BANCO DE ESPAÑA
Eurosistema

Carbon Footprint 2023
Executive summary

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1. INTRODUCTION

This report aims to show the Banco de España's commitment to sustainable development and the inclusion of measures that minimise the environmental impact of its activities along the entire value chain, given its responsibilities as a national central bank, specifically to reduce greenhouse gas emissions (hereafter, GHG) and to report to all stakeholders on the institution's carbon footprint.

1.1 Methodology

The methodology used to calculate the carbon footprint is based on the UNE EN ISO 14064:2019 standard. Under this standard, emissions are classified into six categories. Those that have been measured are defined below:

CATEGORY		GHG SOURCE	
Category 1	Direct GHG emissions associated with fuel consumption of stationary facilities in buildings.	Stationary equipment and facilities	Stationary combustion
	Direct GHG emissions associated with fuel consumption of mobile facilities relating to transport activities using equipment owned or controlled by the institution.	Transport equipment / Mobile sources	Road transport
			Rail transport
			Air transport
			Ancillary machinery
	Fugitive emissions stemming from GHG leaks from refrigeration, heating, ventilation, air conditioning and fire suppression equipment and systems.	Equipment and facilities	Refrigeration, heating, ventilation, air conditioning and fire suppression equipment and systems
Category 2	Indirect emissions stemming from electricity consumption in buildings.	Equipment and facilities	Electricity consumption
Category 3	Indirect GHG emissions stemming from transport-related activities: daily commuting of employees, remote working and business travel.	Equipment and facilities	Remote working (office equipment, lighting and heating, ventilation and air conditioning)
		Transport equipment	Road transport
			Rail transport
			Air transport

1.2 Scope

The reporting period refers to 2023.

In order to obtain information about the institution's environmental performance during a significant base period, the carbon footprint for the period 2019-2023 was calculated. Data referring to 2020 and 2021 were excluded, owing to the substantial changes brought about by the COVID-19 pandemic.

The Banco de España calculated these emissions for all its sites, taking into account the processes carried out in each of them, under an operational control approach.

2. CARBON FOOTPRINT CALCULATION

The carbon footprint was calculated as the sum of GHG emissions for each site, using the following formula:

EMISSIONS = ACTIVITY DATA * EMISSION FACTOR * CONVERSION FACTOR

The carbon footprint was measured in tonnes of carbon dioxide equivalent (tCO_2eq), a universal unit that shows the global warming potential of each greenhouse gas relative to a unit of CO_2.

The **activity data** used to calculate the carbon footprint was obtained from the institution itself, its employees (e.g. mobility survey) and suppliers. Primary data collection was prioritised. However, where this was not possible, the appropriate estimates were made (e.g. data on commuting activity drawn from the mobility survey).

The **emission factors** were selected prioritising nationally and/or internationally recognised official sources (Ministerio de Transición Ecológica y Reto Demográfico, DEFRA [1] and ADEME [2]).

The **conversion factors** used to convert GHG units into tCO_2eq (GWP)[3] were obtained from the IPCC's *Sixth Assessment Report*

The quality of the data obtained was assessed by applying semi-quantitative assessment criteria, considering their representativeness, integrity and uncertainty with respect to the activity, site and calculation period. On average, the analysis found data quality to be "Very good."

1 Department for Environment, Food and Rural Affairs, United Kingdom.
2 Agence de l'Environnement et de la Maîtrise de l'Énergie, France.
3 Global Warming Potential. A factor that describes the impact of the radiation force (the degree of damage to the atmosphere) of a unit of a given greenhouse gas relative to a unit of CO_2.

3. 2023 RESULTS

The Banco de España's carbon footprint in 2023 was **10,298.62** tonnes of CO_2 equivalent.

The overall results of the emission calculations for the institution as a whole in 2023 are shown in the table below.

	EMISSIONS tCO_2 eq	GHG SOURCE		EMISSIONS tCO_2 eq
Category 1	**6,770.28**	1a. Emissions stemming from combustion in stationary facilities	**Stationary combustion**	3,912.11
		1b. Emissions from combustion in transport equipment	**Road transport**	1,083.90
			Rail transport	0.02
			Air transport	1,663.86
			Ancillary machinery	1.95
		1d. Fugitive GHG emissions	**Refrigeration, heating, ventilation, air conditioning and fire suppression equipment and systems**	108.42
Category 2	**0.32**	2a. Emissions stemming from electricity consumption	**Electricity consumption**	0.32
Category 3	**3,528.03**	3c. Emissions from daily commuting of employees and remote working	**Remote working**	498.53
			Employee commuting	1,693.07
		3e. Emissions from business travel	**Business travel**	1,336.44

The distribution of emissions is analysed by category in Chart 1, which shows that 66% of emissions (6,770.28 tCO_2eq) fall under Category 1, and are direct emissions associated with fossil fuel consumption in stationary facilities, transport equipment (mainly associated with the transportation and circulation of cash) and fugitive emissions from refrigeration systems. A total of 34% of emissions (3,528.03 tCO_2eq) fall under Category 3 and are indirect emissions associated with employee commuting, remote working and business travel.

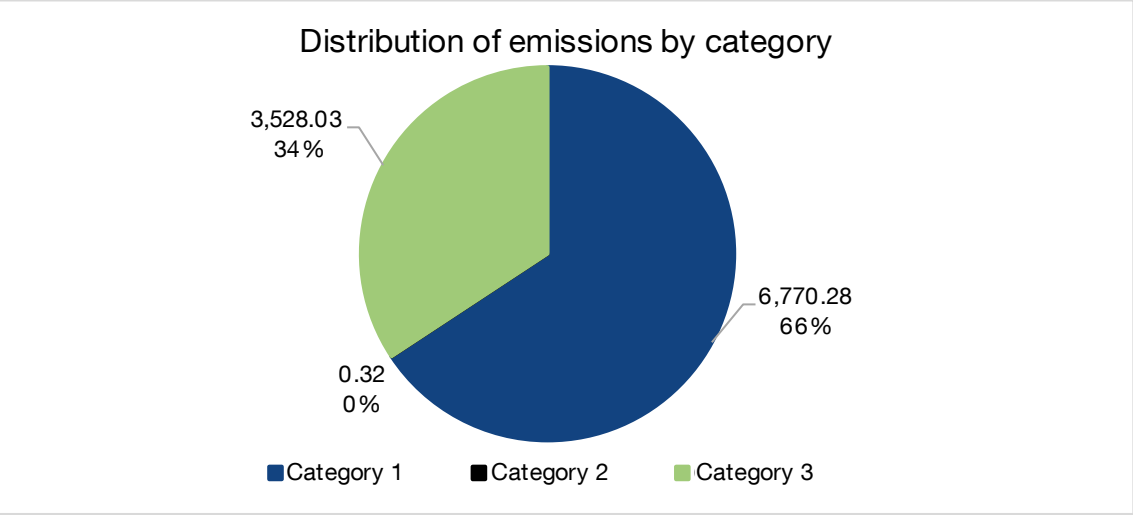

Chart 1. Distribution of total emissions in 2023, by category (tCO_2eq).
Source: Banco de España (2024).

Chart 2 shows a breakdown of emissions by sub-category, distinguishing between three groups according to their volume. First, emissions stemming from combustion in stationary facilities (3,912.11 tCO_2eq) and transport equipment (2,749.74 tCO_2eq), representing the highest volume of all the categories shown. Second, indirect emissions stemming from employee commuting (1,693.07 tCO_2eq) and business travel (1,336.44 tCO_2eq). And third, emissions stemming from remote working, fugitive emissions and electricity consumption.

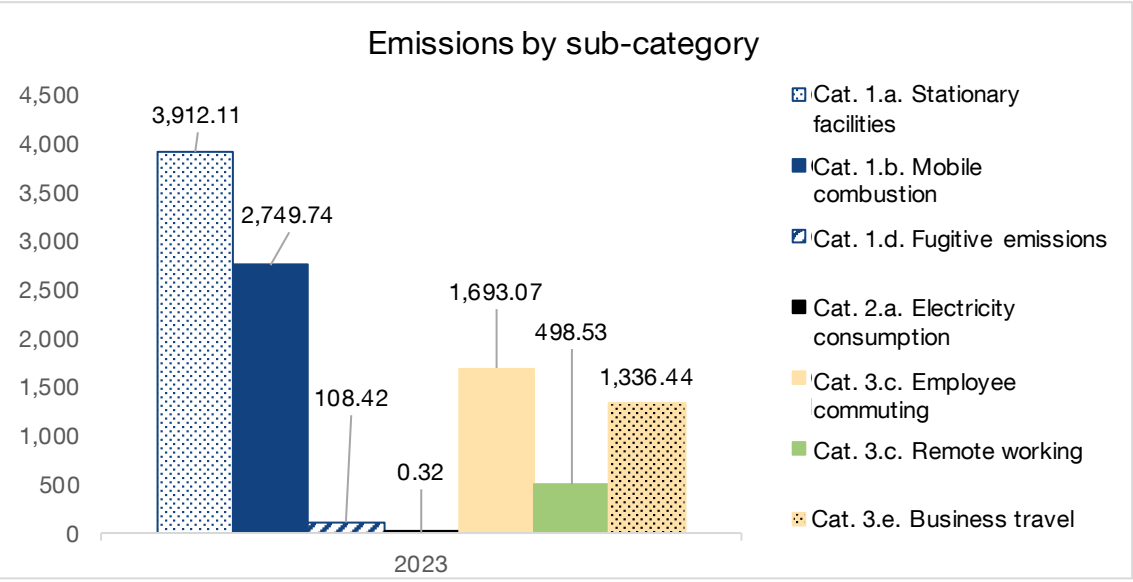

Chart 2. Distribution of emissions by sub-category (tCO_2eq).
Source: Banco de España (2024).

The table below shows the distribution of emissions by sub-category for the different sites: Madrid premises (head offices), branch offices and recreation-training centres.

		Head offices	Branch offices	Recreation-training centres
Category 1	1a. Emissions stemming from combustion in stationary facilities	3,390.83	229.29	292.02
	1b. Emissions stemming from combustion in transport equipment	2,149.62	598.23	1.95
	1d. Fugitive emissions stemming from refrigeration systems and other equipment	45.72	15.79	46.90
Category 2	2. Emissions stemming from electricity consumption	0.32	0.00	0.00
Category 3	3c. Emissions stemming from daily commuting of employees and remote working	1,982.10	209.49	--
	3e. Emissions stemming from business travel	1,311.25	25.19	--
	TOTAL (tCO_2eq)	**8,879.83**	**1,077.99**	**340.87**

The distribution of total emissions by site type is summarised in Chart 3. Clearly, the bulk of emissions originate at head offices (86%), while 11% are generated at the branch offices and only 3% at the recreation-training centres.

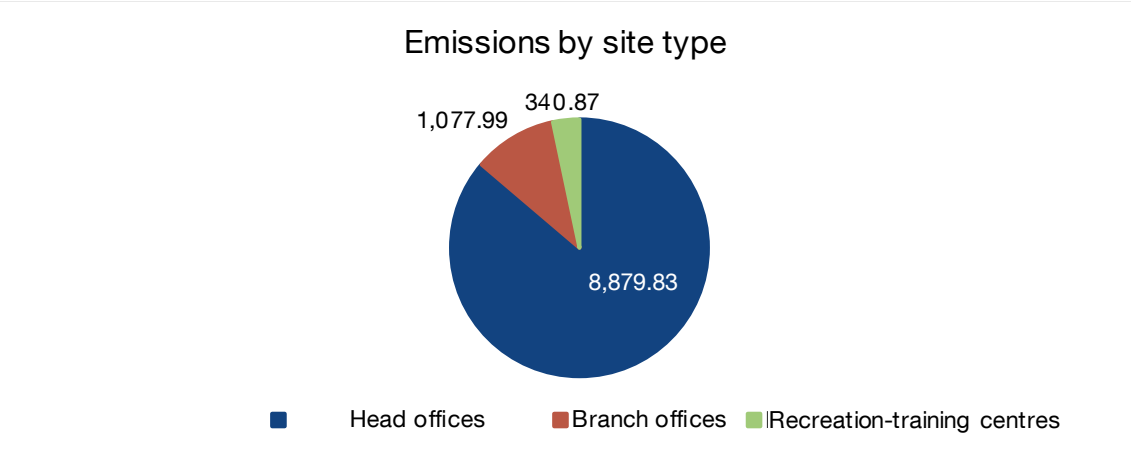

Chart 3. Distribution of total 2023 emissions by site type. (tCO_2eq).
Source: Banco de España (2024).

As regards the changes in emissions, Chart 4 shows how the carbon footprint evolved over 2019, 2022 and 2023.

The Banco de España emitted a total of 10,298.62 tonnes of CO_2 in 2023, 21% less than in 2019 – the last year considered normal prior to the pandemic – and 6.5% less than in 2022.

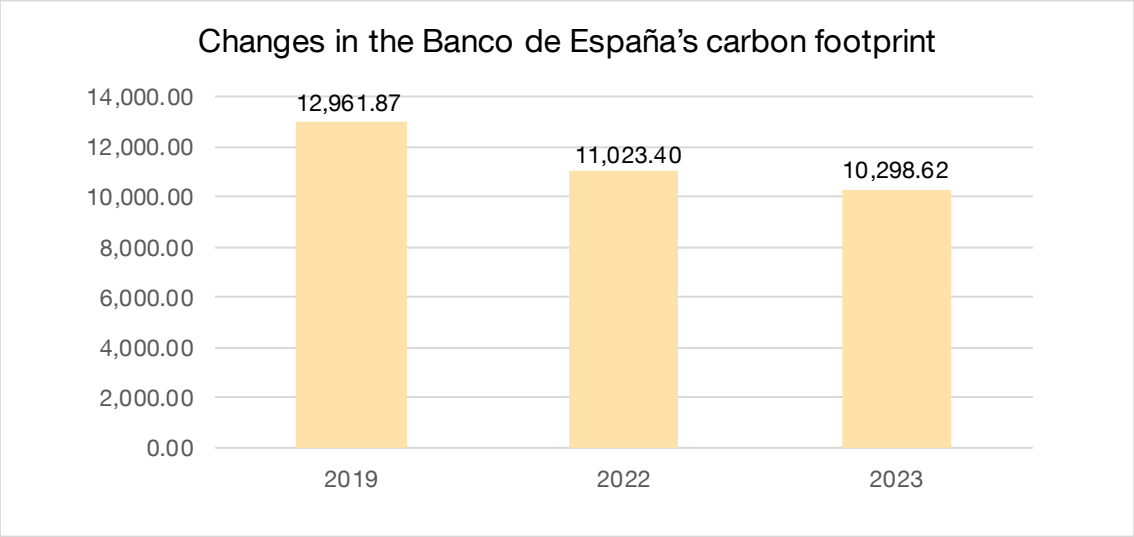

Chart 4. Carbon footprint 2019-2022-2023 (tCO_2eq).
Source: Banco de España (2023).

3.1 Category 1 results

Chart 5 shows the changes in Category 1 emissions. In particular, emissions from combustion at stationary facilities declined by 25% from 2019 to 2023. The following factors contributed to this fall:

- Energy efficiency measures, such as improving building envelope insulation, optimising air conditioning, heating and ventilation on/off times and installing more efficient equipment.
- Reduction of workforce presence due to the pandemic and remote working.
- Royal Decree-Law 14/2022 (applicable from August 2022 to November 2023), limiting heating and cooling temperatures to no more than 19ºC in winter and no less than 27ºC in summer.

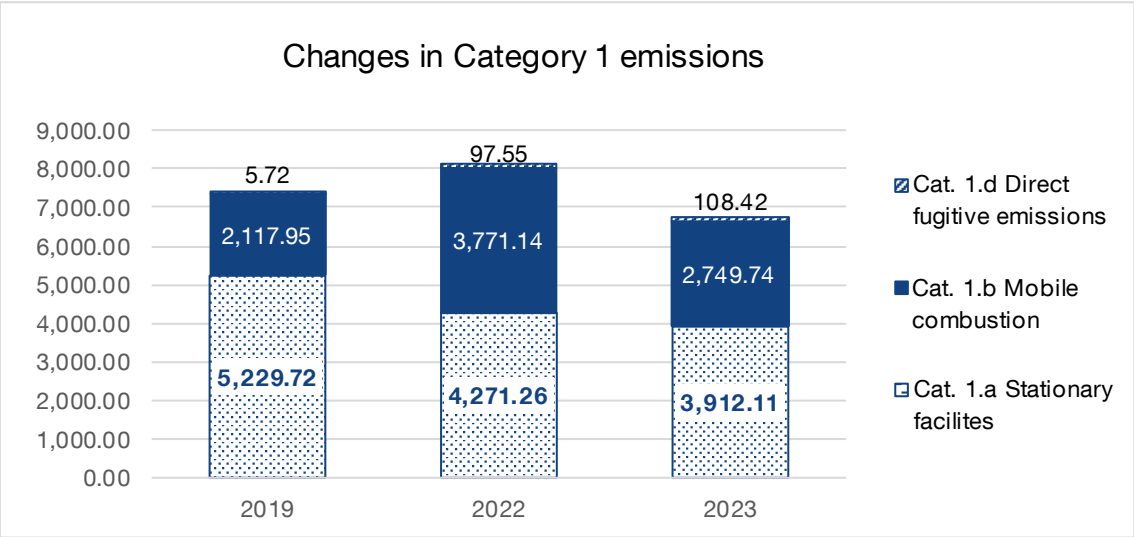

Chart 5: Category 1 changes (tCO2eq).
Source: Banco de España (2024).

Emissions from combustion in transport equipment rose by 1,653.19 tCO_2eq in 2022, up nearly 78% on 2019. This was due to the increase in the number of flights involved in international remittances. In 2023 these emissions fell by 27% compared with 2022, but

remained higher than in 2019. The breakdown of emissions by type of emission-generating transport is shown in Chart 6.

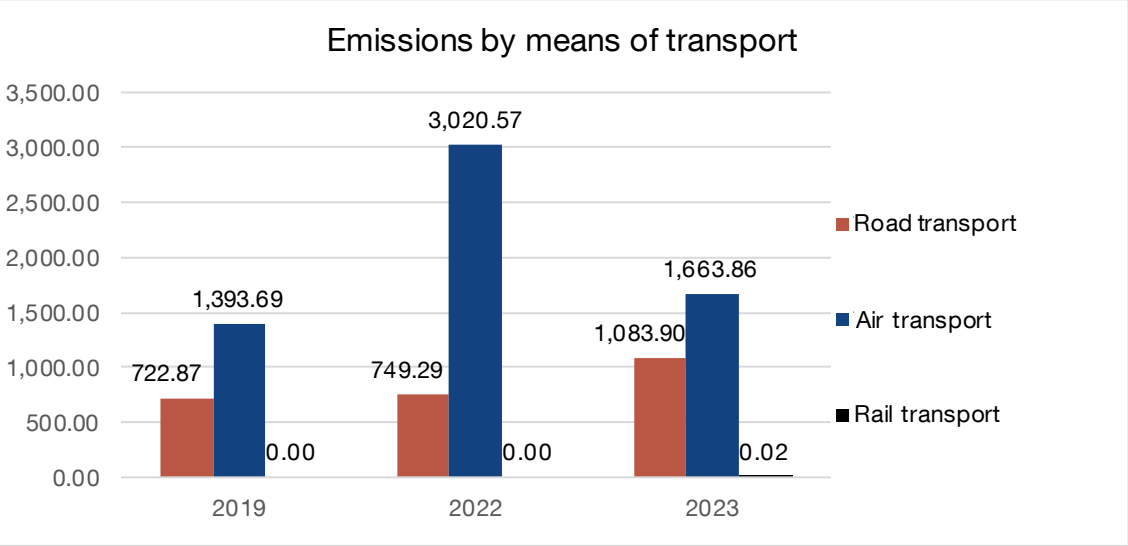

Chart 6: Category 1.b emissions by means of transport (tCO_2eq).
Source: Banco de España (2024).

The processes generating direct transport-related emissions are the processing, control and circulation of cash, as well as employee travel to different sites to perform the functions that fall within the Banco de España's remit.

3.2 Category 2 results

The Banco de España's category 2 emissions are indirect emissions stemming from the consumption of electricity at all of the institution's sites.

Since April 2023, all electricity supply contracts for the sites analysed have a renewable energy guarantee of origin. Virtually no emissions are generated under these contracts, in line with the market approach, as shown in Chart 7.

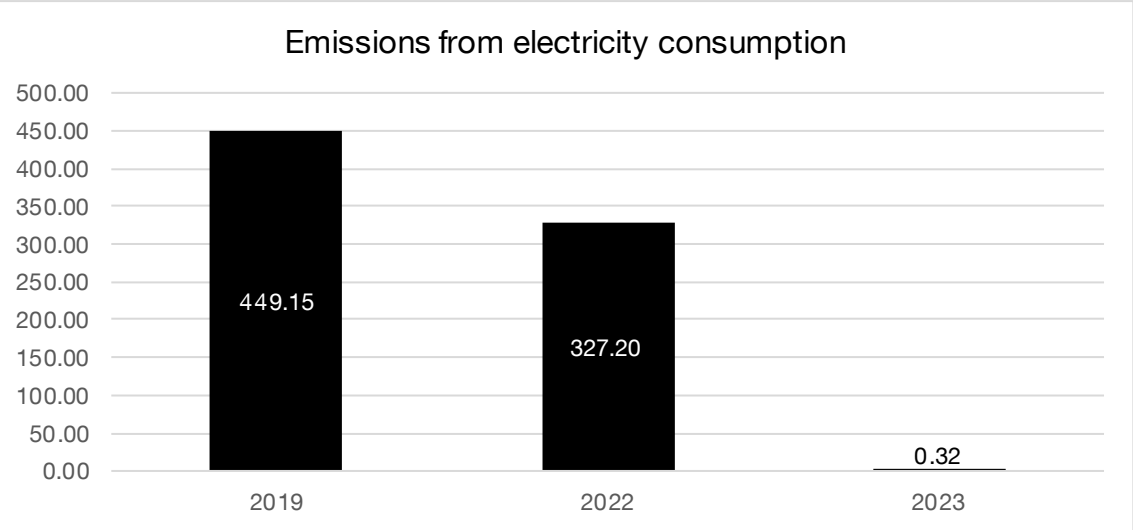

Chart 7: Emissions from electricity consumption (tCO_2eq).
Source: Banco de España (2024).

3.3 Category 3 results

Category 3 comprises indirect emissions stemming from employee commuting and remote working (category 3.c), and business travel (category 3.e).

Employee commuting emissions have been calculated on the basis of data obtained from a survey sent to the entire workforce asking about travel habits in 2022. The data for 2019 and 2023 were estimated based on the results obtained for 2022, with the appropriate corrections concerning the number of employees and remote working conditions.

Emissions from remote working were calculated considering remote working days and air conditioning, heating and lighting of workspaces and electrical consumption of IT equipment.

Chart 8 shows the changes in emissions of this kind from 2019 to 2023.

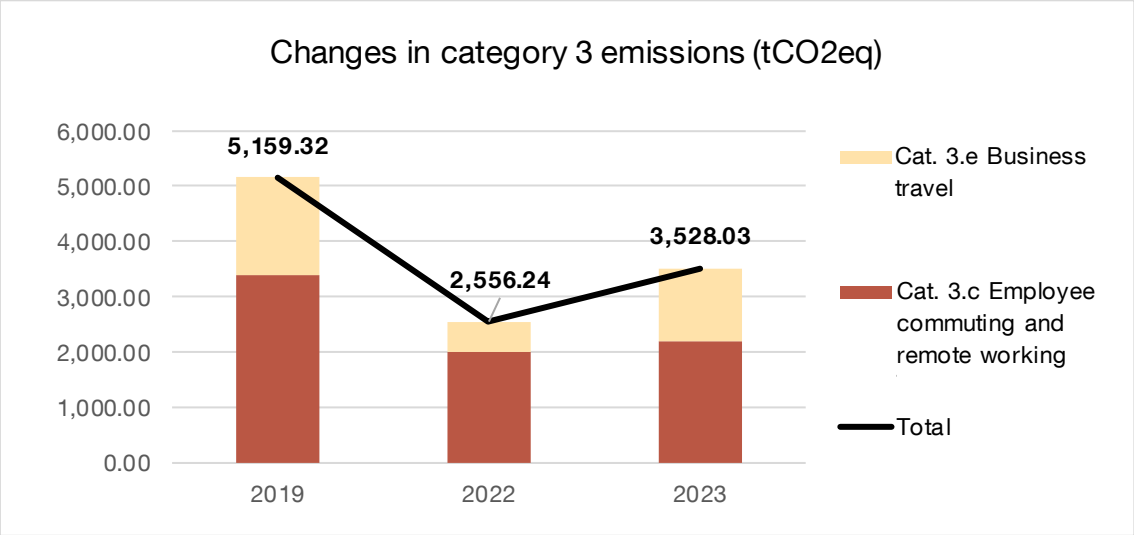

Chart 8: Changes in category 3 emissions (tCO_2eq).
Source: Banco de España (2024).

As discussed above, the pandemic clearly reduced all category 3 emissions, especially those relating to business travel. The impact of the widespread use of technologies such as videoconferencing to replace face-to-face meetings during the pandemic is shown in Chart 8. Compared with 2019, emissions from business travel fell by 69% in 2022 and by 25% in 2023. However, the return to normal has led to a rebound in the number of trips and therefore an increase in the associated emissions. Thus, in 2023 emissions were 141% higher than in 2022, but still far from 2019 levels.

4. CONCLUSIONS

The Banco de España's total emissions in 2023 were 21% down from 2019, the last year considered normal before the pandemic.

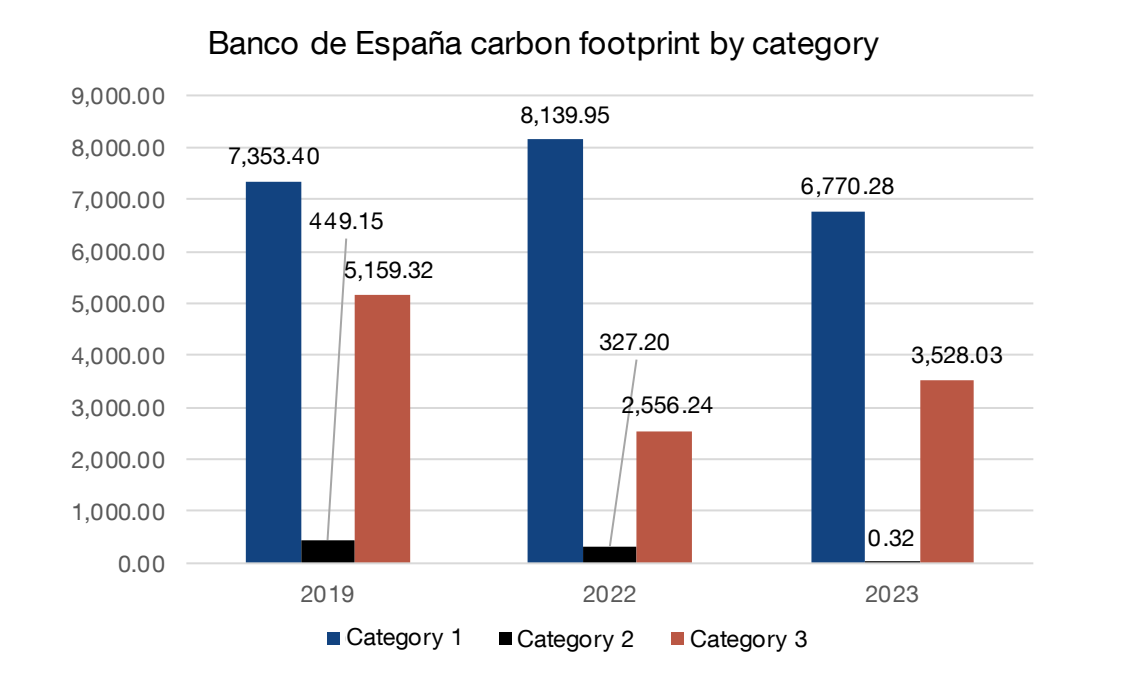

Chart 9: Banco de España carbon footprint by category (tCO_2eq).
Source: Banco de España (2024).

Chart 9 shows the changes in emissions by category in recent years. Analysis of these data reveals a reduction of around 100% in category 2 emissions. Category 3 emissions decreased by almost 32% compared with 2019, and category 1 emissions did so by 8%.

GLOSSARY (Acronyms and formulas)

ADEME: Agence de l´Environnement et de la Maîtrise de l´Énergie. France.

CO_2: Carbon dioxide.

CH_4: Methane.

DEFRA: Department for Environment, Food and Rural Affairs. United Kingdom.

REGO: Renewable Energy Guarantee of Origin, a certification related to electricity consumption. This guarantee certifies the renewable origin for a quantity of megawatts/hour produced, by means of unalterable documents with a unique identification number.

GHGs: Greenhouse gases.

GWP: Global Warming Potential. A factor that describes the impact of the radiation force (the degree of damage to the atmosphere) of a unit of a given greenhouse gas relative to a unit of CO_2.

IPCC: Intergovernmental Panel on Climate Change.

kWh: Kilowatt hour.

MWh: Megawatt hour.

N_2O: Nitrous oxide.

tCO_2eq: Tonne of carbon dioxide equivalent.