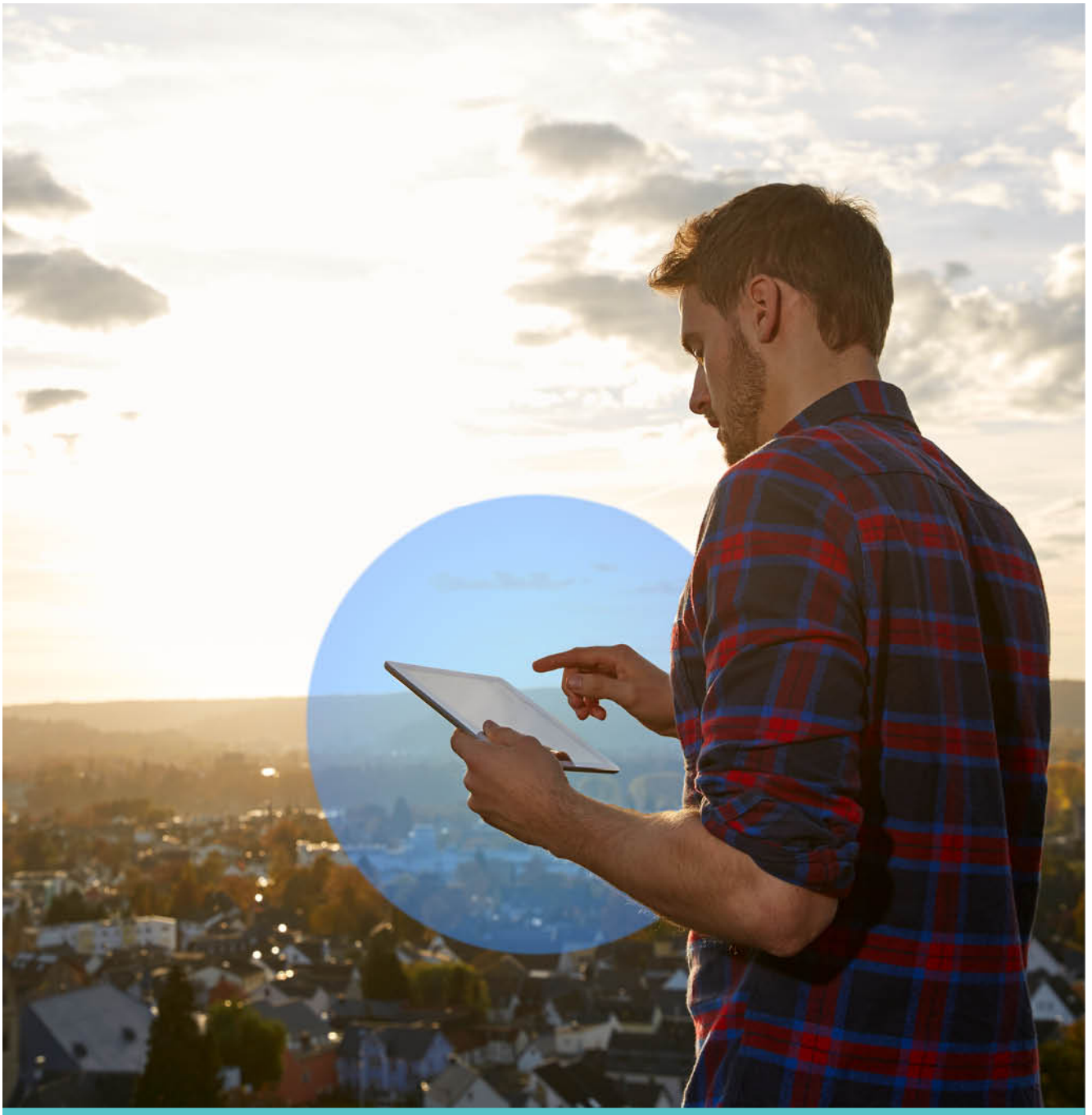


Building a greener future

2.1. Responsibility with the environment

GRI 103, 102-11

KEY POINTS

- **We are committed to minimising our environmental impact and achieving net-zero carbon emissions and zero waste to landfill.**
- **All our operators have implemented externally certified Environmental Management Systems.**
- **We are working to become a leading supplier of digital solutions designed to help our customers avoid 12 million tonnes of CO_2 per year in 2025.**

2.1.1. Vision

In the last few decades, protecting the environment has become a priority for all enterprises due to the risks and opportunities entailed. Furthermore, we are experiencing a clear increase of awareness among consumers, investors and employees towards the planet and the need to carry on their business in a more sustainable manner.

At Telefónica, we are striving to ensure our impact on the environment is minimal and are committed to decoupling the growth of our business from our environmental footprint. We also want to contribute, through digitalisation, to make a **new economic paradigm** a reality, which, in accordance with the European Green Deal, puts the focus on protecting the environment. Digitalisation is, therefore, a crucial tool to face these environmental challenges: climate change, circular economy, water management, biodiversity, etc.

This commitment is part of the Company's general strategy and is the responsibility of the Board of Directors. Our performance in this area is regularly supervised by the Board's Sustainability Committee and the Responsible Business Office, made up of the global areas which execute that strategy alongside the business units.

We have **global environmental and energy management policies,** and we act at all levels of the organisation. The environment is a central issue throughout the Company, involving both operational and management areas as well as business and innovation areas. The carbon reduction targets are part of the variable remuneration of all the Company's employees, including the Executive Committee.

We are working for a world where digital technology contributes to protecting the planet.

2.1.2. Risks and opportunities

The Company's environmental and climate change risks are controlled and coordinated under the Telefónica Group's global risk management model, in accordance with the **precautionary principle.**

The major focal point of our environmental risk is the high geographic dispersion of our infrastructure, which is controlled through environmental management based on uniform processes and certified according to the ISO 14001 standard.

We analyse the risks deriving from climate change in accordance with the recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD). These are specifically disclosed in chapter 2.2 Energy and climate change.

In 2021, the Telefónica Group has contracted, both locally and globally, several insurance programs in order to mitigate the possible occurrence of any incident arising from the risks of environmental liability and/or natural disasters, to guarantee business continuity. We currently have fully comprehensive insurance and coverage for all risks, material damages and loss of profit, in order to cover any material losses, damage to assets and loss of income and/or customers, among other problems, as a consequence of natural events. We also have insurance to cover the environmental liabilities set out by applicable laws and regulations. Both insurance policies are based on limits, sub-limits and cover which are appropriate to the risks and exposure of Telefónica and its Group of companies.

However, our company finds more opportunities than risks in this area: it helps us to improve our financing thanks to a diversified investor base and access to a growing sustainable market; it contributes to lessening our dependence on fossil fuels and reducing CO_2 emissions, fostering more efficient energy consumption; and promotes our growth through Eco Smart products and services.

2.1.3. Strategy and commitments

Our environmental strategy seeks to **minimise our impact on the planet** and **maximise the environmental benefits** generated by our digital products and services. The strategy is built around three levels:

- The **first level** is related to the **responsibility** we assume as a company committed to our environment, managing our risks, implementing ISO management systems and carrying out proactive advocacy in favour of the environment.
- The **second level** has to do with the **decarbonisation and circularity** of the company, thanks to renewable energies, extending the life of electronic equipment and reducing resource consumption and CO_2 emissions to tackle climate change

Go to chapter 2.2 Energy and climate change

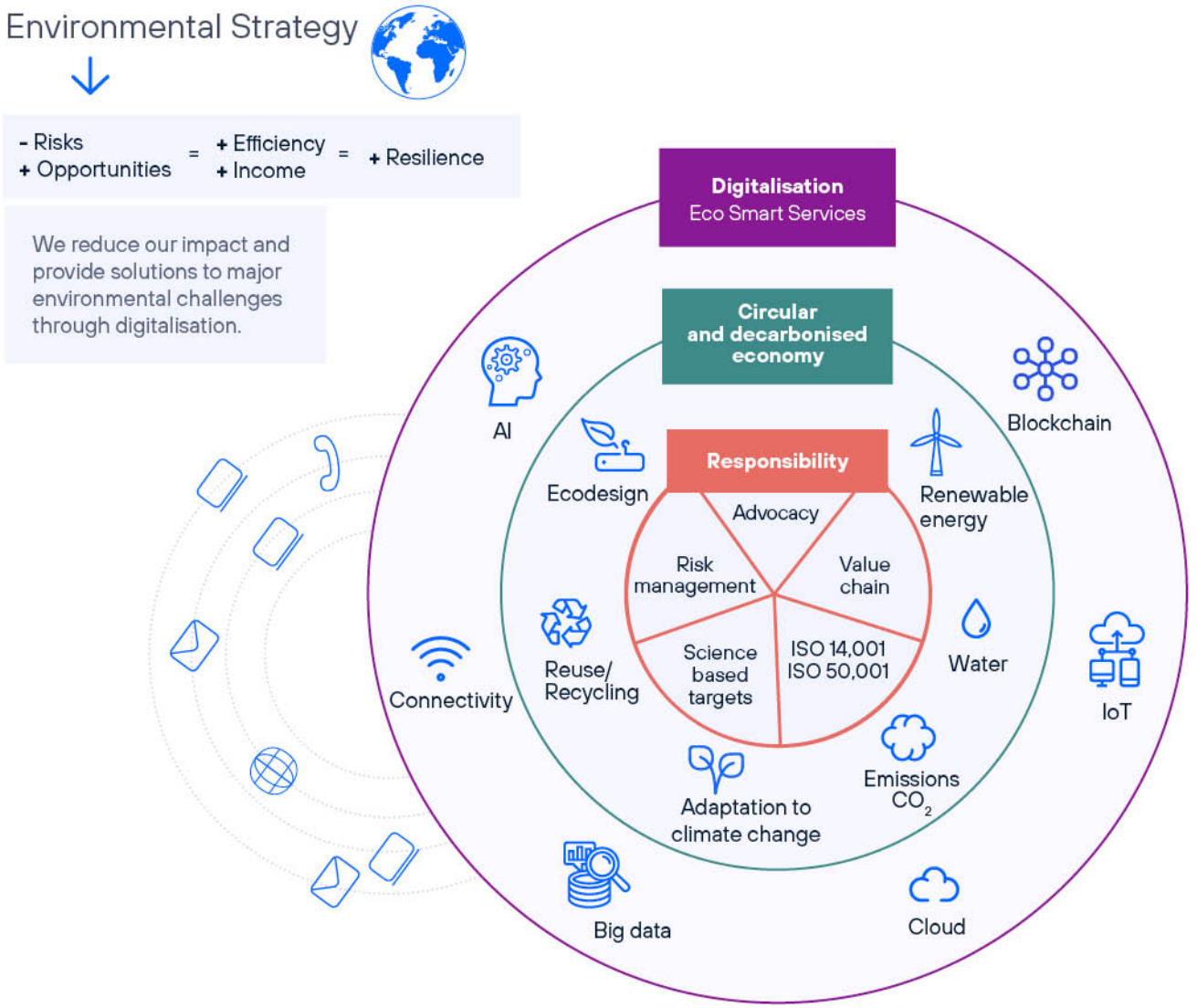
Go to chapter 2.3 Circular Economy

- Finally, the **third level** is linked to our raison d'être, the **digitalisation of our customers**, through services with a positive impact on the environment thanks to technologies such as the Internet of Things (IoT), cloud and big data.

Go to chapter 2.4 Digitalisation and Eco Smart services

As part of the integration of the environment into the company's strategy, **we are progressively increasing the company's sustainable financing.**

Go to chapter 1.7. Sustainable finance



2.1.4. Targets

Our major targets are to:

→ Avoid 12 million tonnes of CO_2 per year for our customers in 2025.

→ Reduce our CO_2 emissions (scope 1+2) by 90% in our main markets in 2025, and 80% globally in 2030

→ Reduce CO_2 emissions in our value chain by 39% by 2025 compared to 2016 (scope 3).

→ Continue to consume 100% renewable energy in our main markets and also reach 100% globally in 2030.

→ Be a zero-waste company in 2030, through increasing ecodesign, reuse and recycling.

2.1.5. Environmental Management System

GRI 103, 102-11, 102-29

The **ISO 14001** Environmental Management System (EMS) is the model we chose to ensure environmental protection. **All our operators have an externally-certified EMS**.

We have a range of global standards incorporating the life-cycle perspective. We also incorporate the life-cycle perspective into the various aspects of our value chain and we pay particular attention to involving our partners in environmental management.

Having a certified EMS enables us to ensure that we successfully control and comply with the environmental legislation applicable to each operation, and this **preventive model of compliance** is associated with the Company's overall compliance process. We were not subject to any significant environmental penalties in 2021.

We manage all the main environmental aspects, such as energy and waste, but also others such as noise and water, progressively reducing our impact and increasing resilience through adaptation to climate change.

In addition, we renewed the Energy Management Systems (**ISO 50001**) certification for our operations in Spain and Germany and are working to extend it to other operations, such as those in Brazil (the EcoBerrini headquarters has already been certified).

2.1.6. Responsible network and biodiversity

GRI 103

With the goal of providing top quality service while promoting care for the environment, we successfully monitor environmental risks and impacts related to managing the network throughout its life cycle. In 2021, we invested around 20.8 million euros towards this goal (similar to the investment in 2020).

An example of the responsible management of the network is the fact that 98% of our waste was recycled in 2021.

In order to minimise the impact of network deployment, we implement best practices, such as noise insulation measures when necessary or infrastructure sharing. Thus, whenever possible during installation of our facilities, we share space with other operators. This enables us to optimise land occupation, visual impact, energy consumption and waste generation.

RESPONSIBLE NETWORK LIFE CYCLE

PLANNING AND CONSTRUCTION	
Environmental licences and permits	1,614
Visual impact reduction measures	88
Base stations with renewable energy	854
OPERATION AND MAINTENANCE	
Energy efficiency and managements projects	188
Renewable energy in own facilities (%)	79.4
GHG emissions (Scopes 1+2) (tCO_2eq)	536,737
Energy consumption by traffic (MWh/PB)	54
DISMANTLING	
Network equipment reused	9,520
Hazardous waste (t)	3,268
Total waste recycled (%)	98

With regard to **biodiversity**, the impact of our facilities is limited. Nevertheless, we conduct environmental impact studies and implement corrective measures when necessary, such as in protected areas.

Practically all facilities are in low or very low value habitats.

To analyse the impact of the Group's infrastructures on biodiversity in greater detail, a Geographic Information System (GIS) was used to put together the area occupied by each type of infrastructure and the different layers of information about protected areas and species obtained from renowned international organisations, such as the International Union for Conservation of Nature (IUCN).

This information has enabled us to establish the quality of the habitats in which some type of the company's infrastructure is present (classifying them into five levels, from very low to very high) and assess the potential impact on biodiversity (destruction of vegetation or habitat disturbance in the area of influence, such as fragmentation, alteration or introduction of invasive species). As a result, it has been observed that almost all facilities are in low or very low value habitats, and none of them are located in habitats with a very high value; therefore, the potential impact on biodiversity is very limited.

2.1.7. Main indicators

GRI 301-3, 302-3, 303-5, 305-1, 305-2, 305-3, 305-4, 306-3, 306-4

The evolution of our environmental performance is reflected in the following summary of indicators:

Telefónica's environmental performance, at a glance

	2020	2021	Trend
Management			
Certified activity according to ISO 14001 (%)	100	100	•
Energy			
Energy consumption (MWh)	6,269,962	6,106,625	▼
Renewable electricity in own facilities (%)	78.8	79.4	▲
Energy consumption per traffic (MWh/PB)	72	54	▼
Emissions			
Scope 1 GHG emissions (tCO_2e)	207,872	183,231	▼
Scope 2 GHG emissions - *market based* (tCO_2e)	467,587	353,506	▼
Scope 3 GHG emissions (tCO_2e)	2,146,226	2,072,159	▼
Emissions offsets (tCO_2e)	78,101	63,018	▼
Avoided emissions			
Emissions avoided by clients ($MtCO_2e$)	9.5	8.7	▼
Water			
Water consumption (ML)	2,785	2,735	▼
Circular Economy			
Waste generated (t)	46,912	64,065	▲
Non-hazardous waste (t)	42,040	60,797	▲
Hazardous waste (t)	4,872	3,268	▼
Waste recycled (%)	98	98	•
Equipment reused (t)	1,913	2,248	▲
Biodiversity			
Visual impact reduction measures (nº)	484	88	▼

2.2. Energy and climate change

GRI 103, 102-11

KEY POINTS

- **Managing climate change is part of our business strategy and follows the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD).**
- **We are committed to achieving net-zero emissions in 2025 in our main markets, and in 2040 worldwide and with our value chain.**
- **Our reduction targets, validated by the Science Based Targets initiative (SBTi), are not only compatible with the expansion of the network and service quality, but also make us more competitive.**

2.2.1. Vision

Intensive energy use in the current economic model is one of the main causes of climate change and most pressing challenges we are facing. In their latest report, the UN expert panel warned that **the world must cut emissions by 45% before 2030** and achieve net-zero emissions by 2050 at a global level. Organisations like the World Economic Forum identify climate change as the major risk factor for the world's economy and the investment world is increasingly aware of the need to focus on sustainable investments.

In addition, energy is an essential resource in developing our business and our annual consumption –over 95% of which is from the telecommunications network – is equivalent to that of a country such as El Salvador. According to GSMA, although the telecommunications sector is responsible for approximately 0.4% of global emissions, we can reduce it 10 times more due to digitalisation's ability to decarbonise other sectors. In addition, according to the World Economic Forum and the Exponential Roadmap, **digital technologies can help cut emissions by between 15% and 35%** within the next 10 years.

Our strategy thus includes managing energy and climate change, by aligning mitigation, adaptation and opportunities with the business and stakeholders' demands. We are working to continue leading in this area and forming part of the A List of the CDP climate change index, on which we have been included consecutively for the past eight years.

See references to the Task Force on Climate-related Financial Disclosures (TCFD) in chapter 2.17.8

2.2.2. Governance

The climate change and energy strategy is part of the Responsible Business Plan, headed by the Board of Directors. The Board of Directors' Sustainability and Quality Committee, which meets monthly, supervises the implementation of the strategy, reviews the risks and monitors its targets.

Our Global Energy and Climate Change Office has been operational since 2007. Comprising such areas as Operations, Environment and Procurement, it is tasked with implementing the strategy. Furthermore, the Global Energy Centre, created in 2015, deals with accelerating the fulfillment of the targets and, alongside local officers, promotes energy efficiency and renewable energy projects in each country.

At the Global Energy and Climate Change Workshop, which we have held every year since 2010, we analyse the progress we have made and new opportunities in the area.

In addition, a percentage of the variable remuneration of all our employees, including the Executive Committee, is linked to fulfillment of the annual CO_2 emission reduction targets, in line with the medium- and long-term goals.

Go to chapter 5.1 Annual report on Remuneration

Reducing CO_2 emissions has been part of the variable remuneration of all employees, including the Executive Committee, since 2019.

2.2.3. Policies

There are several internal regulations to align the organisation with our energy and climate change goals:

- Environmental Policy
- Energy Management Policy
- Supply Chain Sustainability Policy

2.2.4. Risks and opportunities

Climate change is one of the basic risks inside the Company's Risk Management Model.

Go to chapter 3.1. Risk management and control model

We analyse the risks of climate change in accordance with the recommendations of the TCFD (Task Force on Climate-related Financial Disclosures), covering both the physical risks and those arising from transitioning in the **medium and long term,** using projections of climate variables for two different CO_2 concentration scenarios (RCP, the Representative Concentration Pathway).

In the RCP 2.6 scenario (aligned with the Paris Agreement), the risks relate mainly to transitioning to a decarbonised economy (regulatory, technological, market and reputational risks) – for example, due to the tightening of the measures to limit GHG emissions. This transition would also mean considerable **opportunities** associated with cost reductions due to energy efficiency and renewable energy and to business growth in digital solutions designed to help our customers decarbonise their activities.

Go to chapter 2.4. Digitalisation and Eco Smart Services

In contrast, in the RCP8.5 scenario ("business as usual") the major risks are physical risks, associated with changes to specific climate variables, whether these be temporary (increase in extreme weather events) or chronic (increase in temperature, variation in rainfall). The risk associated with the **increase in temperature** would entail a great financial impact, as it could increase electricity consumption from cooling our network equipment. In addition, this could be aggravated by the possible increase in the cost of electricity, mainly in countries which are highly reliant on hydropower, in the event of episodes of drought.

The business continuity, energy efficiency and renewable energy plans help us to cut exposure to these risks and adapt to the consequences of climate change.

Climate change risks

Transition				Physical	
Policy and legal	**Technological**	**Market**	**Reputational**	**Chronic**	**Acute**
Increase in the price of certain products and services as a result of taxes or levies on direct or indirect CO_2 (energy, transport, etc.).	Need for early withdrawal of assets linked to HVAC or for energy to transition to clean energy.	Increased energy OpEx, for example, in countries dependent on hydropower or due to the increase in price of CO_2.	Greater demands in this area from major stakeholders (investors, analysts, customers, etc.). Growing costs of CO_2 compensation	Greater consumption of electricity for refrigeration associated with the increase in global temperature. Possible increase in the price of electricity during droughts.	More frequent extreme weather events (mainly floods) would increase the business continuity risk and the cost or replacing damaged assets.

Climate change opportunities

Resource efficiency	Eco Smart products and services	Energy source	Resilience
Through our Energy Efficiency Plan, we are optimising our operating and network costs.	Our connectivity and digitalisation solutions are key for decarbonising other sectors and will allow us to access new business opportunities.	Our Renewable Energy Plan enables us to reduce carbon emissions and the energy costs of our network, thanks to self-generation and the signing of long-term agreements (PPA).	Our adaptation strategy allows us to incorporate risks and opportunities into the Company's strategy, influencing our investment decisions, modernisation and network deployment.

2.2.5. Strategy and commitments

The energy and climate change strategy is integrated into the management of the Company and focuses on building a greener future. We are committed to reducing our own carbon footprint in order to have a network with net zero emissions through which we deliver Eco Smart solutions to cut our customers' emissions.

Our journey towards **net-zero emissions** means reducing our own emissions (Scope 1 and 2) and those of our value chain (Scope 3), in addition to neutralising remaining emissions.

> Reducing our own emissions

At Telefónica, **keeping our electricity consumption stable** – despite the considerable rise in digitalisation of society and thus the data traffic circulating through our networks – is a priority. To do this, our Energy Efficiency Plan encompasses initiatives such as modernising our network by replacing copper with fibre optics; power plants and HVAC equipment renovation projects; using free cooling to cool with air directly from outside; shutting down legacy networks; implementing power-saving features (PSF) in the access network; and reducing fuel consumption by means of hybrid stations with photovoltaic solar energy.

To reach the point of decarbonisation of the Company, not only do we need maximum efficiency in energy usage but we also need the energy to come from renewable sources.

Our **Renewable Energy Plan** includes all types of solutions – self-generation, the purchasing of renewable energy with a guarantee of origin and long-term agreements (Power Purchase Agreements - PPA) – and prioritises non-conventional renewable energy sources. Our goal is to go further than 100% of renewable energy in our main markets, that is to contribute to increasing the renewable energy mix through self-generation or by facilitating the construction of new parks through our medium- and long-term consumption commitments.

In addition, introducing **carbon pricing** helps us make better investment and equipment procurement decisions. When procuring energy-consumption-intensive equipment, we also apply the Total Cost of Ownership (TCO). This enables us to bear in mind not just the purchase price, but also the price of the energy consumed during its useful life, and thereby to opt for more efficient equipment.

> Reducing the emissions of the value chain

The emissions of our value chain (Scope 3) are the largest in our entire carbon footprint.

Of the **total Scope 3 emissions**, more than 2/3 come from the categories of purchases of products and services, capital goods and use of our products (according to the GHG Protocol methodology).

In order to reduce our emissions in the value chain, cooperating with our main suppliers and the rest of the sector is paramount, as we share the same challenges.

In this respect, we have our own Supplier Engagement Programme and we work closely with other operators in working groups in JAC (Joint Audit Cooperation) and GSMA, as well as in multi-sectoral initiatives such as 1.5°C Supply Chain Leaders and SME Climate HUB.

In addition, we foster the ecodesign and reuse of devices – both customer and network equipment – to reduce emissions from these. We also offer sustainable purchasing criteria, like the Eco Rating seal, which rates the **sustainability of mobiles,** thus encouraging manufacturers to improve them.

Go to chapter 2.3. Circular Economy

We collaborate in sectoral initiatives to reduce our supply chain emissions.

> Neutralising the remaining emissions

We neutralise the emissions we cannot reduce (around 10%) preferably through nature-based carbon sequestration projects (**permanent absorption of CO_2** from the atmosphere) that have been awarded the most reliable certifications, while also seeking added value in terms of job creation and biodiversity.

Targets

Our targets, validated by the Science Based Targets initiative (SBTi), aim to reduce emissions in line with a 1.5ºC scenario through our operations, including the value chain:

- **To reduce** our Scope 1 and 2 **emissions by 90%** in 2025 in our main markets, and by 80% globally in 2030, compared to 2015.
- To have **net-zero emissions in 2025** in our main markets, taking into account Scopes 1 and 2 and neutralise residual emissions (2040 for Hispam).
- To continue using 100% of electricity from **renewable energy** in our main markets, promoting their development through long-term power procurement agreements and more self-generation (Hispam 100% renewable in 2030).
- To reduce CO_2 emissions in our **value chain** by 39% in 2025 compared to 2016, and achieve net-zero emissions in 2040.
- To improve our **energy efficiency:** to reduce energy consumption per traffic unit (MWh/PB) by 90% in 2025 compared to 2015.
- **To contribute** to our customers avoiding 12 million tonnes of CO_2 per year through connectivity and our Eco Smart services in 2025.

Go to chapter 2.4. Digitalisation and Eco Smart Services

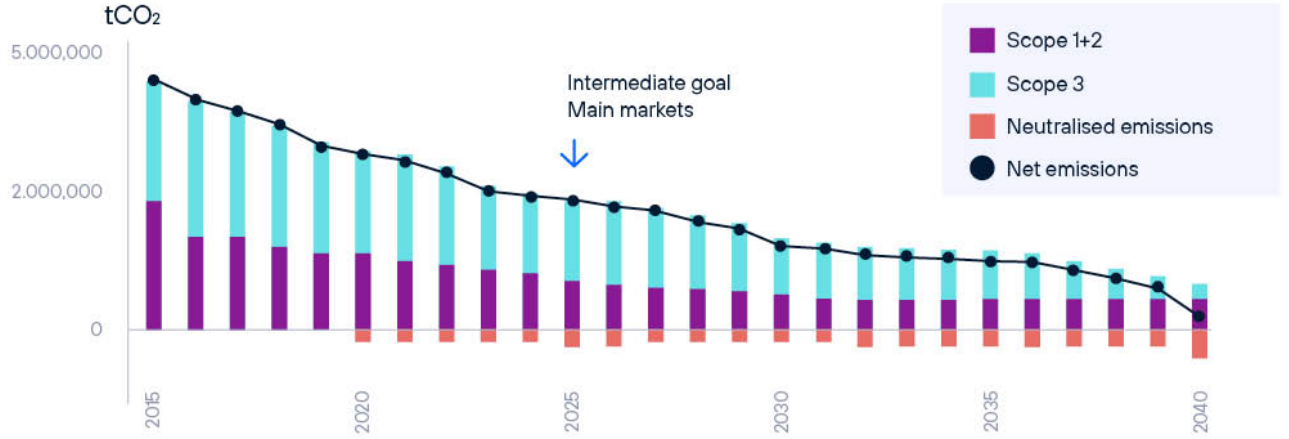
Telefónica's climate targets are validated by the SBTi and include Scopes 1, 2 and 3.

Energy and climate change targets

Beyond the Paris Agreement

Journey to Net-Zero

We reduce our emissions in line with the 1.5°C scenario and we neutralise the rest until we achieve Net-Zero.



Net-ZERO emissions

2025: Intermediate target in main markets
2040: Value chain and Hispam

Renewable energy	Energy efficiency	Emission reduction	Value chain	Neutralisation
100%	-90%	80%	-39%	100%
Renewable energy in Europe, Brazil and Peru Hispam 2030	**MWh/PB 2025** Energy consumption per traffic unit	**2030 Scope 1 and 2** Main markets - 90% in 2025	**2025 Scope 3**	**Residual emissions**
• Certificates of guarantee of origin. • Long-term purchase agreements (PPAs). • Self-generation.	• Transformation of the network and shutting down legacy. • Power saving features (PSF). • Modernisation of HVAC and power equipment. • Lighting.	• Incorporation of carbon pricing. • Low carbon purchasing. • Checking of fugitive emissions and new refrigerant gases.	• Supplier emissions reduction programme. • Efficiency in customer devices.	• Nature-based projects. • With social and biodiversity benefits. • Under reputable standards.

2.2.6. Progress in 2021

The data presented in this section regarding the Telefónica Group do not include operations in the United Kingdom, following its merger with Virgin Media as of 1 June 2021. The main indicators associated with such operations between January and May 2021 (period pertaining to the Telefónica Group) are reported separately in the indicator summary tables.

> Progress in energy consumption

GRI 302-1, 302-2, 302-3, 302-4

In 2021, we undertook 188 energy efficiency and management initiatives in our networks and offices, achieving savings of 302 GWh. Total energy consumption was 6,107 GWh (21,983,852 GJ), 95% of which was electricity, while 5% was fuel. Our **energy consumption per traffic unit** rate improved by 86% compared to 2015 and we saved €37.6 million through the implementation of energy efficiency and management projects.

Thanks to the implementation of energy efficiency projects, we have managed to reduce power consumption by 7.2% since 2015, while data traffic through our networks has increased 6.7 times over.

In 2021, as part of our energy efficiency projects, we fostered network transformation initiatives, responsible for 85% of our energy savings. We also rolled out projects to **shut down** legacy infrastructure, such as 2G and 3G networks, as well as copper networks. In Germany, we concluded the full shutdown of the 3G network, cutting energy consumption by approximately 60 GWh per year.

In Spain, thanks to the migration of customers from copper to fibre (85% more efficient in terms of energy consumption), we shut down over 1,440 stations, saving 36.7 GWh per year.

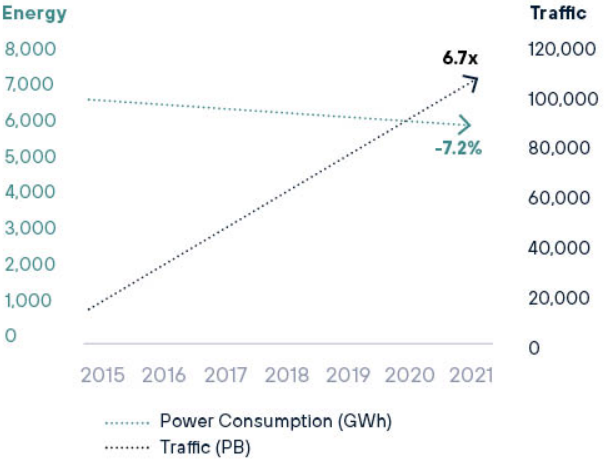
We should also highlight improvements in the **design** of mobile sites, with a more sustainable approach from the point of view of construction, maintenance, energy consumption and emissions. This model, called the Smart Site model, encompasses all available best practices, such as upgrading equipment, free cooling, installing Bluetooth locks and using renewable energy.

With regard to efficient management of network capacity, we increased use of power saving features (PSF) during periods of low traffic. Thanks to the use of artificial intelligence tools and **automatic prediction** of traffic, the 15 new PSFs implemented in our 4G and 5G networks have reduced energy consumption by up to 30% without compromising network quality.

In 2021, we rolled out a sustainable immersion cooling solution at the Bellas Vistas fixed switch site in Madrid (Spain). This pilot scheme demonstrates how less energy can be used to support growing demand for data in Edge Computing and 5G, thanks to immersing the servers in an electrically non-conductive, non-toxic, biodegradable fluid which is up to 50% more energy efficient than air conditioning.

Finally, we must highlight the improvement in reporting methodologies for data on operational fuel consumption and recharging of refrigerant gases. In countries such as Brazil and Argentina, we have digitalised the management process, thereby increasing data accuracy and enabling implementation of new projects to reduce Scope 1 emissions.

Progress in energy and traffic 2015-2021



> Renewable energy

GRI 302-1, 302-2, 302-4, 305-5

In 2021, 79.4 % of our total electricity consumption in own facilities came from renewable sources.

We continued the ambitious **distributed generation** project in Brazil, which will enable, as of 2022, 83 new renewable energy plants around the country to generate over 700 GWh per year for Telefónica Brazil and thus reduce dependence on iREC guarantees of origin.

In Spain, we signed four new **long-term, renewable energy Power Purchase Agreements (PPA)** for the period 2022-2031, which will cover 30% of the total consumption for the country, equivalent to 482 GWh per year for 10 years. These new agreements made it possible to achieve a total of 582 GWh of renewable electricity covered by PPAs in our operations in Spain, covering 50% of the consumption of technical buildings.

Furthermore, thanks to the extension of **guarantee of origin programmes,** countries such as Chile, Colombia and Peru certified 34%, 67% and 100%, respectively, of their electricity consumption in Latin America as renewable. In Germany, Brazil and Peru, we also certified 100% of the electricity consumption at third-party sites as renewable.

In Europe, Brazil and Peru, 100% of the electricity we consume at our own facilities comes from renewable sources (79.4 % at global level). Our goal, as part of the RE100 initiative, is for the electricity we consume in all our operations to come entirely from renewable sources in 2030.

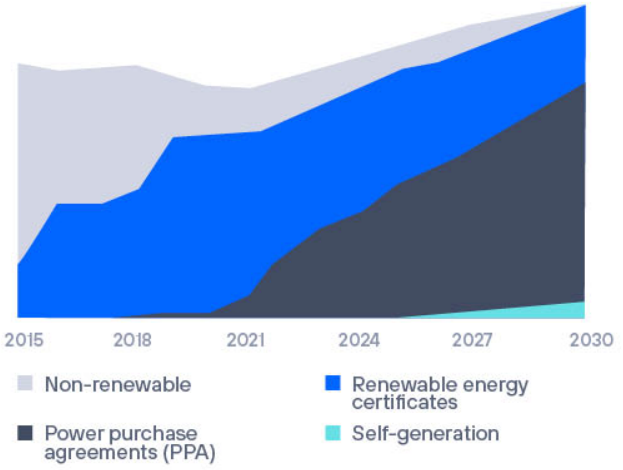
As regards **self-generation**, we are gradually increasing the number of base stations of the mobile network that run on renewable energy, up to 854. This also allows us to avoid using fuel-powered generators in isolated base stations, thus achieving a reduction in consumption of between 70% and 100%.

In Uruguay, due to more favourable regulations for developing this type of system, 3% of the energy consumed by the operator's mobile network was self-generated through solar photovoltaic energy.

In Spain, we also implemented photovoltaic **self-generation** systems in several buildings, using solar production for self-supply (without excess being sent to the grid) under two models, the first with our own CapEx and the second under a service model where we pay for the electricity generated at lower than market rate, obtaining OpEx savings.

Our Renewable Energy Plan focuses on continuing to sign long-term Power Purchase Agreements (PPAs) and self-generation, in order to progressively reduce the purchase of certificates of renewable origin and increase savings in OpEx for electricity.

Renewable energy



Total energy consumption

Savings from energy efficiency projects, 2021

*Other: includes projects such as lighting, correcting the output factor, renewable self-generation, fuel consumption reduction, automation, and tax exemptions and benefits.

Energy[1]	Unit	2015	2019	2020	2021	Evolution 2015/2021
Total energy consumption	MWh	6,577,766	6,399,655	6,269,962	6,106,625	-7.2%
Electricity consumption [2] + self-generation	MWh	6,186,885	6,028,893	5,966,242	5,815,665	-6.0%
Fuel[3] and district heating	MWh	390,882	370,762	303,720	290,961	-25.6%
Electricity from renewable sources in own facilities	%	17.2	73.8	78.8	79.4	
Total annual traffic managed	Petabyte	17,054	59,559	86,591	113,547	565.8%

(1) The data in this table do not include Telefónica United Kingdom (O2). Its total energy consumption between January and May 2021 was 223,657 MWh and 100% of the electricity consumed in own facilities came from renewable sources.
(2) Includes total electricity consumption from renewable sources, which in 2021 amounted to 4,234,353 MWh, of which 3,697,451 MWh are consumed in own facilities.
(3) Includes biofuel consumption, which in 2021 amounted to 35,987 MWh.

> Progress in emissions

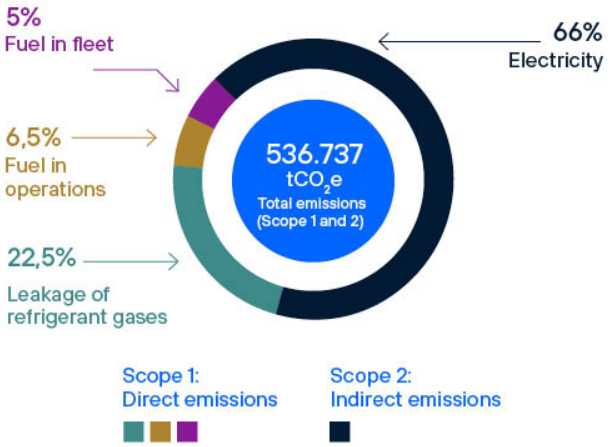
GRI 305-1, 305-2, 305-3, 305-4, 305-5

We calculate and verify by an external party our carbon footprint based on the **GHG Protocol** Accounting and Reporting Standard, developed by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD).

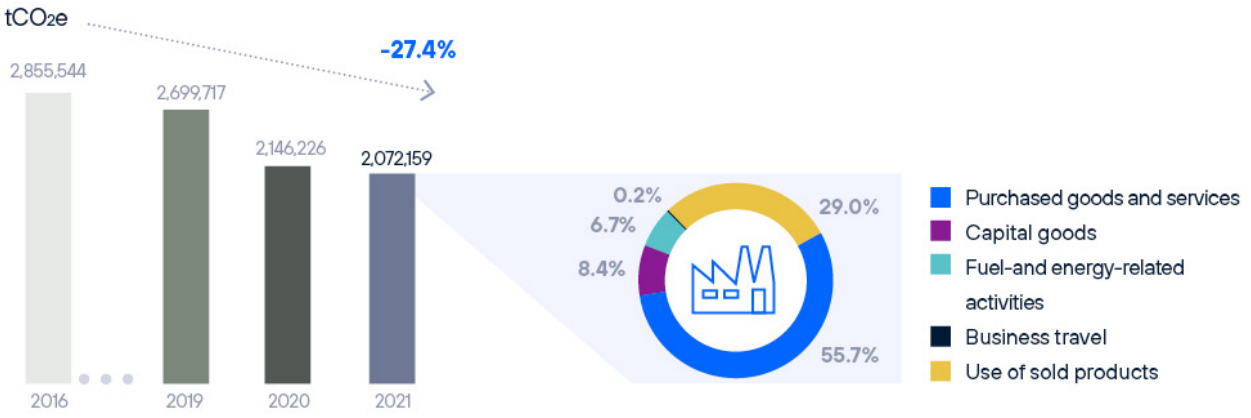
In 2021, our **Scope 1** emissions fell by 36% compared to 2015, which represented 103 $ktCO_2e$ less in 6 years. In **Scope 2** emissions, the reduction was 77% versus 2015, that is 1,171 $ktCO_2e$ less over the same period. Combined, our Scope 1 and 2 emissions fell by 70%, which implies a reduction of 1,274 $ktCO_2e$ emitted to the atmosphere.

Furthermore, our energy efficiency and renewable electricity purchase initiatives saved us 69 $ktCO_2e$ and 902 $ktCO_2$, respectively.

Telefónica emissions in 2021



Scope 3 emissions



Emissions[1]

	Unit	2015	2016	2019	2020	2021	Evolution, base year/2021
Scope 1	tCO_2e	286,201	281,517	229,296	207,872	183,231	-36.0%
Scope 2 (based on market method)	tCO_2e	1,524,954	1,047,751	657,024	467,587	353,506	-76.8%
Scope 1 + 2 (market)	tCO_2e	1,811,155	1,329,268	886,319	675,459	536,737	-70.4%
Emissions offset[2]	tCO_2e				78,101	63,018	
Net emissions[3]	tCO_2e			886,319	597,357	473,718	
Scope 3[4]	tCO_2e		2,855,544	2,699,717	2,146,226	2,072,159	-27.4%
Biogenic	tCO_2e			9,680	9,695	9,020	
Emissions avoided due to renewable energy consumption	tCO_2e	392,489	752,264	868,611	782,868	902,019	129.8%
Intensity of emissions (Scope 1+2/income in €m)	tCO_2e / M€	33.0	29.4	21.4	18.6	14.6	-55.8%

(1) Emissions data in this table represent more than 96% of total emissions from the Group. Telefónica United Kingdom (O2) is not included. Scope 1+2 (market) emissions between January and May 2021 were 15,336 tCO_2e and emissions avoided due to renewable energy consumption were 37,014 tCO_2
(2) Emissions offset by purchase of carbon credits in certified projects.
(3) Net emissions after offsetting through purchase of carbon credits [Scope 1 + 2 (market) - Emissions offset].
(4) Scope 3 emissions were recalculated for 2016, 2019 and 2020 due to a change in scope and improvements in calculation methodology.

Emissions by company

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]
Scope 1+2 (market)	5,950	63,018	44,400	166,854	71,981	35,072	9,223	69,405	6,027	1,107	46,466	7,494	9,740
Scope 1	5,369	63,018	25,631	31,692	10,348	14,101	1,131	7,589	6,027	550	12,338	1,837	3,600
Scope 2 (market)	581	0	18,769	135,162	61,633	20,971	8,092	61,817	0	556	34,128	5,657	6,140

(1) Other companies consolidates emissions for the following companies: Telefónica GIES, ACENS, Media Networks Latin America Perú, Internet para todos -IPT Perú

Without our Renewable Energy Plan, Telefónica's emissions would have been 2.7 times greater.

Scope 3 emissions represent 79% of the total generated by Telefónica. This is why in 2021 the 15 Scope 3 categories were re-screened according to the GHG Protocol to increase the quality of the data through methodological improvements. The screening identified those categories representing over 5% of the total Scope 3 emissions as being material categories: 'Purchased products and services', 'Capital goods', 'Energy-consumption-related activities' and 'Use of sold products'. In addition, we report other emissions we consider to be strategic for our business or which improve comparability with the sector, such as: 'Business travel' and 'Investments" (32,953 tCO_2). We have been reporting on the latter two in 2021 following the creation of the Virgin Media O2 joint venture.

In 2021, our Scope 3 emissions fell by 27.4% compared to 2016 (base year), which represents 783,385 $ktCO_2$ in 5 years. The main Scope 3 emissions of our value chain come from purchases from our supply chain (64%), and usage of the products and services we sell to our customers (29%)

In 2021, we continued our **Supplier Engagement Programme**, and invited our most emissions-significant suppliers to join the **CDP Supply Chain programme**. The information reported enabled us to understand their degree of maturity in handling their carbon footprints and identify potential areas for collaboration with the most advanced ones, to accelerate the achievement of our goal. In total, 262 suppliers participated, representing 90% of the emissions from our supply chain.

Along the same lines, our operator in Brazil implemented a local engagement initiative with 115 suppliers, which represented 90% of the emissions from its supply chain.

In addition, as a result of our participation in the **1.5°C Supply Chain Leaders** initiative, which advocates reducing the emissions of small and medium-sized enterprises, we supported the launch in Spain and the UK of **SME Climate Hub**, which will allow SMEs to begin their journey towards decarbonisation.

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

We continued to lead the working group which is part of the **JAC** (Joint Audit Cooperation) initiative in order to drive climate action as a sector. We assessed the climate-related maturity of the strategic suppliers of the companies who are part of the initiative and worked to encourage them to increase their level of ambition and set science-based, ambitious, emission reduction targets.

We also worked on reducing **emissions associated with use of equipment in customers' homes**, mainly linked to electricity consumption by routers and decoders. We thus continued driving the ecodesign of this equipment. At the current time, our HGU (Home Gateway Unit) consumes 30% less energy than our previous solutions.

We are part of the A List of the CDP Climate Change Index for the eighth year in a row and are a Supplier Engagement Leader.

> Neutralisation of residual emissions

In 2021, we progressed with initiatives to neutralise emissions while also contributing value.

In Spain, we launched the **Telefónica Forest** project, which will help to restore an abandoned area that until then had been used for agriculture and will now be used for forestry purposes, thereby boosting the local economy, involving rural communities, and fostering jobs for young and disadvantaged people.

In 2021, our operator in Brazil continued to offset 100% of its emissions through the purchase of **carbon credits**. The projects that generate these credits are backed by reputable certificates and support local projects for both conserving ecosystems and fostering renewable energy. Brazil will move towards carbon neutrality over the next few years with projects that meet the criteria set for the entire Telefónica Group.

Performance 2021 - Global

KPI	Unit	Target	Value base year	Value 2021	Evolution
Energy consumption per traffic	MWh/PB	-90% (by 2025)	386	54	-86.0%
GHG emissions. Scope 1 + 2 (market)	tCO2e	-80% (by 2030)	1,811,155	536,737	-70.4%
GHG emissions. Scope 3	tCO2e	-39% (by 2025)	2,855,544	2,072,159	-27.4%
% Renewable electricity consumption in own facilities	%	100% (by 2030)	17 %	79 %	

Performance 2021 - Main markets (Brazil, Germany, Spain)

KPI	Unit	2025 target	Value base year	Value 2021	Evolution
Energy consumption per traffic	MWh/PB	-90 %	336	54	-83.9%
GHG emissions. Scope 1 + 2 (market)	tCO2e	-90 %	1,022,365	113,368	-88.9%
GHG emissions. Scope 3	tCO2e	-39 %	1,453,453	1,056,412	-27.3%
% Renewable electricity consumption in own facilities	%	100 %	25 %	100 %	

VMED O2 UK

The main indicator data for VMED O2 regarding energy and emissions from June to December 2021 are:

KPI	Unit	O2 UK (mobile operations)	Virgin Media UK (fixed operations)
Total energy consumption	MWh	332,070	310,534
GHG Emissions. Scope 1 + 2 (market)	tCO2e	28,910	15,479

MILESTONES

→ **We reduced Scope 1 and 2 emissions by 70%, ahead of our 2025 target.**

→ **We were part of the A List of the CDP for the eighth year in a row.**

→ **We awarded the largest, private, long-term, renewable-energy purchase agreement in Spain. In global terms, the electricity we consume in our facilities is already 79.4 % renewable energy.**

→ **We achieved 100% renewable electricity at third-party sites in Germany, Brazil and Peru..**

→ **We implemented the disruptive Liquid Cooling project for cooling servers, technology up to 50% more energy efficient than air conditioning.**

→ **We obtained a 52% response rate in the first year of CDP Supply Chain reporting, with 100% participation of our high-priority suppliers and 84% of our mid-level priority suppliers.**

2.3. Circular economy

GRI 103, 102-11, 301-3, 303-5, 306-2

KEY POINTS

- **We currently recycle 98% of our waste and we are committed to be a Zero Waste company.**
- **We promote the circular economy in the use of electronic devices through ecodesign, recycling and reuse of equipment.**
- **We reuse 4.7 million of electronic equipment, 19% more than 2020.**

2.3.1. Vision

Overexploitation of the planet is one of the main causes of environmental degradation and climate change. According to the World Resources Institute, each year more than 100 billion tonnes of mineral, biological, metal or fuel resources are used. This amount exceeds what the planet can regenerate in a year and only 8.6% of these resources are recycled or have a second life.

The **circular economy** is a solution framework for this problem that understands the economy in a different way, one which enables economic growth while respecting the planet's limits: it could reduce the use of resources by 28% and global greenhouse gas emissions by 39%. Moreover, in the European Union alone, it could create nearly **700,000 jobs** and increase its GDP by 0.5% between now and 2030. All this is based on principles such as reducing impacts from design, product lifespan extension, recovery of raw materials or the dematerialisation of the economy thanks to digitalisation.

At Telefónica, we integrate this philosophy into our processes: we focus on optimising resource consumption and promoting ecodesign, reuse and recycling aiming at minimising our impact, as well as encouraging to keep the materials in circulation.

2.3.2. Policies

We have several policies which lay down the basis for implementation of the circular economy throughout the Company:

- Environmental Policy
- Energy Management Policy
- Supply Chain Sustainability Policy

Deriving from these policies are the following **Principles for promoting the circular economy**:

- Promoting the development of an enabling regulatory framework for the circular economy.
- Reducing waste generation and encouraging reuse and recycling.
- Guaranteeing proper processing with controls on our supply chain.
- Offering our customers products and services with less consumption of raw materials, environmental information during their telephone purchases and alternatives for the disposal of their used devices.
- Promoting the best ecodesign by manufacturers.

2.3.3. Risks and opportunities

Overexploitation of resources and supply **risks** which affect the availability of products and services go hand in hand. A recent example of this risk was the reduced availability of microchips due to COVID-19. In fact, according to the World Economic Forum, the natural resources crisis is considered to be one of the highest impact and highest likelihood risk that can only be reversed by a more circular economy.

Currently, 45% of global emissions derive from the manufacture and use of products, while 90% of the biodiversity loss and water stress is caused by the **extraction and processing of natural resources.** Therefore, a more efficient and circular management can substantially reduce these impacts.

This is especially relevant when using electronic equipment, since each year 54 million tonnes of waste are produced, of which barely 17.4% is recovered and

recycled. Ecodesign or product design for circularity, reuse and recycling contribute to reducing the risk of exhausting resources and affecting the continuity of our supply chain (components, critical raw materials, etc.), as well as reducing greenhouse gas emissions.

Furthermore, the circular economy entails considerable **opportunities** encouraged by digitalisation, as it needs a hyperconnected society in order to be achieved.

Besides influencing the circularity of our operations, we can also encourage circularity in other business sectors thanks to solutions such as artificial intelligence (AI), blockchain and the Internet of Things (IoT), which are a great business opportunity for Telefónica.

For example, the use of digital technology in agriculture (Smart Agro) helps to optimise the use of water, fertiliser, and plant protection products. Another example is the optimisation of processes and consumption in Industry 4.0.

More information in chapter 2.4. Digitalisation and Eco Smart services

A further opportunity is the economic benefit of reuse and recycling. Reuse and refurbishment of home equipment helps to reduce acquisition of new equipment. In addition, the sale of waste (mainly cable from our network transformation process from copper into fibre) and refurbished equipment provides us with additional income.

2.3.4. Strategy and commitments

The circular economy enables us to continue growing sustainably, to do more using less resources, while avoiding or reducing indirect carbon emissions associated with manufacturing new equipment.

We are committed to integrating circular economy criteria, with a cross-cutting approach, on three levels: **internal eco-efficiency, suppliers, and customers.**

Circular economy strategy

Enhanced circularity through digitalisation

> Internal eco-efficiency

We minimise the environmental impact of our services and operations through eco-efficient measures such as preventive maintenance of infrastructure, replacing equipment with alternative, low-consumption equipment and reusing equipment internally. This enables us to optimise our consumption of water, paper, and energy, for the latter, through an Energy Efficiency Programme.

More information in chapter 2.2. Energy and climate change

Taking into account the waste hierarchy principle in the circular economy, to prevent waste generation in our operations and our value chain, we are committed to **ecodesign,** procurement using circular criteria and reuse, mainly of electronic equipment, as the best waste is that which is not generated at all. All this enables us to be more competitive, reduce our expenses and increase our revenue, while reducing our footprint on the environment and complying with applicable legal regulations.

We have set ourselves the main goal of being a **Zero Waste company in 2030**: this entails increasing repair, reuse and recycling, ensuring that our waste does not end up incinerated or sent to landfill, but transformed into raw materials that are reintroduced into the value chain. All this involves the use of Telefónica's GReTel digital platform for waste management.

> Suppliers

We have integrated the philosophy of the circular economy into our relationship with our suppliers, who are essential allies for the transition towards a circular economy. We are working together to introduce ecodesign measures into the products. We are progressively establishing **circularity requirements** as part of the acquisition of electronic equipment, encouraging the elimination of single-use plastic and opting for new models based on digitalisation and dematerialisation with our supply chain, such as moving from product to Product-as-a-Service (PaaS).

> Customers

We support and raise awareness among our customers by offering them different initiatives to reduce their footprint on the planet, such as the **Eco Smart** seal (see chapter 2.4. Digitalisation and Eco Smart services), repair services, handset buy-back programmes and offers of refurbished products (which facilitate the returning and reuse of devices), and the **Eco Rating** seal, which rates the environmental sustainability level of mobiles throughout their life cycle, including use of raw materials and ease of recycling. This information serves to **foster innovation** and encourage our suppliers to reduce the environmental impact of their manufacturing processes.

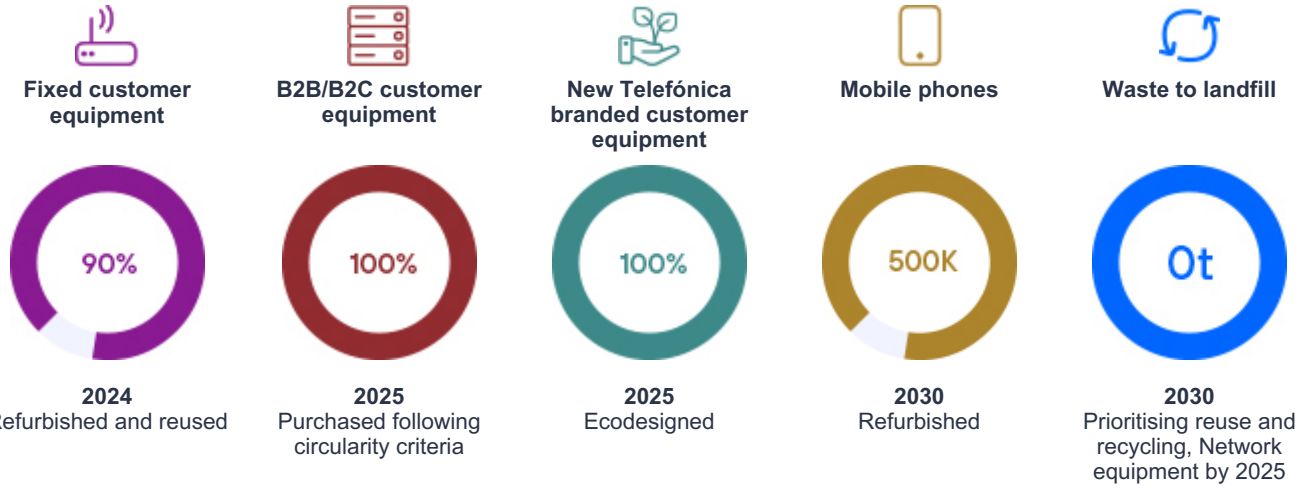
Targets

In order to achieve zero waste by 2030, we have set the following targets:

- To refurbish and reuse 90% of fixed equipment (routers and decoders) collected from customers in 2024.
- To introduce circularity criteria in all purchases of customer electronic equipment in 2025.
- To introduce ecodesign criteria in all new customer equipment under the Telefónica brand in 2025.
- Zero waste to landfill in 2030, through reuse and recycling. Zero network equipment waste to landfill by the end of 2025.
- To refurbish 500,000 mobiles per year in 2030 through various programmes.

Circular economy targets

We are moving towards becoming a Zero-Waste company



2.3.5. Progress in 2021

2.3.5.1. Internal eco-efficiency

GRI 103, 301-2, 301-3

> Electronic equipment

We extend the useful life of equipment by reusing them whenever possible. If the equipment cannot be reused the best option is to recycle them as each piece of equipment contains **precious metals** such as gold, copper and nickel, which can be used as resources in a new product. Due to this, out of the total amount of electronic equipment collected in 2021 in our operations and from our customers, 84% were recycled, 16% were reused, while nearly 0.1% was incinerated or sent to landfill.

Thanks to the returning and refurbishment of customer equipment and internal reuse of equipment in operations and offices, we were able to give new life to nearly 4.7 million devices, 19% more than 2020. Through reuse, we avoided the manufacture of new products and prevented 381,569 tonnes of CO_2 from being emitted, thanks to this initiative.

During our network transformation process, many equipment is reused within Telefónica's own network, thus fostering the circular economy in dismantling processes. To encourage reuse, Telefónica has rolled out the MAIA project, which facilitates and promotes internal reuse with the aid of a digital platform. Each operator can access the platform to view available equipment and contact other operators in the Group to accomplish reuse. When **internal reuse** is not possible, the platform enables operators to connect with technological partners to facilitate equipment sales and thus extend its useful life.

Success story: Dismantling the mobile network at Telefónica Mexico

The gradual dismantling of the mobile network by Telefónica Mexico is being carried out using a circular economy approach. This allows the internal reuse of dismantled equipment primarily in the Telefónica Mexico network, but if this is not possible it is reused by another Telefónica Hispam operator. Thanks to this initiative, Telefónica has managed to successfully reuse over 30% of the equipment dismantled to date.

> Waste as resources

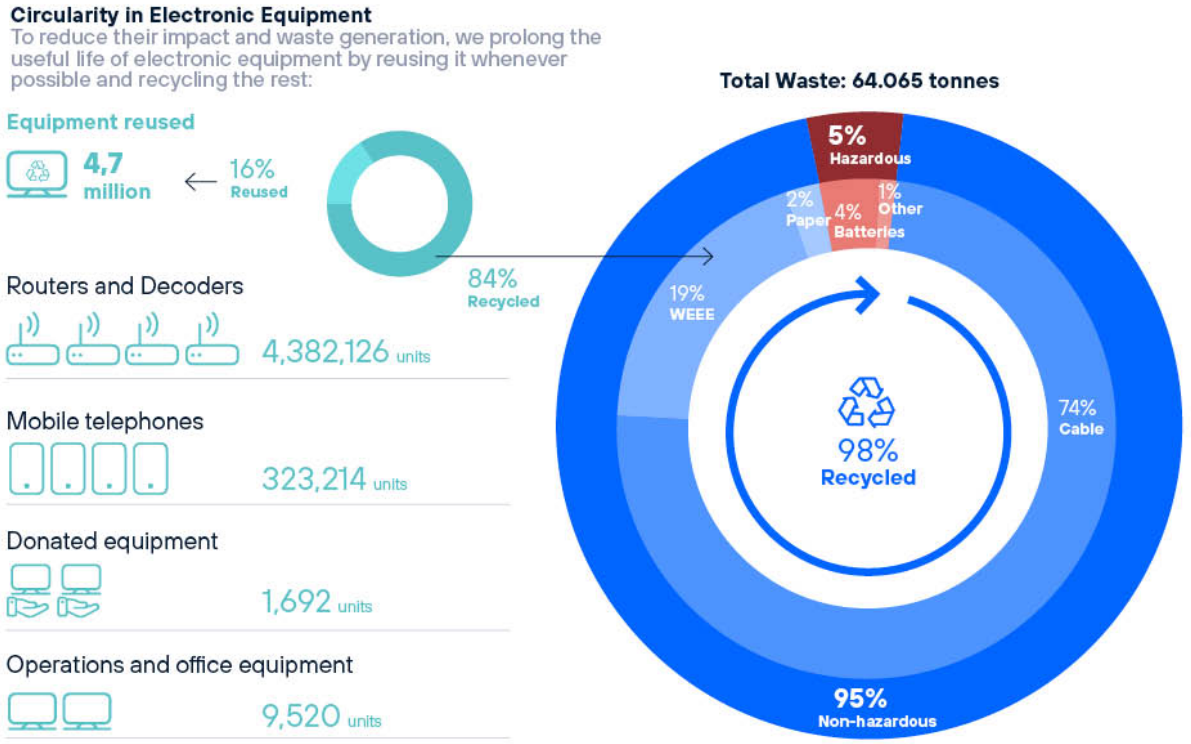
GRI 306-1, 306-2, 306-3, 306-4, 306-5

When reuse is not an option, recycling is the best **alternative** for the treatment of waste. Network infrastructure maintenance is our main generator of waste, along with the administrative activities that we carry out at our offices and, to a lesser extent, commercial activities with our customers. In 2021, we generated 64,065 tonnes of waste and managed to recycle 98% of this total.

About 91% of the waste we generate comes from our network transformation process, when we migrate from copper cables to fibre optics. In 2021, this transformation process was accelerated thanks to the Granada Plan for closing stations in Spain and the Vivo María do Carmo Project in Brazil, as well as different network transformation projects in Hispam. All these efforts, together with the shutting down of 3G at some of our operators, has resulted an increase in reported waste by 37% in the last year. We encourage the **circular**

economy by placing more value on the materials we remove during the transformation process, so that they can be reintroduced into the production model by recycling them. This valorisation generates revenues increasing year by year as the network's transformation evolves.

Zero waste in 2030 thanks to ecodesign, reuse and recycling



The waste we generate is managed outside our facilities by partner companies specialised in managing them in the best way possible in accordance with the available technical capabilities, the environmental regulations in force and the established contractual requirements.

Every time that waste is transferred from our premises, the staff responsible ensure that all the information is incorporated into Telefónica's waste management platform **(GReTel),** making it possible to obtain and analyse real-time data about the waste produced by the Company. This system enables us to be aware of the volume of waste removed, draft reports, analyse information and keep all documentary evidence to ensure proper compliance with **environmental regulations** in each country where Telefónica operates, thus aiding decision-making with regard to promotion of a circular economy approach to waste management.

Zero waste by 2030 - targets and indicators

Target	Indicator	2021
>97% Recycled waste	% Recycled waste	98 %
To refurbish 90% of Customer Premise Equipment (CPE: routers, decoders..) collected from customers in 2024.	% CPE reused or refurbished	84 %
To refurbish 500,000 mobiles a year in 2030 thanks to different programmes.	Number of reused customer mobile phones	323,214
B2B/B2C equipment purchased with circular economy criteria - 100% by 2025	% procurement processes of B2B/ B2C equipment using circular criteria	First pilot exercise: B2B routers and switches acquisition. Telefónica Spain.
Ecodesign of branded equipment – 100% by 2025	% Branded products with ecodesign criteria	First pilot exercise: Life cycle Assessment (LCA) study on the new model of 5G router

Telefónica's waste	Non-hazardous waste			Hazardous waste			Total		
	2019	2020	2021	2019	2020	2021	2019	2020	2021
Total waste generated (t) (excludes reuse as it is not considered waste until its useful life has ended)	38,888	42,040	60,797	2,829	4,872	3,268	41,717	46,912	64,065
Waste diverted from disposal (t) (includes recycling, reuse and other treatments). GRI 306-4	40,350	43,628	62,474	2,716	4,811	3,201	43,066	48,439	65,674
Waste directed to disposal (t) (includes energy recovery, incineration and landfill). GRI 306-5	471	324	571	113	61	67	584	386	638
Treatments prioritised according to the waste hierarchy principle									
Equipment reused (t)	1,933	1,913	2,248	n/a	n/a	n/a	1,933	1,913	2,248
Waste recycled (t)	38,352	41,213	60,036	2,698	4,758	2,520	41,051	45,972	62,556
Waste to energy recovery (t)	31	1	17	3	17	21	34	18	38
Other treatments[(1)] (t)	65	502	191	18	53	681	83	554	871
Waste sent to landfill and incineration (t)	440	323	554	110	45	47	550	368	600

Note:
[(1)]Other treatments: includes physical treatments, biological treatments, secure cells and intermediate treatments prior to recycling.

> Water

GRI 303-4, 303-5

Our water consumption is mainly due to sanitary use and, to a lesser extent, its use in air conditioning. We adopt specific measures to achieve more efficient use, especially in areas where the **water stress** is greater and in accordance with local limitations and regulations.

In 2021, our overall consumption was 2,735 ML (2.7 Hm³), 765 ML in high-water-stress areas, which represents 28% of the total.

Within the set of measures established by each country depending on its environmental characteristics, there are **measures** to reduce water consumption in high-water-stress countries, such as Spain, Chile, and Mexico. Thanks to them, we have reduced consumption in all areas by -2% compared to the previous year.

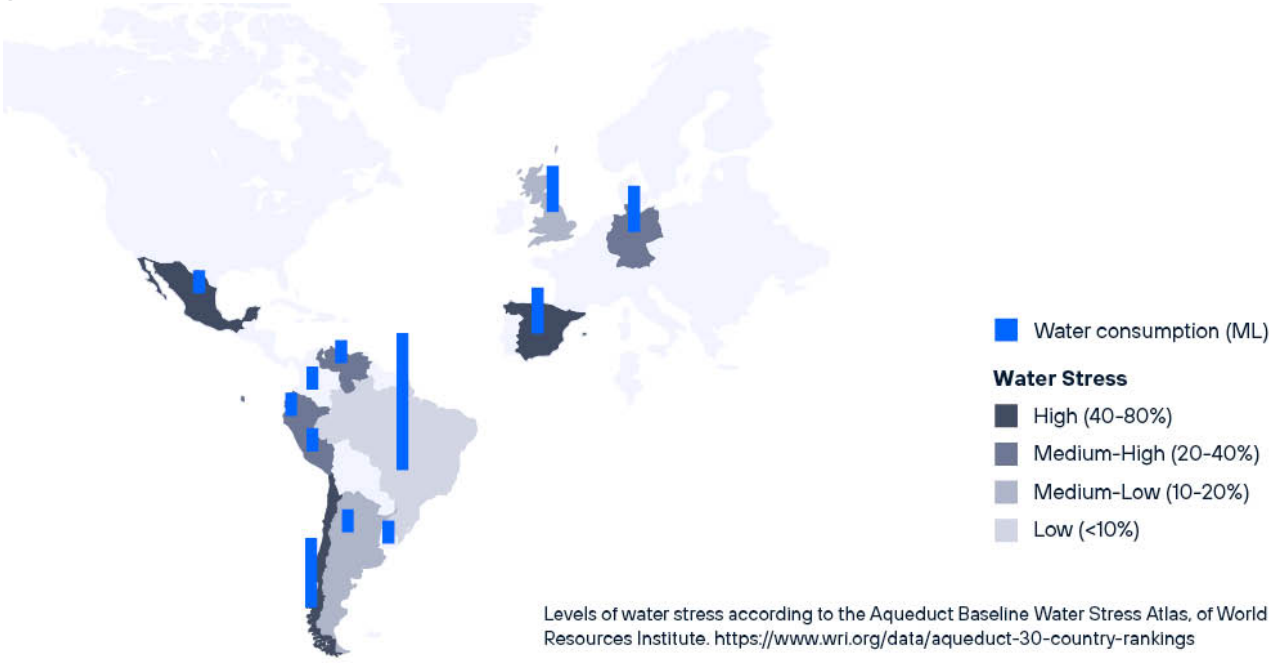
The measures adopted at local level to **reduce** water consumption include water treatment systems in cooling towers in Telefónica Chile; commissioning of a greywater treatment plant for rainwater collection and reuse; installation of water-saving devices and sanitary sewage keys fitted with sensors to limit consumption in the Torre Telefónica building offices in Telefónica Mexico, and a sustainable water use plan implemented at our headquarters in Madrid, which enables water consumption to be reduced by using rainwater in the gardens and other saving systems for sanitation.

Water consumption from all areas (ML)		
2019	2020	2021
3,268	2,785	2,735

Water consumption from areas with high water stress (ML)		
Water consumption in countries with high levels of water stress according to the Aqueduct Baseline Water Stress Atlas, from the World Resources Institute (Spain, Chile, and Mexico)		
2019	2020	2021
806	750	765

Water consumption by Telefónica vs. water stress

We adopt specific measures to achieve more efficient consumption, especially in areas where water stress is greater



Levels of water stress according to the Aqueduct Baseline Water Stress Atlas, of World Resources Institute. https://www.wri.org/data/aqueduct-30-country-rankings

> Paper

Of the paper we consumed in our offices last year, 95% was of recycled or certified origin (FSC, from the Forest Stewardship Council, or PEFC, from the Programme of the Endorsement of Forest Certification schemes). In addition, 110 million customers chose **paperless bills.** We therefore generated over 783 million electronic bills which avoided the consumption of 3,916 tonnes of paper and the felling of almost 66,576 trees.

2.3.5.2. Suppliers

GRI 308-2

> Ecodesign and innovation

Ecodesign helps us to reduce the use of raw materials in manufacture, reduce the energy consumption of the product and avoid emissions. The main projects we are undertaking with our suppliers are the following:

- Our Smart Wifi Router weighs 40% less than a conventional router because it uses fewer plastic, metals, and other elements. In this way, we reduce the **emissions** associated with the extraction of these materials and use (Scope 3), as it is more efficient: it consumes 30% less energy.
- With the Half SIM Card, we have halved the amount of plastic used to manufacture SIM cards. It also represents an improvement in the **efficiency** of the logistics process, as it reduces the volume of the containers used for their transport and storage. In 2021, this measure averted the manufacture and consumption of 190 tonnes of plastic, signifying savings of 648 tonnes of CO_2. The format has already been implemented at nine of our operations and is consolidating its position as the main format in the Group.
- Life Cycle Assessment on 5G Router: thanks to the collaboration with IHOBE (the public environmental management company of the Basque Regional Government), we performed a Life Cycle Assessment (LCA) of the new 5G router model, taking as our benchmark the criteria set out in the UNE-EN ISO 14040:2006 and UNE-EN ISO 14044:2006 standards. This study made it possible to ascertain which elements of the device have a greater environmental impact in order to establish measures to **reduce** that impact by design. The criteria identified in the study will establish the conditions for the incorporation of ecodesign criteria in other devices designed by the Company. Additionally, we are currently working on a study of how repairable, recyclable, and durable the device is in order to integrate the circular economy approach even further through its design.

> Procurement using circular criteria

In 2021 we began progressively incorporating circular criteria into the acquisition of electronic equipment, using as our benchmark the criteria set out in the ITU-T L.1023 recommendation on the assessment method for circular scoring, which makes it possible to assess the **ecodesign,** the ability to be **repaired, recycled and upgraded** and the **durability** of each electronic device

procured. These criteria are currently applied in the router and B2B switch procurement process, making it possible to assess 42 products using this methodology. Our goal is for all our procurement processes of electronic equipment of our B2B/B2C customers across the entire Group to include these circularity criteria in 2025.

In addition, to foster eco-efficient procurement, in our Global Supply Chain Sustainability Policy we have environmental and circular economy criteria, such as the compulsory incorporation of preventive measures and Life Cycle Assessment (LCA) when supplying products or services to Telefónica. One example of this is the inclusion of criteria regarding elimination of single-use plastics in packaging of products and services supplied to Telefónica UK Ltd.

We promote the **reduction of GHG emissions** by our suppliers and are working with them on this challenge.

Go to chapter 2.2. Energy and climate change

2.3.5.3. Customers

One of the Sustainable Development Goals (SDGs) we would like to emphasise is the development of a sustainable consumption and production model. We are therefore developing new products and initiatives that our customers can use to reduce their environmental impact and join the challenge of the circular economy.

- With our policies to extend the useful life of communication equipment through reuse, we offer our customers options such as **buy back and refurbish of mobile phones** to give them a second lease of life, allowing customers to reduce consumption of resources and energy by preventing the manufacture of new devices. Thanks to this initiative, in 2021, we collected 323,214 end-of-life mobile phones from our customers.
- Through Zeleris, a Group company, our customers in Spain can request the repair of their devices thanks to the **comprehensive repair service for electronic equipment** in warranty and out of warranty for private individuals and companies.
- **Eco Rating:** In 2021, we launched a new Eco Rating seal methodology in collaboration with four leading telecommunications companies, aimed at helping customers to make more informed and sustainable decisions, encouraging **suppliers** to reduce the environmental impact of their devices and aligning the entire telecommunications sector in improving transparency and reducing environmental impact. All this has enabled use of the seal to expand in 24 European countries and the assessment of over 160 mobile telephone models to be carried out, in collaboration with 15 telephone manufacturers. As regards Telefónica, the new seal has been introduced in Spain, the UK, Germany, and Brazil.

- Our **Eco Smart** services have a specific chapter devoted to them, due to their importance for the management of the Company.

Go to chapter 2.4. Digitalisation and Eco Smart services

VMED O2 UNITED KINGDOM

The details of the waste indicators for VMED O2 UK from June to December 2021 are given below:

	O2 UK (mobile operation)	Virgin Media UK (fixed operation)
Total waste produced (t)	276	2,764
Total waste recycled (t)	276	2,625

MILESTONES

→**We made progress in ecodesign and integrated circular criteria into electronic equipment procurement.**

→**Thanks to eco-efficiency measures, we reduced our water consumption by -2% and recycled 98% of our waste.**

→**We are committed to reuse: we repaired and reused 4.7 million pieces of equipment, a figure which increased by 19% compared to 2020.**

→**We implemented the new Eco Rating seal in Spain, the UK, Germany and Brazil.**

2.4. Digitalisation and Eco Smart services

KEY POINTS

- **Digitalisation is crucial for decarbonising other sectors of the economy, improving their efficiency and competitiveness.**
- **In 2021, we avoided 8.7 million tCO_2 for our customers, equivalent to the carbon absorbed by 143 million trees.**
- **We introduced the AENOR-verified Eco Smart label, to empower and encourage our customers to tackle their environmental challenges.**

2.4.1. Vision

Having experienced two years of pandemic, we are increasingly aware of our society's fragility in the face of global threats such as climate change and how our current socio-economic model, based on a **linear system of production and consumption,** generates major **environmental problems:** depletion of natural resources, generation of waste and greenhouse gas emissions, pollution, etc. The solution lies in changing the paradigm towards a circular and decarbonised model.

Technology is crucial for **achieving a transition to a green society.** Smart assets based on IoT, for example, enable enhanced predictive maintenance and lengthen the life span of equipment. Blockchain can ensure traceability and transparency in supply chains, and 3D printers facilitate repairs by creating spare parts.

Studies by the World Economic Forum (WEF) and the Exponential Roadmap initiative, indicate that digital technologies can help reduce worldwide greenhouse gas emissions by between 15% and 35% over the next 10 years.

At Telefónica, we promote the development of such solutions to help our customers in their transition to more sustainable business models.

At Telefónica, we are committed to achieving a world in which technology contributes to protecting the planet.

2.4.2. Risks and opportunities

The global efforts of governments and companies to limit the rise of the average global temperature to 1.5ºC translate into a need for the transformation of society and the economy, towards **a low-emission, circular and planet-friendly model.** This need is expected to lead to an increased demand from our customers for technological solutions to enable their businesses to transition towards more sustainable productive models. This means that Telefónica has great potential to increase its revenue from rising sales of its Eco Smart solutions and through the development of new technological applications for these challenges.

2.4.3. Strategy and commitments

We promote digitalisation and connectivity as crucial tools for helping our customers meeting their environmental challenges.

- We are working on **developing new technological solutions** to help our customers in their transition towards more sustainable business models. Many of the services we offer enable them to optimise consumption of resources such as energy and water, facilitate remote working, improve traffic planning, and air quality in cities, and foster the circular economy.
- We identify the **environmental benefits that our portfolio** of products and services generate for customers through the Eco Smart label. Companies thus assimilate, in a simple manner, that digital and green transitions go hand in hand.
- We offer information to **residential customers** to provide them with environmental criteria for their decision-making when purchasing, through initiatives such as the **Eco Rating** label.

Go to chapter 2.3 Circular Economy

> Eco Smart B2B products and services

Our business strategy is committed to the digital revolution and, therefore, we provide services based on connectivity, the Internet of Things (IoT), cloud, big data and 5G. Most of these are what we call Eco Smart solutions, as they promote the digital transformation of our customers.

They also generate significant environmental benefits in their production processes or daily activities, facilitating them to carry on their business more efficiently and sustainably.

For example, **IoT services** enable more efficient use of resources such as energy and water; with **big data** we are helping to improve traffic planning and air quality; and with **drone-based services and connectivity,** we can improve fire response.

Telefónica launched the Eco Smart seal to identify the environmental benefits generated by our products and services following implementation. In this way, we help our customers to incorporate **sustainability criteria into their purchasing decisions** so that they can contribute to the transition towards a more sustainable society.

The environmental benefits that are generated by our services and represented in the seal have been externally verified, by AENOR.

Telefónica Tech – the unit in charge of developing cloud, cybersecurity, IoT and big data services, many of them within the Eco Smart scheme, aims to help our B2B customers in their progress towards a more digital and sustainable world.

Connectivity

We are committed to **digitalisation as a tool for protecting the planet**. Our networks form the basis of the connectivity and other digital solutions we offer our customers. This is why our sustainability strategy focuses on transforming them to increase their capacity efficiently. This enables us to offer the best services with the least environmental impact.

Within this transformation, we have focused on fibre optics as a replacement for copper – a shift geared towards improving the capacities of our customers at a technological level while consuming 85% less energy.

It is with this same vision that we are executing the transformation at the core of the communications network, making it more sustainable through two crucial tools: consumption of renewable energy and energy efficiency.

As such, **we can offer one of the sector's most sustainable networks** from which to expand the digital economy, thereby strengthening its benefits to the environment and assisting the transition to a decarbonised society.

Based on this connectivity, we offer digital solutions such as broadband, fibre, **Digital Workplace solutions, cloud, IoT and big data solutions.**

5G connectivity

We are committed to 5G as the connectivity of the future. At present, we have activated this technology in our European markets and in Brazil. Thanks to an on-site research carried out with different vendors, we have been able to measure that 5G is up to 90% more efficient than 4G, in terms of energy consumption per unit of traffic (W/Mbps).

5G is expected to represent an unprecedented, disruptive, technological change in different economic sectors and in society over the next decade. **At Telefónica, we are already marketing 5G solutions for large companies and administrations**. The first use cases we offer based on this technology involve the incorporation of robots into industry to improve processes and operations; remote assistance for supervision, assembly or operation of assets attended remotely by expert staff; and the use of drones for inspections of critical and remote assets, stock control, supervision and control of spaces, and swift assistance, etc.

These use cases prevent travel, improve predictive maintenance, increase the efficiency of productive processes and therefore generate significant environmental benefits for our customers.

Digital Workplace

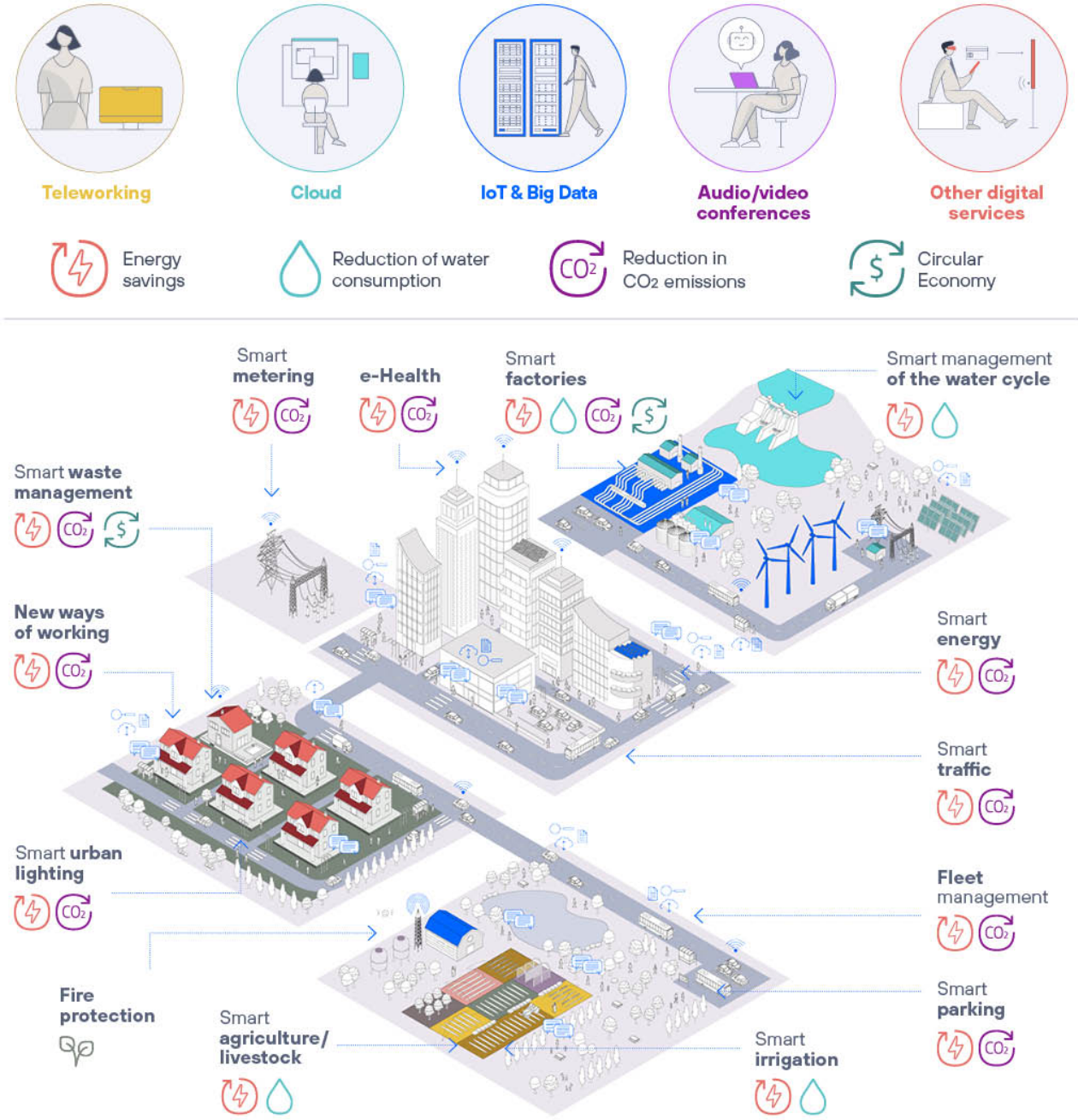
Productivity and collaboration solutions allow people inside and outside the organisation (customers, suppliers, etc.) to connect and work remotely. These solutions thus enable remote and flexible working, generating **considerable environmental benefits** by reducing travel and cutting fuel consumption and office HVAC. All this translates into lower CO_2 emissions and easing traffic on the roads, thereby helping to reduce air pollution in cities.

Cloud

Companies are increasingly relying on the cloud to carry out an endless number of processes that make them more agile, flexible, and efficient. The Cloud offers them a place to safely integrate all their networks and services, provides instant access to critical information and greater control of their business, and increases engagement among their employees.

We are committed to offering companies the solutions that best meet their needs, and therefore we have a complete portfolio of global services – enhanced through worldwide agreements with the main hyperscalers, including AWS, Google y Microsoft Azure – which enables us to offer the service each company needs, wherever they need it.

Digital solutions for environmental challenges



Our cloud services use servers hosted in data centres that meet high energy efficiency standards. The average PUE (Power Usage Effectiveness) of our main data centres in 2021 was 1.72.
As such, business migration to the cloud translates into a significant reduction in IT carbon emissions, promoting greater circularity, and fostering more sustainable products and services. It makes it possible to do more with less, leading to a **more sustainable world.**

Internet of Things (IoT), big data, artificial intelligence and blockchain

Technologies like IoT, big data, artificial intelligence and blockchain are essential to reactivate the economy of companies and organisations. They also have a significant impact on other aspects of daily life, enabling a transformation of society towards a greener model.

By combining IoT with big data and artificial intelligence, the possibilities are infinite. All the connected objects and equipment emit data in real time; by linking them with our customers' data and other external sources, the processed and analysed information makes it possible to generate great efficiencies in productive processes, reduce consumption of raw materials, decrease wastage and even extend the life span of equipment. All this can be seen in services like:

- **Smart meters** for our customers, such as in the case of Spain and the United Kingdom, where Telefónica manages millions of connected electricity, water, and gas meters.
- **Solutions for smart cities**, based on optimising lighting, use of parking spaces, and waste management and collection.
- **Energy efficiency solutions,** telemetry, and remote management of energy consumption at the offices, factories or buildings of companies with large geographical dispersion, such as hotels, banks and supermarkets, among others.
- **Agricultural management solutions** such as Smart Agro, which enables innovation, digitalisation, and data analysis for crops like coffee and cotton, with the aim of optimising resource use.
- **E-health solutions** facilitating remote health care through mobile devices and apps that enable the monitoring of patient symptoms, prevent unnecessary trips to healthcare centres, and facilitate early detection of health problems, potentially avoiding the need for hospital admission.
- **Solutions for the transport sector** helping to optimise planning of transport systems and infrastructure through greater understanding of passengers, timetables, and routes, thereby adapting plans to the real needs of passengers with maximum budgetary control and minimal environmental impact.
- **Mobility solutions,** such as our fleet management and asset tracking solutions.
- **Solutions for retail** through which our clients can improve their experience while understanding their business better and managing it more efficiently (for example with stock management and enhanced store layout).
- **Solutions for Industry 4.0**, in which private networks (5G or LTE) and associated solutions (for example, AGV, drones, predictive maintenance, asset control and operator safety) take the manufacturing and mining industries, and the port and airport management, to a new level of operation, flexibility, productivity and efficiency.

In addition, the inclusion of the technological capacities of **blockchain** in many of the use cases mentioned above leads to improvements in traceability, transparency, and security, enabling faster and more efficient forms of doing things. Examples of this are its application in the areas of document management (for example, eliminating the use of paper when managing invoices, official certificates, contracts, and so on), and logistics (providing complete traceability of foods or medicines), in manufacturing and throughout the supply chains of all types of goods, etc.), thus boosting the circular economy.

We also look for innovative ways of using data to help develop society. Telefónica has implemented several projects in this area:

- **Prediction and analysis of high granularity in air pollution in cities**: the use of big data on mobility data generated by the mobile network is proving to be an instrument that shows great potential and complementarity with sensors that measure air quality or traffic. Artificial intelligence techniques even make it possible to predict future pollution levels. This provides the authorities with tools to prepare contingency plans. This project was implemented as a pilot in cities like Madrid (Spain). In 2020, a platform and tool were designed to measure pollution caused by mobility through a portable measuring station in vehicles, which facilitates a much more accurate diagnosis at street level of the most problematic pollution focal points.
- **Using big data** to reduce emissions in the livestock sector: Telefónica and the Food and Agriculture Organization of the United Nations (FAO) are working together on the 'Climate-Smart Agriculture' project in Ecuador. The aim is to provide small and medium sized farmers with information and training on how to improve the sustainability of their crops.

Targets

Our aim is to **avoid** the emission of **12 million tonnes of CO_2** for our customers through our products and services, each year as of 2025.

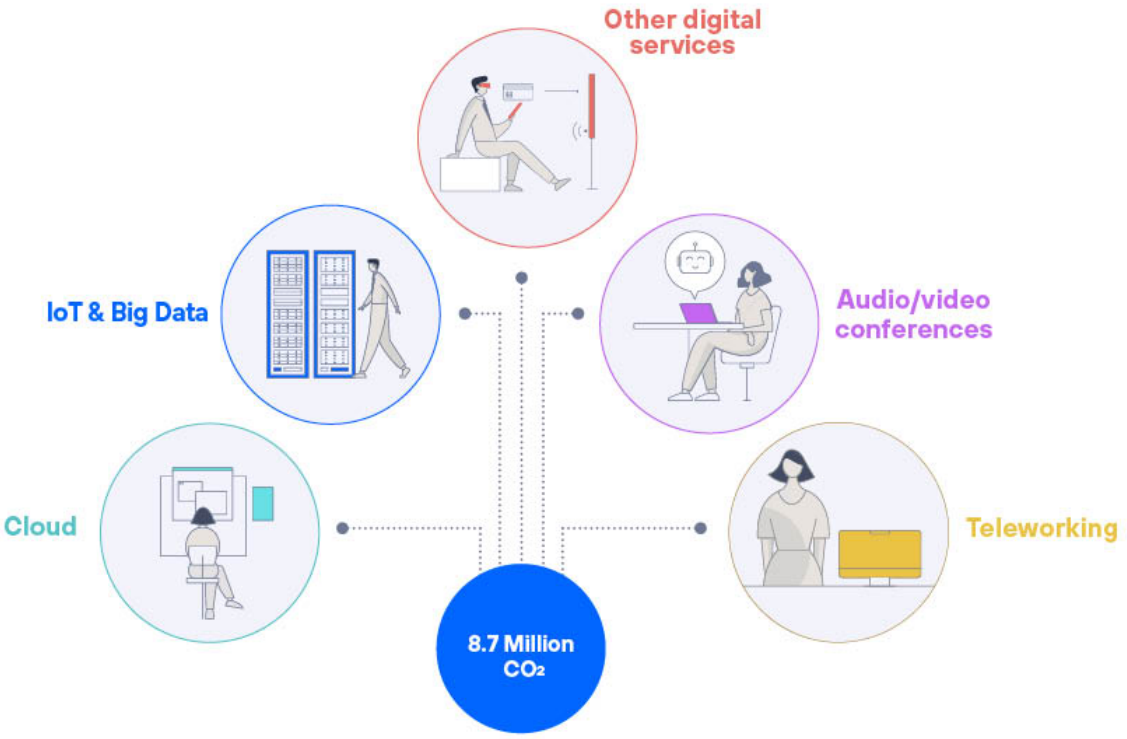
Digitalisation to decarbonise the economy

2.4.4. Progress in 2021

Last year, we continued to roll out the Eco Smart seal: AENOR verified **52% of the services for large, medium-sized, and small companies in Spain,** confirming its environmental benefits for customers, and we extended it to Vivo in Brazil.

The emissions avoided in 2021, thanks to the efficiencies generated by our products and services for customers, exceeded 8.7 million tonnes of CO_2. This is equivalent to planting a forest with 143 million trees and shows the capacity of new technologies to accelerate the transformation of the economy into a more sustainable model.

Customers' emissions avoided through digitalisation



This figure is lower than the figure for 2020 as there were fewer lockdown measures during 2021 and, therefore, although the percentage of people working from home was high, it was not as high as in 2020.

MILESTONES

- → **We avoided 8.7 million tonnes of CO_2 thanks to our products and services.**
- → **52% of the business services offered by Telefónica have been verified as Eco Smart.**

2.5. European taxonomy for sustainable activities

KEY POINTS

- **The ICT sector is one of the 6 sectors listed in the taxonomy because of its contribution to climate mitigation and adaptation.**
- **In this first year of taxonomic reporting, Telefónica's activities are mainly related to the decarbonisation of other sectors, which is characteristic of the telecommunications sector and its data centers.**
- **In line with the legal requirements, in 2022 the company will work on alignment with the stipulated criteria (compliance with the specific technical screening criteria for each activity).**

2.5.1. Regulatory background

In March 2018, the European Commission presented the **Action Plan on Financing Sustainable Growth** as a roadmap to enhance the role of finance in achieving the environmental and social objectives of the European Union. One of the actions contemplated within that plan was the creation of a **European Taxonomy** establishing a common language and a clear definition of what is "sustainable". Within all this new strategic and regulatory framework, in December 2019 the European Commission presented the **Green Deal of the European Union**, to promote the necessary investments to achieve a circular, competitive and climate-neutral economy by 2050.

The **Taxonomy**, so far developed just for the environmental dimension, is a classification system that identifies a list of economic activities and outlines a number of requirements that, if met, would qualify an activity as sustainable. This way, the EU Taxonomy provides companies, investors and policy-makers more consistent information on economic activities that help achieve environmental goals. So far, two objectives have been defined: mitigation and adaptation to climate change.

For an economic **activity** to be considered **"environmentally sustainable"** according to the EU taxonomy, a distinction must be made between Taxonomy-eligibility and Taxonomy-alignment. An economic activity is considered as eligible if it is described in the related Delegated Regulation. An eligible activity is considered as aligned when it has been assessed to comply with the specific technical screening criteria (related to substantial contribution to one of the environmental objectives and not for doing significant harm) and with the minimum safeguards. Once compliance with these criteria are justified, the activity may be considered aligned and labelled as an enabling or transitional activity, as applicable.

The taxonomy-related regulations[1] outlines several **reporting requirements** for certain undertakings. For 2021, non-financial undertaking must disclose the **proportion of the turnover (revenues), capital expenditure and operating expenditure of their eligible activities** (i.e. Taxonomy-eligible economic activities or activities covered by the taxonomy due to their potential to make a substantial contribution to the two environmental objectives: climate change mitigation and climate change adaptation. For 2022, the non-financial undertakings must also assess compliance with the technical screening criteria for reporting the **proportion of Taxonomy-aligned activities**.

As at the date of this report, a further **Delegated Regulation** is pending publication that includes the technical criteria for the four remaining environmental objectives (the sustainable use and protection of water and marine resources; the transition to a circular economy; pollution prevention and control; and the protection and restoration of biodiversity and ecosystems), along with the update of the climate Delegated Regulation.

Against this backdrop, regulatory developments and official guidelines established in **2022** will be monitored closely.

[1] Regulation (EU) 2020/852 on the establishment of a framework to facilitate sustainable investment; Delegated Regulation (EU) 2021/2139 (on climate); Delegated Regulation (EU) 2021/2178 (on disclosure).

2.5.2. Scope of the report

In applying the EU Taxonomy, Telefónica has considered the activity of **Telefónica, S.A.** and all the subsidiaries comprising the Group (fully consolidated companies).

To understand why Telefónica considers the taxonomy to be added value in its sector environment, one must only look at its **mission**:

- *Make our world more human by connecting people's lives*: aspiring to digitalise all of society, leaving no one behind, and bridging the digital divide through access, affordability, accessibility, and digital skills training. And innovating to offer products and services that add value and contribute to improving people's lives, putting technology at their service.

And its **sustainability strategy**:

Telefónica believes it is its duty to take advantage of the capabilities of connectivity and digitalisation, not only to bring value to its customers, but also to help tackle major challenges, such as climate change, inequality, employability, and misinformation. It wants to:

- *Helping society thrive:* promoting economic and social progress based on digitalisation, leaving no one behind.
- ***Build a greener future****:* taking advantage of the power of digitalisation to curb climate change.
- *Go beyond what is expected of us* and take responsibility for our actions at all times in order to build trust.

Since 2010, Telefónica has based its business on **digitalisation**, promoting services such as cloud, the Internet of Things (IoT), big data, e-health, etc. With this in mind, Telefónica set up two large subsidiaries, Telefónica Tech to further develop these digital services, and Telefónica Infra to unlock the value of Telefónica's infrastructure. These can carry out all digital services, not just of Telefónica, but also of the rest of the sectors. Telefónica's digital services target all its customers (residential, corporate, public administrations, and other government or official bodies) and are not only designed to make it easier for them to use technology in their daily lives, but also to benefit the environment by reducing emissions when using these services by using the Group's infrastructure.

2.5.3. Vision and scope of the taxonomy

The **ICT sector** is covered by the taxonomy for its climate change mitigation potential. It is a significant and growing economic sector, representing 3.9% of EU value-added, 2.5% of total employment, 15.7% of all expenditures for R&D performed within the business enterprise sector (BERD), and 18.6% and 20.6% of the R&D personnel and researchers in the EU, respectively. Current estimates put ICT accounting for 8-10% of European electricity consumption and up to 4% of its carbon emissions[2].

An ETNO and BCG[3] report quantified the **enabling potential,** measuring up to 15% of emission reductions resulting from full digitalisation (including smart cities and buildings, transportation, industry IoT and blockchain applications, and energy)[3]. Other studies (e.g. the Exponential Road Map) suggest that digital technologies can reach up to an additional 35% considering also indirect criteria such as changes in consumption habits over the next years[4]. The large impact of digitalisation in Europe's future decarbonisation warrants inclusion of the ICT sector among Taxonomy-eligible economic activities. The so-called **'*greening by effect*' reflects how technologies and digital solutions are indivisible** and that data transmission is required for those solutions to work.

It is precisely this effect, as an **enabling activity for the decarbonisation** of the economy, that is reflected among the taxonomy activities and, specifically, the ICT sector. Data transmission technologies such as 5G or IoT are among the solutions with potential to reduce greenhouse gas emissions.

Telefónica, in keeping with its strategy of building a greener world, has been promoting **awareness among its customers** for several years now of the environmental benefits of its products and services; e.g. by implementing the Eco Smart seal.

For further information on Eco Smart, see chapter 2.4 Digitalisation and Eco Smart services.

[2] COMMISSION STAFF WORKING DOCUMENT. IMPACT ASSESSMENT REPORT Accompanying the document, Commission Delegated Regulation (EU), supplementing Regulation (EU) 2020/852, of the European Parliament and of the Council, by establishing the technical screening criteria for determining the conditions under which an economic activity qualifies as contributing substantially to climate change mitigation or climate change adaptation, and for determining whether that economic activity causes no significant harm to any of the other environmental objectives (Brussels, 4.6.2021).
[3] Connectivity & Beyond: How Telcos Can Accelerate a Digital Future for All. ETNO and Boston Consulting Group. March 2021.
[4] Exponential roadmap. Scaling 36 solutions to halve emissions by 2030. Version 1.5.1. January 2020.

2.5.4. Methodology and results

2.5.4.1. Understanding the taxonomy requirements

According to article 8 of **Regulation (EU) 2020/852**, non-financial undertakings subject to application of the EU taxonomy must disclose, as provided for in Annex I of Delegated Regulation (EU) 2021/2178, the following:

- proportion of Taxonomy-eligible revenues
- proportion of Taxonomy-eligible capital expenditure (CapEx)
- proportion of Taxonomy-eligible operating expenditure (OpEx)
- explanatory information accompanying these three key performance indicators (KPIs).

Following is a description of the process for **calculating the three KPIs**, covering key aspects related to **accounting policy**, **compliance with Regulation (EU) 2020/852,** and **contextual information** of those KPIs.

The **exercise carried out by Telefónica for 2021** covered the eligibility requirements according to regulations in force and other information provided by the European Commission. This section describes mainly the criteria used by Telefónica for interpreting and applying the current regulatory framework. This exercise should be reviewed for the 2022 report, which is expected to cover the alignment requirements and consider any guidance issued by the European Commission in addition to Delegated Regulation (EU) 2021/2178 on disclosure and Delegated Regulation (EU) 2021/2139 on climate.

2.5.4.2. General considerations

Considering the **Group's consolidated financial information**, and based on the corporate management control criteria relating to revenues, CapEx and OpEx, Telefónica has identified the items of these KPIs related to its Taxonomy-eligible economic activities.

Telefónica has assessed the information for the various **operators** contribution to the Group's consolidated total. Revenues by the **rest of the companies** was not considered in the identification of Taxonomy-eligible economic activities given the nature of their activities (not covered by the taxonomy) and the relative weight on the total KPIs. Therefore, this information is included in the denominators to consider the Group's total revenues, CapEx and OpEx, but not in the numerators.

Transactions between Group companies were not considered in the calculations.

Throughout the entire process, due care was taken to **avoid double counting**:

- Reconciliation with the accounting information, which ensures that eliminations and adjustments made during the consolidation process are properly taken into account.
- Use of consistent information sources, thereby preventing consideration of the same item in two different KPIs or twice in the same KPI.
- Verification of the completeness and accuracy of the data

After assessing each of the three KPIs, the following were identified as **Taxonomy-eligible economic activities**[5]:

- Activities that can make a substantial contribution to **climate change mitigation:**
  - Activity 8.1 Data processing, hosting and related activities
  - Activity 8.2 Data-driven solutions for GHG emissions reductions.
- Activities that can make a substantial contribution to **climate change adaptation:**
  - Activity 8.3 Programming and broadcasting activities
  - Activity 13.3 Motion picture, video and television programme production, sound recording and music publishing activities.

Given the complexity of applying the recently published - and continuously developing - regulatory framework, for the first year of application, Telefónica chose to report a **range of minimum and maximum rates of potential eligibility** of its economic activities, thereby providing high level of transparency of the analysis performed. The difference between the two corresponds to activity 8.2:

- The **minimum value** factors in the development or use of ICT solutions without including the data transmission phases or the technology required to perform the transmission process. A narrowed vision of activity 8.2 is reflected in this minimum value.
- The **maximum value** is also including the data transmission phase through the use of technologies such as the Internet of Things (IoT) or 5G. Therefore, we will also have information in this maximum value on the impact of telecommunications technologies on the total for this economic activity.

For each KPI, a scenario was considered where 0% of our networks is eligible, and one where 100% of data traffic on our networks is eligible. Accordingly, the reported numbers

[5] The activities have been listed according to Annex I and II of the Commission Delegated Regulation (EU) 2021/2139 of 4 June 2021 supplementing Regulation (EU) 2020/852 of the European Parliament and of the Council by establishing the technical screening criteria for determining the conditions under which an economic activity qualifies as contributing substantially to climate change mitigation or climate change adaptation and for determining whether that economic activity causes no significant harm to any of the other environmental objectives.

are a **range between the minimum and maximum potential of data transmission**, with eligibility in the latter case understood as the potential of an activity to become Taxonomy-aligned in the future. In other words, the more digital solutions designed to reduce emissions grow, the more the traffic of our networks will be able to transmit data that reduce emissions. This alignment indicates that part of Telefónica's potential allocated year to year on these solutions. For further explanation, see the description of each KPI.

Taxonomy-eligibility reporting does not consider the assessment of technical screening criteria and, since activities 8.1 and 8.2 are included in the taxonomy as transitional and enabling activities, those activities can only be considered as "eligible-to-be-transitional" and "eligible-to-be-enabling" according to the FAQ document of 2 February 2022, on the interpretation of certain legal provisions of the Disclosures Delegated Act. Reporting for 2022 will be when Telefónica, according to prevailing regulations, should report the proportion of Taxonomy-aligned activities, assessing compliance with the technical screening criteria.

2.5.4.3. Proportion of Taxonomy-eligible revenues

This KPI shows the relative weight of **revenues derived from products or services associated with economic activities** covered by the taxonomy over total revenues (reported in the consolidated financial statements).

Telefónica has analyzed the various concepts included in its revenue model, enabling it to identify **revenues from data services** (excluding, from revenues from services, primarily revenues from handset sales and revenues derived from voice services). Revenues from **digital services** was disaggregated. The breakdown provided by the different companies considers two categories:

- Services considered **eligible** (for the potential to reduce emissions in other sectors) include:
  - Most services related to the Internet of Things (IoT) such as smart cities, smart industry or smart energy and e-health.
  - Cloud services.
- Services considered **non-eligible**; e.g. those related to information security, content, applications or advertising.

Revenues from programming and broadcasting **video and television** content were also considered eligible. Revenues from advertising and broadcasting rights has been excluded.

The scenario considering Telefónica's maximum potential of eligibility also considers as eligible the **data transmission revenues, which** includes **fixed** (mainly fibre and copper) and **mobile** (2G, 3G, 4G and 5G) **technologies**. These technologies underpin the telecommunications networks carrying the data traffic that allows application of digital capabilities to processes, products and assets to enhance efficiency and create new opportunities for value creation and are considered an integral part of the solutions. **Digitalisation** has high climate change mitigation potential in sectors where these digital capacities are applied.

As a result of applying the criteria described above, Telefónica's **sources of revenues** are therefore related to the following economic activities covered by the EU taxonomy:

Main Taxonomy-eligible activities		Telefónica activities
Activities that can make a substantial contribution to climate change mitigation	**Activity 8.1 Data processing, hosting and related activities**	Cloud services provided to users over the Internet, allowing user data to be stored in cloud data centres
	Activity 8.2 Data-driven solutions for GHG emissions reductions	Digital services related to data collection, transmission and analysis that enable the reduction of emissions arising from other activities Technologies included in digital solutions that support data transmission, such as 5G*
Activities that can make a substantial contribution to climate change adaptation	**Activity 8.3 Programming and broadcasting activities** **Activity 13.3 Motion picture, video and television programme production, sound recording and music publishing activities**	Services relating to the production, programming and broadcasting of video and television content

(*) Considered only for the maximum value of the range.

The **proportion of Taxonomy-eligible revenues for 2021** is as follows:

	Proportion of revenue (%)
MAIN TAXONOMY-ELIGIBLE ACTIVITIES	
Activity 8.1 Data processing, hosting and related activities	2.2%
Activity 8.2 Data-driven solutions for GHG emissions reductions	Between 0.8% and 43.4%
Activity 8.3 Programming and broadcasting activities / 13.3 Motion picture, video and television programme production, sound recording and music publishing activities	6%
Revenues from Taxonomy-eligible activities	Between 9.0% and 51.6%

As explained in the section on identification of sources of revenues, the economic activity corresponding to activity 8.2 of the taxonomy has been broken down into two, to distinguish between **digital services** and the **technologies** in which such digital services are embedded. If only revenues from digital services is considered, excluding technology, the proportion of Taxonomy-eligible revenues is 9.0% (minimum value of the range). But, if revenues from technologies that embed digital solutions for data transmission (mobile technologies such as 5G, 4G, 3G and 2G and fixed technologies such as fiber and copper) is also considered, then the proportion of Taxonomy-eligible revenues is 51.6% (maximum value of the range), as shown in the table above.

2.5.4.4. Proportion of Taxonomy-eligible capital expenditure (CapEx)

This indicator shows the **proportion of capital expenditure** (CapEx) **associated with assets or processes associated with economic activities** covered by the taxonomy.

The denominator includes **additions of property, plant and equipment and intangible assets** (equivalent to the CapEx as defined in the financial information reported by the Group). The definition of CapEx associated with the taxonomy also includes additions of rights-of-use recorded under IFRS 16, as well as additions of property, plant and equipment, intangible assets or rights of use resulting from business combinations.

The data used to calculate the indicator is sourced from the **CapEx model**, which structures operators' data as a matrix along two axes, reflecting two variables: **projects** (macro-project portfolio classified into categories) and **nature of the investment** (project subdivisions and technical components). Therefore, the scenario considering Telefónica's maximum potential of eligibility considers, as **eligible** investments related to the network, mostly **projects** related to fixed and mobile networks such as fiber, copper, 4G, 5G, 2G, 3G and investments related to:

- **Access** (the part of the network closest to the end customer)
- **Infrastructure** (installation of equipment and devices)
- **Transmission** (data transmission between network nodes)
- **Core** ("core" investment in fixed and mobile network technologies and equipment)
- **Capitalised CapEx relating to labour** as required to install the service at the customer's premises.

The two scenarios reported are considered to be eligible CapEx relating to **data centres** (deployment, adaptation and expansion of hosting infrastructure) and **cloud** services. Also considered eligible are investments identified in the CapEx model as part of the following projects: Internet of Things (IoT), video and television.

Non-eligible CapEx includes investments related to the purchase of hardware, licences and software, development of new applications among others.

The scenario considering Telefónica's maximum potential of eligibility also includes as CapEx investment to **acquire spectrum rights** to enable deployment of technologies in the various markets. The entire amount of this CapEx qualifies as **eligible** in this scenario and it relates to 5G, the only technology for which Telefónica has acquired spectrum in 2021.

For the acquisition of **right-of-use assets**, the criteria for considering them as eligible or non-eligible was based on the classification of the underlying assets. An asset is **eligible** in the scenario considering Telefónica maximum potential eligibility if it directly relates to network infrastructure (land, shelters, supports for antennas, distributors, etc.). Indirectly related assets (buildings, access roads, air conditioning, power lines, etc.) are non-eligible.

As a result of applying the criteria described above, Telefónica's **CapEx** is therefore related to the following economic activities covered by the EU taxonomy:

Main Taxonomy-eligible activities		Telefónica activities
Activities that can make a substantial contribution to climate change mitigation	**Activity 8.1 Data processing, hosting and related activities**	Operation and maintenance of data centres and cloud infrastructure
	Activity 8.2 Data-driven solutions for GHG emissions reductions	Digital services relating to data collection, transmission and analysis that enable the reduction of emissions arising from other activities Operations of technologies embedded in digital solutions that support data transmission, such as 5G* Acquisition of spectrum for deployment of mobile technologies embedded in digital solutions*
Activities that can make a substantial contribution to climate change adaptation	**Activity 8.3 Programming and broadcasting activities** **Activity 13.3 Motion picture, video and television programme production, sound recording and music publishing activities**	Services relating to the programming and broadcast of television content

(*) Considered only for the maximum value of the range.

The **proportion of Taxonomy-eligible CapEx for 2021** is as follows:

	Proportion of CapEx (%)
MAIN TAXONOMY-ELIGIBLE ACTIVITIES	
Activity 8.1 Data processing, hosting and related activities	0.1%
Activity 8.2 Data-driven solutions for GHG emissions reductions	Between 0.01% and 66.3%*
Activity 8.3 Programming and broadcasting activities / 13.3 Motion picture, video and television programme production, sound recording and music publishing activities	1.2 %
CapEx from Taxonomy-eligible activities	Between 1.31% and 67.6%

* Considering the CapEx denominator, the proportion of CapEx associated with individual measures that could reduce emissions (e.g. management of energy efficiency or installation of renewable energies) is close to zero. For further information see section 2.2 Energy and climate change.

As with revenue, CapEx corresponding to activity 8.2 of the taxonomy has been broken down into two, to distinguish between **digital services** and the **technologies** in which such digital services are embedded (including, in this case, the acquisition of spectrum). If only CapEx associated with digital services is considered, the proportion of Taxonomy-eligible CapEx is 1.3% (minimum value of the range). But if CapEx from technologies that embed digital solutions for data transmission (mobile and fixed technologies) is also considered, then the proportion of Taxonomy-eligible CapEx is 67.6% (maximum value of the range), as shown in the table above.

2.5.4.5. Proportion of Taxonomy-eligible operating expenditure (OpEx)

This indicator shows the **proportion of operating expenditure** (OpEx) **associated with the economic activities** covered by the taxonomy.

The denominator includes **direct non-capitalised costs** that relate to **short-term leases, maintenance and repairs**, and any other direct expenditures relating to the **day-to-day servicing of assets of property, plant and equipment** that are necessary to ensure the continued and effective functioning of such assets.

The OpEx data used to calculate the indicator is sourced from the **expense model**, which structures operators' data by the nature of related expense. Assessing all OpEx items, relevant expenditure considered for the denominator includes **network expenses,** excluding non-eligible items, such as the expense of buying energy for technical facilities.

The numerator in the scenario considering Telefónica's maximum eligibility considers as **eligible** the **network expenses related to maintenance of current infrastructure** (e.g. the fixed and mobile access network, transmission and switching equipment, and remote monitoring and control of indicators and service levels for network resources and equipment). It excludes items such as expenses related to the technical call center or logistics related to customer equipment management.

Also considered as **eligible** were expenses related to **lease or rental** of sites, technical facilities, satellite capacity or transmission capacity through links and circuits.

As a result of applying the criteria described above, Telefónica's **operating expenses** are therefore related to the following economic activity covered by the European taxonomy:

Main Taxonomy-eligible activities		Telefónica activities
Activities that can make a substantial contribution to climate change mitigation	**Activity 8.2 Data-driven solutions for GHG emissions reductions**	Maintenance of technologies embedded in digital solutions that support data transmission, such as 5G*

(*) Considered only for the maximum value of the range.

The **proportion of Taxonomy-eligible OpEx for 2021** is as follows:

	Proportion of OpEx (%)
MAIN TAXONOMY-ELIGIBLE ACTIVITIES	
Activity 8.2 Data-driven solutions for GHG emissions reductions	Between 0% and 77.3%
OpEx from Taxonomy-eligible activities	Between 0% and 77.3%

As with revenue and CapEx, the OpEx corresponding to activity 8.2 of the taxonomy covers data transmission **technologies** in which digital services are embedded. If only expenses associated with these technologies are considered, the proportion of Taxonomy-eligible OpEx is close to 0% (minimum value of range). But, if OpEx from technologies that embed digital solutions for data transmission (mobile and fixed technologies) is also considered, then the proportion of Taxonomy-eligible OpEx is 77.3% (maximum value of the range), as shown in the table above.