consumption,
- a reduction in consumption during peak hours (periods of maximum consumption),
- shifting consumption to valley hours (periods of minimum consumption).

Demand-side management strategies also contribute to a greater integration of renewable energy.

The tasks to be carried out will consist mainly of:

- Identifying and understanding the behaviour patterns associated to society's demand for electricity.
- Proposing and putting in place measures for demand-side management and evaluating such measures.
- Disseminating know-how related to successful measures and consumption patterns

Electric mobility

The introduction of the electric vehicle (EV) offers a great opportunity for improving the efficiency of the electricity system. Depending on the way that the charging of these vehicles is managed, it would be possible to reduce the differences between periods of high consumption and low consumption, thus facilitating the integration of non-manageable energy sources such as wind power. The charging of EVs during valley (off-peak) hours would allow the use of energy generated in said hours, which would otherwise be lost due to the lack of an effective storage system.

Particularly important in this context is the CECOVEL project for the creation of an Electric Vehicle Control Centre. This project will allow the monitoring of the overall load of the electric vehicle on the system and help achieve its synergistic integration into the electricity system when the use of these vehicles in society reaches significant levels.



Furthermore, Red Eléctrica is involved in a large number of projects and working groups dedicated to the promotion, research and development of this kind of vehicle.

3. Adaptation Plans

The effects associated with climate change could have a physical effect on electricity transmission facilities as well as having an influence on future energy generation and consumption patterns, which would in turn have an impact on Red Eléctrica's activity as operator of the electricity system.

It is important to conduct an analysis of the risks associated with climate change, assessing the consequences and defining the need for measures to adapt to new circumstances that may arise in the future.

B. Reduction of the Company's carbon footprint

In line with the European Union's targets for the reduction of emissions, Red Eléctrica constantly works on identifying and minimising its GHG emissions.

1. Calculating Red Eléctrica's carbon footprint (GHG inventory)

This is a fundamental process when setting and pursuing targets. It is essential when providing information to stakeholders on the Company's efforts and performance in relation to climate change issues.



2. Reduction of emissions

2.1. Reducing SF₆ emissions

Red Eléctrica makes a constant effort to improve its procedures for the control of SF₆ gas and to introduce measures to ensure minimising any leakage of this gas.

2.2. Implementing efficiency measures at the Company's facilities to reduce electricity consumption

Identifying and implementing energy-saving and efficiency measures in:

- Buildings and substations: passive measures (insulation), climate control, lighting and equipment efficiency.
- Information and Communications Technology (ICT)

2.3. Implementing efficiency measures in mobility

- Fleet vehicles
- Business trips
- Employee commutes

2.4. Reducing transmission grid losses

Losses in the electricity transmission grid are directly related to and depend on the distance between generation points and consumption points, the amount of energy demanded, the energy generation mix, international exchanges and the shape of the demand curve. Practically none of these factors can be controlled by Red Eléctrica, and it is not therefore possible to set specific loss-reduction targets.

However, Red Eléctrica works hard to improve other aspects related to reducing losses, though these have an impact that is not as significant and improvements are difficult to see in the short term. Noteworthy measures include renewing and maintaining the various elements that make up the transmission grid (ensuring their availability and good condition helps reduce losses) and making use of the most advanced technologies (the most efficient equipment, cables with lower resistance, etc.).



2.5. Reducing other indirect emissions

These are basically measures directed towards working with suppliers and contractors.

3. Offsetting emissions

- **'The RED ELÉCTRICA Forest'**: This is a multi-year project which consists of the planting of trees in degraded areas in order both to offset emissions and to assist in the recovery of these areas.
- Development of other mechanisms for the offsetting of emissions

C. Participation in initiatives related to climate change.

This includes all those activities that involve communicating and interacting with stakeholders and which are not covered by the courses of action described in the two preceding sections.

- Collaboration on initiatives to combat climate change promoted by the public administration and other stakeholders.
- Taking part in working groups related to climate change.
- Developing projects to promote energy efficiency.

In addition to the aforementioned courses of action, it is important to highlight **innovation** as a cross-cutting course of action. The development of **R&D+i** projects is essential to continue making advancements in the performance associated to all of them. Of special relevance are those initiatives in the field of integration of renewable energies, energy storage, demand-side management and energy efficiency.



ACTION PLAN

The Action Plan includes the objectives to be achieved regarding climate change issues and the specific actions to be carried out.

The Plan shall be updated at least once every four years and whenever changes are required due to technical or strategic issues that may affect the Plan.

The observance of the Plan shall be reviewed at least annually. Monitoring the degree of fulfilment of its objectives shall be carried out by means of the performance indicators defined within said Plan.

The objectives and goals to be achieved are to be included in the Company's Annual Environmental Plan.

Review:

**Sustainability and
Innovation Area**

Daniel Pérez Varela

Validation:

**Corporate Director of
Sustainability, Innovation and
Institutional Coordination**

Ana Cuevas Tello

Approval:

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