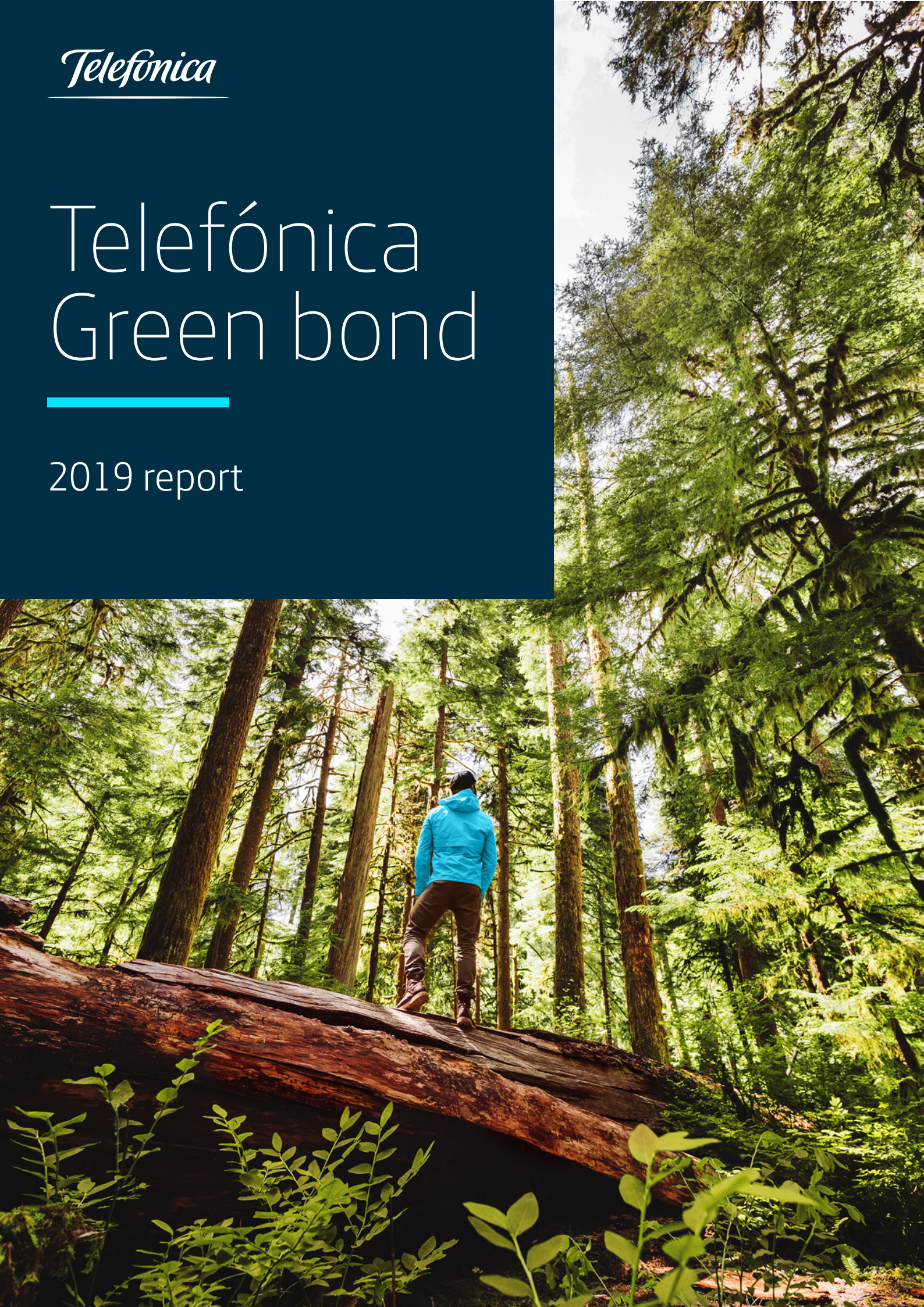


*Telefónica*

# Telefónica Green bond

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2019 report





## Introduction

**Telefónica** is a company that is aware of the new challenges posed by today's society. This is why we offer the most sustainable means and with the safest and cutting-edge technology, to facilitate communication between people.

An innovative and attentive spirit with an immense technological potential that multiplies the choice of its more than **356 million** customers. Telefónica operates in **14 countries** and is present in **24** others, with an average of **120,138 employees**.

Net sales figure (revenue) was **€48,693 million in 2018**, with more than **356 million accesses**.

Telefónica is a private company with more than **1.3 million shareholders**, traded in several of the most important stock markets around the world.

In November 2018, it published its sustainable financing framework, (with an **independent second-party opinion from Sustainalytics**) linked to the **United Nations Sustainable Development Goals** and **aligned with the ICMA 2018** (International Capital Markets Association) **Green Bond Principles**.

In this context, Telefónica successfully issued its first green bond in January 2019, for 1 billion euros and a term of 5 years. The first green bond in the telecommunications sector worldwide. The funds obtained will serve to finance or refinance projects aimed at increasing the company's energy efficiency thanks to the transformation of the copper network to optical fibre in Spain.

With this issue, **Telefónica takes a further step towards integrating sustainability into its business strategy** and thus demonstrates its commitment to the investment community and to society as a whole, contributing to social welfare while generating value for its shareholders.

**January 2019**

First green bond  
issuance

**1,000**  
Mill€





## Telefónica's commitment to climate change

Telefónica has an Energy and Climate Change strategy, aligned with the business, approved annually by the Board of Directors. We are committed to reducing our own carbon footprint and offer solutions to reduce our customers' emissions.

We implemented the recommendations of the **Task Force on Climate Related Financial Disclosures** (TCFD), to respond to the demands of our main stakeholders and the transparency required in this area.

### Energy and Climate Change goals

In 2016, we set Energy and Climate Change goals for 2020 and 2030, in line with the Paris Agreement and validated by the **Science Based Target Initiative** (SBTi).

Achieving these goals has been part of the variable remuneration of all the company's employees since 2019.

These goals help us take advantage of the opportunities for decarbonisation, to be more competitive and to offer our customers a clean network.

In 2018, two years ahead of schedule, we met the goals set for 2020. In 2019, **we set more ambitious goals**, validated by SBTi, following the necessary reductions to keep the global temperature increase below 1.5°C:



50% carbon emissions reduction by 2025, and 70% by 2030. Achieving carbon neutrality by 2050.



Achieving 85% of renewable electricity consumption by 2025 and 100% by 2030.



Improve energy efficiency (consumption vs. data traffic) by 85% by 2025.

### 2019

We increased the ambition of our objectives



### SBTi validation

# 1.5°C





## Digitalisation

Our commitment to the environment goes beyond our own goals, it extends to the entire economy. The company is increasing its range of digital solutions, based on IoT, Cloud, Security, Big Data and Artificial Intelligence to help our customers, and society in general, to improve waste management, reduce air pollution, save water, prevent fires, etc.

In 2018, Telefónica succeeded in reducing emissions by its customers in the amount of 1.4 million tonnes of CO<sub>2</sub>, thanks to its digital solutions.

Telefónica's global goal is to avoid CO<sub>2</sub> emissions equivalent to 10 times its own footprint by 2025, thanks to this type of digital solutions. In addition, Telefónica is already working with its suppliers to reduce CO<sub>2</sub> emissions in its supply chain by 30% per euro purchased by 2025 compared to 2016, as they are the key allies in reducing the carbon footprint and boosting circular economy.

**We decarbonize  
the entire economy**

**1.4**  
Million tCO<sub>2</sub>  
avoided

For 1 tCO<sub>2</sub> we  
emit, we save  
1.2 on our  
customers





## Telefónica's sustainable financing framework<sup>1</sup>

In 2018, Telefónica published its **sustainable financing framework**, which will enable it to issue green, social and sustainable bonds and use the funds to finance and refinance, in whole or in part, existing and future projects that promote energy efficiency and the reduction of GHG emissions within its own operations and those of its clients and/or deliver positive social outcomes.

It has received **Sustainalytics'** independent second-party opinion, which has considered our SDG Framework is credible and impactful, and aligns with the four core components of the Green, Social and **Sustainability** Bond Principles.

This framework defines eligibility criteria in the following areas:



Energy efficiency of Telefónica network infrastructure.



Renewable energy.



Energy efficiency: Digital solutions for the environment.



Digital inclusion: access for all through an affordable infrastructure.



Employment generation and economic growth.

In addition, a project selection and evaluation process is established, which is led by a Committee or working group made up of senior management from the departments of Finance, Management Control and Global Corporate Ethics and Sustainability, among others.

Telefónica hereby reports on its annual performance, both in terms of the allocation of funds and the positive impact achieved.



<sup>1</sup> Telefónica SDG Framework. November 2018.

<https://www.telefonica.com/en/web/shareholders-investors/ebt-ratings/sdg-framework>

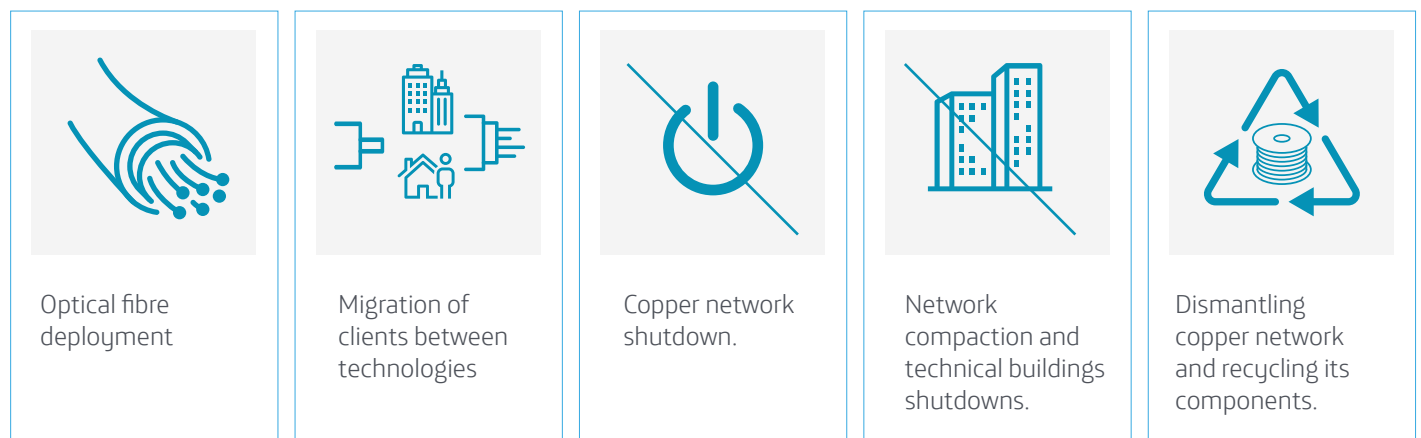




## Transformation of the landline network in Spain: from copper to fibre optic

The entire green bond issued in 2019 is allocated to the transformation of Telefónica's landline communications network in Spain from copper to fibre to the home (FTTH). This project will create the network of the future, more efficient and cleaner, which will also be the enabler of many digital services with a positive effect on society.

### Network transformation process



Thanks to fibre optics, Telefónica has a network that is better prepared for the future, adapted to the demands of 5G, virtualisation and services such as Cloud, Edge Computing, Big Data and Analytics.





## Our Goals

This transformation project seeks to achieve maximum business and environmental efficiency in the deployment and maintenance of our network. To this end, we have set the following challenges:

- 100% of retail customers on fibre by 2025.
- Reduce energy consumption through:



shutdown of the copper network and the systems that support it: 990 technical buildings to be shut down by 2020.



efficiency in the management and transmission of large volumes of data.



**Optic Fibre**

**85%**

more efficient than  
copper network

## Why it is important

Fibre is much more efficient than copper, playing a key role in sustainable connectivity, as it involves:

### a) Greater simplification and environmental efficiency:

- Energy efficiency: Fibre access per user consumes between 7 and 20 times less energy (>85% efficiency) than copper access.
- Technical buildings shutdowns: The fibre optic connection has 4 times more range than copper connections, which allows us to shut down more technical buildings each time.
- Circular economy: all this process facilitates the recycling of equipment and cables to obtain secondary raw materials.
- Space savings: Fibre takes up 10 times less space and has 100 times more capacity.
- Network quality and reduced maintenance resources: half the number of breakdowns in fibre than in copper, reducing the number of trips, the need for spare parts and logistics.



**b)** A new relationship model between customers and services based on self-installation/self-provision, flexibility and immediacy.

**c)** Social and economic effect on people, companies and territories. Facilitating digital education, entrepreneurship, new business and relationship models, greater ability to reconcile family and work, better access to health services or the establishment of population in rural areas.

**d)** A benefit for the environment because of the CO<sub>2</sub> emissions saved thanks to digital services that need the capacity and data transmission speed offered by optical fibre.

### What we already achieved (2016-2019)

**Environment:** 346 GWh of energy saved and 93,297 tCO<sub>2</sub> avoided, equivalent to the carbon captured by more than 1,543,000 trees. Thanks to the shutdown of hundreds of thousands of elements and the closure of hundreds of copper technical buildings.

#### Energy savings

346 GWh equivalent to CO<sub>2</sub> captured by



**+ 1.543**  
million trees since  
2016



**Business:** Spain has the largest fibre-to-the-home network in Europe, with more than 4 million connected customers and 21 million connected premises.



**Society:** Various studies indicate that communities with high-speed broadband have a higher GDP than others without such a connection, namely, a 1.1% increase in GDP<sup>2</sup>.



<sup>2</sup> Source: (2011) Broadband Consumer Research. Sosa, D. (2015) Early Evidence Suggests Gigabit Broadband Drives GDP.





## Basic data on Telefónica's inaugural green bond

<b>Issuer</b>	Telefónica Emisiones, S.A.U.
<b>Guarantor</b>	Telefónica S.A.
<b>Guarantor rating</b>	Baa3/BBB/BBB (Moody's/S&Ps/Fitch)
<b>Type of debt</b>	Senior Unsecured
<b>Nominal amount (EUR)</b>	1,000,000,000
<b>Redemption date</b>	5 February 2019
<b>Due date</b>	5 February 2024
<b>Coupon</b>	1.069%
<b>Use of the funds</b>	Eligible green investments for energy efficiency, mainly the transformation of the copper network into optical fibre in Spain
<b>Second opinion</b>	Sustainalytics
<b>Admission to securities trading</b>	Irish Stock Exchange regulated continuous market
<b>ISIN code</b>	XS1946004451





## Fund allocation

This bond finances the transformation of the landline (or fixed) network with copper technology into a fibre optic network.

This project is divided in three phases:

**Fibre deployment:** Construction of the fibre optic network in FTTH (Fibre To The Home) mode between the technical building and the CTO (point of deployment closest to the customer's home, whether a residential or business customer). The CTO is usually placed in the building where the client's home is located.

**Transportation:** Construction of the transport network necessary to manage the data of customers with a fibre connection. This issue has been dealt with in a very restrictive way when allocating funds, as transport is a common element of several technologies. For this bond, only the part of transport associated with agreements with different public or private entities in which it is specified that the access technology must be optical fibre has been selected.

**Customer migration:** The transition from existing customers with copper technology access to fibre optic technology access. It collects the operations between the CTO and the customer's home.

All the concepts include direct investment (costs with third parties) and its corresponding part of "TREI" (Spanish acronym for "investment work carried out by own resource") with the following distribution:

### Funds

1,011.79  
Mill€



Fibre deployment



Transport



Customer migration

Fund allocation	Mill€
FTTH Deployment	551.45
TREI FTTH Deployment	212.92
FTTH Connect migrations	238.17
TREI FTTH Connect migrations	8.69
Transport	0.46
TREI Transport	0.10
<b>TOTAL</b>	<b>1,011.79</b>



## Impact indicators and calculation methodology

In order to measure the positive impact, several monitoring indicators have been established in line with the provisions of the sustainable financing framework.

### Consumption of landline network electricity (kWh)

This is the sum of all the electricity consumed by Telefónica's buildings necessary to provide landline network communications services. It includes both buildings that are already 100% fibre and those that still have copper network equipment.

The electricity consumption is calculated from the bills of the electricity suppliers at the different consumption points (buildings). Those buildings considered "unique" because they do not provide direct service to the landline communications network, such as DPCs (data processing centres) or office buildings, are not considered.

In addition, given Telefónica's status as the incumbent operator in Spain, we house other operators' equipment in our buildings. The electricity they consume in our buildings is subtracted from the one in the bills, in order to have the real consumption of the Telefónica network.

### Electricity consumption of the landline network divided by data traffic managed by said network (kWh/PB)

This energy intensity indicator is calculated using the electricity consumption of the landline network and the data traffic managed by the landline network, expressed in Petabytes (PB).

### Electricity savings (kWh)

This is the amount of electricity saved by disconnecting elements from the copper network and subsequent total technical buildings shutdowns.

To develop the project of total shutdown of the copper network, specific shutdown sub-projects have been defined by technology. Each technology has its own elements and based on the consumption that these had when they were in use, the amount of electricity saved is calculated.

#### Indicators



kWh  
Fixed network consumption



kWh/PB  
Consumption / data



kWh  
Savings



tCO<sub>2</sub>  
Emissions



The consumption of the different elements is calculated either through the technical specifications of the element or through direct measurements of its consumption, when the age of the equipment makes it impossible to have such specifications. A small fraction is added to this consumption, corresponding to the savings in air conditioning thanks to the lower heat dissipation of the communication equipment.

Monthly, the number of elements that are turned off and their typology are reported. This, together with the consumption data for each type of element, allows the amount of energy saved to be calculated.

Since the exact day on which each element is switched off is not known, it is assumed that, for the current month, only the savings corresponding to 15 days are allocated, as if all the equipment had been switched off on the 15th of each month. From the following month onwards, the amount of electricity saved over 30 days is already considered.

### Carbon emissions avoided through electricity savings (tCO<sub>2</sub>)

Based on the amount of electricity saved by switching off the copper network, the carbon emissions avoided are calculated using the emission factor of the Spanish electricity mix, corresponding to each year being calculated (2016-2019).

The emission factors used are taken from the annual reports on guarantees and electricity labelling published by the CNMC<sup>3</sup> (Spanish National Commission for Markets and Competition). The emission factors used are:

Carbon emissions avoided	2016	2017	2018	2019
Emission factor (KgCO <sub>2</sub> /kWh)	0.25	0.31	0.26	0.26

For 2019, the same value is used as for 2018, as the emission factor is not published until 2020.




### Avoided CO<sub>2</sub> calculation

from the energy savings involved in switching off the copper network

<sup>3</sup>[https://gdo.cnmc.es/CNE/resumenGdo.do?informe=garantias\\_etiquetado\\_electricidad](https://gdo.cnmc.es/CNE/resumenGdo.do?informe=garantias_etiquetado_electricidad)

## Green Bond 2019 monitoring indicators

	Indicators	2016	2017	2018	2019
kWh	Landline network electricity consumption	1,015,019,657.73	971,568,725.18	932,751,356.41	916,111,995.36
kWh/PB	Landline network/traffic electricity consumption	186,212.90	141,875.94	109,639.89	85,170.26
kWh	Saving electricity by shutdown/transformation of the network	27,808,405	71,437,053	108,288,448	138,633,951
tCO <sub>2</sub>	Emissions prevented by saving electricity	6,952.10	22,145.49	28,155.00	36,044.83





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## Limited Assurance Report



### **Telefónica, S.A.**

Independent Limited Assurance Report on the information related to  
“Transformation of the landline network in Spain: from copper to fibre optic”  
(re)financed by the Green Bond (ISIN XS1946004451),  
executed during the years 2016, 2017, 2018 and 2019



*This version of our report is a free translation of the original, which was prepared in Spanish. All possible care has been taken to ensure that the translation is an accurate representation of the original. However, in all matters of interpretation of information, views or opinions, the original language version of our report takes precedence over this translation.*

## Independent Limited Assurance Report

To the Management of Telefónica, S.A.:

We have carried out our work to provide a limited assurance on the information related to "Transformation of the landline network in Spain: from copper to fibre optic" (re)financed by the Green Bond (ISIN XS1946004451), executed during the years 2016, 2017, 2018 and 2019 issued by Telefónica Emisiones S.A.U. (hereinafter, "the Bond"), contained in the "Telefónica Green Bond. 2019 Report" of Telefónica S.A. (hereinafter, "Telefónica") for the year ended 31 December 2019, and prepared in accordance with the sustainable financing framework "Telefónica SDG Framework, november 18", available in the web page <https://www.telefonica.com/en/web/shareholders-investors/debt-ratings/sdg-framework> (hereinafter, "the Framework").

The aspects of the information subject of our review are the following:

- The application of the eligibility criteria in the project (re)financed by the Bond described in the Framework, as well as the (re)financed project itself.
- The allocation of the funds obtained through the Bond to the project (re)financed by it and that the capital invested in the project (re)financed is attributable to the Bond.
- The verification that the impact indicators (consumption of landline network electricity, electricity consumption of the landline network between data traffic managed by the network, electricity savings and carbon emissions avoided through electricity savings) are prepared in accordance with their calculation methodology, defined in the mentioned "Telefónica Green Bond. 2019 Report".

### Responsibility of Management

Management of Telefónica is responsible for the preparation, content and presentation of the "Telefónica Green Bond. 2019 Report", in accordance with the requirements included in the Framework in which the eligibility criteria of the projects, the allocation of funds, the impact indicators. In particular, this responsibility includes establishing, implementing and maintaining the internal control required to ensure that the information included in the "Telefónica Green Bond. 2019 Report" is free from any material misstatement due to fraud or error.

Management of Telefónica is also responsible for defining, implementing, adapting and maintaining the management systems from which the information required to prepare the mentioned report, is obtained.

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Inscrita en el R.O.A.C. con el número S0242 - CIF: B-79 031290



### Our independence and quality control

We have fulfilled our work in accordance with the independence requirements and other ethical requirements of the Code of Ethics for Professional Accountants of the International Ethics Standard Board for Accountants (IESBA), which are based on basic principles of integrity, objectivity, professional competence and diligence, confidentiality and professional conduct.

Our firm applies the International Standard on Quality Control 1 (ISQC 1) and thus employs an exhaustive quality control system which includes documented policies and procedures on the compliance of ethical requirements, professional standards, statutory laws and applicable regulations.

### Our responsibility

Our responsibility is to issue a limited assurance report based on the procedures that we have carried out and the evidence obtained. Our limited assurance engagement was done in accordance with the International Standard on Assurance Engagements 3000 (Reviewed) "Assurance Engagements other than Audits or Reviews of Historical Financial Information", issued by the International Auditing and Assurance Standards Board (IAASB) of the International Federation of Accountants (IFAC).

The scope of a limited assurance engagement is substantially less extensive than the scope of a reasonable assurance engagement and thus, less security is provided.

The procedures that we have carried out are based on our professional judgment and have included consultations, observation of processes, document inspection, analytical procedures and sampling test. The general procedures employed are described below:

- Meetings with Telefonica's personnel from various departments who have been involved in the preparation of the "Telefónica Green Bond. 2019 Report" in order to know the characteristics of the project (re)financed by the Bond, the internal management procedures and systems in place, the data collection process and the environment control.
- Verification of the application of the eligibility criteria, described in the Framework, for the selection of project (re)financed by the Bond.
- Analysis of the procedures used for gathering and validating the information and data presented in the impact indicators included in the "Telefónica Green Bond. 2019 Report".
- Verification of the traceability of the funds obtained through the Bond to (re)finance the project and verification that the investments undertaken by Telefonica in the project refinanced have been made in accordance with the Framework criteria.
- Verification through sampling tests revisions and substantive tests of the information related to impact indicators. We have also verified whether they have been appropriately compiled from the data provided by Telefónica's sources of information.
- Obtainment of a management representation letter from the Directors.



### Conclusion

As a result of the procedures carried out and the evidence obtained, no matters have come to our attention which may lead us to believe that:

- The project financed by the Bond included in “Telefónica Green Bond. 2019 Report” does not comply, in all its significant aspects, with the eligibility criteria described in the Framework.
- The funds obtained through the Bond have not been assigned to the project (re)financed by it and that the capital invested in the (re)financed project is not attributable to the Bond.
- The impact indicators contain significant errors or have not been prepared, in all their significant aspects, in accordance with what is indicated in the Framework and as indicated in Telefónica Green Bond. 2019 Report in relation to its calculation.

### Use and distribution

Our report is only issued to the Management of Telefónica in accordance with the terms and conditions of our engagement letter. We do not assume any liability to third parties other than Telefónica’s Management.

PricewaterhouseCoopers Auditores, S.L.

Original in Spanish signed by  
Pablo Bascones

14 January 2020