Telefónica

Climate Action Plan

July 2023

Acronyms

B2B: Business-to-Business

B2C: Business-to-Consumer

CapEx: Capital expenditure

CDP: Carbon Disclosure Project

CO_2: Carbon dioxide

COP: Conference of the Parts

DJSI: Dow Jones Sustainability Index

EDF: Environmental Defense Fund

EGDC: European Green Digital Coalition

ESG: Environmental, Social and Governance

ETNO: European Telecommunication Network Operators Association

FAO: Food and Agriculture Organization of the United Nations

FSC: Forest Stewardship Council

GHG: Greenhouse Gases

GWP: Global Warming Potential

ICTs: Information and Communication Technologies

IEA: International Energy Agency

IFRS: International Financial Reporting Standards

IoT: Internet of Things

IPCC: Intergovernmental Panel on Climate Change

ITU: International Telecommunications Union

JAC: Joint Alliance for CSR

KPI: Key Performance Indicator

LCA: Life Cycle Analysis

NGFS: Network for Greening the Financial System

OpEx: Operational expenditure

PPAs: Long-term power purchase agreements

RCP: Representative Concentration Pathway

REC: Renewable Energy Certificates

SBTi: Science Based Targets initiative

SDGs: Sustainable Development Goals

SMEs: Small and medium-sized enterprises

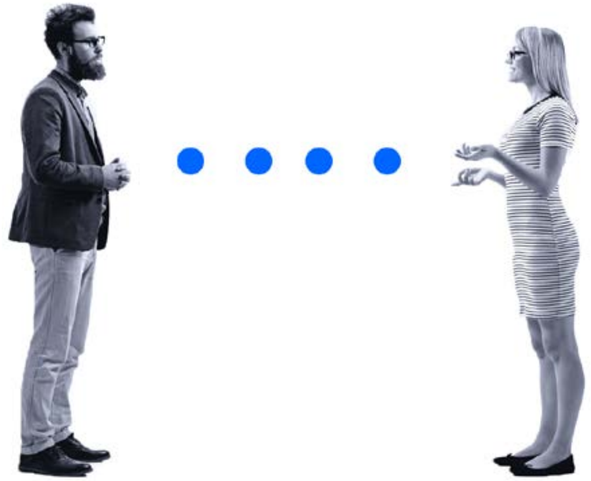
TCFD: Task Force on Climate-Related Financial Disclosure

TCO: Total Cost of Ownership

TSVCM: Taskforce on Scaling Voluntary Carbon Markets

WRI: World Resources Institute

WWF: World Wildlife Fund



Content

Introduction

Introduction

Climate change and digitalisation

> Our Energy and Climate Change Strategy is focused on mitigating our impact, seizing opportunities and adapting by appropriate management of climate risks.

There is no doubt that climate change is one of the major challenges we face today as a society. The international scientific community warns in the sixth report of the Intergovernmental Panel on Climate Change (IPCC) that the global average temperature increased by 1.09°C between 2011 and 2020 compared to the period of 1850-1900, and presents an even more critical situation: under the five climate scenarios analysed, the temperature increase will exceed 1.5°C by the middle of this century, only remaining below that figure in 2100 in the most optimistic scenario (with relatively low future greenhouse gas emissions) and reaching an increase of 4.4°C in the most pessimistic scenario (with relatively high future greenhouse gas emissions scenario). In this regard, the report stresses the need to work together and without delay to achieve net zero emissions in order to limit global warming to 1.5°C and avoid catastrophic and irreversible consequences.

The IPCC defines **net zero emissions** as the point where anthropogenic emissions of greenhouse gases to the atmosphere are balanced by anthropogenic removals over a specified period. Aligned with the IPCC, the Net-Zero corporate standard[1] of the Science Based Targets initiative (SBTi) considers that **achieving net zero emissions entails both achieving a scale of greenhouse gas emissions reductions consistent with the 1.5°C scenario** of the Paris Agreement, as well as **neutralising any residual emissions** by removing or absorbing CO_2 from the atmosphere and permanently storing it through technological initiatives or nature-based solutions.

The current situation triggered by the pandemic has highlighted the importance of connectivity and digitalisation for maintaining a work-life balance and driving business growth through innovation, but it has also proven **that digital technologies are essential tools for achieving the targets set out in the Sustainable Development Goals (SDGs), the European Green Deal and the Paris Agreement,** given than digital solutions make it possible, for example, to replace business travel with video conferencing, to optimise the use of resources in infrastructure, cities, agriculture and industry, and to drive the transition towards a resilient, circular and GHG-neutral economy.

The climate-related regulatory developments reinforce the accountability of companies, which will have to include transparent and reliable information in their management report to understand the Company's impact on sustainability issues. The ESRS E1 draft of the recently adopted Corporate Sustainability Reporting Directive (CSRD), the EU Corporate Sustainability Due Diligence Directive (CSDDD) or the US SEC's draft "The Enhancement and Standardization of Climate-Related Disclosures for Investors", define as mandatory the following disclosure requirements: transition plan for climate change mitigation, climate-related risks and opportunities management, emission reduction targets or scope 1, 2 and 3 GHG emissions.

Telefónica is fully aware of its role as a driver of change in the economy and in society through digitalisation and big data and Internet of Things (IoT) services as solutions which help to reduce customer emissions. However, Telefónica must first lead by example and reduce both its direct operation emissions and its value chain emissions.

For this reason, in 2020, recognising the urgency of reducing CO_2 emissions, Telefónica ramped up its climate ambition and announced new Energy and Climate Change targets for 2025, 2030 and 2040, aligned with the 1.5°C scenario of the Paris Agreement and validated by the SBTi initiative. In **2022**, following the release of SBTi Corporate Net-Zero standard, Telefónica reinforced this commitment by becoming the first **telecommunications operator in the world to have its 2040 net zero emissions target validated** by the initiative.

To guarantee compliance with its short-, medium- and long-term objectives, **the Climate Action Plan has been integrated into Telefónica's governance model** and includes the GHG emissions accounting, the implementation of specific actions with verifiable indicators and the definition of oversight and accountability responsibilities within the organisation. The plan not only defines actions in Telefónica's operational model, but also in its business and financial strategy and in its commitment to customers, the supply chain and society as a whole. The ultimate goal is for Telefónica to prosper in a world in which the average global temperature does not exceed 1.5°C above pre-industrial levels and in which the health of natural ecosystems is restored.

1 Available at the following link: Net-Zero-Standard (sciencebasedtargets.org)

Metrics and targets

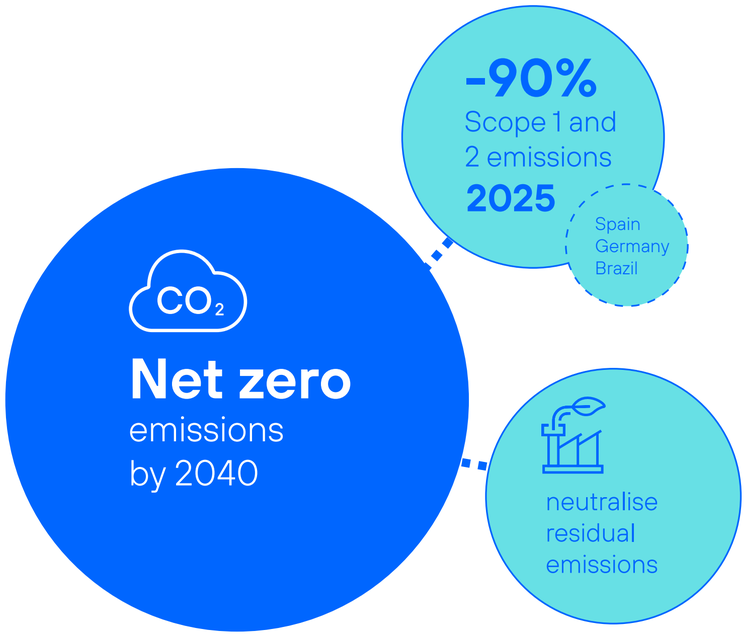
Metrics and targets

Our targets

Vision

Telefónica's ambition is to **achieve net zero emissions by 2040 globally**, including value chain emissions.

In addition, interim targets are set such as a 90% reduction in Scope 1 and 2 emissions from operations in Spain, Germany, and Brazil by 2025 and neutralising the residual emissions of these scopes through nature-based solutions.



Strategic plans

Due to the transversal and global nature of climate change, it is integrated into Telefónica's management main aspects, such as corporate governance, strategy, risks and targets. Telefónica has set ambitious targets and **strategic levers** to be aligned with a 1.5°C pathway and achieve net zero emissions:

- **More efficient transformation of telecommunications networks**
- **Renewable Energy Plan**
- **Energy Efficiency Plan**
- **Carbon pricing**
- **Emission Neutralisation Plan**
- **Actions to decarbonise the value chain**
- **Portfolio of products and services with environmental benefits**
- **Mainstreaming climate change into organisational culture and partnerships with industry associations and other institutions**

Metrics and targets

Our targets

Specific targets

On the road to achieving **net zero** by 2040, Telefónica's decarbonisation plan considers short-, medium- and long-term targets that have been validated by the SBTi initiative[2]:

> Telefónica was the first telco with net zero targets validated by SBTi.

	Energy efficiency	Renewable energy	Scope 1 and 2 emissions	Value chain emissions (Scope 3)	Customers' emissions avoided through digitalisation	Neutralisation
Short-term 2025	Improve energy consumption per unit of traffic by **90%**, compared to 2015	Continue to consume electricity with **100%** renewable origin in the main markets	**- 90%** in main markets compared to 2015	**- 39%** globally, compared to 2016	Help customers to **reduce their CO_2 emissions** through connectivity and Eco Smart services[3]	Neutralise unabated **Scope 1 and 2** emissions in main markets annually **(10%)**
Medium-term 2030		**100%** of electricity from renewable sources globally[4]	**- 80%** globally compared to 2015	**- 56%** globally, compared to 2016		
Long-term 2040			Reduce total emissions by **90%**			Neutralise residual emissions annually **(10%)**

Net zero emissions

2 These are absolute reduction targets compared to the base year, which is 2015 for Scope 1 and 2 emissions and 2016 for Scope 3 emissions.

3 Telefónica is currently working on the definition of a new long-term objective aligned with the methodological recommendations being developed by the European Green Digital Coalition (EGDC).

4 Refers to electricity consumption in own facilities.

Metrics and targets

Our targets

Monitoring of targets

In 2022, Telefónica Group's emissions (scopes 1 and 2) decreased by 54% and 85%, respectively, compared to 2015 emissions. Combined, operational emissions decreased by 80%, representing 1,458 $ktCO_2e$ less emitted to the atmosphere. The target has therefore been achieved 8 years in advance. In addition, emissions from the value chain (scope 3) decreased by 32% in 2022 compared to 2016, equivalent to the emission of 925 $ktCO_2e$ less in 6 years.

The figure on this page shows Telefónica's performance against the defined targets, how the Group is working towards meeting some of them within the established deadlines and how others have already been achieved; that is why targets are currently being redefined.

	Performance		Target	Progress[5]
	2021	2022		
Reduction of total emissions	44%	51%	90% in 2040	57%
Reduction of **Scope 1 and 2** emissions	70%	80%	80% in 2030	100%
Reduction of **Scope 3** emissions	27%	32%	56% in 2030	57%
Reduction of **Scope 1 and 2** emissions **(key markets[6])**	89%	94%	90% in 2025	104%
Offsetting of residual **emissions from Scope 1 and 2 (key markets)**	56%	61%	100% in 2025	61%
Renewable electricity in own facilities	79%	82%	100% in 2030	82%
Improved energy consumption per unit of traffic	86%	87%	90% in 2025	97%

5 2022 performance versus the target

6 Key markets mean operations in Germany, Brazil and Spain.

Metrics and targets

Our emissions

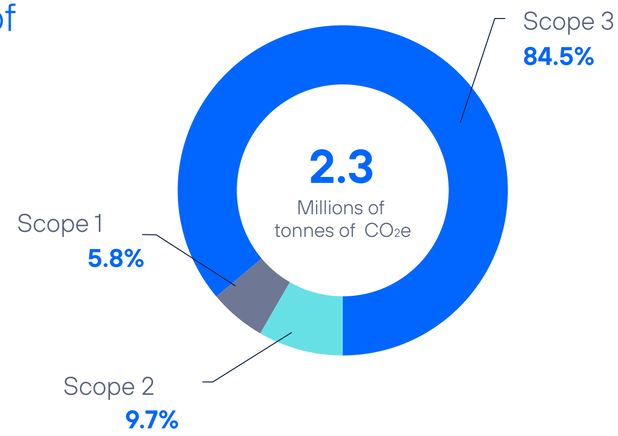
Telefónica annually calculates the carbon footprint of its operations (Scopes 1 and 2) and its value chain (Scope 3) and draws up an emissions inventory **following the methodological guidelines of the GHG Protocol,** based on the principles of relevance, completeness, consistency, transparency and accuracy. For further details, please consult **»the annual consolidated management report**, available on Telefónica's website[7].

The information included in Telefónica's inventory of Greenhouse Gas Emissions (GHG[7], hereinafter) corresponds to the entire reporting perimeter of the Company's non-financial indicators. The facilities included in the inventory are base stations, fixed and mobile telephone exchanges, data centres, docking stations, points of presence (POPs) and offices, warehouses, etc.

The emissions inventory is **verified by an independent third party** in order to check the completeness of the calculation process and to increase the credibility and transparency of the reported data. In addition, the emissions avoided, by the renewable energy consumption and the energy efficiency measures implemented, are calculated each year.

In **2022**, Telefónica Group emitted **2.3 million tCO_2e,** equivalent to the annual emissions of around **300,000 households**.

2022 GHG emissions of Telefónica, by scope



Scope 1
131,809 tCO_2e

Telefónica's direct emissions represent 6% of total emissions and come from activities that are controlled by the organisation. This includes both emissions from fuel consumption in stationary sources and in the vehicle fleet, as well as fugitive emissions of fluorinated gases, mainly used in air-conditioning equipment.

Scope 2
221,537 tCO_2e

Indirect emissions from the generation of purchased electricity account for nearly 10% of total emissions[8]. 95% of the energy consumption is electricity consumption, so for Telefónica it is essential to make efficient use of this resource.

Scope 3
1,930,051 tCO_2e

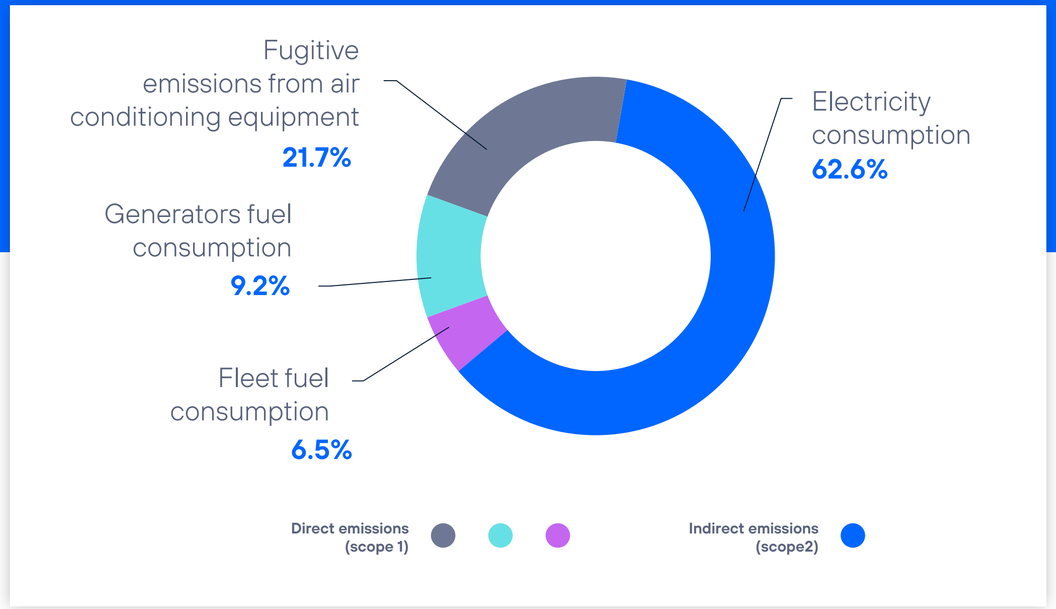
84.5% of the Group's total emissions are indirect emissions of Telefónica's value chain, both upstream and downstream of the organisation, which are a consequence of its activity, but occur from sources not owned or controlled by the Company. Given the relevance of Scope 3 for Telefónica's carbon footprint and aiming at improving the quality of the data and the calculation methodology, in 2021 the telco carried out a new screening of the 15 Scope 3 categories according to the GHG Protocol, identifying as material those categories representing over 5% of the total Scope 3 emissions. The five Scope 3 categories that have proved material for Telefónica represent 91% of its total Scope 3 emissions. The other ten categories are excluded from Telefónica's GHG inventory, either because they are not applicable or are reported in other scopes or because they account for less than 5% of scope 3 emissions. The exclusions of 6 categories from the GHG inventory, in total, do not exceed 10% of total scope 3 emissions, as defined by the SBTi Net-Zero corporate standard.

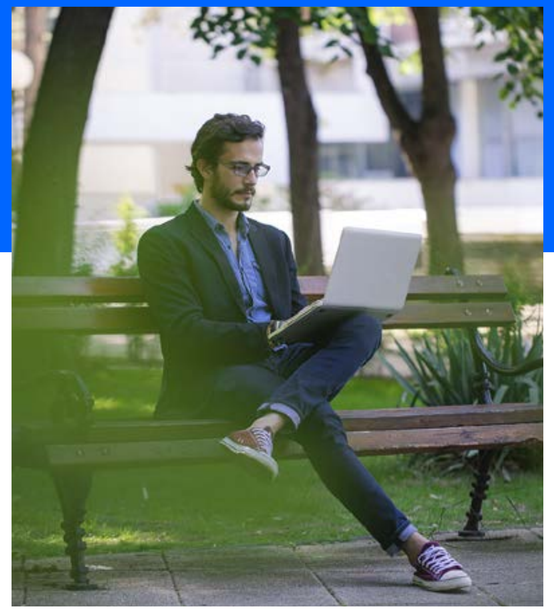
7 According to the IPCC glossary, Greenhouse Gases are gases in the atmosphere that absorb and emit radiation at certain wavelengths. This causes an increase in temperature, known as the greenhouse effect. The main GHGs are carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O), but there are other GHGs, such as sulphur hexafluoride (SF_6), hydrofluorocarbons (HFC), and perfluorocarbons (PFCs). The unit of emission measurement for the different GHGs is tCO_2e, which is obtained by multiplying the emissions of the specific GHG by its Global Warming Potential (GWP).

8 Telefónica calculates Scope 2 emissions according to the market-based calculation method, whereby any contractual instruments between energy generators and consumers, such as renewable energy certificates or guarantee of origin certificates, can be reflected. Using the location-based method, which uses the average power generation emission factors for the organisation's locations, GHG emissions in 2022 would have amounted to 1,002,189 tCO_2e.

Metrics and targets

Our emissions





Taking a closer look at emissions

Emissions from operations (Scopes 1 and 2)

In 2022, Telefónica emitted a total of 353,346 tCO_2e from its direct operations, representing 15.5% of its total carbon footprint. **Electricity consumption is the main source of emissions** (62.6%), followed by fugitive emissions from air conditioning equipment (21.7%). Finally, fuel consumption in generators and vehicles accounts for 15.7%.

The breakdown of Scope 1 and 2 emissions in the main Group companies is as follows:

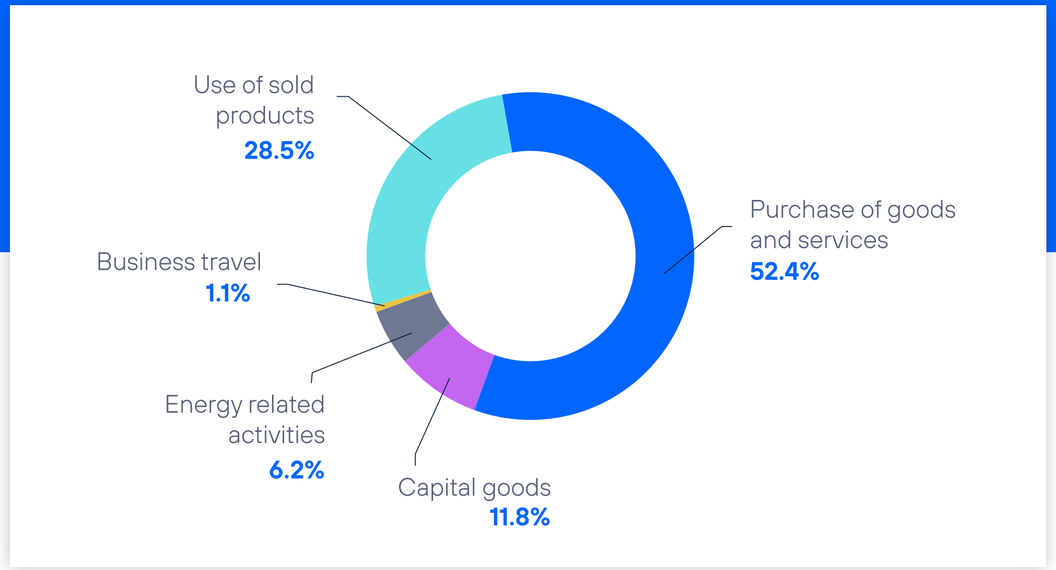
EMISSIONS (tCO_2e)	T. Germany	T. Brazil	T. Spain	T. Argentina	T. Chile	T. Colombia	T. Ecuador	T. Mexico	T. Peru	T. Uruguay	T. Venezuela	Telxius	Other companies[1]	TOTAL
Scope 1	5,520	32,190	20,679	26,995	9,736	11,040	1,134	5,408	3,621	408	10,817	1,289	2,972	**131,809**
Scope 2 (market)	261	0	0	121,847	0	6,846	6,069	47,927	0	2,462	27,281	3,922	4,922	**221,537**
Scopes 1+2 (market)	5,781	32,190	20,679	148,842	9,736	17,886	7,203	53,335	3,621	2,870	38,098	5,211	7,894	**353,346**

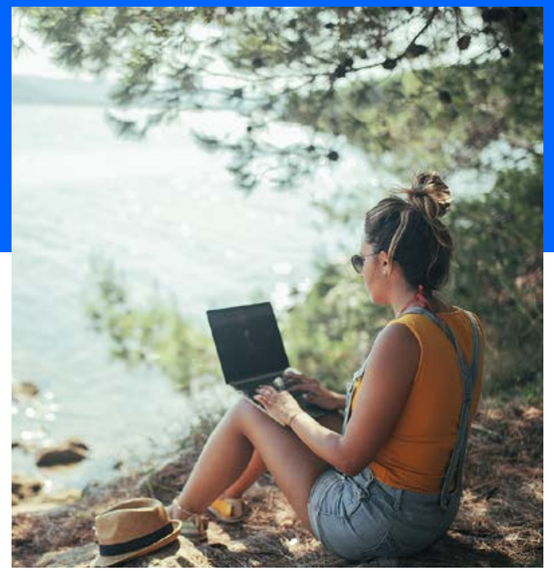
[1] "Other companies" consolidates the emissions of the following companies: Telefónica GIES, ACENS, Media Networks Latin America Peru, Internet para todos - IPT Peru

Telefónica is working on various initiatives to reduce its own emissions

Metrics and targets

Our emissions





Taking a closer look at emissions

Value chain emissions (Scope 3)

Emissions of the supply chain **(purchase of products and services and capital goods) are the main source of emissions** in Telefónica's value chain, accounting for 64.2% of total Scope 3 emissions, followed by the **use of sold products** by customers, which accounts for 28.5%.

Emissions associated with energy-related activities account for 6.2% of Scope 3 emissions.

Emissions from business travel, although representing only 1.1%, are reported because they improve comparability with the sector.

EMISSIONS (tCO_2e)	T. Germany	T. Brazil	T. Spain	T. Argentina	T. Chile	T. Colombia	T. Ecuador	T. Mexico	T. Peru	T. Uruguay	T. Venezuela	Telxius	Other companies[1]	TOTAL
Purchase of goods and services	160,363	177,770	242,727	82,152	72,408	75,495	9,053	79,860	67,077	7,764	1,123	2,302	34,201	**1,012,294**
Capital goods	58,171	52,933	47,489	7,518	21,498	11,649	2,503	2,234	7,376	1,293	4,194	3,211	5,921	**225,991**
Energy related activities	1,330	4,979	2,242	61,029	1,196	3,875	3,076	17,601	474	1,778	19,258	1,320	2,037	**120,194**
Business travel	1,985	3,352	2,959	1,178	1,407	451	206	534	624	149	166	1,715	6,423	**21,149**
Use of sold products	161,435	42,547	120,813	54,459	66,744	37,532	834	8,748	56,332	890	89	0	0	**550,423**
Total Scope 3	383,284	281,581	416,230	206,336	163,252	129,003	15,672	108,978	131,882	11,874	24,829	8,548	48,582	**1,930,051**

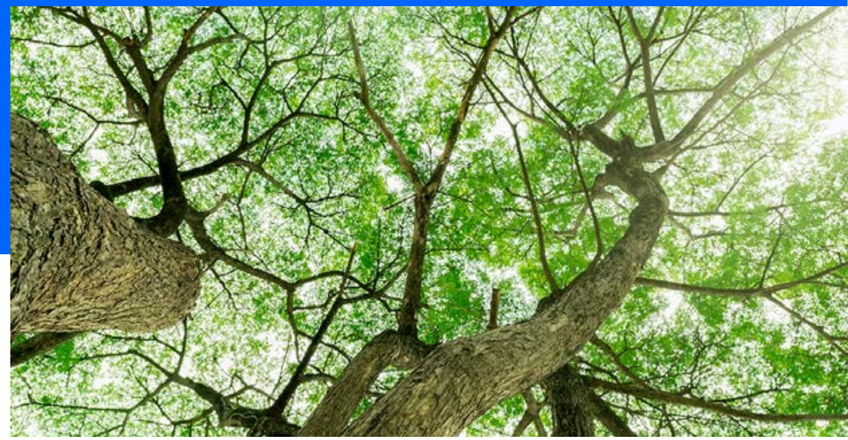
[1]) "Other companies" consolidates the emissions of the following companies: Telefónica GIES, ACENS, Media Networks Latin America Peru, Internet para todos - IPT Peru

Telefónica has been implementing collaborative actions and projects to reduce emissions in the value chain for several years now

Metrics and targets

Our emissions

> Since 2016, Telefónica has been preparing a complete, accurate and transparent GHG emissions inventory, which considers the 3 scopes and is the key element of our climate strategy.



Historical emissions

Our scopes 1, 2 and 3 since the base year

Since 2015, the Company **has decreased 51% of its total emissions** thanks to the implementation of specific Scope 1, 2 and 3 emission reduction actions.

The **GHG emissions evolution** can be seen below:

EVOLUTION EMISSIONS	2015	2016	2017	2018	2019	2020	2021	2022
Scope 1	286,201	281,517	287,514	245,282	229,296	207,872	183,231	131,809
Scope 2	1,524,954	1,047,751	973,792	879,765	657,024	467,587	353,506	221,537
Scope 3	2,855,544[1]	2,855,544[2]	2,803,601[2]	2,751,659	2,699,717	2,146,226	2,072,159	1,930,051
Total	**4,666,699**	**4,184,812**	**4,064,907**	**3,876,706**	**3,586,037**	**2,821,685**	**2,608,896**	**2,283,397**

[1] Telefónica started to calculate its Scope 3 emissions in 2016 financial year. Thus, 2016 value has been assumed for 2015, so that the organisation's total footprint (Scopes 1, 2 and 3) can be calculated for the purposes of its evolution over time.

[2] In 2021, Telefónica carried out a new screening of the 15 Scope 3 categories under the GHG Protocol and implemented methodological improvements, which led it to recalculate and verify the emissions of the base year and the most recent years (2019-2021), without recalculating the Scope 3 emissions of the 2017 and 2018 financial years. The values shown are an extrapolation based on recalculated and verified emissions for 2016, 2019, 2020, 2021 and 2022.En 2021, s de 2016, 2019, 2020, 2021 y 2022.

Risks and opportunities

Risks and opportunities

Identified R&O

> According to the IPCC´s sixth report, ocean warming over the last century has been the greatest since the last interglacial period and sea level rise has been the fastest in the last 3,000 years.

The IPCC's Sixth Assessment Report[9] states that climate change will cause an increase in temperatures and extreme weather events, affecting ecosystems, public health and the global economy. According to the report, ocean warming over the last century has been the greatest since the last interglacial period and sea level rise has been the fastest in the last 3,000 years.

The increased frequency and severity of extreme events can have a major impact on various economy sectors and specifically on those organisations that are not prepared for the threats that climate change brings upon their business model, assets and infrastructure.

Due to the already irreversible effects of climate change, companies are assessing the risks and opportunities that climate change creates for their business. The Task Force on Climate-related Financial Disclosure (TCFD)[10] recommendations are currently the most internationally recognised methodology for analysing climate-related risks and opportunities.

Telefónica analyses the risks and opportunities of climate change in accordance with the recommendations of the TCFD. The analysis helps to build climate change into long-term business decisions, seeking to minimise risks and maximise opportunities.

The detailed assessment has focused on the operations in Spain, Germany and Brazil, due to their strategic relevance and because they represent more than 70%[11] of the revenue volume.

The fixed and mobile network business lines have been analysed, including more than 100,000 physical assets between telecommunication towers, data centres, switch centres, and programming and broadcasting assets related to television, as they are the most representative of the Company's activity and those where climate change may have the greatest impact. These results have been extrapolated to the rest of the operations to provide an overall quantitative value of the impact of the potential risks and opportunities associated with climate change.

The **physical risks** have been assessed taking into consideration projections of climate variables for two different climate prediction or CO_2 concentration scenarios (Representative Concentration Pathway - RCP) defined by the IPCC, for the time horizons 2030, 2040 and 2050.

- **> RCP2.6 scenario:** aligned with the Paris Agreement, where the temperature increase by the end of the century does not exceed 2°C compared to pre-industrial levels.
- **> RCP8.5 scenario:** business-as-usual scenario, where the temperature increase at the end of the century is around 4°C.

9 The full report, as well as the technical summary and the summary for policymakers are available at: https://www.ipcc.ch/report/sixth-assessment-report-working-group-ii/

10 The TCFD is a working group created by the Financial Stability Board, which establishes a framework with recommendations for the identification, assessment and reporting of climate-related risks and opportunities, enabling stakeholders, especially shareholders, insurers, and investors, to understand companies' exposure to climate risks and opportunities linked to business strategy and risk management. The report of recommendations on climate-related financial disclosures is available on the TCFD website: https://www.fsb-tcfd.org/recommendations/

11 At the end of December 2022, revenues from Spain, Germany and Brazil accounted for 74% of the Telefónica Group's total revenues.

Risks and opportunities

Identified R&O

Considering the information on which the quantitative and qualitative analysis is based, Telefónica estimates the likelihood of occurrence of each of the identified physical risks, their possible impacts and their economic valuation. The result is an expected level of exposure for each type of risk in each of the scenarios analysed.

In the RCP2.6 scenario, the risks relate mainly to transitioning to a decarbonised economy, e.g., from higher electricity prices or tighter measures to limit GHG emissions. In contrast, in the RCP8.5 scenario, the most relevant risks are those associated with one-off changes in climate variables (increase of extreme weather events such as floods) and chronic (temperature and precipitation variability).

Quantitative and qualitative analysis

The quantitative and qualitative analysis of **risks and opportunities** is based on the following information:

Projection of climate variables based on RCP2.6 and 8.5 scenarios

such as temperature increase, rainfall, or number of days with extreme temperatures.

Projection of non-climate variables based on the IEA and NGFS NZE 2050 scenarios

such as the price of electricity or the price of CO_2 emissions.

Projection of variables not based on scenarios

available at Telefónica or provided by external sources, such as the increase in IoT connections or the future forecast of Telefónica's GHG emissions.

Telefónica's physical assets

with their respective geolocation and economic valuation, which are cross-referenced with scenario-based projections of climate variables.

Analysis of Telefónica's historical data

such as GHG emissions, electricity consumption and average electricity prices.

Risks and opportunities

Identified R&O

> The identified risks and opportunities, their impacts and their financial assessment, are the origin of the climate strategy defined by Telefónica.

Meanwhile, to assess **transition risks and opportunities**, we have used the **IEA NZE 2050** scenario has been used. This scenario, aligned with the Paris Agreement, describes the efforts needed to reduce GHGs and reach net zero emissions by 2050 globally. This scenario has been complemented with information from the equivalent **NGFS**[12], scenario in order to provide a more comprehensive analysis of Telefónica's exposure to climate change. The analysis under this scenario considers different variables established in the model, such as the future carbon price and the pricing of electricity.

The result of the analysis shows that the market transition risk is the most significant one due to the high consumption of electricity that Telefónica needs for its operations, so that an increase in the price of electricity due to higher prices of energy sources would have a major impact on the total expenditure of the business group.

Given the characteristics of Telefónica's business, and its ambitious climate strategy, the scenarios analysed would primarily involve significant opportunities, mainly associated with a growth in digital solutions to help customers decarbonise their activity. The results of the quantitative analysis show that the economic benefits associated with the climate-related opportunities are almost four times higher than the physical and transition risks.

The identification of the risks and opportunities linked to climate risk has been the **starting point for the definition of Telefónica's decarbonisation strategy,** which is articulated in models with specific actions for addressing the main risks and opportunities.

Scenario	Description	Application
RCP2.6	Aligned with **the Paris Agreement**, where the temperature increase by the end of the century does not exceed **2°C** compared to pre-industrial levels.	**Physical risk analysis.**
RCP8.5	Business-as-usual scenario, where the temperature increase at the end of the century is around **4°C**.	**Physical risk analysis.**
IEA NZE 2050	Scenario aligned with **the Paris Agreement**, which describes the efforts needed to reduce GHGs and reach **net zero emissions by 2050 globally.**	**Transition risk and opportunity analysis.**

12 Network for Greening the Financial System (NGFS) is a group of central banks and supervisors sharing best practices and contributing to the development of environmental and climate risk management in the financial sector.

Risks and opportunities

Identified R&O

The **main physical and transition risks identified by Telefónica** are shown below, along with their financial impact and their management strategy, considered in some of the models of this Climate Action Plan:

Risks

Physical risks

Chronic risks:

Increased electricity consumption in cooling associated with rising global temperatures.

Possible increase in electricity prices during periods of drought, especially in countries dependent on hydro generation.

Acute risks:

Business continuity risk and increased cost of replacement of damaged assets due to increased occurrence of extreme weather events, , such as floods, storms, and fires.

Transition risks

Policy and legal risks: Price increases for certain products and services due to direct or indirect CO_2 taxes or charges (energy, transport, etc.).

Market risks: Increase in energy OpEx due to higher CO_2 prices.

Reputation risks: Increasing demands from stakeholders (analysts, investors, customers) and increasing costs of CO_2 offsetting.

Financial impact

Increase in operating costs.

Increase in operating costs.

Decrease in revenues due to service unavailability.

Increase in operating costs, due to application of taxes.

Increase in operating costs.

Increase in operating costs.

Management of the risk/opportunity

To manage chronic physical risks, Telefónica has an Energy Efficiency Plan aimed at reducing electricity consumption and a Renewable Energy Plan, which allows Telefónica to be less dependent on fluctuations in electricity prices thanks to long-term power purchase agreements (PPAs).

Specifically, the organisation reduces its electricity consumption, associated with air conditioning, through energy efficiency projects (free cooling, liquid cooling, modernisation of equipment, etc.) and technical specifications for network equipment so that it can operate at higher temperatures.

OPERATIONAL MODEL

To manage this risk, Telefónica has a Global Business Continuity regulation, adapted and implemented in the countries in which it operates, which guarantees the maximum resilience of its operations in the event of any possible interruption. Likewise, the Company's risk financing model considers the insurance of the possible impact on assets, as well as the unavailability of services due to the occurrence of extreme weather events.

ADAPTATION PLAN

Given that the risk of increased regulatory requirements related to climate change may affect Telefónica's supply chain, compromising supply, the organisation develops collaborative projects with its suppliers and other companies in the telecommunications sector that share the challenge of moving to a low-carbon economy.

VALUE CHAIN MODEL

To manage this risk and reduce Telefónica's exposure to rising energy prices, we implemented: the Energy Efficiency Plan, the Renewable Energy Plan and internal carbon price.

OPERATIONAL MODEL

To manage the risk of a reduction in the perceived value of the organisation, in the event that it is unable to meet the new climate change expectations of its stakeholders or in the event that one of its suppliers fails to comply with environmental legislation, Telefónica integrates aspects of climate change and sustainability, as a robust part of its organisational culture, through various lines of action, such as transparent communication, the commitment of all levels of the organisation and the establishment of alliances with the most relevant stakeholders for the Company.

GOVERNANCE AND ADVOCACY MODEL

Risks and opportunities

Identified R&O

The **main opportunities for Telefónica** linked to climate change, their financial impact and the way the organisation manages them are detailed below:

Opportunities

Opportunities	Financial impact	Management of the risk/opportunity
Resource efficiency: Cost optimisation in networks and operations through better energy management.	**Reduction in operating costs.**	The Energy Efficiency Plan gives Telefónica a major competitive advantage in the sector, as it increases the efficiency and resilience of its networks and manages to decouple business growth from energy consumption. Since 2015, the organisation's energy consumption has decreased slightly, despite the exponential growth in traffic on its networks. OPERATIONAL MODEL
Products and services: A low-carbon economy represents increased business growth, through the sale of digital products and services that reduce the carbon emissions of Telefónica's customers.	**Increased revenues as a result of higher demand for connectivity, products and services that contribute to the decarbonisation of the economy.**	Digital services based on broadband connectivity, IoT, cloud and big data have the potential to optimise Telefónica's customers' resource consumption and thus reduce their impact on the environment. Telefónica Tech business unit drives the growth of digital services to achieve greater scale and integrate leading digital solutions to help Telefónica's B2B customers decarbonise. COMMERCIAL MODEL
Energy sources: Reduced exposure to energy price volatility and savings in energy OpEx, due to the use of renewable energies as opposed to conventional energy.	**Reduction of operating costs.**	One of Telefónica's strategic objectives is to commit to renewable energies, achieving 100% of electricity consumption from renewable sources by 2030. The Renewable Energy Plan includes all types of solutions (self-generation, purchase of renewable energy with guarantees of origin, distributed generation and long-term PPAs) which have led to considerable savings in the cost of electricity for Telefónica. OPERATIONAL MODEL
New finance sources: Access to new and more competitive sources of sustainable finance, such as green bonds, which mean savings in interest rates compared to traditional financing.	**Reduction of financing costs.** **Broadening the investor base and types of investors.**	Telefónica aims to take advantage of the financial opportunities offered by the transition to a decarbonised economy. It therefore uses green bonds and hybrid green and sustainable instruments to finance projects with a positive environmental impact as defined in its sustainable finance framework. In addition, Telefónica uses other sustainable bank financing instruments, such as loans and credits linked to sustainability targets, which allow it to make progress in achieving corporate targets linked to the reduction of emissions. FINANCIAL MODEL

Risks and opportunities

Identified R&O

Financial impact of climate-related risks and opportunities

Risks and opportunities

Risk management and Adaptation Plan

The risks associated with climate change are controlled and coordinated under Telefónica's Global Risk Management Model, in accordance with the precautionary principle. In order to mitigate the risks materialisation, Telefónica has various all-risk insurance international programmes at local and global level, covering material losses, damage to assets and loss of revenue and/or customers.

Telefónica's climate strategy also includes a Climate Change Adaptation Plan (hereafter the Adaptation Plan), with several areas of action that intend to limit its exposure to both physical risks and those risks arising from the transition to a low-carbon economy. It also works towards increasing the Company's resilience to climate change, so that it can continue to provide its services in an unfavourable climate context.

The Adaptation Plan considers the climate risks identified in the climate risk analysis, which Telefónica conducts annually based on the TCFD recommendations. The main measures contained in the Adaptation Plan, which is applicable to 100% of Telefónica's operations, are as follows:

Business continuity plans in the event of climate disasters which, according to Telefónica's climate vulnerability study, will occur mainly in certain regions of Latin America (especially Brazil and Peru, followed by Colombia and Chile), and could affect the Company's infrastructure elements that support fixed and mobile connectivity in these countries.

To protect Telefónica's network assets, the Corporate Risks and Insurance Division conducts modelling for all locations in all countries where it operates, which it cross-checks with historical information on extreme weather events, using the relevant IT systems (RMS, EQCat, etc.). As a result of this process, the probabilities of potential losses under different scenarios and return periods are determined. The analysis of this data helps to define the most efficient structure to determine the limits and retentions of the property damage insurance programme and the loss of benefits.

To manage the climate-related physical risks, Telefónica has a Global Business Continuity regulation, included in the Adaptation Plan, which prescribes preventive risk management, ensuring the maximum resilience of the Company's operations in the event of any possible interruption.

Each country's business continuity plan sets out how to restore essential functions that may be disrupted. In addition, the global management system, which manages high-impact threats, has a Global Crisis Committee, which has the support of specialists for each type of incident (e.g., natural disasters). The Committee acts in 4 phases: first, it warns of the crisis at local level, next it assesses the impact at global level, then it develops and implements procedures for action and finally it prepares for returning to normal after the crisis.

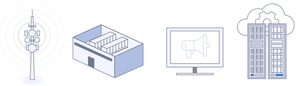
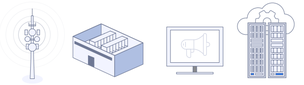
Energy Efficiency Plan, which promotes projects to reduce energy consumption. This plan includes activities aimed at reducing refrigeration consumption, such as free cooling, as well as the upgrading of equipment with higher efficiency, the analysis of obsolescence, legacy network shutdowns, infrastructure compacting, implementation of Power Saving Features (PSFs) or the inclusion of technical specifications in the procurement of network equipment so that it can operate at higher temperatures. In this way, it will be possible to lower power consumption and reduce the equipment failure rate, which are expected to increase in the future as a result of the average increase in temperatures and the increased likelihood of heat waves. In addition, consolidation and compacting projects are being carried out, as well as projects developed under a new disruptive business model called Energy Savings as a Service (ESaaS), which is based on an agreement with a specialised supplier that designs the energy solution, invests, operates, maintains and ensures the savings are made. This service, which covers different initiatives such as the replacement of cooling equipment, lighting systems and electricity generation, is paid for by sharing the savings resulting from the measures implemented.

Risks and opportunities

Risk management and Adaptation Plan

Renewable Energy Plan, focused on progressively increasing the signing of long-term power purchase agreements (PPAs) and self-generation, aiming at reaching the target of using 100% renewable electricity by 2030. This will help to reduce progressively the purchase of renewable energy certificates (REC) and to increase savings in electricity OpEx, as well as making the assets more resilient, as they are less dependent on conventional energy. The Plan reduces the risk associated with growing energy costs from fossil fuels by increasing self-generated electricity projects. In addition, the signing of PPAs will ensure a supply of renewable energy at stable prices, not affected by market volatility.

The **Adaptation Plan** proposes the following adaptation measures for each of the assets analysed:

Pillar of the Adaptation Plan	Related physical risk	Main measures implemented	Associated assets
Business continuity plan	• Extreme weather events	✓ Inventory of assets and business processes to determine the probabilities of possible losses in different scenarios and payback periods. ✓ Business continuity plans by country, with definition of the process for restoring essential functions in the event of interruption. ✓ Crisis management. ✓ Implementation of smart metering systems. ✓ Automatic systems, allowing geographical identification of assets. ✓ Services to monitor the operation of equipment/assets, optimising maintenance, avoiding breakdowns. ✓ Maintenance of the current network infrastructure (fixed and mobile), transmission and switching elements. ✓ Network of Incident Response Centres (CSIRT) at global level.	
Energy Efficiency Plan	• Variability of the temperature • Heat wave • Cold snap/frost	✓ Set points for maximum and minimum temperatures. ✓ Modernisation and optimisation of lighting systems. ✓ Liquid cooling, free cooling. ✓ Automatic shutdown and monitoring systems. ✓ Hot air conversion.	
		✓ Hot and cold corridors. ✓ Boiler control. ✓ Infrastructure modernisation.	
		✓ More efficient planning of base stations. ✓ PSFs implementation in the access network. ✓ Legacy network shutdowns. ✓ Infrastructure compacting. ✓ Base station sharing. ✓ Heat-resistant batteries.	
Renewable Energy Plan	• Drought • Variation in rainfall	✓ Implementation of photovoltaic generation systems. ✓ Efficient use of water in cooling systems. ✓ Contracting renewable energy with PPAs.	

 Base stations

 Data distribution centres (switch centres)

 Data centres

 Programming and broadcasting assets (TV)

Circular economy

Circular economy

Towards Zero Waste

The implementation of circularity criteria in business models promotes both the manufacture of products with ecodesign criteria and their reuse and recycling at their end-of-life. It also contributes to reducing the resources depletion risk, gives continuity to the supply chain (components, critical raw materials, etc.) and helps to reduce GHG emissions.

According to the **World Resources Institute (WRI) and the Circularity Gap Report**[13], nearly half the emissions that cause climate change come from the production and use of everyday items. Hence, the circular economy is seen as a crucial complement to energy efficiency actions, to painting a complete picture of a resilient, net zero world which achieves the Paris Agreement targets.

Every year, more than 100 billion tonnes of resources are consumed and only 8.6% are recycled or given a second life. Doubling this value is estimated to have the potential to reduce global greenhouse gas emissions by 39% and reduce resource use by 28%.

The circular economy represents great opportunities, based on the reduction of impacts from design, the extension of the useful life of products, the recovery of raw materials or the dematerialisation of the economy thanks to digitalisation. Specifically, the Circularity Gap Report estimates that the telecommunication sector has the potential to reduce the emission of around 0.19 gigatonnes of CO_2e globally and reduce the use of 0.33 gigatonnes of virgin materials, through digitalisation, cloud and IoT devices, and the design of smaller and lighter devices.

As part of its Circular Economy strategy, Telefónica has defined 5 targets as a key pillar for **reducing its own and its customers' emissions** and becoming a **Zero Waste Company.**

Circular economy targets

We are moving towards becoming a Zero Waste Company

Fixed customer equipment

2024

Refurbisched and reused

B2B/B2C customer equipment

2025

Purchased following circularity criteria

New Telefónica branded customer equipment

2025

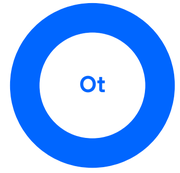
Ecodesigned

Mobile phones

2030

Collected

Waste to landfill



2030

Prioritising reuse andrecycling. Network equipment by 2025

13 The Circularity Gap Report (2022). Download available at: https://www.circularity-gap.world/2022#Download-the-report

Circular economy

Towards Zero Waste

Telefónica integrates circular economy criteria with a cross-cutting approach at three levels:

- in its **operational model** through internal eco-efficiency of resources
- in its **value chain model** working together with suppliers in ecodesign
- and in its **commercial model**, providing customers with a wide range of sustainable products.

Circular economy strategy

Enhanced circularity through digitalisation

Neutralising and offsetting residual emissions

Neutralising and offsetting residual emissions

Removing carbon from the atmosphere

> Telefónica will neutralise its residual emissions by purchasing carbon credits or developing its own emission capture or absorption projects.

According to the SBTi "Net-Zero" corporate standard, achieving 'net-zero emissions' is a balance between the emissions a Company produces and the emissions it removes or eliminates from the atmosphere. The commitment to **achieve net zero** according to SBTi includes **two premises**:

> **Reduce GHG emissions** to a level that is consistent with the 1.5°C scenario of the Paris Agreement.

> **Neutralise residual emissions** by permanently removing an equivalent amount of CO_2 from the atmosphere, through carbon credits or developing nature-based solutions.

The Task Force on Scaling Up Voluntary Carbon Markets (TSVCM) estimates that, to be able to meet private sector decarbonisation commitments, the current voluntary carbon offset market needs to grow at least 15-fold by 2030 and 120-fold by 2050.

The Integrity Council for the Voluntary Carbon Market (ICVCM[14]) states that high-integrity carbon credits can unlock the required financing to ensure a transition to a low carbon economy and that we need all available tools for the global average temperature to rise no more than 1.5°C above pre-industrial levels.

Telefónica's commitment is to achieve net zero emissions from its operations and value chain globally by 2040, with an interim target of neutralising the impact of its Scope 1 and 2 unabated emissions from Spain, Germany and Brazil as from 2025, removing these emissions from the atmosphere and permanently storing them.

To this end, Telefónica will neutralise its residual emissions only when it has reached its reduction target (at least 90%) by 2040 or its interim target by 2025, through the purchase of carbon credits or by investing in developing its own carbon removal projects.

Selected projects must meet the following internally established criteria:

> **Carbon sequestration projects,** preferably using **nature-based solutions,** such as reforestation, afforestation or ecosystem restoration, using native plant species.

> Demonstration of **additionality**.

> Demonstration of **long-term impact.**

> **Projects with environmental and social co-benefits and** contributing as far as possible to the achievement of the Sustainable Development Goals (SDGs)[15] and that respect and consider the rights of local communities and indigenous peoples.

> **Projects certified** to recognised international standards or national schemes[16] and verified by an accredited third party.

> Preferably located in **geographical regions where Telefónica is present.**

14 In 2023, the Integrity Council for the Voluntary Carbon Market (ICVCM) has published 10 Core Carbon Principles that set out the key principles of high-integrity carbon credits. More information at: https://icvcm.org/the-core-carbon-principles/?redirect=true

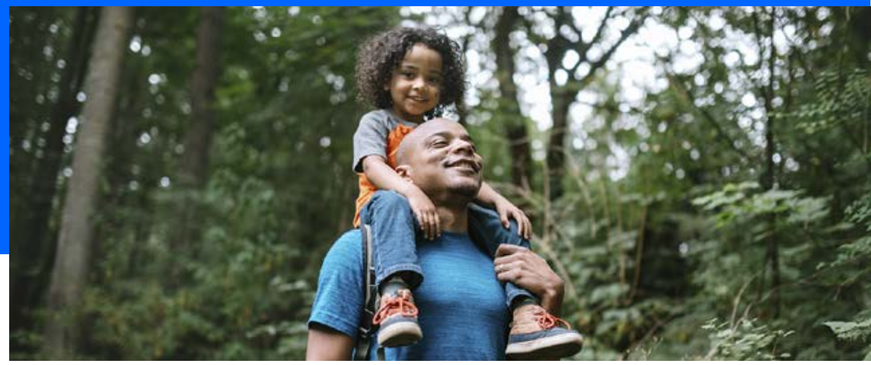
15 The Sustainable Development Goals (SDGs), defined in the United Nations 2030 Agenda, are the strategic framework that guides Telefónica's commitments to society and environmental protection, as well as its contribution to socio-economic development. Telefónica's work agenda is based on SDG 9 (Industry, Innovation and Infrastructure), to which it contributes by deploying sustainable, resilient and quality infrastructure and by innovating. It is also aligned to SDGs 4 (quality education), 5 (gender equality), 7 (affordable and clean energy), 8 (decent work and economic growth), 11 (sustainable cities and communities), 12 (responsible consumption and production), 13 (climate action), 16 (peace, justice and strong institutions) and 17 (partnerships for the goals).

16 It is important that these projects follow a robust methodology validated by international standards such as the Gold Standard, Verified Carbon Standard (VCS), American Carbon Registry (ACR), Climate Action Reserve (CAR) or by national schemes, mainly from European countries, such as the Spanish Climate Change Office registry, the Peatland Code or the Woodland Carbon Code (WCC), both from the UK.

Neutralising and offsetting residual emissions

Removing carbon from the atmosphere

> REDD+ project financing mitigates climate change, prevents biodiversity loss and boosts the development of disadvantaged communities, contributing to a fair transition.



Telefónica is also inspired by the "Oxford Offset Principles"[17] to define its emissions offsetting strategy, so that it is initially committed to reducing its emissions and using high-quality credits to exclusively neutralise residual emissions, periodically reviewing the offsetting strategy as best practice progresses, to evolve the portfolio from emission reduction credits to carbon removal credits and to progressively promote long term storage methodologies.

In the near-term, and always on a temporary basis[18], Telefónica will use carbon credits that reduce emissions from deforestation and degradation, in addition to carbon removal credits from sequestration projects, with the aim of contributing to halt deforestation in certain regions where Telefónica has operations.

This criterion follows the recommendations of SBTi's corporate Net-Zero standard and the Draft Consensus Statement on High Quality Tropical Forest Carbon Credits[19], drawn up by organisations such as WRI, WWF, EDF or IPAM Amazonia.

In any case, such carbon credits must meet the following criteria:

> **Be high-quality credits,** supporting the conservation of existing forest carbon stocks and sustainable forest management.

> **Be located in countries with a high rate of deforestation[20]**, as, in these cases, the projects that generate this type of credit near-term incentives to maintain remaining intact forests and support indigenous peoples and local communities.

> **Comply with the previously defined criteria:** demonstrate additionality and long-term impact, include environmental and social co-benefits as far as possible, be certified to recognised standards and verified by an accredited third party.

Supporting projects that generate emission reduction credits by preventing deforestation also contributes to the first major agreement at the COP26 climate summit, whereby the countries with the largest tracts of forest (which also have the highest rates of deforestation) pledged to stop massive felling in their nations and end and reverse deforestation by 2030

The open letter Global South Voices in Support of REDD+, signed by groups and organisations working to support indigenous peoples[21], makes clear that in order to halt deforestation and keep global warming to 1.5°C, high integrity climate finance must be scaled and channelled to indigenous-led conservation efforts and that REDD+ projects provide one of the only proven avenues available to indigenous communities to access the required finance.

As such, funding these projects not only contributes to mitigating climate change and preventing biodiversity loss, but also drives sustainable development of more disadvantaged communities and supports their economic diversification, which are key to a just transition to enable a low-carbon economy.

17 https://www.smithschool.ox.ac.uk/sites/default/files/2022-01/Oxford-Offsetting-Principles-2020.pdf

18 Before 2025 for Scope 1 and 2 emissions from main markets and before 2040 for HISPAM and Scope 3 emissions.

19 Draft version available at: https://merid.org/draft-forest-credit-statement/

20 As in the case of Brazil, Peru or Colombia, according to Global Forest Watch and the World Resources Institute (https://www.globalforestwatch.org/blog/data-and-research/global-tree-cover-loss-data-2020/).

21 These groups include the FSC Indigenous Foundation, the Peoples' Forest Alliance (PFP) and the Mesoamerican Alliance of Peoples and Forests (AMPB). More information at https://www.peoplesforestspartnership.org/post/open-letter-global-south-voices-in-support-of-redd

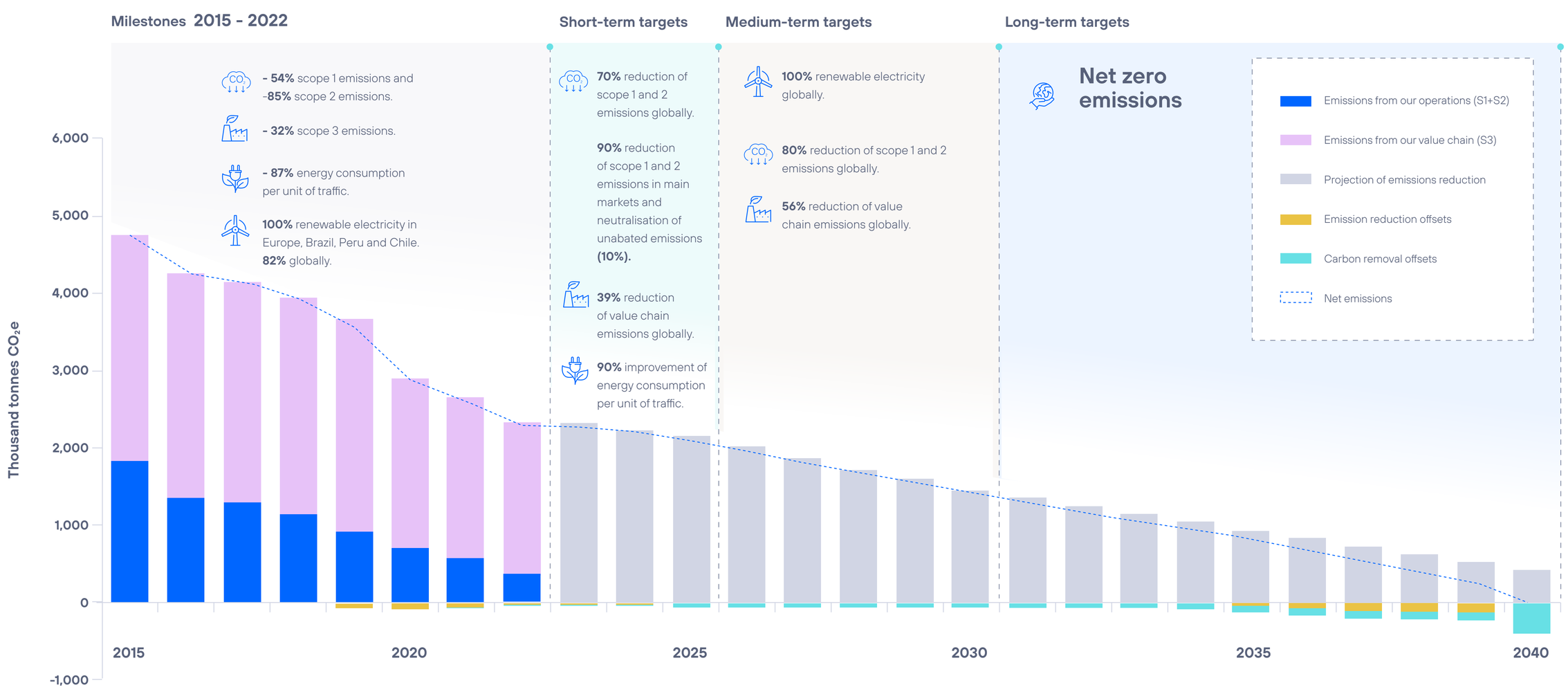
The road to net zero

The road to net zero

Milestones and targets

Since 2015, the Company has reduced 51% of its total emissions thanks to the implementation of specific actions to reduce emissions in Scopes 1, 2 and 3.

On the path towards global net zero emissions, Telefónica has defined interim targets for the short (2025) and medium term (2030), with the aim of continuing to cut emissions in all three scopes, while offsetting residual emissions to complement its strategy, and moving from offsets that represent avoided or reduced emissions (compensation or mitigation) to offsets that represent carbon removals (neutralisation), in order to have a **net impact on climate.**



The road to net zero

Milestones and targets

> Telefónica's climate strategy has led to a significant reduction in GHG emissions in its three scopes, compared to the base years.

The implementation of actions defined in Telefónica's Climate Strategy has led to a considerable reduction in GHG emissions in its three scopes, compared to the base years. The main results derived from projects such as the efficient transformation of the communications network, the use of renewable energies, the incorporation of circularity criteria or engagement actions with suppliers are shown below.

Milestones achieved

54% reduction in **Scope 1** emissions from a 2015 base year, which entails **154,392 tCO_2e** less in 7 years.

85% reduction in **Scope 2** emissions from a 2015 base year, equivalent to **1,303,417 tCO_2e.**

As a result, Telefónica's own emissions reduction is **80%** from a 2015 base year.

Decrease in **value chain emissions (Scope 3) by 32%**, from a 2016 base year, meaning **925,492 tCO_2e** less in 6 years.

87% improvement in the ratio of energy consumption per unit of traffic from a 2015 base year, with **energy consumption decreasing by 7.2%** and data traffic increasing by 7.4 times in the same period.

100% renewable electricity consumption in European markets, Brazil, Peru and Chile. Globally, **82%.**

Distributed generation in Brazil and signing of long-term power purchasement agreements in Spain and Germany to guarantee electricity supply from renewable sources for more than 10 years.

Implementation of **1,569 energy efficiency projects since 2010**, which have generated savings of more than **€1,714 billion, 11,050 GWh** and **3.3 $MtCO_2e$ avoided emissions to the atmosphere.**

Offset 61% of 2022 operational emissions from Germany, Brazil and Spain, through the purchase of more than 35,000 high-quality carbon credits.

€17 billion in sustainable financing[22] by May 2023, which has helped the deployment of more efficient networks.

Implementation of the **Eco Rating model in all Telefónica Group OBs** in order to evaluate the environmental impact of mobile phones.

22 Sustainable financing includes balance sheet debt, hybrids and other undrawn committed credit facilities. Sustainable criteria are established based on Telefónica's existing sustainable finance frameworks in accordance with the ICMA Sustainable Bond Guidelines and the LSTA Sustainability Lending Principles, respectively, and other ESG criteria applied to specific financing instruments. Not necessarily aligned with the requirements of the Taxonomy Regulation.

The road to net zero

Programmes to achieve our targets

Key components of the Climate Action Plan

Telefónica's Climate Action Plan is made up of **5 key models** to achieve the short-, medium- and long-term targets.

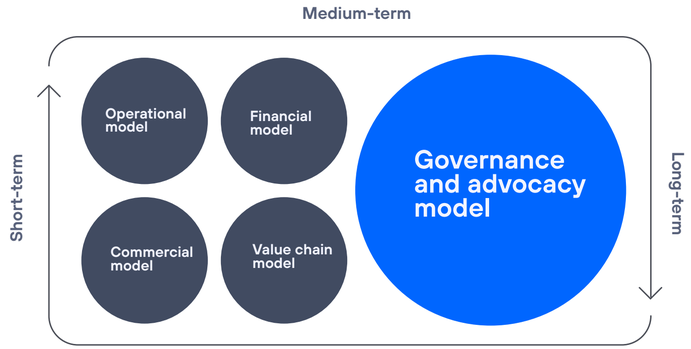
The **operational model** seeks to optimise Telefónica's internal processes to reduce Scope 1 and 2 emissions and neutralise residual emissions.

The **value chain model** aims to reduce Scope 3 emissions through suppliers and manufacturers engagement and by implementing ecodesign and circular economy criteria in procurement processes.

With the **commercial model**, Telefónica helps to reduce the emissions of its B2B and B2C customers through connectivity and digital solutions and drives awareness-raising initiatives aimed at getting customers to incorporate environmental issues into their purchasing decisions.

Finally, the **financial model** comprises the financial analysis of climate change, the sustainable finance model and the internal carbon pricing as decision-support drivers.

These four models are included within Telefónica's **governance model**, which seeks to communicate its strategy transparently, commit all levels of the organisation to achieving climate change targets and influence society by establishing partnerships with its most significant stakeholders.



Governance and advocacy model

- Defining climate chance governance mechanisms and responsibilities.
- Variable remuneration aligned with the achievement of climate change targets.
- Environmental and climate change internal regulations.
- Internal engagement actions related to sustainability.
- Transparent reporting, avoiding greenwashing.
- Participation in sector working groups, strategic partnerships and membership of international climate change initiatives.

Operational model

- Network transformation.
- Replacement of generator sets.
- Fuel substitution.
- Installation of lithium batteries.
- Fleet replacement and reduction of travelling.
- Cooling equipment, preventive maintenance, leakage control and replacement of refrigerant gases.
- Energy efficiency projects.
- Shift towards renewable energies: PPA, self-generation.
- Offsetting/neutralisation.

Value chain model

- Requirement to set emission reduction targets (SBTi) for strategic suppliers.
- Supplier Engagement Program.
- Joint Alliance for CSR.
- 1.5 Supply Chain Leaders / SME Climate Hub.
- Extension of the use of materials and equipment.
- Ecodesign of products.
- Procurement with circular criteria.
- Eco Rating.

Commercial model

- Eco Smart services.
- Emissions avoided.
- Eco Rating.
- Buyback and refurbishment of mobile devices.
- Offsetting of emissions in the purchase of devices.
- Commitment to transparency.

Financial model

- Financial analysis of climate change.
- Sustainable financing strategy.
- European taxonomy of sustainable activities.
- Sustainable and responsible investment.
- Carbon pricing.

Models of the Plan

- Operational model ›
- Value chain model ›
- Commercial model ›
- Financial model ›
- Governance and advocacy model ›

Models of the Plan

Operational model

> The ratio of energy consumption per unit of traffic at Telefónica has improved by 87% compared to 2015 and has led to savings of more than €400 million due to the implementation of energy efficiency and energy management projects.

Targets

90% reduction
of Scope 1 and 2 emissions in key markets by **2025**, from a 2015 base year.

80% reduction of Scope 1 and 2 emissions globally by **2030**, from a 2015 base year.

Improve energy consumption per unit of traffic (MWh/PB) **by 90%** in **2025**, compared to 2015.

100% renewable electricity
in own facilities by **2030**, in all Group operations.

The telecommunications sector plays a significant role in tackling climate change, as it is continuously working on the development of products and services that enable the transformation of business models, boosting the optimisation of resources through innovation and digitalisation. However, energy consumption for network operation and for data usage and processing must be considered for this digital transformation, as it is the main input for the telco sector.

The transition to a decarbonised economic model requires companies to focus on improving operational efficiency, using resource efficiency, renewable energy and production efficiency as levers for change. A strategic vision of decarbonisation in the operational model decouples business growth from GHG emissions and leads to improved financial performance, positioning and competitiveness of the Company.

One of Telefónica's priorities within its climate change strategy is **to reduce its operational emissions**, decoupling GHG emissions from business growth. Keeping electricity consumption stable despite the increase in the digitalisation of society and data traffic on networks is one of Telefónica's greatest challenges. The Company has been addressing this successfully thanks to its Energy Efficiency and Renewable Energy Plans, which include numerous actions to minimise energy consumption, ranging from self-generation to power plants and air conditioning equipment renovation projects.

As part of the Autonomous Network Journey programme, which defines how to build the network of the coming years, Telefónica has launched the Sustainable Platform Design project in 2022. This aims to make the network sustainable by design, i.e., energy efficient and low carbon. In this way, the Company will be able to deal with the increase in traffic expected in future years without increasing the associated GHG emissions.

Telefónica also aims for more efficient telecoms networks to reach 90-97% mobile broadband coverage of the rural population in its core markets by 2024, strengthening its commitment to the development of rural areas and local economies and the just transition.

In 2022, 128 energy efficiency and management initiatives were rolled out in Telefónica's networks and offices, saving 408 GWh, thereby avoiding the emission of more than 118,000 tCO_2e into the atmosphere. The implementation of these projects since 2010 has contributed to avoiding the emission of more than 3.3 million tonnes of CO_2e into the atmosphere, in addition to a financial saving of more than €1,714 million for the Company.

Models of the Plan

Operational model

Key actions

Combustion in stationary sources

How?

Saving, starting in 2023, 2% per year in fuel consumption in the Company's operations, by applying the following measures:

> Installation of hybrid self-generation systems: hybrid PV self-generation systems avoid the use of fossil-fuelled generators at isolated base stations. There are currently 485 mobile network base stations running on renewable energy.

> Replacement of heating fuels: replacing diesel with natural gas or propane in boilers reduces the emissions associated with heating the premises, as they generate fewer emissions for the same heat production. Switching fuel from diesel to gas in 7 boilers in 3 technical buildings at Telefónica España has reduced around 1,000 tCO_2e in one year, while switching from diesel to propane in one boiler has helped to emit 170 tCO_2e less in one year.

> Replacement of fuels for generators: the substitution of fuels such as diesel by other less polluting fuels such as hydrogen or methanol reduces the emissions associated with the generation of electricity using generator sets.

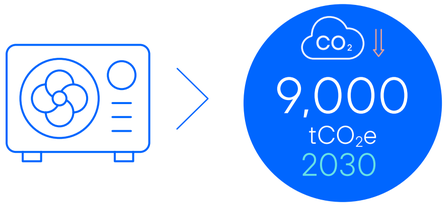
> Reduction of fuel consumption: the extension of battery autonomy, the implementation of BaaS (Battery as a Service) services and the replacement of generator sets reduce diesel consumption and maintenance costs.

> Installation of lithium batteries: the implementation of emergency generator start-up delay logics at sites with frequent power outages using high cycling (lithium) batteries reduces generator operation and saves fuel.

Models of the Plan

Operational model

Refrigerant gases



How?

Reducing, from 2023, fugitive emissions of refrigerant gases by 2% per year, through the following actions:

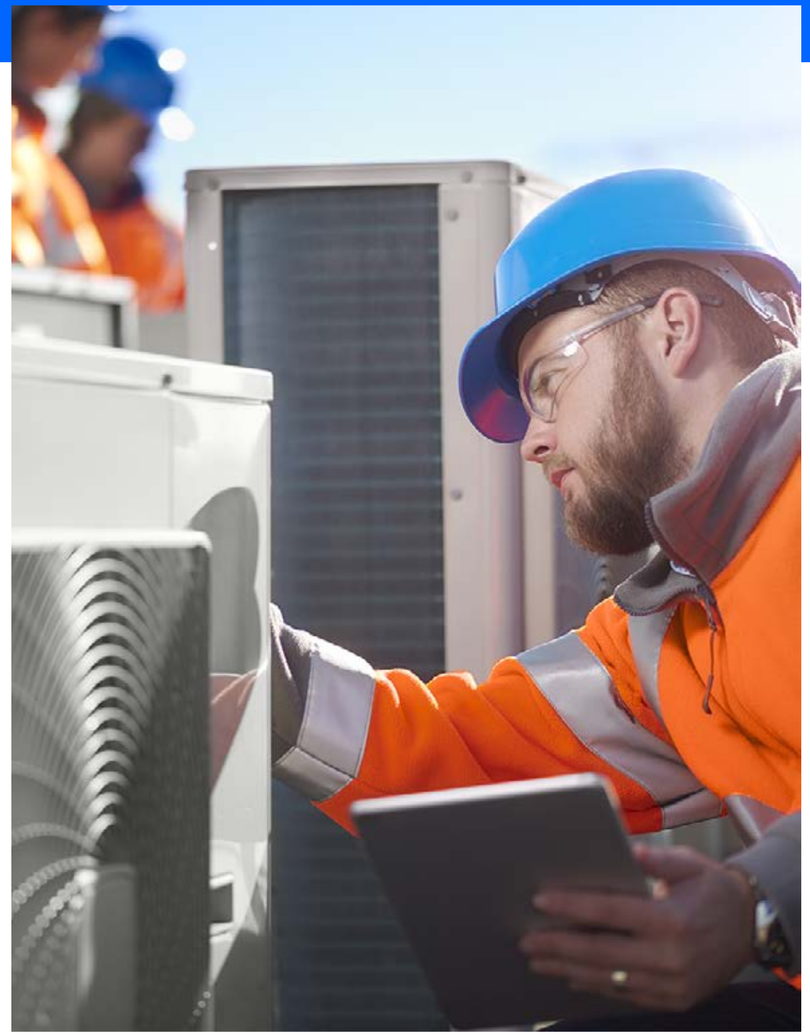
> New air-conditioning solutions: measures have been implemented such as the increase in temperature set points, the implementation of free cooling for air-conditioning technical rooms with external air and technological innovations such as liquid cooling by immersion, a disruptive model for cooling servers by immersion in an electrically non-conductive, non-toxic and biodegradable liquid. This type of technology, applied as a pilot programme at Bellas Vistas headquarters in Spain, has proven to be much more energy efficient than air conditioning, saving up to 75% in non-IT energy consumption and eliminating the use of refrigerant gases, while maintaining traditional levels of reliability.

> Equipment shutdown: thanks to the network transformation process, a shutdown of plants and compaction of technical rooms is being carried out. This allows air-conditioning equipment to be shut down and dismantled, or used for less time, thereby reducing the risk of refrigerant gas leakage.

> Preventive maintenance: improved preventive maintenance of air-conditioning equipment reduces refrigerant gas leakage.

> Leakage control: the use of digitalisation for the process of managing fuel consumption data from operations and recharging refrigerant gases optimises the control of gas and refrigerant leakage. In Brazil, the digitalisation of the management process has increased the reliability of the data by continuous monitoring, which has led to a 53% reduction in refrigerant gas recharges. This also makes it possible to implement new projects to reduce Scope 1 emissions.

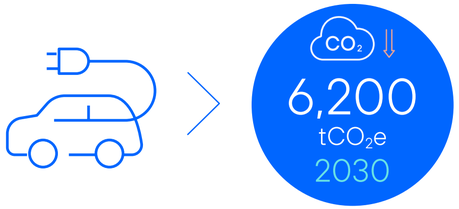
> Gas replacement: when purchasing new air conditioning equipment, as well as when replacing the refrigerant gases in existing equipment, the global warming potential (GWP) is considered, aiming for refrigerants with lower values.



Models of the Plan

Operational model

Combustion in the vehicle fleet



How?

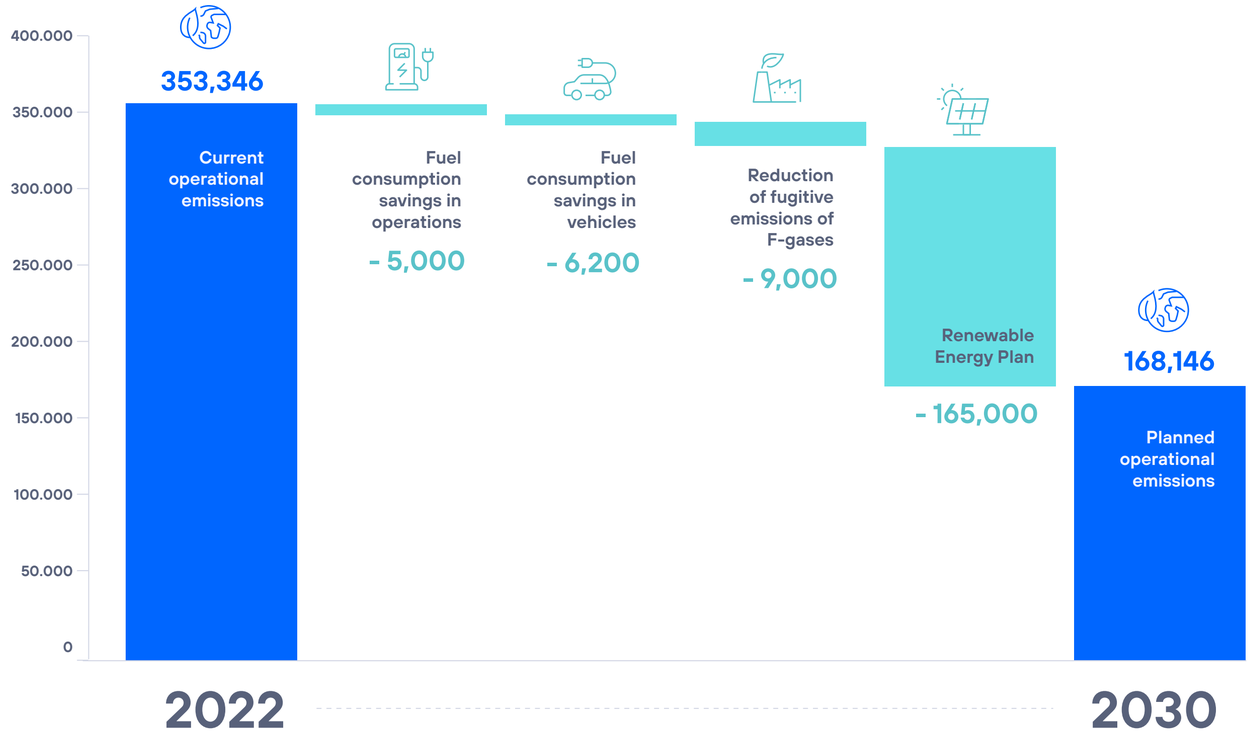
Saving, from 2023, 3% per year in gasoline consumption and 4% per year in diesel consumption in the vehicle fleet, by implementing these actions:

> Vehicle replacement: the replacement of fossil fuel vehicles by electric or biofuel vehicles (such as ethanol) in Telefónica's fleet reduces Scope 1 emissions.

> Reduction of travelling: the migration of the network from copper to fibre optic reduces the number of trips by maintenance staff to address technical problems in the networks.

> Gradual reduction of the vehicle fleet.

Key actions to achieve our operational emissions reduction targets by 2030

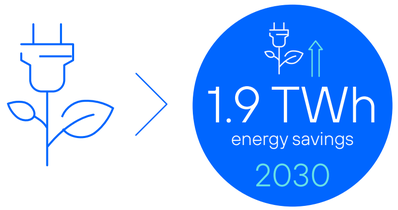


Models of the Plan

Operational model

> Thanks to the implementation of energy efficiency projects, we have succeeded in reducing energy consumption by 7.2% compared to 2015, even though the traffic handled by our networks has increased 7.4 times.

Energy Efficiency Plan



How?

With the following actions, defined in our Energy Efficiency Plan, which reduce electricity consumption:

> Network transformation: projects related to the shutdown of legacy networks, such as 2G and 3G, equipment compaction, network reconfiguration and replacement of the copper network with fibre optics, 85% more efficient in customer access. In 2020 Telefónica presented the results of a real-world measurement study showing that 5G technology is up to 90% more efficient than 4G in terms of energy consumption per unit of traffic[23]. Aligned with the plan to close copper by 2024, Telefónica Spain has shut down 2,236 exchanges since 2014 and operations in Latin America are progressing with multi-layer and 2G switch-off. In Germany, with the completion of the 3G switch-off, 60 GWh of savings per year have been achieved.

> Modernisation of obsolete equipment: replacement with more efficient equipment, incorporating technological innovations in both electrical infrastructure elements (rectifiers/power plants/external cabinets, UPS) and air conditioning infrastructure elements (chillers and air treatment units). In 2022, Telefónica Germany has installed rectifiers with 98% efficiency, as a result of the TCO assessment (compared to 96% rectifiers), which means a saving of 2% in energy per year and an ROI of less than 3 years.

> Compacting and consolidation the increase in the level of occupancy of technical spaces (IT rooms), reaching levels close to 80%, will allow Telefónica to achieve the optimum performance of its facilities in terms of efficiency. In addition, Telefónica will carry out a study of its existing infrastructure elements in order to categorise sites according to their reliability and efficiency. This will allow the Company to carry out consolidation projects and move loads from less efficient buildings to more efficient buildings.

> Power Saving Features (PSF): implementation of energy consumption optimisation systems at off-peak times demonstrates a reduction in energy consumption of up to 30% at off-peak times, without compromising network quality. In FY2022, Telefónica implemented 17 new PSF functionalities between operations in Germany, Brazil and Spain.

> Artificial intelligence and machine learning tools: as a result of the use of artificial intelligence tools and machine learning algorithms that act during a certain period of time, known as the learning phase, it is possible to predict future traffic behaviour and thus enable the activation of cell shutdowns 24 hours a day. In 2022, several pilots of these artificial intelligence and machine learning platforms tested on TOP were run on the already implemented PSFs, obtaining additional results of up to 9% in aggressive threshold configuration scenarios.

> Other energy efficiency actions: replacement of fluorescent lighting with LED technology, power factor correction, installation of presence sensors and smart meters, among others.

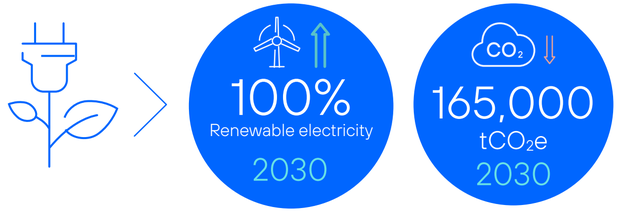
23 For more details, please see
https://www.nokia.com/about-us/news/releases/2020/12/02/nokia-confirms-5g-as-90-percent-more-energy-efficient/ and https://www.ericsson.com/es/blog/3/2021/1/achieving-sustainability-with-energy-efficiency-in-5g-networks

Models of the Plan

Operational model

> We want to go beyond 100% renewable, helping to increase the renewable mix in the countries in which we operate through self-generation and the promotion of new farms through PPAs.

Renewable Energy Plan



How?

Implementing the following actions, defined in the Renewable Energy Plan, which are committed to increase the percentage of renewable energies compared to fossil fuels:

> Power Purchase Agreements (PPAs): long-term renewable electricity supply agreements not only guarantee emission-free electricity, but also offer opportunities for OpEx savings. Telefónica has several such contracts. For example, in Spain, the four PPAs signed for the period 2022-2031 have already come into operation, which, together with the one signed in 2020, represent 582 GWh/year, cover 50% of the consumption of the operator's technical buildings and avoid some 87,300 tCO_2/year. Telefónica Germany has also signed two PPA agreements for the period 2025-2040, equivalent to 550 GWh per year, which will cover 87% of the total consumption of Telefónica's operations in Germany. On the other hand, Telefónica Brazil has several "distributed generation" (DG) agreements that will supply more than 700 GWh/year (avoiding almost 95,000 tCO_2/year) and will cover almost half of the electricity consumption of its networks in the country, also reducing dependence on renewable energy certificates (iRECs). Distributed generation produces renewable electricity in many small generation plants, rather than concentrating it in large facilities. This has additional benefits to the generation of energy, as it minimises environmental impacts, favours access to small generators and promotes employment throughout the territory, often in disadvantaged rural environments. This helps to ensure that the progressive change from the current economic model to a low-carbon model is socially just, leaving no one behind.

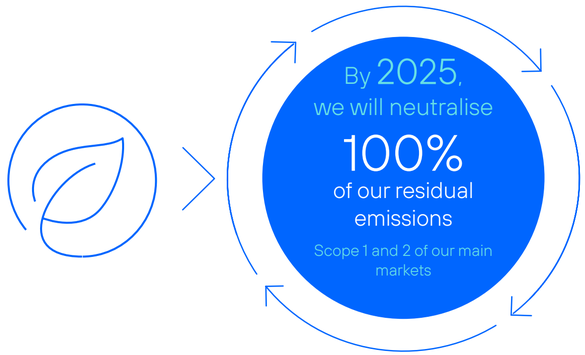
> Guarantees of origin: the programme for the purchase of renewable electricity with a guarantee of origin covers up to 100% of electricity consumption in countries such as Spain, Germany, Brazil, Peru and Chile, and has also been extended to other countries, such as Colombia, Ecuador or Argentina, certifying 87%, 30% and 7% of their electricity consumption in their own facilities, respectively.

> Self-generation: the implementation of photovoltaic generation systems in isolated base stations, technical buildings and offices represents the production of more than 6,000 MWh per year, which translates into around 1,000 tCO_2 of avoided emissions. This will increase progressively, especially in countries such as Spain. Also, by using this system, the use of fossil fuel generators is avoided. For example, in Chile, 23 hybrid self-generation systems generate annual savings of almost 60,000 litres of fuel.

Models of the Plan

Operational model

Neutralisation of emissions



How?

To offset the climate impact of its residual emissions, Telefónica, in compliance with the criteria defined internally, will resort to the voluntary market to purchase carbon credits in the most efficient way possible or will develop its own carbon removal projects, always verified by an accredited third party. Currently, Telefónica has already started to offset part of its emissions through the following projects.

In 2020, **Telefónica Spain launched Bosque Telefónica** (meaning "Telefónica Forest")[24], in Palencia (Spain). Planting over 12,500 trees of native species will help to restore a degraded agricultural area, transforming it for forestry use, involving rural communities and boosting the local economy by generating employment for young people and disadvantaged people. "Bosque Telefónica" is expected to absorb 3,000 tonnes of CO_2 over its life cycle. Part of the tonnes absorbed have been used by the Spanish operator to offset its operational emissions in 2021 and 2022.

In 2022, Telefónica Spain acquired carbon credits from the **REDD+ EVERGREEN[25]**, project, which protects forests located in one of the regions with the highest deforestation rate in the Amazon Biome. The project, verified by VCS, provides alternative income for extractive communities and helps to protect 250 species of birds, 40 mammals and 15 reptiles, as well as protecting flora species such as Mahogany, Cedar, Copaiba, Andiroba, Chestnut and Rosewood.

In 2021, **Telefónica Germany** neutralised 20% of its operational emissions (Scope 1 and 2) through the Gold Standard certified **CO_2OL Tropical Mix project[26]**. The initiative aims to restore more than 13,000 hectares of land which was used in the past for extensive cattle ranching and convert it into mixed forests by planting 20 different native tree species and protecting more than 30 other species. In addition, it contributes to biodiversity conservation and provides sustainable timber and cocoa production, which also improves the economic and social situation of local communities.

Telefónica Germany has also used the credits generated by the project for the **restoration of degraded areas and reforestation in Cáceres and Cravo Norte[27]**, in Colombia, to neutralise 40% of its operational emissions, as well as those arising from its business travel. The project proposes to carry out reforestation, with 25 native tree species, 1,230 ha in the Cáceres/Antioquia area and 9,640 ha in the Cravo Norte/Arauca area, areas which had previously been degraded by extensive livestock farming activities. It also promotes the sustainable management of forest resources to encourage natural regeneration.

24 The "Bosque Telefónica" absorption project is included in the Spanish Climate Change Office registry. Further information can be found at https://www.miteco.gob.es/images/es/2021-b212_tcm30-538762.pdf

25 For more information on the Evergreen project, please visit the VCS registry: https://registry.verra.org/app/projectDetail/VCS/2539

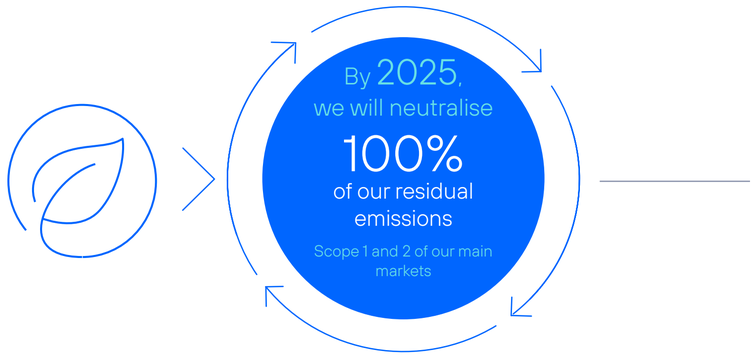
26 The sustainable production of wood and cocoa is certified by the Forest Stewardship Council (FSC) and UTZ (sustainable agriculture programme and label). More information on the project is available at https://registry.goldstandard.org/projects/details/1796

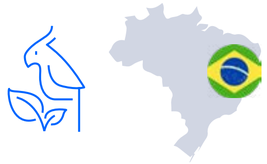
27 Details of the "Cáceres y Cravo Norte" project, which has additional CCB certification from VCS, are available at: https://registry.verra.org/app/projectDetail/VCS/576

Models of the Plan

Operational model

Neutralisation of emissions





From 2019, **Telefónica Brazil** has been offsetting 100% of its operational emissions mainly through projects that support local ecosystem conservation initiatives. For example, **Cikel Brazilian Amazon REDD+**[28] verified with the international VCS standard, is located in the state of Pará and will avoid the deforestation of 27,400 hectares of rainforest. It also enhances biodiversity within the framework of FSC certification and promotes community development and local job creation. With this project, part of Telefónica Brazil's operational emissions in 2020 and 2021 have been offset.

Other projects to reduce emissions from deforestation and degradation in which Telefónica Brazil has invested are the **REDD+ EVERGREEN** project and the **JARI AMAPA REDD+**[29] project, located in the Brazilian Amazonian state of Amapá, which, having additional CCB certification[30], in addition to reducing GHG emissions through proper forest management, trains local farmers in sustainable management techniques and promotes the socio-economic development of local communities that strive to conserve forest resources and cease to depend on extractive activities.

From 2022, Telefónica Brazil is also investing in reforestation projects. Specifically, the **MATO GROSSO**[31] project is a reforestation project with 50 native species, which aims to restore an area of 8,000 hectares that had been deforested by cattle ranching activities. In addition to the positive environmental impact, the project also develops educational activities, generates income for the local populations and ensures the preservation of biodiversity by using native species from the Amazon rainforest.

28 More information on the Cikel Brazilian Amazon project can be found in the VCS registry: https://registry.verra.org/app/projectDetail/VCS/832

29 The VCS registry contains additional information on the Jari Amapa project: https://registry.verra.org/app/projectDetail/VCS/1115

30 The CCB (Climate, Community & Biodiversity) standard ensures that projects have been implemented using best practices for community engagement and provide clear benefits for local communities and biodiversity conservation, demonstrating additional benefits beyond CO_2 mitigation.

31 More information on the Mato Grosso reforestation project can be found at https://registry.verra.org/app/projectDetail/VCS/665

Models of the Plan

Value chain model

> Telefónica promotes the circular economy in the use of electronic equipment through ecodesign, reuse and recycling.

Targets

39% reduction of CO_2e emissions in the value chain (Scope 3) by **2025** and **56%** by **2030**, from a 2016 base year.

100% of our **strategic suppliers** with **emissions reduction targets** aligned with the Science Based Targets (SBTi) initiative by **2026**.

Introduce **ecodesign criteria in 100% of new customer equipment** under the Telefónica brand image from **2025**.

Include **circularity criteria in 100% of electronic equipment procurement processes** of B2B/B2C customers by **2025**.

Refurbish and reuse 90% of fixed equipment (routers and set-top boxes) collected from customers by **2024**.

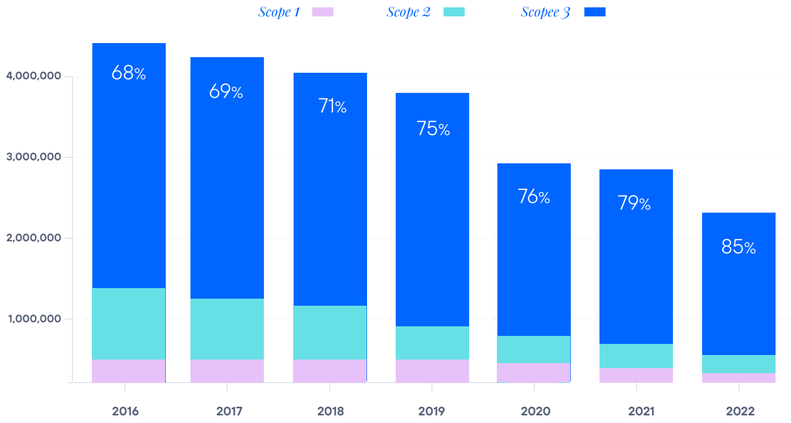
According to the SBTi initiative, Scope 3 emissions represent a major challenge for most companies because, being outside the boundaries of direct control, the process of collecting activity data is more complex and the allocation of responsibilities is more diffuse.

In addition, although Scope 3 has decreased by 32% since the base year, it represents 84.5% of the Telefónica Group's total emissions and is gaining more and more weight in Telefónica's footprint (in 2016, it represented 68%), due to the significant work carried out in the decarbonisation of the Company's operational model and the consequent reduction of Scope 1 and 2 emissions.

Some of the trends and best practices proposed by the SBTi initiative include the implementation of green procurement policies that include sustainability and climate change criteria, engagement with suppliers to encourage them to reduce their own emissions, innovation in business models to extend the useful life of products and the design of more efficient products that integrate circular economy principles.

At Telefónica, the procurement of products and services is currently the main source of emissions, accounting for almost 2/3 of its Scope 3 emissions. However, the Company has identified opportunities to meet its emissions reduction targets and maximise the sustainability benefits associated with digitalisation, through **collaborative projects with its suppliers and other companies in the telecommunications sector** that share the same challenges. Telefónica also actively participates in working groups, cooperates with its suppliers to integrate ecodesign in customer equipment designed under the multinational's brand image (Movistar, O2 or Vivo) and **implements circularity criteria in the purchases.**

Share of *Scope 3* Telefónica's carbon footprint.



Models of the Plan

Value chain model

> Understanding the climate maturity level of our suppliers is key to help them accelerate their decarbonisation.

Key actions

Climate change requirement for strategic suppliers

Telefónica is aware that working with suppliers that have defined an ambitious decarbonisation strategy has a positive impact on reducing the emissions associated with its procurement of goods and services.

For this reason, in 2022 a **new climate change requirement has been incorporated into the procurement process**, whereby Telefónica has asked its strategic suppliers[32] to establish short-term emission reduction targets in line with the Science Based Targets (SBTi) initiative. Specifically, they have been asked to commit to defining science-based reduction targets within 6 months, as well as to complete the validation of these targets with the SBTi a posteriori.

Supplier Engagement Program

In order to achieve the goal of reducing Scope 3 emissions, Telefónica is working since 2019 with its most carbon-intensive suppliers in a programme called Supplier Engagement Program. Suppliers participating in this programme were selected based on the following criteria:

> Percentage of its emissions (contribution to Telefónica's Scope 3).

> Degree of maturity in its climate change management.

> Strategic importance for Telefónica.

From 2021, Telefónica invites the most relevant suppliers in terms of emissions to participate in the CDP Supply Chain program. This aims to gather information from suppliers to **understand the level of maturity of their climate strategies and help them set more ambitious emissions reduction targets** through specific webinars and recognition of their progress. Using a tool familiar to suppliers with CDP Supply Chain enables Telefónica to cover a higher percentage of suppliers. In 2022, 218 suppliers participated, representing 97% of emissions in its supply chain.

Having primary information not only allows Telefónica to improve the accuracy of the calculation of the Scope 3 portion of its carbon footprint but is also the basis for drawing up a carbon maturity curve, which classifies suppliers into 5 levels of climate maturity. Telefónica subsequently identifies different areas for improvement, depending on the level of maturity, so that the supplier's commitment is adapted to its actual management, thus varying the measures it undertakes to adopt to reduce its climate impact, from the purchase of renewable energy to the change to low-emission vehicles or the implementation of energy efficiency projects, among others.

2022

CDP Supply Chain (Telefónica)

218 suppliers

emissions of the supply chain

Engagement project with local suppliers (Telefónica Brazil)

125 suppliers

emissions of the supply chain

32 The 73 strategic suppliers have been selected based on the percentage of emissions represented by the purchase of their goods or services in Telefónica's Scope 3 categories 1 and 2, having covered more than 90% of the emissions in these categories in the 2021 inventory.

Models of the Plan

Value chain model

> We are working in collaboration with other companies in the industry to address the challenge of decarbonising our supply chain.

Collaboration with other telcos in the Joint Alliance for CSR

JAC (Joint Alliance for CSR) is an association of telecommunications operators whose objective is to verify, evaluate and develop the implementation of Corporate Social Responsibility (CSR), at the manufacturing sites of multinational suppliers in the Information and Communication Technologies sector. JAC members have been cooperating, since 2010, to apply sustainability principles effectively throughout the industry.

In 2020, a new industry working group was created within the JAC (Joint Alliance for CSR) initiative, led by Telefónica, to **drive climate action in the supply chain as a telco sector.**

In this project, several work streams have been initiated for key suppliers of the 27 companies that are part of the conglomerate (representing 60% of the industry's revenues) to increase their level of ambition and establish science-based emission reduction targets, in addition to providing training in collaboration with CDP and GSMA[33] to the most relevant companies. In 2022, the initiative assessed suppliers' climate management to define and implement common emission reduction actions across the industry supply chain.

1.5°C Supply chain leaders / SME Climate Hub

The **'1.5°C Supply Chain Leaders'** initiative advocates the reduction of emissions in the global supply chain. It also **supports small and medium-sized enterprises on their route to decarbonisation** through the SME Climate Hub, the launch of which in Spain and the United Kingdom has been supported by Telefónica. This programme, which invites SMEs to sign up to a climate commitment and shares specialised tools and best practices, enables Telefónica to strengthen its role as a driving force with its supply chain and accelerate the decarbonisation of the global economy by 2050. In 2022, these two initiatives launched a pilot in which Telefónica's small and medium-sized suppliers were invited to participate.

Value chain model

We work with our supply chain, accelerating their decarbonisation

CDP SUPPLIER ENGAGEMENT LEADER

JAC COOPERATION BEYOND COMPETITION

Eco Rating

1.5°C Supply Chain Leaders

We promote circular economy of customer equipment

- Extension of the use of materials and equipment
- Ecodesign of products and services
- Procurement with circular criteria

33 **» GSMA** is an organisation of mobile operators and organisation across the mobile ecosystem dedicated to supporting the standardisation, implementation and promotion of the mobile phone system. It has approximately 800 mobile operators and more than 200 related companies as members.

Models of the Plan

Value chain model

> Thanks to reuse, 4.4 million pieces of electronic equipment have been given a new life each year and the generation of more than 5,000 tonnes of waste and more than 350,000 tCO_2e emissions have been avoided.

Extension of the use of materials and equipment

Telefónica promotes the reconditioning, reuse and recycling of valuable equipment and materials as opposed to their disposal, so that they are not considered waste, but can be reincorporated as resources into the production cycle. This also avoids the emissions associated with the extraction and processing of new natural resources, which would be necessary if these valuable materials were not reused or recycled.

> **Extending the useful life of the equipment of Telefónica's offices, operations and customers,** by reusing it through customer equipment return and refurbishment program, and internal reuse of used equipment in offices and other operations. By 2022, the program has succeeded in giving a new life to nearly 4.4 million devices, corresponding to 44% of the total electronic equipment managed, thereby avoiding the generation of 5,557 tonnes of waste and the emission of more than 350,000 tonnes of CO_2, associated with the manufacture of new equipment.

> **Reuse of equipment and materials during the network transformation and decommissioning process**, through MAIA, an internal digital platform that allows each Group operator to visualise available equipment and connect with other operators to encourage its internal reuse. In 2022, Telefónica reused 39% of the total network equipment managed thanks to the MAIA project. Likewise, when internal reuse of network equipment is not possible, the sale of equipment to other technology partners is promoted by the platform, thus extending its useful life.

> **Reuse of fixed equipment from customers' homes**, through initiatives such as VICKY and APOLO, which have enabled Telefónica to reuse 86% of all routers and TV decoders delivered for reconditioning by 2022. VICKY uses blockchain technology to obtain greater traceability throughout the value chain, which significantly improves recovery rates, refurbishment processes and the useful life of the equipment. Meanwhile, APOLO improves efficiency in reverse logistics processes with the use of big data & analytics to optimise collection routes for uninstalled or inactive equipment, both at the customer's facilities and at other collection points.

> **Reuse of mobile handsets**, through the global MARA initiative, which promotes the circular economy of mobile devices, whether internal or customer devices, by optimising logistics models, reconditioning or providing customers with access to repair or repurchase services for their old handsets, thus extending the useful life of the devices so that they do not become waste. In 2022, Telefónica refurbished 386,210 mobile devices.

In addition, by 2030 and in line with GSMA, Telefónica is committed to collect at least 20% of the mobile phones distributed through the channels under Company´s management control.

> When reconditioning and reuse are not possible, **electronic equipment is recycled** as it contains precious metals such as gold, copper or nickel, which can be used as a resource in a new product.

Most of the waste generated by Telefónica comes from the network transformation process when migrating from copper to fibre optic cable. **Of the total waste generated, the Company recycles 98%.**

Models of the Plan

Value chain model

> We work to integrate ecodesign from the conception and development stage of products to reduce their impact throughout their life cycle.

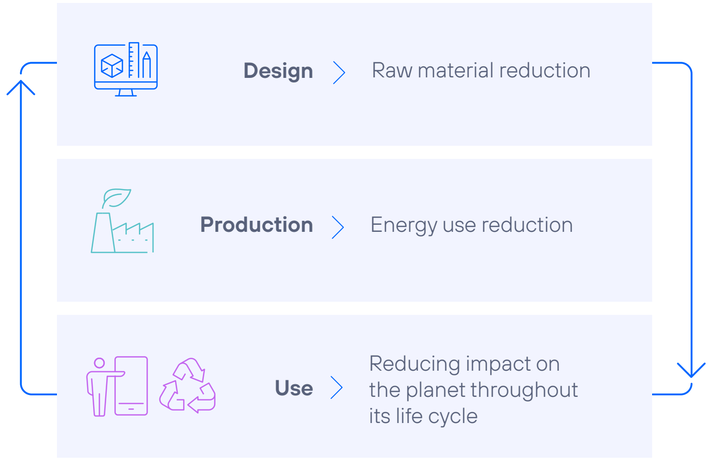
Ecodesign of products

Ecodesign helps us to reduce the use of raw materials in manufacturing, the energy consumption of the product and the emissions associated with both the production processes and the use stage of the products. The main projects rolled out in collaboration with suppliers to integrate ecodesign are as follows:

> **Half SIM Card:** a format that reduces the plastic used in the manufacture of cards by 50%, avoiding, in 2022 alone, the consumption of 228 tonnes of plastic (190 tonnes in 2021), saving 778 tCO_2e and optimising the logistics process. Currently, the format has been implemented in 9 of Telefónica's operations, consolidating its position as the Group's main format. In addition, in 2022, VMED O2, Telefónica's JV in the UK, incorporated recycled PVC/ABS plastic in its SIM cards, which further reduces the emissions associated with their manufacturing process.

> **Life cycle analysis of a new router model:** from 2021 and throughout 2022, Telefónica has collaborated with Ihobe[34] in the framework of the Basque Ecodesign HUB for Ecodesign and Circular Economy, in a project that allows to know those elements of the device that have a greater environmental impact in order to establish measures to reduce it from the design. In a complementary manner, a study of the reparability, recyclability and durability of the device has been carried out in order to further integrate the circular economy from its design. The criteria identified in this study will lay the foundations for the incorporation of ecodesign measures in other electronic devices designed under the Telefónica brand image (Movistar, O2, Vivo) from 2025.

Ecodesign



Procurement with circular criteria

As part of its Global Supply Chain Sustainability Policy, Telefónica has incorporated environmental and circular economy criteria, such as life cycle analysis (LCA) when supplying products or services to the Group. An example of this is the inclusion of criteria for removing single-use plastics in the packaging of products and services supplied to Telefónica.

Telefónica has a **Corporate Instruction for low-carbon purchases**, which establishes the criteria for acquiring equipment with high energy consumption and fluorinated gas content. This includes the calculation of the Total Cost of Ownership (TCO), incorporating the lifetime energy and carbon cost of the equipment in the procurement process. This provides sufficient information to select the best option economically and in terms of energy consumption and GHG emissions.

From 2021, Telefónica progressively implements **circularity criteria in the procurement of electronic equipment**, using as a benchmark the criteria established in the ITU-T L.1023 assessment method for circular scoring. This makes possible to assess the repairability, recyclability, durability and upgradeability of the purchased equipment. The goal is for 100% of the electronic equipment procurement processes of B2B/B2C customers across the Group to include these circularity criteria by 2025.

34 Ihobe is a public entity attached to the Basque Government's Department of Economic Development, Sustainability and Environment, which works with companies, public administration and citizens to improve the environment and integrate environmental criteria into public policies. More information at https://www.ihobe.eus/inicio

Models of the Plan

Value chain model

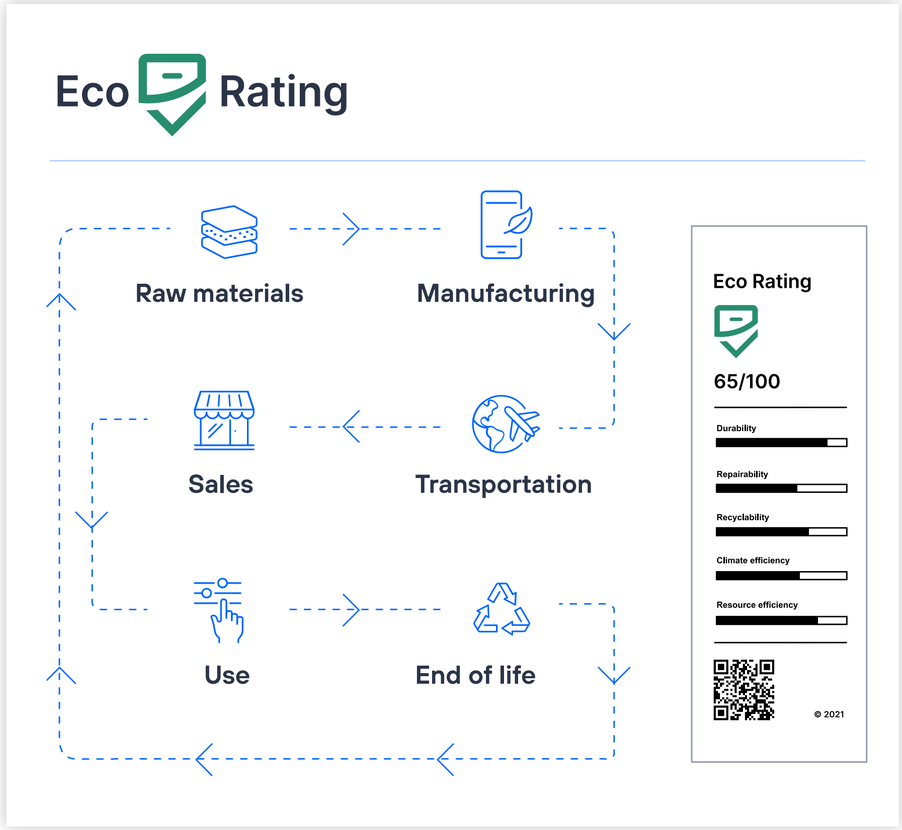
Eco Rating

Eco Rating is a system that assesses the environmental impact of mobile phones throughout their life cycle through a methodology that assigns a score (between 1 and 100) to each device. The closer the score is to 100, the better the sustainability performance of the device.

It is an initiative developed in partnership with four major European telecommunications companies. The main objectives include helping customers to incorporate sustainability criteria into their purchasing decisions and encouraging manufacturers to reduce the environmental impact of their devices.

Working with mobile device manufacturers is particularly important for Telefónica, as the emissions associated with the manufacture, transport and use of mobile devices account for more than 25% of the Company's Scope 3 emissions.

By the end of 2022, the initiative involves 9 telecommunications companies, more than 20 mobile device manufacturers, has expanded to 35 countries and has enabled the evaluation of more than 300 mobile phones. Within the Telefónica Group, the Eco Rating seal has been implemented in all operators (12 countries)[35].



35 Except in Venezuela, where Telefónica has no mobile sales business.

Models of the Plan

Commercial model

> We stand for a world where digital technology helps to protect the planet.

Targets

Help customers **reduce their CO_2 emissions,** through the development of digital and connectivity solutions.

Increase **buyback and refurbishment** of mobile devices.

A study by the Exponential Roadmap[36] initiative indicates that while the telco sector is responsible for just 1.4%[37] of global emissions, the development of digital technologies can contribute **significantly to cutting emissions across other sectors**. According to the study, the implementation of digital solutions in sectors such as energy, industry, agriculture, buildings and transport has the potential to **reduce fuel-related emissions by 15% by 2030**, and by a further 35% indirectly **through its ability to transform people's habits**. The study states that the digital revolution and the evolution of information technologies are key enablers for the transformation towards disruptive business models that integrate sustainability, resource efficiency, circular economy and climate targets into their operating models.

Telefónica **helps its customers to decarbonise their business through digital transformation and connectivity** as key levers to use resources efficiently and drive sustainability.

In 2022, thanks to the efficiencies generated by Eco Smart and connectivity services, Telefónica's customers avoided the emission of 81.7[38] million tonnes of CO_2, representing approximately 35 times the organisation's carbon footprint.

Key actions

One of the priorities of Telefónica's environmental strategy is **to boost connectivity and digitalisation as key drivers for the green transition** and for improving our customer's competitiveness.

At the same time, the Group provides **information on the environmental benefits or attributes of our products and services** so that customers can identify how their technology purchase will help drive their own sustainability goals.

- ECOSMART — Eco Smart services
- Avoided emissions
- Eco Rating — Eco Rating
- Buyback and refurbishment of mobile phones
- Carbon offsetting when purchasing devices
- Commitment to transparency

36 Exponential Roadmap (2019), Scaling 36 solutions to halve emissions by 2030. Available at https://exponentialroadmap.org/wp-content/uploads/2019/09/ExponentialRoadmap_1.5_20190919_Single-Pages.pdf

37 In the latest version of the report, the lifecycle carbon footprint of the information and communications technology (ICT) sector was estimated at 730 $MtCO_2e$ (1.4% of the global total, and use of 3.6% of global electricity for its operations), based on 2015 data.

38 Of the total figure, 80.6 million tonnes are from services where Telefónica only provides broadband and mobile connectivity for the B2C segment and 1.1 million are from IoT, cloud, big data and health services where Telefónica provides connectivity, IoT devices, platforms, servers and/or software. This data includes emissions generated by the connectivity and network infrastructure that are part of these services.

Models of the Plan

Commercial model

Eco Smart Services

Telefónica's **Eco Smart** solutions for B2B customers, which are developed through services based on connectivity, Internet of Things (IoT), cloud, big data or 5G, favour the digital transformation of customers and generate relevant environmental benefits in their activities or production processes, such as optimising the use of resources, accelerating the transition to circular economy models, and reducing their emissions. This allows them to develop their business in a more efficient and sustainable way. To this end, the **Eco Smart** seal was developed, **a mark verified by AENOR** that identifies the **environmental benefits** of Telefónica's digital **products and solutions**. Thus, Telefónica helps its customers to identify how digitalisation can make their organisation more efficient and sustainable.

The seal has 4 icons that represent the different environmental benefits generated by products and services (energy savings, reduction of water consumption, reduction of CO_2 emissions and promotion of the circular economy). In the seal of a specific service, only the icons of the environmental benefits provided by that service are highlighted.

At year-end 2022, the solutions catalogue of Telefónica Tech, Telefónica Spain, Telefónica Brazil, Telefónica Germany and Telefónica Chile had been assessed, verifying that 54% of the services that these companies offer for B2B customers generate environmental benefits and contribute to mitigating the environmental impact of their customers. The remaining companies will be assessed by the end of 2025, according to the Group's Strategic Plan.

ECOSMART

Examples of **Telefónica's products and services** for each of the environmental benefits are listed below:

Environmental benefit		Examples
	Energy savings	○ Smart Energy: services that allow the customer to control and manage the energy of installations and/or equipment, reducing their electricity and/or fuel consumption.
		○ Fleet management: fleet management services that enable fuel savings.
		○ Use of drones for inspections of critical and remote assets, saving the fuel that would be needed for employee travel.
		○ Cloud services: reduce the customer's energy consumption by means of platforms or servers hosted in highly efficient data centres.
	Reduction of water consumption	○ Smart water meters in facilities or buildings or applied to services such as irrigation management in cities or agriculture, which reduce water consumption.
		○ Smart Agro solutions enable digitalisation in the agricultural sector and improve decision-making based on crop data and environmental parameters to optimise the use of resources, mainly irrigation water, but also fertilisers, phytosanitary products, and pesticides.
		○ Smart Industry services that achieve efficiencies in water use in sectors with a high dependence on this resource, such as food, beverages, cosmetics and water companies.
	Reduction of CO_2 emissions	○ Digital Workplace solutions, which enable remote and flexible working and reduce employee commuting to the workplace and air conditioning in offices.
		○ E-Health solutions facilitating remote health care, avoiding patient travel and associated emissions..
		○ Solutions for the transport sector, which optimise the planning of transport infrastructure and systems through greater knowledge of passengers, timetables and routes, minimising their environmental impact.
		○ Air quality measurement sensors and use of big data on the data obtained (air pollution and traffic) to predict pollution levels and implement action measures to improve air quality and reduce CO_2 emissions.
	Circular economy	○ Services that allow monitoring of equipment/assets and provide information on their state of operation, optimising maintenance, avoiding breakdowns and, therefore, extending their useful life.
		○ Products and services that optimise production processes, reducing the consumption of raw materials or minimising waste.
		○ The inclusion of blockchain technology capabilities in many of the above examples provides them with improvements in traceability, transparency and security, enabling faster and more efficient ways of doing things, thus boosting the circular economy.

Telefónica Tech is one of the Telefónica Group units responsible for driving the development of B2B services to integrate digital solutions that help customers in their evolution towards sustainability.

Models of the Plan

Commercial model

> Thanks to Eco Rating system, Telefónica helps its customers to incorporate sustainability criteria when buying mobile phones. It also offers buyback and refurbishment options for used mobile phones.

Avoided emissions

Since 2017 and with the support of Carbon Trust, Telefónica has developed and applied **a calculation methodology that measures the enabling effect of Telefónica's services implemented for customers**, by transforming its efficiencies (energy, operational or material consumption) into avoided carbon emissions. The methodology is continually updated, both to include new digital services and technological developments of solutions and customers, and to apply the sector's methodological guidelines or recommendations.

In 2022, Telefónica expanded the calculation scope, including new remote healthcare services, IoT solutions for water cycle management and considering how mobile connectivity and B2C broadband services enable the use of digital applications that allow for more sustainable lifestyles such as teleworking, remote training, audio/video calls and car sharing.

To understand how Telefónica's customers use these applications, the Company surveyed over 3,300 customers in Spain, Brazil and Germany in 2022.

As a result of the methodological update and the services sold, in 2022, Telefónica customers avoided the emission of 81.7[39] million tonnes of CO_2, which proves the capacity of new technologies to accelerate the economy's transformation towards a more sustainable model.

Eco Rating

Telefónica supports and raises awareness among its residential customers by offering them various initiatives to help them make informed decisions and reduce their impact.

One of these initiatives is Eco Rating, a system that measures the environmental impact of mobile phones throughout its entire lifecycle (from the material extraction stage, production, transport and use stage, to disposal or recycling of the devices), assessing 13 environmental indicators, such as greenhouse gas emissions, resource use or energy consumption, and 6 material efficiency criteria, (such as recycled material content or ease of repair) to obtain a single score for each device.

The label **supports customers of any operator Company from Telefónica[40] to make informed decisions** by helping them to incorporate sustainability criteria **when choosing mobile devices,** thus driving more sustainable practices in the industry. In addition, this initiative encourages manufacturers to reduce the environmental impact of their devices and aligns the telecommunications industry in improving transparency.

The Eco Rating label indicates the environmental impact of the handsets simply and clearly, through a score on a scale from 1 to 100 that evaluates how sustainable the handset is; the higher the score, the more environmentally friendly the handset. The label also displays additional information on durability, repairability, recyclability, climate efficiency and resource efficiency.

39 Of the total figure, 80.6 million tonnes are from services where Telefónica only provides broadband and mobile connectivity for the B2C segment and 1.1 million are from IoT, cloud, big data and health services where Telefónica provides connectivity, IoT devices, platforms, servers and/or software. This data includes the emissions generated by the connectivity and network infrastructure that are part of these services.

40 Telefónica has implemented Eco Rating in all of its European and Latin American markets (excluding Venezuela, since Telefónica does not sell devices in this country).

Models of the Plan

Commercial model

Buyback and refurbishment of mobile phones

The reuse and recycling of used mobile phones **reduces the consumption of energy and resources** since it avoids the manufacture of new equipment. Thus, Telefónica offers its customers options to buy back and refurbish their mobile phones. Under this programme, 162,304 end-of-life mobile phones were collected in 2022.

Carbon offsetting when purchasing devices

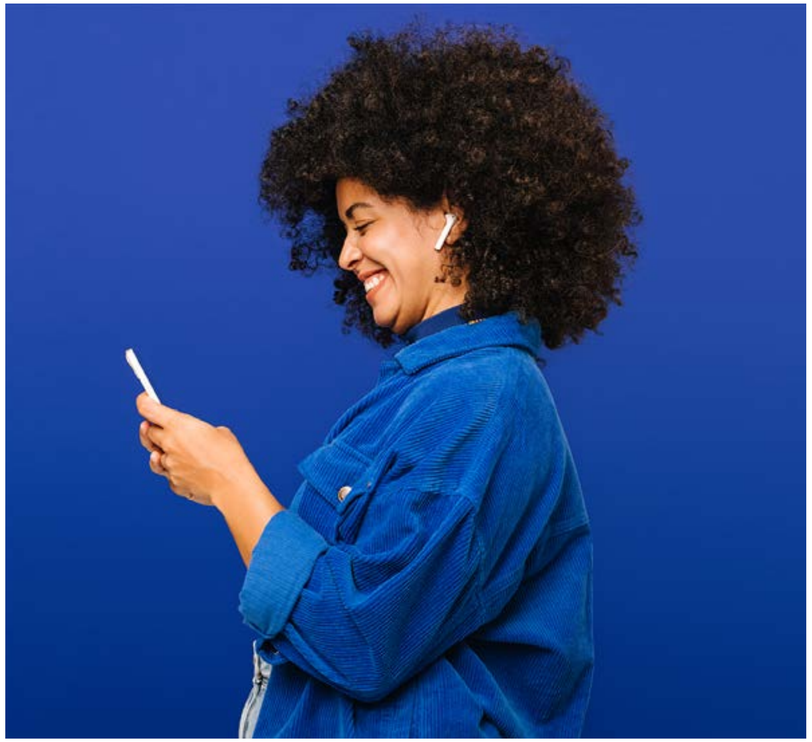
'tu.com', Telefónica's online shop of devices and accessories, is the first sustainable technology e-commerce Company in Spain.

At tu.com, customers can offset the carbon footprint associated with the manufacture of their purchased devices (mobile phones, TVs, smart watches, etc.). During the purchase process, information is provided on the kg of CO_2 resulting from the device's manufacture and customers get the opportunity to offset these emissions for free by choosing from several reforestation or nature conservation projects.

Commitment to transparency

Telefónica is aware that it must **harness the power of its communication to encourage more sustainable consumer behaviour.**

Therefore, in 2021 it joined the Planet Pledge initiative launched by the World Federation of Advertisers and committed to increasing the capacity of its marketing and communications teams to spearhead climate action and to strengthen a trustworthy marketing environment where sustainability claims can be substantiated, **avoiding greenwashing**. In 2022, Telefónica trained around 400 marketing, communications, events and sponsorship employees on these issues.



Models of the Plan

Financial model

Targets

Reach **30-35%** of **sustainability-linked financing** by **2024.**

Update by **2023** the sustainable finance framework to broaden the scope of environmental and social projects in line with ICMA's **Sustainable Bond** Guidelines and LSTA's **Sustainable Lending** Principles.

Implement new instruments to internalise the **internal carbon price** from **2023** onwards.

Gradually improve the reporting on the impact of climate change on the **Company's financial statements**, completing the implementation from **2025** onwards.

According to the analysis developed by the UN High-level Climate Action Champions[41] for COP 26 in Glasgow, it will be necessary to invest US$125[42] trillion dollars to transform the economy and avoid the worst physical impacts of climate change. It also shows that US$32 trillion of this amount will need to be invested by 2030 to decarbonise the economy by 2050, in line with the International Energy Agency's transition scenarios.

Private sector could provide 70% of this investment, offering huge opportunities for companies to access finance if they manage climate change responsibly. While there is an international trend for investors to shift capital flows to investments that help decarbonise the economy, they are calling for greater transparency on climate change management to help them assess climate-related risks in their investments and make informed decisions.

According to the "2021 Institutional Investor Survey"[43] conducted by the proxy solicitors Morrow Sodali, 97% of investors consider climate risk as very or somewhat important in their investment decisions and 61% expect more transparency from companies.

Telefónica is taking action to take advantage of the financial opportunities offered by the transition to a decarbonised economy.

Financial model

Financial analysis of climate change

- Financial statements
- Investment in taxonomic activities

Sustainable finance strategy

- Sustainable financing
- Sustainable and Responsible Investment

Carbon pricing

- Shadow price in purchasing decisions
- Internal carbon fee

41 Financing Roadmaps (https://www.gfanzero.com/netzerofinancing)

42 Investment understood as direct capital expenditure

43 Access to the survey results is available at: https://morrowsodali.com/insights/institutional-investor-survey-2021

Models of the Plan

Financial model

The KPIs of the most relevant Company activities are highlighted below:

Main activities

Eligible turnover	9.2%	Aligned turnover	1.3%
Eligible CapEx	3.3%	Aligned CapEx	0.6%

Key actions

Financial analysis of climate change

Climate change has a twofold impact on a Company's financial management. On the one hand, companies must be aware of the investment they need to make and secure access to the necessary finance to ensure business continuity in a greenhouse gas neutral economy, mitigate climate change risks and take advantage of market opportunities.

On the other hand, companies will have to be aware of how climate change will impact their financial statements, knowing the linked cost and the benefits and/or savings obtained with a correct management. While there is currently no accounting requirement for companies to report the impact of climate change in the Company's financial statements, authorities and extension agencies are increasingly focusing their attention on this aspect, and International Financial Reporting Standards (IFRS) indicate that material issues should be included in the financial statements[44].

Given the growing interest of investors in climate issues, Telefónica is identifying the potential costs, benefits and savings of its activities linked to climate change.

In addition, Telefónica has committed to complete the exercise of **including these issues in 2025 at the latest, in order to provide transparent information** to its stakeholders.

In 2022, Telefónica has worked to comply with regulators' recommendations and anticipate future regulatory changes. Therefore, for the first time, the Group has included in the financial statements information on certain actions and commitments made by the organisation linked with climate change, such as long-term power purchase agreements (PPAs), energy efficiency projects and carbon credits purchases, among others.

European taxonomy for sustainable activities

As part of the **implementation of the European taxonomy for sustainable activities**[45], Telefónica has reported for the first time its revenues, investments (CapEx) and expenses (OpEx) from taxonomy-aligned activities that have been carried out in 2022. These reported activities are those that have the potential to make a substantial contribution to climate change mitigation and adaptation targets. Also, taxonomic eligibility has been reported, as it was already done in the 2021 annual report.

Both core and secondary activities have been reported. Also, both the calculation methodology and the assessment of compliance with environmental and social aspects[46] have been developed thoroughly.

The current situation of the taxonomy, due to its youth and technical complexity, may lead to different interpretations of the legal texts, as reflected in the usability report published by the European Sustainable Finance Platform.

At Telefónica, we understand that the **full decarbonisation potential of telecommunications networks as connectivity solutions has not been properly considered**. Hence, the largest part of the Company's business has not been considered for taxonomy KPI reporting.

Sustainable finance strategy

Telefónica has been working for several years to align environmental and financial sustainability internally. To this end, it is continuously working to expand the inclusion of ESG criteria in the funding model in order to take advantage of opportunities, as well as to interact with ESG partners and investments.

44 IAS 1.7 - a matter is material when its omission, misstatement or concealment could reasonably be expected to influence the economic decisions of the primary users of financial statements that provide financial information about a particular Company.

45 European Regulation (EU) 2020/852 establishes that companies must report financial KPIs based on environmental criteria specific to each activity. Currently, these are climate criteria, whereby the substantial contribution to climate change mitigation and adaptation of Telefónica's activities to enable emissions reduction for third parties is assessed. Likewise, in order for revenues from activities to be aligned, they must do not significant harm (DNSH) to other environmental objectives, such as circular economy or water management and must comply with social minimum safeguards, such as human rights or fair competition and taxation policies.

46 For more detailed information, please refer to Chapter 1.8. European taxonomy for sustainable activities in Telefónica's consolidated management report at https://www.telefonica.com/en/shareholders-investors/financial-reports/integrated-annual-report/

Models of the Plan

Financial model

Telefónica's sustainable finance strategy is based on two pillars:

Using debt as a financial instrument to support the sustainable business strategy.

Proactively positioning Telefónica to attract investors who promote ESG-aligned investment strategies and styles that are in line with emerging regulation.

Sustainable financing

Sustainable financing is a key element in the transformation of Telefónica's business model, as it allows the financing of projects with a positive environmental and/or social impact.

Telefónica has been a pioneer in this field and is currently one of the largest issuers of sustainable bonds in the telecommunications sector, both in terms of volume, number and diversification of issuances (senior green bonds and hybrid green or sustainable instruments). All these issuances are backed by its Sustainable Finance Framework[47], aligned with the Green Bond, Social Bond and Sustainable Bond principles of the International Capital Markets Association (ICMA) and verified by the independent external agent Sustainalytics. In addition, Telefónica uses other sustainable bank financing tools, such as loans and credits linked to sustainability targets, which enable the Company to progress steadily towards corporate targets linked to emissions reductions.

*Exchange rate at end-June 2023

Thus, Telefónica's main syndicated loan is linked to sustainability criteria according to the corporate Sustainability-linked Loan Framework, validated by Sustainalytics.

These financing tools are becoming more prominent in the Group's corporate debt structure and are set to become one of the main tools for financial instruments and private investment flows. As at year-end 2022, the Group's sustainable financing activity[48] exceeded 27% of the Company's total financing and the target is to reach between 30% and 35% by 2024.

As of June 2023, Telefónica Group has reached €17 billion of sustainable financing thanks to several operations issued in 2022, such as the refinancing at corporate level of its main syndicated loan under sustainable criteria, amounting to €5.5 billion.

All this demonstrates the growing concern of investors and financial institutions regarding ESG aspects and impacts.

The environmental projects that will benefit from this funding framework are those focused on reinforcing Telefónica's commitment to climate change and the achievement of its decarbonisation goals and its net-zero target. Telefónica has decided to focus on following key initiatives to tackle climate change: energy efficiency of network infrastructure, shift to renewable energy models and digital solutions for the benefit of the environment.

More information about the specific projects to which each issuance will be dedicated and the impact of these projects, once audited, is publicly available at Telefónica's Sustainable Finance webpage[48].

47 Telefónica's Sustainable Finance Framework was first published in 2018 and updated in January 2021. For more information, the latest version of the framework can be accessed at: https://www.telefonica.com/es/wp-content/uploads/sites/4/2021/08/Telefonica-Framework-Green-Social-Bonds-20210122.pdf

48 The main information related to Telefónica's sustainable finance activities is available at https://www.telefonica.com/en/shareholders-investors/rating/sustainable-finance/?t=tab-2021.

Models of the Plan

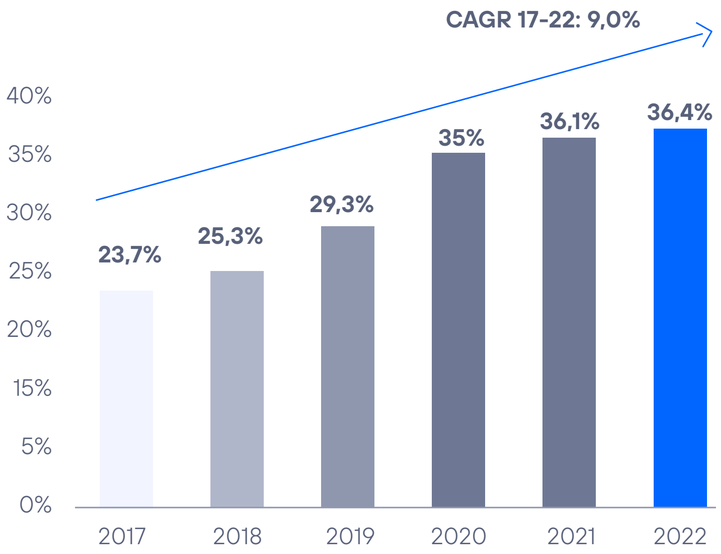
Financial model

Sustainable and Responsible Investment

The ability to attract sustainable and responsible capital reflects the impact and positive perception from investors and analysts of Telefónica's activity. Telefónica has integrated ESG criteria across the board in all its operations, which enables the Company to meet both the main requirements of analysts and ESG indices, such as CDP or the prestigious S&P Dow Jones Sustainability Index (DJSI), and the needs and expectations of institutional investors, particularly investment fund managers, proxy advisors and other players in the financial world.

The presence of ESG investors in Telefónica's shareholder base, who take into consideration, among other criteria, the Company's performance in environmental, social and governance aspects, confirms the growing importance that ESG criteria, and in particular climate change management, are taking on in the investment process. According to a study by Leaders Arena, with data as of 31 December 2022, 36.4% of Telefónica's total shares are managed by institutional investors considering ESG criteria and publicly declared as such by them. This percentage has been increasing year on year since 2017 and sustainable investment funds are expected to continue burgeoning, also stimulated by the new European regulation.

Sustainable investment

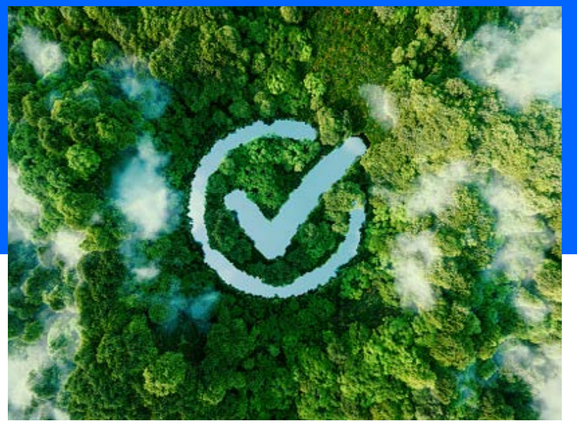


Source: Public information on the ownership of shares in Telefónica by Institutional Investors according to FactSet. Leaders Arena's analysis of the percentage of ESG investment.

Models of the Plan

Financial model

> The internal carbon price will help the organisation to make better investment and equipment purchasing decisions and to achieve its emission reduction targets.



Carbon pricing

Internal carbon pricing is one of the most effective tools for companies to manage the risks and opportunities associated with their carbon footprint and thus internalise the costs of GHG emissions, enabling efficient financing of their transition to a low-carbon economy.

Setting an internal price on carbon means internalising the cost of GHG emissions by assigning a monetary value to each tonne emitted, so that companies can identify the cost of greenhouse gases emissions.

In this context, Telefónica is working to evaluate different financing tools within the Group to **establish an internal carbon price as a strategic lever to achieve net zero emissions** by 2040.

On the one hand, Telefónica implements a shadow price in purchasing decisions for equipment with electricity and/or fuel consumption, as well as equipment containing refrigerant gases. Telefónica's Corporate Instruction on low-carbon purchasing includes the calculation of the Total Cost of Ownership (TCO) of this equipment, allowing procurement processes to be guided towards more efficient technologies and equipment, with a lower carbon footprint.

On the other hand, Telefónica is working on developing an internal carbon fee that will generate revenues for Telefónica to cover the payment of carbon credits or finance its own carbon removal projects. This will help to neutralise its residual emissions, starting with unabated emissions from Scopes 1 and 2 of its main markets from 2025 onwards.

The internal carbon price will help the organisation to make better investment and equipment purchasing decisions and to achieve its emission reduction targets.

Models of the Plan

Governance and advocacy model

> Climate change strategy is one of the priorities of the Board of Directors.

Transparency and integrity of corporate climate action are among the principles that are becoming increasingly important in the disclosure of climate commitments, thereby facilitating decision-making by investors and other financial market participants.

In accordance with TCFD recommendations, it is essential for companies to have defined their governance mechanisms to assign responsibilities to the different executive bodies and ensure the achievement of the targets defined in the Climate Action Plan.

Telefónica integrates climate- and sustainability-related aspects as a robust part of its organisational culture through various action programs: assigning responsibilities in its governance structure, developing policies aligned with its energy and climate change ambition and targets, internal engagement actions, transparent reporting and communication of its strategy and, finally, strategic alliances and advocacy.

Furthermore, it is important to emphasise that transition plans adapted to the specific context of each country can be developed at local level.

Governance mechanisms

Environment and climate change are cross-cutting issues throughout the Company, involving operational and management areas, as well as business and innovation areas.

Oversight and accountability

The energy and climate change strategy is part of the Company's Responsible Business Plan, which is approved by the Board of Directors. The Board Sustainability and Quality Committee, as well as the Board Audit and Control Committee and the Board Nominating, Compensation and Corporate Governance Committee, in accordance with the responsibilities set out in their respective operating regulations, oversee its implementation, review risks and monitor targets.

Since 2007, the Global Energy and Climate Change Office, comprising areas such as Operations, Environment and Procurement, has been responsible for implementing this strategy. In addition, the Global Energy Centre, created in 2015, is responsible for accelerating the achievement of targets, with the responsibility for driving energy efficiency and renewable energy projects in each of the countries.

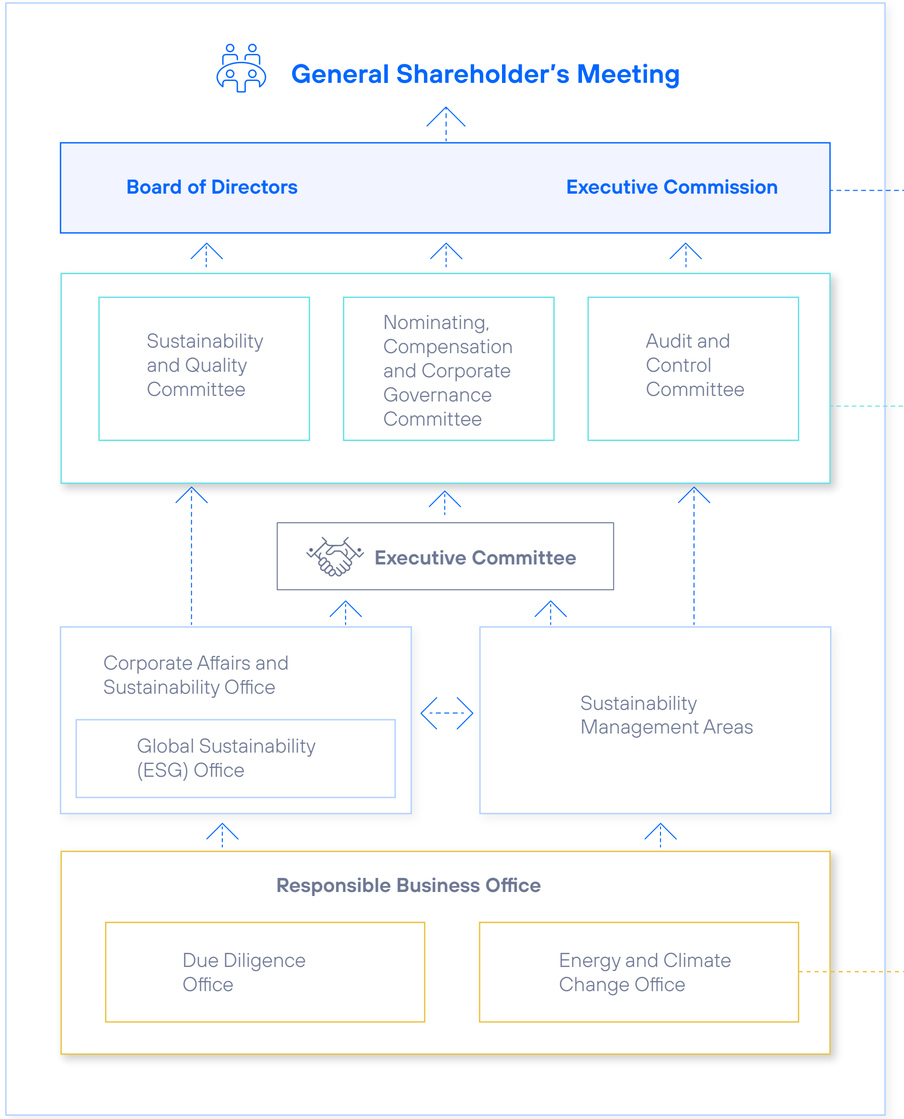
In order to ensure that the strategy is integrated into all the organisation's operations, Telefónica incorporates climate-related aspects at all governance levels, in strategic indicators and in the Company's key objectives.

This Climate Action Plan will be annually approved by the Board of Directors, after an analysis by the Sustainability and Quality Committee. In addition, the Energy and Climate Change Office together with the different areas of Telefónica involved in the development of actions aimed at achieving the emission reduction targets of the Plan, will keep the Plan updates and will inform the Sustainability and Quality Committee and/or the Board of Directors in the event of substantial modification of the Plan.

Telefónica offers its various stakeholders a **feedback mechanism for the Climate Action Plan**, which enables to place value on their comments and points of view. Telefónica discloses its climate strategy to the market and informs its shareholders, institutional investors and other stakeholders of its climate strategy through the non-financial information sent to the Spanish Stock Exchange Commission (CNMV by its Spanish acronym) and other official international bodies, as well as through the corporate website, in the Shareholders & Investors section.

Models of the Plan

Governance and advocacy model



Approval

The **Board of Directors** is responsible for approving the Climate Change Strategy, the Climate Action Plan and environmental policies, as well as establishing the risk management model, including climate-related risks whose supervision is delegated to the Audit and Control Committee.

Oversight

- **The Sustainability and Quality Committee** is responsible for overseeing the implementation of environmental and climate-related initiatives on a regularly basis, and for monitoring the progress of both climate-related targets and all other targets of Telefónica's Responsible Business Plan.
- **The Nominating, Compensation and Corporate Governance Committee** is responsible for overseeing the sustainability targets included in the variable compensation system, including the reduction of GHG emissions.
- **The Audit and Control Committee** is responsible for overseeing the climate-related risk management model, the effectiveness of the Company's internal control and the integrity of the information related to climate change.

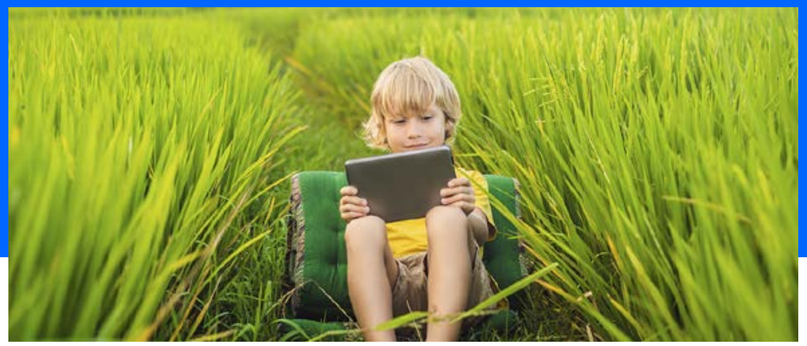
Implementation

The **Energy and Climate Change Office** is responsible for the operational implementation of the Climate Change Strategy, KPIs assessment, performance monitoring against targets, review of climate-related regulatory aspects and compliance with stakeholders' expectations. It comprises the following areas:

- **The Operations area,** led by the Chief Operating Officer, is responsible for monitoring climate-related issues and the achievement of energy efficiency targets.
- **The Environment area,** led by the Chief Sustainability Officer, is responsible for preparing and updating the Climate Action Plan and for monitoring compliance with climate-related targets from an emissions reduction perspective. It also reviews and reports on energy and climate-related KPIs.

Models of the Plan

Governance and advocacy model



Telefónica has a contact point, the **» Concern and Whistleblowing Channel**, available to all its stakeholders, so they may inquire about, request, inform, suggest and react to on any aspect related to the Responsible Business Principles, including the organisation's climate strategy.

Likewise, supported by the General Secretariat, Investor Relations, People and Sustainability areas, the Company maintains permanent contact and dialogue with shareholders, institutional investors and proxy advisors, responding to their queries related to the Climate Action Plan and providing them with the clarifications they request.

Through the **» Office of the Shareholder**, Telefónica ensures transparent, agile and fluid communication with its shareholders. The Company has a channel for dealing with shareholder requests and shares information with them on relevant issues, including the Climate Action Plan, through e-mails, a monthly newsletter and the "Acción Telefónica" magazine.

In addition, a significant part of the variable compensation of all Company employees, including the Management Committee, is linked to the achievement of operational, financial and sustainability targets (ESG).

20% of the short-term variable compensation includes sustainability targets, such as the reduction of GHG emissions. Likewise, 10% of the long-term variable compensation of the Executive Directors and other senior Directors is linked to the offsetting/neutralisation of CO2 emissions to meet Telefónica's interim target by 2025[49], establishing a minimum threshold of 90% compliance.

Linking variable compensation to the achievement of emission reduction and offsetting targets is intended to reward and retain key employees who can pull the strategic levers defined in the Climate Action Plan and contribute to achieving Telefónica's long-term climate-related targets.

Policies

The organisation has several internal regulations that serve as a common reference framework for all the companies of the Group. These policies guide the Company in improving its environmental performance and achieving its climate change targets in the short, medium and long term.

Global Environmental Policy

Commits all Telefónica Group companies to protect the environment, improve internal eco-efficiency and drive the transition to a decarbonised Company, by improving adaptation to climate change and considering physical and transition risks into Company management.

View policy>

Energy Management Policy

Envisages continuous improvement of energy efficiency, progress in the use of renewable energy sources, internalisation of carbon pricing, and active suppliers' engagement to reduce Scope 3 emissions, especially in the supply chain and customer premise equipment.

View policy>

Supply Chain Sustainability Policy

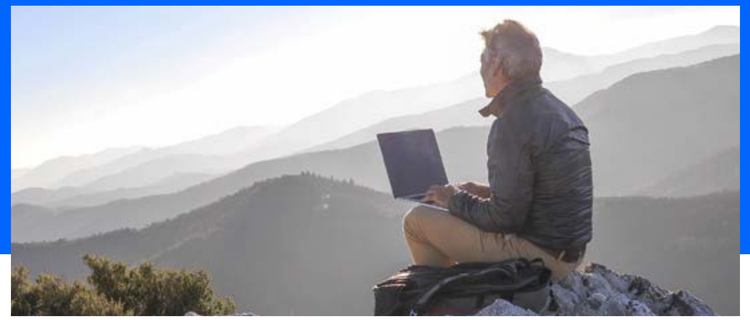
Sets out the minimum standards for responsible business, containing environmental criteria such as climate change, with the aim of promoting the emissions reduction in the supply chain.

View policy>

49 Telefónica's interim target is reducing Scope 1 and 2 emissions by 90% in the main markets (Spain, Germany and Brazil) by 2025 and neutralising the residual Scope 1 and 2 emissions through nature-based solutions.

Models of the Plan

Governance and advocacy model



Internal engagement actions and training

Building an organisational culture in the field of sustainability and climate action requires an appropriate employee training. For this reason, Telefónica continually delivers strategic training programmes, in line with its purpose and its Responsible Business Principles. These training activities go hand in hand with internal communication campaigns and awareness-raising events on strategic issues for the Company, such as the inclusion of environmental and climate-related criteria in the responsible design of products and services. Telefónica's ultimate aim with these actions is to promote understanding and adoption of sustainable practices in relation to climate change.

> **"Sharing experiences":** Telefónica periodically organises internal virtual workshops, to share best practices of operators located in different countries related to issues such as energy efficiency and climate change. The aim of these sessions is to publicise best practices, so that they can be replicated throughout the Group.

> **Global Energy and Climate Change Workshop:** Telefónica's Workshop, which has been held since 2009, is the annual meeting point for the Company's energy transformation leaders and the main partner companies in the field. During the event, which each year brings together more than 250 people from all the countries in which Telefónica operates, the latest initiatives in energy efficiency and renewable energies are presented and shared, and new challenges related to climate change are established jointly between the different areas of the Company.

> **Energy and Climate Change Awards:** these awards recognise the annual work of Telefónica teams to achieve the targets related to carbon footprint reduction and environmentally responsible digitalisation leadership.

Telefónica is aware that the transition to a low-carbon economy and its associated regulatory requirements may affect the organisation's employees, since technical profiles with knowledge of climate change will be the most in-demand sustainability careers.

Telefónica has launched the ESG Academy, a global space with training programmes related to the three sustainability dimensions that, in addition to addressing the just transition, guarantee the reskilling of its employees. This will enable them to broaden their knowledge in this area and to promote a culture of sustainability in the Company, thus acquiring the necessary skills to adapt to new technologies and market demands.

Reporting

Transparent communication and reporting is one of the principles of Telefónica's work. As a result, it is recognised by Carbon Disclosure Project (CDP) and other sustainability indices as a global leader fighting the climate crisis.

CDP A LIST 2022 CLIMATE	Included in the **Climate Change A list** for the **ninth year in a row.**
CDP SUPPLIER ENGAGEMENT LEADER 2022	Included in the **Supplier Engagement Leaderboard (A rated)** for the **fourth consecutive year**, for including its value chain in its climate targets.
Member of Dow Jones Sustainability Indices Powered by the S&P Global CSA	Member of DJSI Europe. 2022 score: **86/100** Highest score in the environmental dimension
Sustainability Award Bronze Class 2022 S&P Global	Telefónica Group and Telefónica Brazil, **distinguished in the Top 10% of telecommunications operators** for their commitment to sustainability on a global scale (only 20 telcos included). Inclusion in the Sustainability Yearbook.
FTSE4Good	Score: **4.4 / 5** Recognition as the **best-performing** Company in the **telecommunications sector.**
SUSTAINALYTICS ESG INDUSTRY TOP RATED	Score: **15.2 (low risk)** **6th Position (6/623)** in the telecommunications sector.
TCFD TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES	Telefónica **follows the TCDF recommendations** for the analysis and reporting of climate-related risks and opportunities.

Models of the Plan

Governance and advocacy model

Advocacy and strategic partnerships

One of the pillars of the climate strategy is advocacy as part of Telefónica's commitment to society, working together with other companies in the telecommunications sector to take advantage of the role of ICT (Information and Communications Technologies) in mitigating and adapting to climate change and advocating for the adoption of ambitious climate policies. Working to place digitalisation at the top of the climate change and environmental sustainability policy agenda is Telefónica's main objective in its advocacy strategy.

Some key actions that help to meet this target include participation in industry working groups and professional associations, investment and collaboration in research, and active participation in ICT and climate change standardisation activities.

European Green Digital Coalition (EGDC): Telefónica is a founding member of the EGDC, an initiative of the European Commission and leading European ICT companies committed to supporting the green digital transformation as a solution to climate change through three strategic areas:

> Development and deployment of green digital solutions with a with significant energy and material efficiency that achieve a net positive impact in a wide range of sectors.

> Development of methods and tools to measure the net impact of green digital technologies on the environment and climate.

> Creation of guidelines and recommendations for green digital transformation.

SME Climate Hub: Telefónica supports this pioneering global initiative, that empowers small and medium-sized companies to take climate action, providing them access to different resources to learn about and mitigate their environmental impact, such as action guides, tools and a powerful network within which to perform their networking. Small and medium-sized companies joining this initiative commit to halving their greenhouse gas emissions by 2030, reach net zero emissions by 2050 or even earlier, and report their progress each year.

Participation in sectoral working groups on climate change: knowing that collective work can help align all companies with the Paris Agreement`s goals, Telefónica shares best practices and actively collaborates with other associations in the telecommunications sector such as ETNO[50], GSMA or JAC, in joint initiatives to define the GHG emissions quantification, establish ambitious reduction targets and drive climate action in the supply chain. Telefónica participates actively in all of them, Telefónica, having a constructive voice and working to promote digitalisation as a key ally of the green transition.

Other initiatives and partnerships: aware of its responsibility to promote a global movement for tackling climate change and recognising the need for collective action to accelerate the transition to a sustainable economy, Telefónica is also participating in the following initiatives:

RE 100	**A global initiative that brings together the world's most influential companies advocating to 100% renewable electricity.**
THE CLIMATE PLEDGE	Cross-sectoral community of companies and organisations, working to address the **climate crisis** and **decarbonisation challenges.**
WE MEAN BUSINESS COALITION	Coalition catalysing political and business action to **halve global emissions** by 2030, in line with the 1.5°C pathway.
Grupo Español Crecimiento Verde	Association of Spanish companies that promotes public-private collaboration **to address environmental challenges such as climate change,** circular economy and energy efficiency.
EXPONENTIAL ROADMAP INITIATIVE	Initiative, which aims **to halve GHG emissions** before 2030 and accelerate exponential climate action and solutions through **ground-breaking projects.**
BUSINESS AMBITION FOR 1.5°C	The initiative is an urgent call to action for companies to set science-based **emissions reductions targets** in line with a 1.5°C future.

50 **» ETNO** (European Telecommunications Network Operators' Association) is the umbrella association of Europe's leading telecommunications network operators since 1992 and has become the principal policy group for European electronic communications network operators.

Our Plan, at a glance

Our Plan, at a glance

Our journey to Net Zero

2025

We will reduce **90%** of our scope 1 and 2 emissions in our main markets and we will neutralise the remaining 10% (unabated emissions)

We will reduce **39%** of our scope 3 emissions

2030

We will reduce **80%** of our scope 1 and 2 emissions

We will reduce **56%** of our scope 3 emissions

2040

Net zero emissions

Reducing **90%** of our emissions

Neutralising **100%** of our unabated emissions

2015 **2016** 2017 2018 2019 2020 2021 2022 2023 2024 **2025** 2026 2027 2028 2029 **2030** 2031 2032 2033 2034 2035 2036 2037 2038 2039 **2040**

How are we going to do it?

Optimising our internal processes

- Improve 90% of energy consumption per unit of traffic
  - ✓ Network transformation and legacy shutdown
  - ✓ Power Saving Features (PSF)
  - ✓ Compacting and consolidation
  - ✓ Modernisation of power and cooling equipment
  - ✓ AI and machine learning
  - ✓ Efficient lighting
- 100% renewable electricity
  - ✓ Guarantees of Origin
  - ✓ Long-term Power Purchase Agreements (PPA)
  - ✓ Self-generation
- ✓ Reduction of consumption
- ✓ Replacement of fuels
- ✓ Installation of hybrid self-generation systems
- ✓ Installation of lithium batteries
- ✓ Vehicle replacement and reduction of travelling
- ✓ Cooling equipment: leakage control, equipment shutdown and refrigerant replacement.

1 Operational model

Engaging with suppliers and promoting circular economy

- Refurbish and reuse 90% of fixed customer equipment
- 100% of strategic suppliers with emission reduction targets aligned with SBTi
- 100% of new CPE* with ecodesign criteria
- 100% of CPE* purchased with circularity criteria

Strengthen supply chain engagement:

- ✓ Supplier Engagement Program
- ✓ Joint Alliance for CSR
- ✓ 1,5° Supply chain leaders / SME Climate Hub
- ✓ Eco Rating

2 Value chain model

Helping our customers to decarbonise its businesses

- Collect 20% of mobile devices distributed
- ✓ Help customers reduce their CO_2 emissions through the development of digital and connectivity solutions
- ✓ Promote the sale of Eco Smart products and solutions
- ✓ Help customers to make informed decisions, through Eco Rating
- ✓ Transparent communication to drive customer sustainable habits

3 Commercial model

Aligning environmental and financial sustainability

- Update the Sustainable Finance Framework
- 30-35% of sustainable finance
- New instruments for Internal Carbon Pricing
- ✓ Map debt issuance against the EU taxonomy
- Improve the reporting on the impact of climate change in financial statements

4 Financial model

Being transparent and involving everyone

- ✓ Defined climate change governance mechanisms and responsibilities
- ✓ Environmental and climate change internal regulations
- ✓ Annual reporting on our progress with verifiable KPIs
- ✓ Continued leadership in transparent reporting through CDP and DJSI
- ✓ Variable remuneration aligned with the achievement of climate targets
- ✓ Internal engagement actions
- ✓ Report on risks and opportunities in line with TCFD recommendations
- ✓ Climate advocacy actions: industry groups, strategic partnerships and professional associations

5 Governance model

* CPE - Customer Premise Equipment (routers, decos,...)


Telefónica