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**Endesa Carbon Footprint** 2022 Annual Report endesa



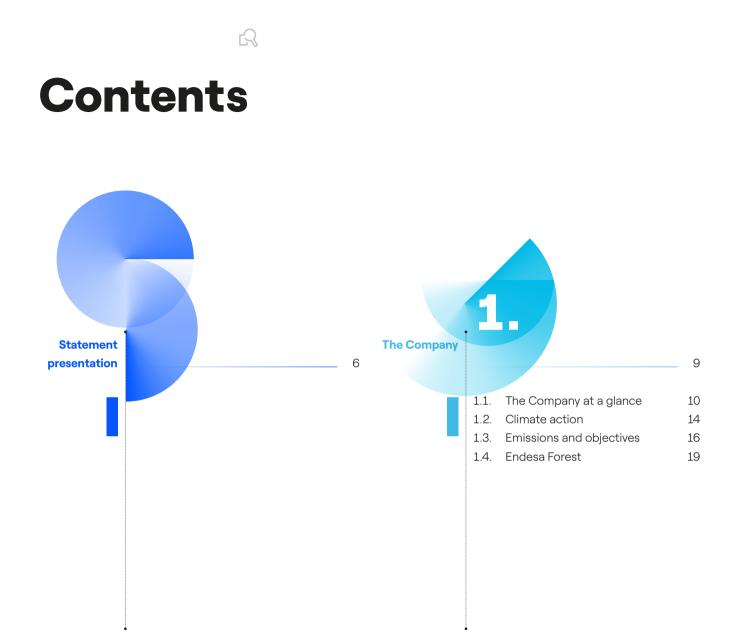


#### OPEN POWER FOR A BRIGHTER FUTURE. WE EMPOWER

SUSTAINABLE PROGRESS.

#### **Endesa Carbon Footprint**

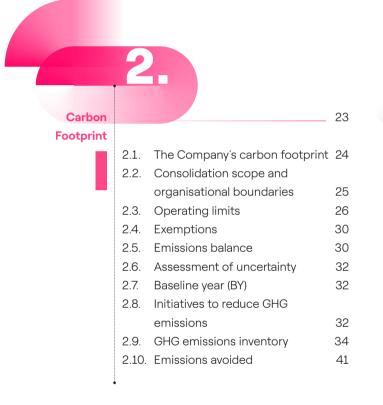
2022 Annual Report

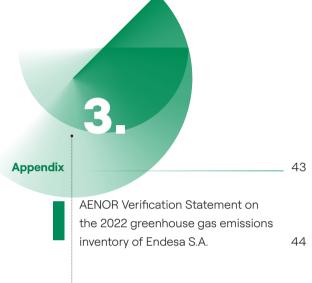


#### How to navigate the document

For ease of reference, the document contains hypertext links, as well as various interactions that enable navigation.







# **Statement presentation**

The year 2022 was an enormously challenging year in navigating the unprecedented and highly complicated economic, political, social and regulatory landscape, **yet Endesa was not blown off course.** The energy crisis now upon us has highlighted, more than ever, the need to achieve energy independence and accelerate our response to the climate emergency by making further efforts towards decarbonisation. This past year turned out to be the warmest and one of the driest years in the historical series in Spain, confirming the models predicted for our country by experts who monitor the course of climate change.

Against this backdrop, the swift reactivation of economic activity in the wake of the pandemic

and the effects of the ongoing conflict between Russia and Ukraine have led to an increase in operations at our mainland thermal power facilities. However, we have also made further progress along our decarbonisation pathway by achieving a 60% reduction in emissions since the signing of the Paris Agreement, together with significant growth in renewable generation through more than 900 MW of new installed capacity. We also view sustainability as an essential aspect that steers our business strategy, and in doing so we have managed to achieve this remarkable progress towards decarbonisation while simultaneously continuing our industrial activity at the Company's key locations, thus offering them present and future meaning and worth.





José D. Bogas Gálvez Chief Executive Officer

As proof of our commitment to leading the energy transition, in late 2021 Endesa announced **that it was bringing forward to 2040 its ambitious goal of achieving net zero emissions in its activities and becoming a 100% renewable company,** in line with the targets set out in the Paris Agreement to limit the average global temperature rise to 1.5 °C compared to pre-industrial levels. In addition, the 2023–2025 investment plan, which describes the actions needed to achieve these objectives, is 90% directly related to the UN Sustainable Development Goals, especially SDG 13 – Climate Action, while more than 80% is aligned with the taxonomy of the European Union.

We now find ourselves at a unique point in time, where our actions moving forwards will make a real difference, and our priority is to do everything we can to minimise our emissions and work towards the decarbonisation of the electricity sector. It is therefore **a genuine pleasure for me to present the Endesa 2022 Carbon Footprint Report**, as a further show of transparency that will tell you more about our results and our pledge to lead the energy transformation in Spain.

We are now pursuing our ambitious goal of becoming a completely emission-free company by 2040 and will be making further strides towards the biggest industrial conversion in our history, which spans almost 80 years.





# The Company

1.1.	The Company at a glance	10
1.2.	Climate action	14
1.3.	Emissions and objectives	16
1.4.	Endesa Forest	19

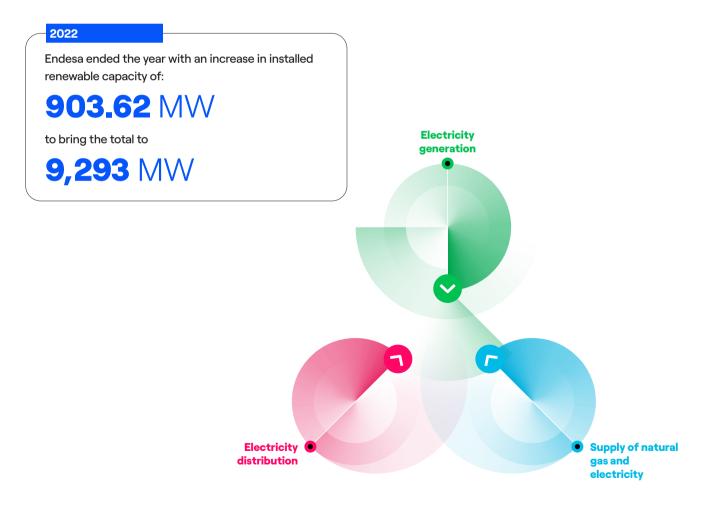
# .1. The Company at a glance

Endesa, S.A. and its subsidiaries operate in the electricity and gas business, mainly in the Spanish and Portuguese markets. To a lesser extent, they also supply electricity and gas in other European markets, and provide other products and services related to their main business activities. The organisation is divided into generation, supply and distribution activities, each of which includes electricity and, in certain cases, gas activities and other products and services.

In recent years, Endesa has developed a sustainable business model, focusing its business strategy on meeting the major challenges facing the society in which it operates. The constantly changing social, economic and political backdrop we are seeing at present means that Endesa must be constantly vigilant and develop specific action plans to better respond to these changes. Endesa's strategy is aligned with the climate emergency and the greater climate ambition of limiting the temperature increase to 1.5 °C through the accelerated decarbonisation of its energy mix. As best evidence of this strategy, Endesa ended 2022 with an increase in its installed renewable capacity of 903.62 MW to 9,293 MW.

Endesa's nine thousand plus employees enable it to serve more than 12 million electricity and gas customers (10.5 million electricity customers and 1.8 million gas customers at 31 December 2022).

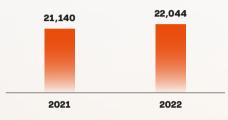
In 2022, Endesa's generation facilities in Spain achieved a total net output of 64,716 GWh, **up 12%** on the 2021 figure. In 2022, the total energy injected into Endesa's networks in accordance with ENEL Group's policy came to 141,789 GWh.



#### **Main activities and figures**

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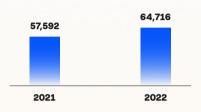




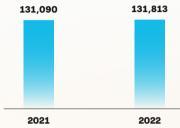




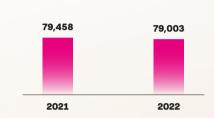
#### Net electricity production (GWh)



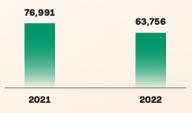




## Electricity sales to end customers (GWh)



#### Gas sales (GWh)



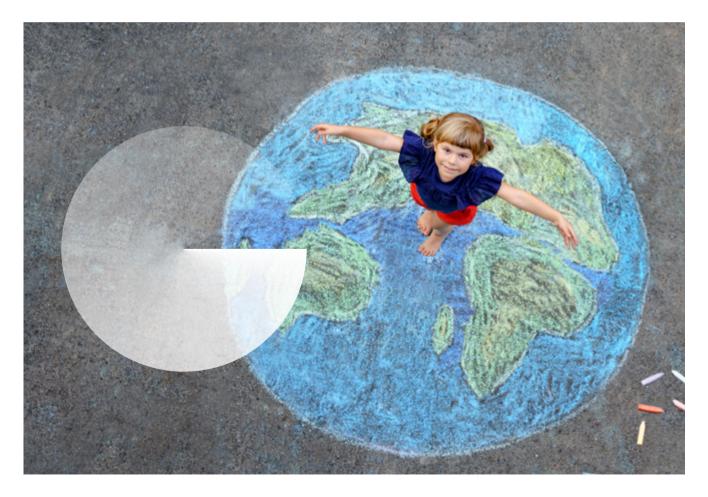


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## **1.2. Climate action**

The main aim of the Paris Agreement is to limit the temperature increase to:

2°C though with the aspiration for it not to exceed 1.5°C compared to the pre-industrial period The main objective of the **Paris Agreement** is to limit the increase in global temperature to 2 °C, with the goal of not exceeding 1.5 °C more than in the pre-industrial period. The Agreement introduces the condition of **carbon neutrality**, **which must be achieved by the second half of the century**. In recent years Endesa has geared its strategy in line with the context of climate emergency and the call to be more ambitious, by establishing ambitious targets through the successive Strategic Plans it has been drawing up since the Paris Agreement was adopted. The decarbonisation path that

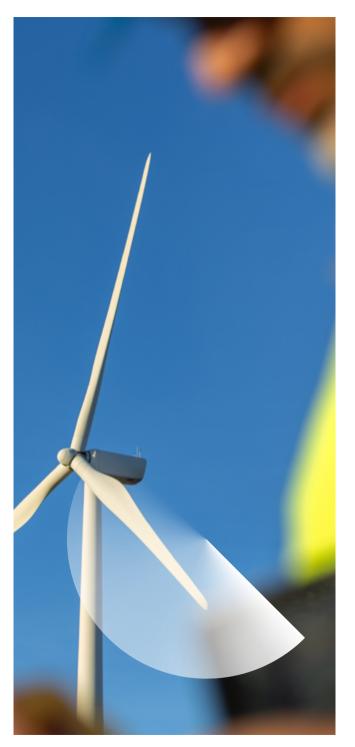




Endesa has been pursuing in recent years and its efforts year after year to exceed its targets demonstrate its ambition in terms of decarbonisation.

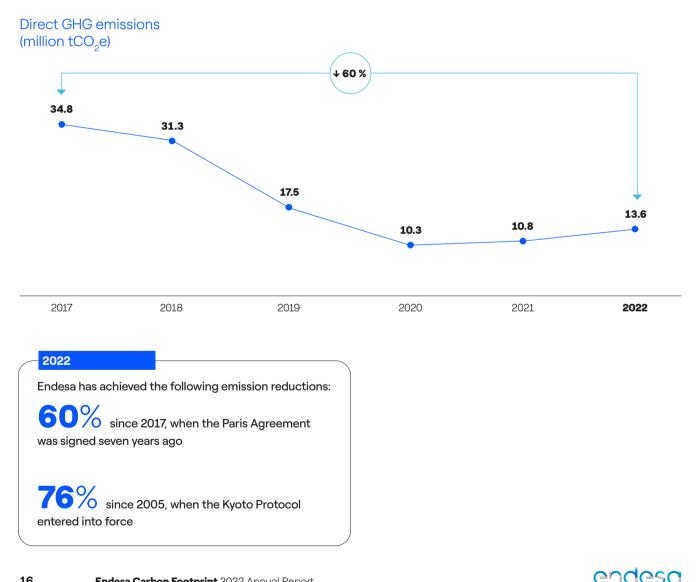
Endesa's measurement of its climate change performance demonstrates that the company is once again playing a **leading role in the fight against climate change**, thus showing strong leadership as it makes a significant contribution to compliance with Spanish and international commitments to the decarbonisation of the planet. The result of this recognition is the renewal of its "Leadership" rating for the sixth consecutive year in an index as prestigious as the CDP.

Endesa is aware of the effects of climate change on its business. It integrates this vision not only as an element in its environmental and climate management policy, but as a major component in decision-making at the business level and in setting and pursuing its strategic plans. To succeed in this task, **Endesa has integrated its climate change action plan into its Strategic Plan.** In this respect, Endesa's Strategic Plan is geared and prepared for the fight against climate change. It is approved every year by the Board of Directors, and developed and implemented by the company's Senior Management. More precisely, the CEO is ultimately responsible for implementing the Company's Strategic Plan and therefore for the company's climate strategy.

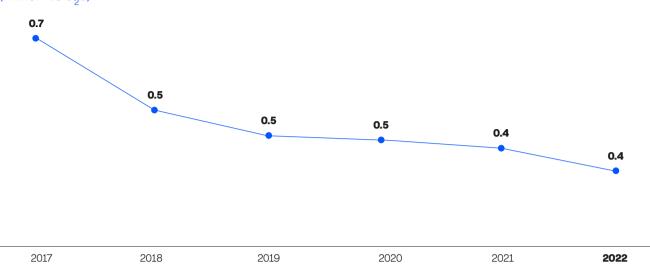


## **1.3. Emissions and objectives 1.3.1.** Endesa's track record in emissions

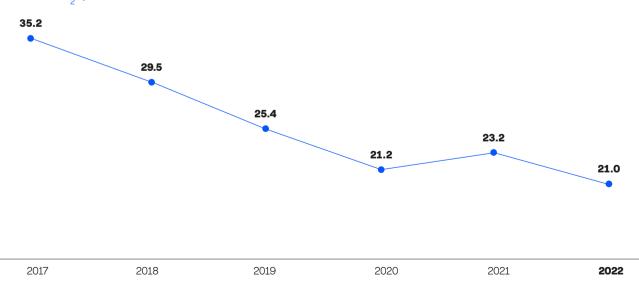
Endesa is working constantly to move forward on the defined path towards becoming a company with **completely** decarbonised generation and supply operations by 2040. with its ambition to reach this goal progressively increasing. Proof of this is the effective reduction achieved in the company's greenhouse gas (GHG) emissions in recent years.



#### Indirect Scope 2 GHG emissions (million tCO<sub>2</sub>e)



## Indirect Scope 3 GHG emissions (million tCO<sub>2</sub>e)





#### **1.3.2. Endesa's reduction targets**

In 2021 Endesa embraced a commitment to become a company with a **totally emission-free generation mix by 2040**. The definition of the **2023-2025 Strategic Plan** increased this ambition by additionally establishing an integrated objective for the generation and retail supply of electricity, so that **by 2040 all electricity sold should also be emission-free.** 

Endesa's strategy, which it pursues through its 2023-2025Strategic Plan, responds to the current climate emergency and defines a decarbonisation path aligned with the 1.5 °C objective that covers the main direct and indirect emissions. Endesa thus contributes to the **goal certified by the Science Based Target initiative (SBTi)** at group level for its parent company, Enel. The company is accelerating plans to exit its generation business based on fossil fuels, such as the sale of gas, to become a 100% renewable electricity company with no links to emitting production technologies or fossil fuels, by setting additional intermediate emission objectives for 2025 and 2030.



Fully decarbonised generation by 2040

Zero emissions for all the electricity it sells by 2040

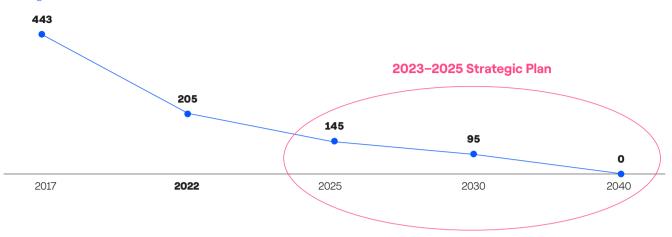


# **1.3.3. Reduction of GHG emissions from the generation business**

Endesa has raised the bar when it comes to its main business objective on the 2030 horizon, by including a further target of bringing specific Scope 1 emission to below 95  $gCO_2e/kWh$  (which represents a reduction of 80% with respect to 2017).



## Scope 1 specific GHG emissions (gCO<sub>2</sub>e/kWh)



## **1.4. Endesa Forest**

In 2023, it will be seven years since the launch of the Endesa Forest (Bosque Endesa, or "BE" for short), a trailblazing corporate environmental initiative in the energy sector that pursues sustainability and is a further step forward in climate change mitigation and adaptation and in improving biodiversity on land located in the area surrounding Endesa's activities. The initiative has already led to the implementation of five projects: BE La Atalaya (Madrid), BE Doñana (Andalusia), BE Teruel (Aragon), BE Balearic Islands, BE Pyrenees related to brown bear habitat improvement in Catalonia, and at least one more under development in Ceuta. The first three have already been registered in the CO<sub>2</sub> sinks section of the National Registry of Carbon Footprint, Compensation and Absorption Projects of the Spanish Office for Climate Change (OECC) in the Ministry of Ecological Transition and Demographic Challenge, making this a pioneering initiative in the energy sector.

The aim of the projects included in the Bosque Endesa (Endesa Forest) initiative is the restoration of forest in degraded and burned areas of Spanish territory, by means of sowing and planting techniques involving native forest species, since these are the best adapted to the environment. As a result of these activities, a significant positive environmental impact is made since forest restoration enables the recovery of environments that have been degraded or ravaged by fire, **thus contributing to climate change mitigation and adaptation and at the same time to the recovery of natural assets, biodiversity and ecosystem services that have been lost.** 





In the social realm, the projects included in the initiative also help to promote local (rural) employment, since priority is given to unemployed people, young people, people over 45 years of age and those at risk of social exclusion when recruiting personnel for future plantation and maintenance work on the projects. In the social sphere, special mention should also be given to the project's potential as a tool for environmental awareness and education, as it enables Endesa

<sup>2</sup> At the time of writing, work is under way to register the 2022 Carbon Footprint.

to organise visits and/or events that showcase the importance of taking care of our natural environment and the benefits that this entails.

Meanwhile, the initiative helps to boost the local economy, as the recovery of a forest often generates additional activity associated with the use of the resources and services it provides (tourism, hunting and the use of forest products like timber, firewood, cork, fruits and fungi).

To date, the Endesa Forest initiative has involved the restoration of more than 100 hectares of forest and the planting of some 50,000 trees, which are estimated to be capable of absorbing approximately 10,500 tCO<sub>2</sub> over their useful life. Thanks to all of these efforts, Endesa is the only company in the energy sector in Spain to have its 2021<sup>2</sup> carbon footprint entered, for the fifth year running —and earning the seal for all phases (Calculate, Reduce and Offset)— on the register of carbon footprints and carbon offset and absorption projects kept by the Spanish Office for Climate Change (OECC) attached to the Ministry of Ecological Transition and Demographic Challenge.



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# **Carbon Footprint**

2.1.	1. The Company's carbon footprint	
2.2.	Consolidation scope and organisational boundaries	25
2.3.	Operating limits	26
2.4.	Exemptions	30
2.5.	Emissions balance	30
2.6.	Assessment of uncertainty	32
2.7.	Baseline year (BY)	32
2.8.	Initiatives to reduce GHG emissions	32
2.9.	GHG emissions inventory	34
2.10.	Emissions avoided	41

# **2.1. The Company's carbon footprint**

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Endesa's Carbon Footprint results for 2022 are presented in this report.

Endesa has been voluntarily calculating and verifying its carbon footprint since 2009. This process includes the development of a calculation methodology and a proprietary software solution, the implementation of a management system, and the creation of an inventory of GHG emissions and removals across the entire Company. Calculating the carbon footprint provides essential information and transparency that helps the Company to manage the risks and opportunities associated with GHGs in a global and comprehensive manner by making the "carbon component" an integral part of its decisionmaking. Endesa has had its carbon footprint registered with the Ministry of Ecological Transition and the Demographic Challenge since 2013, and has demonstrated a path to reducing its emissions in accordance with the criteria established by the Spanish Climate Change Office. Meanwhile, the quantification of emissions and their verification in line with standard UNE-EN ISO 14064-1<sup>3</sup> delivers consistency, integrity and transparency to stakeholders in relation to the quantification, reporting and monitoring of GHG emissions by Endesa. It also ensures comprehensive, uniform management of these aspects across the entire company.

3 ISO 14064-1:2018 - Greenhouse gases. Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals.



Environment Ibería is the department responsible for quantifying Endesa's Carbon Footprint. The person ultimately responsible carrying out this work is the Head of Ibería Environment of Endesa.



# **2.2. Consolidation scope and organisational boundaries**

The scope of the 2022 Endesa carbon footprint includes the following systems associated with its various businesses:

- Renewable generation: hydro, wind, photovoltaic and biogas.
- Thermal generation: coal, fuel/gas and natural gas.
- Nuclear generation.
- · Electricity distribution.
- · Port terminal management.
- Administrative activities at Endesa buildings<sup>4</sup>.
- · Supply of natural gas and electricity.
- · CO<sub>2</sub> sinks.

The consolidated results presented in this report are based on a **shareholder and operational involvement approach**, in keeping with Endesa's consolidation scope determined by the Company's Economic and Financial area.

In other words, the results include all the emissions from facilities where Endesa is the majority shareholder and therefore controls all the operations. They also include emissions from other facilities at which Endesa is not the majority shareholder. In this case, the emissions represent the percentage of the ownership interest held by the Company. This is particularly relevant in the case of nuclear plants.

<sup>4</sup> The calculation of the emissions originating from Endesa's administrative activities includes the emissions from its employees' work-related travel and vehicles associated with these activities, as well as employees' commutes to and from the workplace.



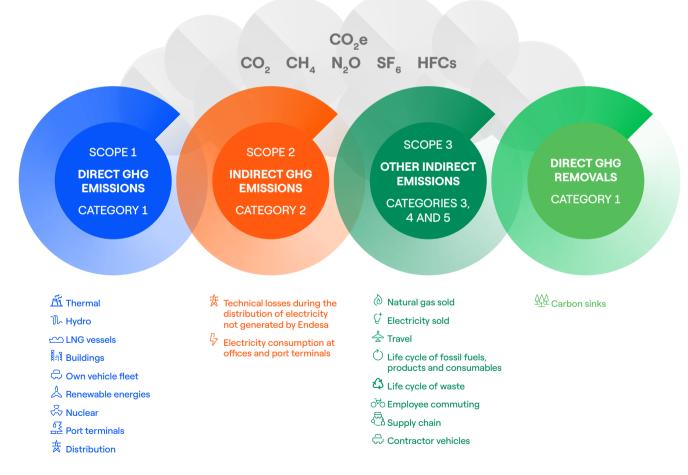
# 2.3. Operating limits

Endesa establishes operating limits based on the guidelines in the GHG  $\rm Protocol.^5$ 

The limits for the geographical scope of the carbon footprint are determined by the location of the facilities included in the systems considered.

The results set out in this carbon footprint report include both direct and indirect emissions, classified as follows:

All the possible emission sources of Endesa's businesses have been analysed to determine the inventory of emissions that should be reported, collecting the most significant and those that the organisation considers it important to report, considering its activities. Endesa's criteria for defining significant emissions are as follows: emissions that account for more than 5% of total emissions.



<sup>5</sup> The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition) (GHG Protocol). This provides the requirements and guidance for companies and other organisations on how to prepare a GHG emissions inventory.



# **2.3.1. Scope 1 — Category 1 ISO14064. Direct GHG** emissions and removals

Direct GHG emissions refer to emissions from sources that are controlled by the Company. This category includes emissions derived from:

- CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O from fuel consumption (coal, fuel/diesel, natural gas) for electricity production at electricity generation plants.
- Fugitive SF, emissions at all Endesa facilities.
- Fugitive HFC emissions at all Endesa facilities.
- Fugitive CO<sub>2</sub> emissions from fire extinguishing equipment in port terminal management.
- Fugitive emissions of methane (CH<sub>4</sub>) at hydroelectric generation reservoirs owned by Endesa.

- Emissions of CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O derived from fuel consumption in boilers and generators in relation to administrative activities at Endesa buildings.
- Emissions of CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O from fuel consumption by generators in relation to electricity distribution activities.
- Emissions of CO<sub>2</sub>, CH<sub>4</sub> and N<sub>2</sub>O derived from fuel consumption by Endesa vehicles.
- Emissions of  $\rm CO_2$ ,  $\rm CH_4$  and  $\rm N_2O$  emissions derived from fuel consumption on ships chartered by Endesa for the transport of LNG.
- Direct GHG removals by absorption of CO<sub>2</sub> through vegetation cover on Endesa's own land (carbon sinks).



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### 2.3.2. Scope 2 — Category 2 ISO14064. Indirect GHG emissions from imported electricity

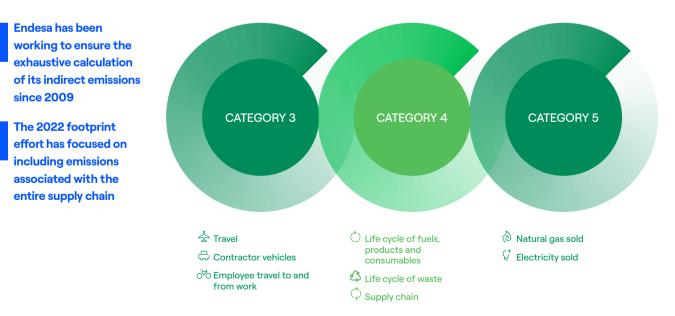
Indirect emissions are those emissions derived from the company's activity, but generated by other entities. In the case of Endesa, these emissions relate to:

- Emissions associated with the generation of electricity necessary to offset the technical losses produced during the distribution of electricity not generated by Endesa.
- Electricity consumption at Endesa's buildings and management of port terminals.

### 2.3.3. Scope 3 – Other indirect emissions (Categories 3, 4 and 5 under ISO14064)

Endesa has been working since 2009 to ensure the **exhaustive calculation of its indirect emissions**, expanding the scope each year to improve its vision of the indirect impacts generated by its activity. As a result, more concrete and effective emission reduction actions can be designed.

Scope 3 emissions are indirect emissions resulting from the company's activities that are generated by sources not owned or controlled by the company. This scope includes all emissions associated with the various stages in the electricity life cycle not included in the previous scopes.





## Category 3 – ISO 14064. Indirect GHG emissions from transport.

- Emissions associated with work travel by plane, train and vehicle hire/leasing.
- Emissions associated with the fleet of vehicles owned by maintenance subcontractors and facilities for electricity distribution and hydro generation.
- Emissions associated with employees commuting to and from the workplace.

## Category 4 — ISO 14064. Indirect GHG emissions from products used by the organisation.

- Emissions associated with Endesa's supply chain.
- Emissions associated with the extraction, production and transport of fuels consumed in the company's operations.
- Emissions associated with the manufacture and transport of chemical products consumed in the company's operations.
- Emissions associated with the transport and treatment of waste generated in the company's operations.
- Emissions due to the life cycle of the water consumed.

## Category 5 – ISO 14064. Indirect GHG emissions from use of the organisation's products.

- Emissions associated with the extraction, production and transport of the natural gas marketed and its use by end users.
- Emissions associated with generation for the part of the electricity sold that has not been generated at Endesa's own plants.





## 2.4. Exemptions

The exclusion of the quantification of the emissions is in accordance with section 6.1 of the UNE-EN ISO 14064-1 standard, based on following criteria: no significant emissions (greater than 5% of their category) have been excluded from this inventory.

In 2022, Endesa had a total of:



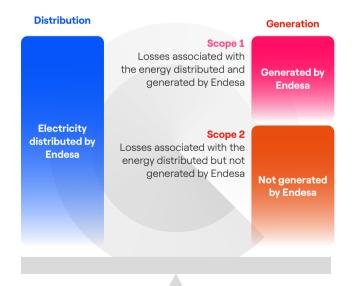
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## **2.5. Emissions balance**

In the case of business groups like Endesa, which are characterised by the vertical integration of different business lines throughout the electricity value chain, when reporting the overall carbon footprint it is necessary to consolidate the emissions by carrying out a series of balances to prevent dual accounting between the different scopes of the individual business lines.

#### 2.5.1. Balance between distribution and generation

Endesa distributes more energy than it generates. Emissions associated with the power produced and distributed by the company are accounted for as direct emissions in scope 1 (including losses associated with distribution). These are therefore not considered as indirect emissions from imported energy (scope 2). Scope 2 includes emissions associated with the generation of energy by other companies needed to offset technical losses during distribution through Endesa's networks.



# **2.5.2. Balance between electricity consumption and generation**

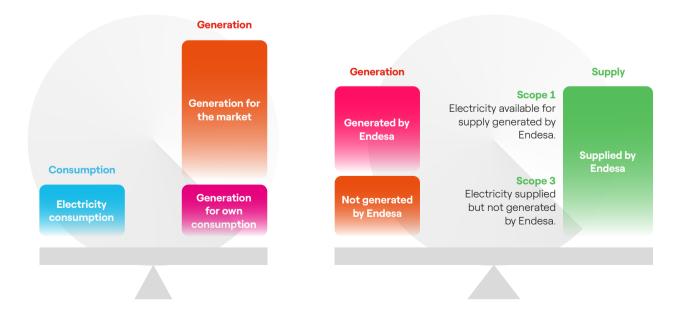
As stated in the GHG Protocol Scope 2 Guidance, to avoid double counting between scope 1 (direct emissions) and scope 2 (indirect emissions from imported energy) within the same inventory, companies with power generation facilities must treat their electricity consumption as if it were supplied by their own generation facilities, without reporting additional emissions in scope 2. At Endesa, this balance is calculated with the electricity consumed in pumped hydro generation and in the shutdown of generation facilities; since it is produced by Endesa, the associated emissions are already accounted for in Scope 1.

No balance has been performed for indirect emissions from imported energy from management of port terminals and administrative activities in Endesa buildings, as these do not relate to electricity generating facilities.

# **2.5.3. Balance between supply and generation**

It is also necessary to balance the amount of electricity generated with the electricity supplied in each country in which the two activities are conducted.

Only the electricity that Endesa sells but does not generate at its facilities is counted when calculating indirect emissions associated with use of the organisation's products (Scope 3). Endesa supplies more energy than it generates and part of the energy supplied has been generated by the organisation itself. Therefore, the emissions from such generation have already been included in Scope 1 and are not considered in Scope 3.



31



## 2.6. Assessment of uncertainty

Uncertainty has been assessed using the methodology contained in the IPCC Guidelines for National Greenhouse Gas Inventories (Volume 1 General Guidance and Reporting. *Chapter 3 – Uncertainties*), based on uncertainty regarding

information on business activities and the emission factors used, obtaining uncertainty of less than 5% across all businesses for categories 1 and 2.

## **2.7. Baseline year ("BY")**

Given the company's characteristics in terms of business stability (acquisition, sales, etc.), the selected BY is a "rolling baseline year", meaning that the results for each year will be compared to those of the previous. In the case of the 2022 Carbon Footprint, the year 2021 has been set as the BY. On this occasion, it has been necessary to recalculate the figures for 2021 as the emissions associated with 100% of the supply chain in Scope 3 have been included as a new element in the 2022 Footprint.

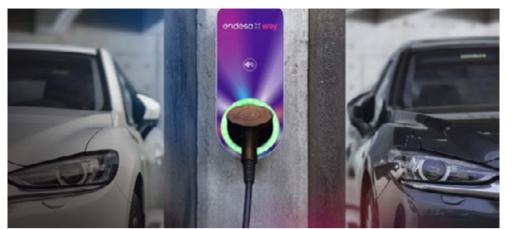
# **2.8. Initiatives to reduce GHG emissions**

Since 2013, Endesa has been more active in managing its emissions and has included some of the projects it has been implementing at its facilities to improve energy efficiency and reduce emissions under "Initiatives to reduce GHG" (previously known as "Targeted Actions") within the scope of the UNE-EN ISO 14064-1.

The targeted actions implemented include the following.

Efficiency in administrative activities at Endesa buildings	Endesa carries out specific actions to reduce its carbon footprint, such as optimising the use of space and reducing energy consumption. Thanks to the optimisation of workspace usage, a reduction of 801 m <sup>2</sup> of office space was achieved in 2022, obtaining an emissions saving of <b>65 tonnes of CO<sub>2</sub> in the company's Scope 2 emissions</b> .
Reduction in waste generation arising from administrative activities in buildings	Reduction of paper and cardboard waste in offices cutting <b>24 tonnes of CO<sub>2</sub></b> emissions in the company's Scope 3 in 2022.





## In 2022, the total emissions savings were as follows:

**3,422** 

Sustainable management of the Endesa vehicle fleet	Endesa also reduces its carbon footprint through the efficient management of its fleet of vehicles. One of the core actions undertaken by Endesa to promote sustainable mobility concerns the management of its own vehicle fleet. For several years, Endesa has been taking action to reduce its fossil fuel fleet and introduce hybrid and electric vehicles. In 2022, Endesa had 209 electric vehicles and 731 hybrid vehicles, representing 52% of the total fleet. It also helps to reduce emissions by no longer using combustion vehicles. In 2022, 130 combustion engine vehicles were decommissioned from the company's fleet. These actions represented a total saving of 61 tonnes of Scope 1 CO2 emissions at Endesa in 2022.
Promoting work from home arrangements	As part of its work-life balance policy, Endesa employees may voluntarily adhere to the work from home system, which currently allows them to work one, two or three days a week from home. In 2022, most employees opted for this system, so emissions are lower than what they would be if they were to work in the office every day. A reduction of 3,170 tonnes of $CO_2$ equivalent is estimated for Endesa's Scope 3 emissions.
Electric Mobility Plan for employees	In 2015 the company launched its Electric Mobility Plan for employees, which has been selected annually as a Climate Project by the Ministry since 2016 and audited by AENOR. This plan facilitates the acquisition of electric vehicles for the personal use of Endesa employees during a set period. Thanks to employees adhering to this plan, their commutes from home to work at Endesa have an important electric mobility component, making it possible to avoid the emissions that would have occurred if they had been fossil fuel vehicles rather than electric. The total emissions savings in 2022 amounted to <b>102 tCO</b> <sub>2</sub> associated with the company's Scope 3 emissions.

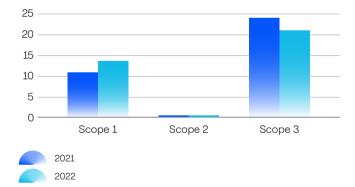


## **2.9. GHG emissions inventory**

The consolidated results for 2022 and an analysis of the data presented are shown below.

The chart and table below show the changes in scopes 1, 2 and 3 in 2022 with respect to 2021.

#### Change in total Endesa emissions (million tCO<sub>2</sub>e)



#### Endesa (tCO<sub>2</sub>e)

34

Year	Scope 1	Scope 2	Scope 3	Sinks
2021	10,812,036	437,734	23,994,612 <sup>6</sup>	-31,112
2022	13,608,478	369,9807	20,967,0278	-34,238

<sup>6</sup> Recalculated to include the entire supply chain.

<sup>7</sup> See section 3.9.5 for a market-based and location-based breakdown.

<sup>8</sup> Market-based: 20,967,027 tCO<sub>2</sub>e; Location-based: 19,149,124 tCO<sub>2</sub>e.

Scope 1 emissions increased by 21% in 2022. The bulk of this scope, in the case of Endesa, is due to the use of fuels in electricity generation. More precisely, traditional thermal power generation increased by 11% in 2022 and combined cycle generation was up 30%, leading to an increase in absolute  $CO_{2}$  emissions.

With regards to the aforementioned increase in Scope 1 emissions in 2022, we would highlight the ongoing energy crisis, which began in 2021 following the reactivation of activity in the wake of the pandemic and worsened in 2022 due to the conflict between Russia and Ukraine. This ultimately led to a regulatory and market environment that called for an increase in the output of Endesa's mainland facilities that use fossil fuels.

The **decline in Scope 2 emissions** is largely due to a reduction in technical losses during electricity distribution following an improvement in the methodology for calculating these losses. Meanwhile, the **increase in Scope 3 emissions** was mainly due to the inclusion of 100% supply chain emissions in the 2022 Carbon Footprint.

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### **2.9.1. Endesa emissions by ISO 14064 category**

Catagory	Non-biogenic emissions (tCO2 <sub>e)</sub>					
Category		CO2	CH₄	N₂O	FGHG	Total CO <sub>2</sub> e
Direct GHG emissions — Category 1	15,131	13,431,558	142,575	18,505	708	13,608,478
Emissions from stationary sources	0	13,301,162	38,163	17,965	0	13,357,291
Direct emissions from stationary sources in thermal generation	0	13,271,230	38,050	17,902	0	13,327,182
Direct emissions from stationary sources in other businesses	0	29,932	113	63	0	30,108
Direct fugitive emissions from anthropogenic systems	15,131	0	104,205	0	708	120,044
Direct SF <sub>6</sub> emissions	15,131	0	0	0	0	15,131
Direct emissions at Endesa-owned reservoirs associated with hydroelectric generation	0	0	104,205	0	0	104,205
Fugitive direct emissions from air conditioning and fire protection systems	0	0	0	0	708	708
Emissions due to combustion in mobile sources	0	130,395	208	540	0	131,142
Direct emissions from mobile combustion sources (vehicles)	0	3,935	4	39	0	3,977
Direct emissions from mobile combustion sources (LNG shipping)	0	126,460	204	501	0	127,166
Removal of $CO_2$ via carbon sinks	0	-34.238	0	0	0	-34.238
Indirect GHG emissions due to imported energy — Category 2	0	368,099	769	1,112	0	369,980
Emissions due to losses in electricity distribution	0	364,977	762	1,103	0	366,842
Emissions from electricity consumption at buildings and port terminals <sup>9</sup>	0	2,900	6	9	0	2,915
Emissions associated with electricity consumption in the electric vehicle fleet	0	222	0.5	0.7	0	223
Indirect GHG emissions from transport — Category 3	0	31,367	7	280	0	31,655
Emissions associated with subcontractor mobile combustion sources	0	21,096	4	256	0	21,356
Emissions associated with business travel (train, plane, rental vehicles, taxi and hotel stays)	0	3,978	3	25	0	4,006
Emissions associated with commuting	0	6,293	0	0	0	6,293
Indirect GHG emissions from products used in the organisation — Category 4	0	6,055,973	1,080,490	6,221	0	7,142,684
Emissions associated with the life cycles of the fuels consumed	0	4,224,808	1,075,125	6,133	0	5,306,066
Emissions associated with waste transport and management	0	5,599	5,338	81	0	11,018
Emissions from the production and transport of chemicals/consumables purchased	0	1,803	28	6	0	1,837
Emissions due to the life cycle of the water consumed	0	130	0	0	0	130
Emissions associated with the supply chain	0	1,823,634	0	0	0	1,823,634
Indirect GHG emissions from use of the organisation's products — Category 5	0	13,725,565	36,802	30,322	0	13,792,688
Emissions associated with retail sale of natural gas	0	10,397,432	20,325	4,906	0	10,422,663
Emissions associated with retail sale of electricity <sup>9</sup>	0	3,328,133	16,477	25,415	0	3,370,025
Indirect GHG emissions from other sources — Category 6	0	0	0	0	0	0
Total direct GHG emissions		13,431,558	142,575	18,505	708	13,608,478
Total indirect GHG emissions	0	20,181,004	1,118,068	37,935	0	21,337,006
Total GHG emissions	15,131	33,612,561	1,260,643	56,440	708	34,945,484

<sup>9</sup> Market-based approach to identify emission reductions.

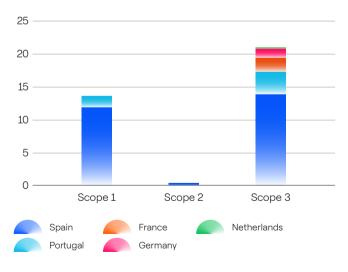
#### Endesa emissions by ISO 14064 category

Category	Biogenic emissions (tCO <sub>2</sub> e)
Direct GHG emissions	1,303
Direct emissions from stationary combustion sources	1,255
Direct emissions from mobile combustion sources (vehicles)	48
Indirect GHG emissions from transport	109
Indirect emissions from subcontracted mobile combustion sources	109
Total direct GHG emissions	1,303
Total indirect GHG emissions	109
Total GHG emissions	1,412

#### **2.9.2. Endesa emissions by country**

The following table provides a breakdown of Endesa emissions by scope for each country in which it operates.

## Endesa emissions by country (t $CO_2e$ ) (in millions)



#### **Endesa – 2022 (tCO\_e)**

	Scope 1	Scope 2	Scope 3
Spain	11,880,289	369,980	13,850,256
Portugal	1,728,189	0	3,391,346
France	0	0	2,146,779
Germany	0	0	1,397,089
Netherlands	0	0	181,557
	13,608,478	369,980	20,967,027

As the chart clearly shows, most of the emissions are produced in Spain since this is the country with the highest volume of business. The entire generation business is located in Spain and Portugal (Scope 1) and electricity distribution in Spain only (Scope 2), while the electricity and gas supply business (Scope 3) is conducted in all other countries.

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## 2.9.3. Endesa emissions by GHG type

The following table provides a breakdown of Endesa emissions by type of greenhouse gas. As is to be expected, the highest percentage corresponds to CO<sub>2</sub> emissions.

### Endesa 2022 (tCO<sub>2</sub>e)<sup>11</sup>

	Scope 1	Scope 2	Scope 3
CO <sub>2</sub>	13,431,558	368,099	19,812,905
CH <sub>4</sub>	142,575	769	1,117,299
N <sub>2</sub> O	18,505	1,112	36,823
SF <sub>6</sub>	15,131	0	0
HFCs	708	0	0
CO2e	13,608,478	369,980	20,967,027

Below is the breakdown by type of GHG and business of Scope 1:

### Scope 1 - 2022 (tCO,e)

	CO2	CH₄	N <sub>2</sub> O	SF <sub>6</sub>	HFCs	Total
Generation	13,273,514	17,907	9,795	38,059	382	13,339,657
Electricity supply	126,673	502	0	205	0	127,380
Distribution	1,545	17	748	104,206	2	106,519
Natural gas supply	28,395	77	4,588	102	0	33,161
Offices	1,051	1	0	3	293	1,348
Renewable energy	364	1	0	1	0	366
Port terminal management	15	0	0	0	32	47
Total	13,431,558	18,505	15,131	142,575	708	13,608,478

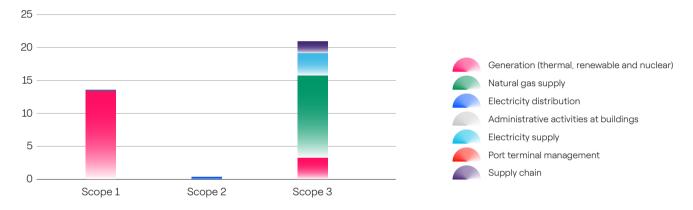
<sup>11</sup> Endesa's activities do not emit NF<sub>3</sub>

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## 2.9.4. Endesa emissions by business

The following table provides a breakdown of Endesa emissions by business line. The business with the highest emissions in Scope 1 is electricity generation. However, in Scope 2 it is electricity distribution, while in Scope 3 the highest emissions correspond to the natural gas supply business.

### Endesa emissions by business (t CO<sub>2</sub>e)



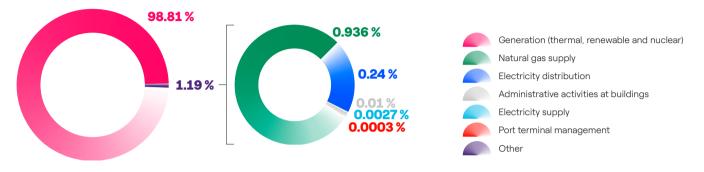
### tCO<sub>2</sub>e

	Scope 1	Scope 2	Scope 3
Generation (thermal, renewable and nuclear)	13,446,176	0	3,232,728
Natural gas supply	127,380	0	12,503,867
Electricity distribution	33,161	366,842	26,109
Administrative activities at buildings	1,348	2,000	10,600
Electricity supply	366	0	3,370,025
Port terminal management	47	1,137	64
Supply chain	0	0	1,823,634
	13,608,478	369,980	20,967,027

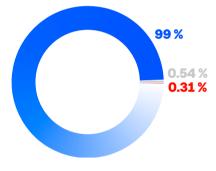


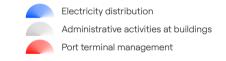
The following charts provide a picture of the volume of emissions for the different business lines and scopes.



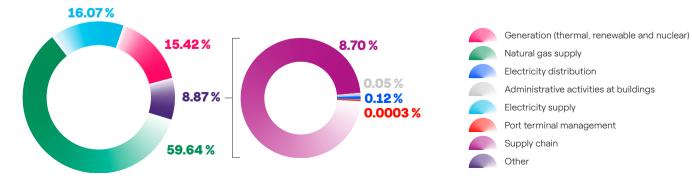


Emissions by business **Scope 2** 





# Emissions by business **Scope 3**

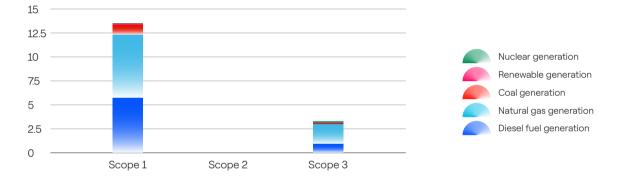


The following table and chart show emissions by type of generating plant.

### Generation (tCO<sub>2</sub>e)

	Scope 1	Scope 2	Scope 3
Gas oil	5,715,173	0	922,475
Natural gas	6,590,966	0	2,055,430
Coal	1,031,264	0	82,367
Renewable	106,519	0	6,299
Nuclear	2,254	0	166,156
	13,446,176	0	3,232,728

# Endesa Generation (in million tCO<sub>2</sub>e)



### 2.9.5. Breakdown of Scope 2 emissions

Details of the Scope 2 calculations are shown below, depending on whether the approach is market-based or location-based. The results in Endesa's carbon footprint are obtained by applying the following approaches:

- Market-based to electricity consumption (applying the emission factor of the national electricity mix of retail suppliers without Guarantees of Origin or zero if the electricity consumed is of renewable origin).
- Location-based losses during electricity distribution (applying the emission factor on domestic generation).

### Scope 2 (tCO<sub>2</sub>e)

	Scope 2 Endesa	Scope 2 Location based	Scope 2 Market based
Electricity distribution	366,842	366,842	622,948
Administrative activities at buildings	1,777	5,242	1,777
Port terminal management	1,137	615	1,137
Electric vehicles	223	121	223
	369,980	372,820	626,085

# 2.10. Emissions avoided

Endesa's strategy is aligned with the climate emergency and with the overarching climate ambition of limiting the temperature increase to 1.5 °C through the accelerated decarbonisation of its energy mix, which will be fully renewable in 2040 and contributing to the decarbonisation of other energy uses. As best evidence of this strategy, Endesa ended 2022 with an increase in its installed renewable capacity of 903.62 MW to 9,293 MW. In addition, Endesa, in its eagerness to increase its ambition, through its latest Strategic Plan 2023–2025, ratifies its energy transition strategy by increasing the installed capacity of renewable sources by 10% compared to its previous plan, thus reaching a renewable power portfolio of 13,900 MW in 2025, a figure that includes 241 MW of BESS (battery energy storage systems) and H<sub>2</sub> (hydrogen). The 2023-2025 Strategic Plan envisions average growth of 1,500 MW per year on the path to reaching a total of 4,400 MW at the end of this period, with € 4.3 billion set aside for this purpose.

### In 2022, Endesa generated

**38,549** GWh free of CO<sub>2</sub> emissions, representing nearly

**60 %** of the energy generated, and which prevented the emission into the atmosphere of

17 million tonnes of CO<sub>g</sub>e.



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# Appendix

AENOR Verification Statement on the 2022 greenhouse gas emissions inventory of Endesa S.A. 44





#### Declaración de Verificación de AENOR para ENDESA S.A. del Inventario de emisiones de gases de efecto invernadero correspondientes al año 2022

#### EXPEDIENTE: 1997/0694/HCO/01

#### Introducción

ENDESA, S.A. ha encargado a AENOR INTERNACIONAL, S.A.U. (AENOR) llevar a cabo una revisión razonable del Inventario de emisiones de gases de efecto invernadero (GEI) del año 2022 de sus actividades incluidas en el informe de GEI de junio de 2023, el cual es parte de esta Declaración.

AENOR se encuentra acreditada por la Entidad Mexicana de Acreditación, con número OVVGEI 004/14 (vigente a partir del 31/10/2014; fecha de actualización 19/04/2023), conforme a la norma ISO 14065:2020, para la realización de verificación de emisiones de gases de efecto invernadero conforme a los requisitos establecidos en la norma ISO 14064-3:2019 para los sectores de la energía y desechos.

El Inventario de emisiones de GEI de junio de 2023 ha sido emitido por la Organización: ENDESA, S.A., con domicilio social en CL RIBERA DEL LOIRA, 60 CAMPO DE LAS NACIONES 28042 - MADRID.

Representante de la Organización: D. Jorge PINA PÉREZ (Responsable de Medio Ambiente).

ENDESA, S.A. tuvo la responsabilidad de reportar sus emisiones de GEI de acuerdo a la Norma de referencia ISO 14064-1:2018.

#### Objetivo

El objetivo de la verificación es facilitar a las partes interesadas un juicio profesional e independiente acerca de la información y datos contenidos en el Informe de GEI de ENDESA, S.A. mencionado.

#### Alcance de la Verificación

El alcance de la verificación se establece para las actividades que presta la organización en España y Portugal, en las instalaciones:

- Generación térmica: carbón, fuel-gas, gas natural.
- Generación nuclear.
- Generación renovable: eólica, fotovoltaica, hidráulica, minihidráulica y biogás.
- Transporte y distribución de electricidad.
- Gestión de terminales portuarios.
- Actividades administrativas en edificios de ENDESA.
- Comercialización de gas natural y electricidad: emisiones de la flota de vehículos asignada y de los barcos metaneros operados.
- Sumideros: terrenos reforestados

Se han considerado los gases de efecto invernadero CO2, CH4, N2O, SF6 y HFCs

Durante la verificación se analizó la información atendiendo al enfoque de control operacional que establece la ISO 14064-1:2018, es decir, la organización notifica todas las emisiones y absorciones de GEIs atribuibles a las operaciones sobre las que ejerce control en las respectivas instalaciones.

Página 1 de 6



#### Las actividades directas, indirectas y exclusiones de la verificación

En cuanto al alcance de las actividades de la compañía éstas se clasifican en directas e indirectas, siguiendo las directrices de la norma UNE-EN ISO 14064-1:2018

- Categoría 1: Emisiones y remociones directas de GEI
  - Emisiones de combustión estacionaria:
    - Emisiones de CO<sub>2</sub>, CH<sub>4</sub> y N<sub>2</sub>O asociadas al consumo de combustibles (carbón, fuel/gasoil, gas natural, biogás) para la producción de electricidad en las centrales de generación.
      - Emisiones de CO<sub>2</sub>, CH<sub>4</sub> y N<sub>2</sub>O derivadas del consumo de combustibles en calderas o grupos electrógenos en edificios de oficinas.
  - Emisiones fugitivas directas en sistemas antropogénicos:
    - Emisiones de SF<sub>6</sub> en las instalaciones de Distribución de electricidad y en las centrales de generación térmica y nuclear.
    - Emisiones de GEI en equipos de extinción de incendios en la gestión de los Terminales Portuarios
    - Emisiones de HFCs en las instalaciones de climatización en los terminales portuarios.
    - Emisiones de metano (CH<sub>4</sub>) en los embalses propiedad de Endesa asociados a la generación hidráulica.
  - Emisiones por combustión móvil,
    - Emisiones de CO<sub>2</sub>, CH<sub>4</sub> y N<sub>2</sub>O derivadas del consumo de combustibles en grupos electrógenos en distribución de electricidad.
    - Emisiones de CO2, CH4 y N2O derivadas del consumo de combustibles en la flota propia de vehículos.
    - Emisiones de CO2, CH4 y N2O derivadas del consumo de combustibles en los barcos metaneros operados para el transporte de gas natural licuado (GNL).
  - Remociones de CO2 en sumideros: terrenos reforestados.
- Categoría 2: Emisiones indirectas de GEI por energía importada
  - Las emisiones asociadas a la generación de electricidad necesaria para compensar las pérdidas técnicas producidas durante la distribución de la energía eléctrica no generada por ENDESA. Las emisiones se calculan considerando las pérdidas de electricidad como energía importada.
  - Las emisiones asociadas a la generación de electricidad consumida en los edificios y en terminales portuarios
- Categoría 3: Emisiones indirectas de GEI por transporte
  - o Emisiones asociadas a los vehículos de las subontratas que operan en las instalaciones
  - Emisiones asociadas a los viajes de negocios (tren, avión, carretera).
  - Emisiones asociadas a los desplazamientos de los empleados al centro de trabajo
- Categoría 4: Emisiones indirectas de GEI por productos utilizados por la organización
  - Emisiones asociadas al ciclo de vida de los combustibles consumidos.
  - Emisiones asociadas al transporte y gestión de los residuos generados.
  - Emisiones asociadas a la producción y transporte de los productos químicos y consumibles adquiridos.
  - Emisiones asociadas a la captación y transporte del agua consumida.
  - o Emisiones asociadas a la cadena de suministro
- Categoría 5: Emisiones indirectas de GEI asociadas con el uso de productos energéticos que comercializa la organización
  - Emisiones asociadas a la generación de la parte de la electricidad comercializada que es comprada a terceros.

Página 2 de 6



- Emisiones asociadas a la extracción, transporte y uso del gas natural suministrado a clientes.
- Categoría 6: Emisiones indirectas de GEI por otras fuentes: No se han identificado emisiones asociadas a esta categoría.

#### Exclusiones

La organización no ha excluido la cuantificación de ninguna categoría de emisiones directas o indirectas relevante.

#### Actividades de mitigación y año base

Se han verificado los cálculos de la reducción de emisiones de  $CO_2e$  asociadas a las actividades de mitigación realizadas en 2022:

- Mejora en la eficiencia energética en actividades administrativas en edificios de Endesa: disminución de la superficie ocupada de oficinas.
- Mejora en la eficiencia energética en actividades administrativas en edificios de Endesa: reducción de generación de residuos.
- Mejora en la eficiencia de la flota de Endesa: electrificación y racionalización de los vehículos de combustión.
- Disminución de las emisiones de los desplazamientos de los empleados a los centros de trabajo, mediante el Plan de Movilidad Eléctrica para empleados y promoción del teletrabajo.

La organización ha establecido el año 2021 como su año base para el análisis de la evolución de su huella de carbono.

#### Importancia relativa

Para la verificación se acordó considerar discrepancias materiales aquellas omisiones, distorsiones o errores que puedan ser cuantificados y resulten en una diferencia mayor al 5% con respecto al total declarado de emisiones.

#### Criterios

Los criterios e información que se han tenido en cuenta para realizar la verificación han sido:

- La Norma ISO 14064-1:2018: Especificación con orientación, a nivel de las organizaciones, para la cuantificación y el informe de las emisiones y remociones de gases de efecto invernadero.
- La norma ISO 14064-3:2019: Especificación con orientación para la validación y verificación de declaraciones sobre gases de efecto invernadero.
- El Reglamento (UE) nº 2018/2066 (modificado por Reglamento (UE) 2020/2085) y los correspondientes requisitos establecidos en la autorización y el plan de seguimiento de las instalaciones sujetas a EU ETS (Emission Trading System)
- Protocolo de Gases de Efecto Invernadero (GHG Protocol)

Al ser la huella de carbono de una empresa integrada verticalmente, desde la generación de la energía eléctrica hasta su comercialización, incluyendo su distribución, se han realizado balances entre los negocios para evitar contabilizar dos veces las mismas emisiones, siguiendo la guía del GHG Protocol:

Página 3 de 6



- Balance entre las emisiones de la categoría 2 por importación de energía eléctrica para compensar las pérdidas en la distribución de electricidad y las emisiones de la categoría 1 en la producción de electricidad.
- Balance entre las emisiones de la categoría 2 por importación de la electricidad consumida y las emisiones de la categoría 1 en la producción de electricidad.

Por último, fue objeto de la verificación el "Informe 2022 de Huella de Carbono de Endesa", de junio de 2023.

AENOR se exime expresamente de cualquier responsabilidad por decisiones, de inversión o de otro tipo, basadas en la presente declaración.

#### Conclusión

Se considera que el Informe de emisiones GEI "Informe 2022 Huella de Carbono ENDESA" de junio de 2023, es conforme con los requisitos de la norma ISO 14064-1:2018.

Basado en lo anterior, y de acuerdo con el nivel de aseguramiento razonable, en nuestra opinión, *la información sobre emisiones reportada en el* "Informe 2022 de Huella de Carbono de Endesa", *de junio de 2023, es una representación fiel de las emisiones de sus actividades.* 

De forma consecuente con esta Declaración a continuación se relacionan los datos de emisiones y remociones finalmente verificados:

Página 4 de 6

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47

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Emisiones y remociones de GEI de ENDESA en el año 2022 (No biogénicas)	t CO <sub>2</sub> e
ategoría 1: Emisiones y remociones directas de GEI	13.608.478
- Emisiones directas a partir de combustión estacionaria en generación térmica	13.327.182
- Emisiones directas a partir de combustión estacionaria en el resto de negocios	30.108
- Emisiones directas de combustión móvil de la flota de vehículos	3.977
- Emisiones directas de combustión móvil del transporte marítimo	127.166
<ul> <li>Emisiones fugitivas directas de SF<sub>6</sub> (redes de distribución y subestaciones)</li> </ul>	15.131
- Emisiones fugitivas directas de CH4 (embalses para la generación hidráulica)	104.205
- Emisiones fugitivas directas de CFCs en sistemas de climatización y contra incendios	708
<ul> <li>Remociones directas por absorción de CO<sub>2</sub> en terrenos con vegetación</li> </ul>	34.238
Categoría 2: Emisiones indirectas de GEI por energía importada*	369.980
t CO2e	t CO2e
(método mercado)	(método localización)
- Emisiones indirectas de GEI por las pérdidas en las redes de distribución de electricidad importada 622.948	366.842
- Emisiones indirectas de GEI por la electricidad importada en edificios y terminales portuarios 2.915	5.857
- Emisiones indirectas de GEI por la electricidad importada en la flota de vehículos eléctricos 223	121
Categoría 3: Emisiones indirectas de GEI por transporte	31.655
- Emisiones causadas por el transporte de subcontratas	21.356
- Emisiones causadas por viajes de negocio	4.006
- Emisiones causadas por el desplazamiento de los empleados desde sus hogares a los centros de trabajo	
Categoría 4: Emisiones indirectas de GEI por productos utilizados por la organización	7.142.684
Emisiones provenientes de los combustibles comprados	5.306.066
- Emisiones provenientes de los productos químicos y consumibles comprados	11.018
Emisiones provenientes de agua comprada	
	1.837
- Emisiones provenientes de la gestión de residuos	130
- Emisiones provenientes de la cadena de suministro	1.823.634
Categoría 5: Emisiones indirectas de GEI asociadas con el uso de productos de la	13.792.688
organización	
<ul> <li>Emisiones de las etapas de extracción, transporte y uso del gas suministrado a clientes</li> </ul>	10.422.663
<ul> <li>Emisiones de las etapas de generación, transporte y distribución de la electricidad comercializada que es comprada a terceros</li> </ul>	3.370.02
Emisiones Directas Totales	13.608.478
Emisiones Indirectas* Totales	21.337.006

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Página 5 de 6



### AENOR Confía

\*Las emisiones indirectas por importación de energía se calculan aplicando los criterios:

- Location-based a las pérdidas producidas durante la distribución de electricidad (aplicando el factor de emisión en la generación nacional)".
- Market-based al consumo de electricidad (aplicando el factor de emisión del mix eléctrico nacional de las comercializadoras sin GdO's) para identificar la reducción de emisiones.

Emisiones de GEI de ENDESA en el año 2022 (Biogénicas)		t CO <sub>2</sub> e
Emisiones directas de GEI		1.303
-	Emisiones por el consumo de combustibles en fuentes estacionarias	1.255
-	Emisiones por el consumo de combustibles en fuentes móviles	48
Emisi	ones indirectas de GEI por transporte	109
-	Asociadas al consumo de combustible en vehículos de subcontratas	109
	Emisiones Biogénicas Totales (t CO <sub>2</sub> e):	1.412

REDUCCIONES (ACTIVIDADES DE MITIGACIÓN Y EMISIONES CUANTIFICADAS)	t CO <sub>2</sub> e
EMISIONES DIRECTAS DE GEI	
Reducción de emisiones por combustión móvil: aumento del porcentaje de vehículos eléctricos en la flota de vehículos	61
EMISIONES INDIRECTAS DE GEI	
Reducción de emisiones por importación de energía: disminución del consumo de electricidad por la disminución de la superficie ocupada de oficinas	65
Reducción de emisiones por gestión de residuos: reducción de generación de residuos de papel y cartón	24
Reducción de emisiones de los vehículos de los empleados por la ayuda para la electrificación y racionalización de los vehículos de combustión (Programa CLIMA).	102
Reducción de emisiones en los desplazamientos de los empleados a los centros de trabajo, mediante el Plan de Movilidad Eléctrica para empleados y promoción del teletrabajo.	3.170
Emisiones reducidas Totales:	3.422

Madrid, 28 de junio de 2023

D. Rafael García Meiro Consejero Delegado / CEO

Página 6 de 6

Endesa Ribera del Loire, 60 28042 Madrid Telephone: 91 209 19 14 endesa.com

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