

Press Release

15 November 2022

## Environmental accounts. Air Emission Accounts Preview 2021 and year 2020

# The Spanish economy emitted 294.9 million tonnes of Greenhouse Gases in 2021, 5.7% more than in 2020.

# These emissions have decreased by 29.6% since 2008

# 23.0% of emissions corresponded to households

The Air Emission Accounts record the emissions made by resident economic units, both within and outside the economic territory.

In 2021, Greenhouse Gas (GHG) emissions increased by 5.7%, standing at 294.9 million tons of Carbon Dioxide equivalent (tCO2e)<sup>1</sup>.



#### **Greenhouse Gas Emissions**

Unit: million tonnes of Carbon Dioxide equivalent (tCO2e)

Between 2008 (first year of the accounting series) and 2021, the decrease in GHG emissions was 29.6%.

 $<sup>^1</sup>$  In order to make a comparison of atmospheric emissions of greenhouse gases other than carbon dioxide, all are converted to their carbon dioxide equivalent (CO<sub>2</sub>e) value by multiplying the mass of the gas in question by its global warming potential.

There are different types of Greenhouse Gases. The main ones, due to their level of emissions, are Carbon Dioxide ( $CO_2$ ), Methane ( $CH_4$ ) and Nitrous Oxide ( $N_2O$ ).

Carbon Dioxide emissions to the atmosphere increased by 7.1%, and those of Methane by 1.0%. For their part, Nitrous Oxide emissions remained at levels similar to those of the previous year.

	Total	% of the total	% annual variation	impact
CO <sub>2</sub> – Carbon dioxide	233,699.7	79.2	7.1	5,574
CH <sub>4</sub> – Methane	38,131.9	12.9	1.0	0,140
N <sub>2</sub> O – Nitrous oxide	17,694.3	6.0	0.0	0,002
Other GHG	5,418.5	1.9	-0.2	-0,004
TOTAL	294,944.4	100.0	5.7	

# **Greenhouse gas emissions by type of gas. Year 2021**

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### Greenhouse Gas Emissions by branches of activity and households.

In 2021, 25.4% of the total greenhouse gas emissions were concentrated in *Manufacturing*. *Households* accounted for 23.0% of the total and *Agriculture, livestock, forestry and fishing*, 17.3%.

The branches of activity that increased their GHG emissions the most in 2021 were *Transportation and storage services* (18.3%) and *Households* (10.2%).

# Greenhouse Gas Emissions by branches of activity and households.

Unit: thousand tonnes of Carbon Dioxide equivalent (tCO<sub>2</sub>e)

	TOTAL GHG	% of the total	% annual variation	% variation 2008-2021
Manufacturing industry	74,877.8	25.4	3.7	-29.9
Agriculture, livestock, forestry and fishing	51,079.9	17.3	0.7	9.1
Electricity, gas, steam, air conditioning and water supply	45,608.6	15.5	0.6	-57.7
Transport and storage	37,074.8	12.6	18.3	-18.5
Other productive sectors	18,536.3	6.2	3.6	-40.8
Households	67,767.0	23.0	10.2	-16.3
TOTAL	294,944.4	100.0	5.7	-29.6

Compared to 2008, the branches of activity where GHG emissions decreased the most were *Supply of electricity, gas, steam, air conditioning and water* (-57.7%) and *Other activity branches* (-40.8%).



**Greenhouse Gas Emissions by branches of activity and households. Years 2008 and 2021** Unit: thousand tonnes of Carbon Dioxide equivalent (tCO<sub>2</sub>e)



The highest amounts of Carbon Dioxide emitted in 2021 corresponded to the *Manufacturing Industry* (70.0 million tons), *Households* (65.0 million) and *Transportation and storage services* (36.4 million).

Meanwhile, *Agriculture, livestock, forestry and fishing* emitted the highest amounts of Methane (64.0% of the total) and Nitrous Oxide (77.8%).

#### Greenhouse Gas Emissions by type of gas, branches of activity and households. Year 2021

Unit: thousand tonnes of Carbon Dioxide equivalent (tCO<sub>2</sub>e)

	TOTAL GHG	Carbon Dioxide (CO <sub>2</sub> )	Methane (CH <sub>4</sub> )	Nitrous Oxide (N <sub>2</sub> O)	Other GHG
Manufacturing industry	74,877.8	69,960.5	2,113.2	592.4	2,211.7
Agriculture, livestock, forestry and fishing	51,079.9	12,884.1	24,397.6	13,767.7	30.5
Electricity, gas, steam, air conditioning and water supply	45,608.6	33,117.0	10,601.1	1,548.4	342.0
Transport and storage	37,074.8	36,421.4	42.8	417.5	193.2
Other productive sectors	18,536.3	16,273.6	276.4	745.0	1,241.2
Households	67,767.0	65,043.1	700.8	623.3	1,399.9
TOTAL	294,944.4	233,699.7	38,131.9	17,694.3	5,418.5

#### Other atmospheric emissions. Year 2020

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Other environmental problems that cause harmful effects on the environment and health are acidifying gases, tropospheric ozone precursor gases and particulates (fine dust).

#### Emissions of atmospheric pollutants. Year 2020

Units: thousands of tonnes.

	TOTAL	% annual variation	% variation 2008-2020
Acidifying gases	1,555.2	-7.7	-27.4
Tropospheric ozone precursors	1,632.7	-12.6	-33.4
Particulates < 2.5µm	121.9	-5.8	-19.5

Acidifying gases, which include Sulphur Oxides  $(SO_x)$ , Nitrogen Oxides  $(NO_x)$  and Ammonia  $(NH_3)$  measured in equivalent tons of Sulphur Dioxide  $(tSO_2e)^2$  depending on their degree of acidification, fell by 7.7% in 2020.

Tropospheric ozone precursor gases, which correspond to Non-Methane Volatile Organic Compounds (NMVOC), Nitrogen Oxides (NO<sub>x</sub>), Methane (CH<sub>4</sub>) and Carbon Monoxide (CO) measured in equivalent tons of NMVOC<sup>2</sup>, decreased 12.6% in 2020.

On the other hand, emissions of particles with an aerodynamic diameter of less than 2.5 microns ( $PM_{2.5}$ ) fell by 5.8% in 2020, standing at 121.9 thousand tonnes.

The highest emissions of acidifying gases corresponded to *Agriculture, livestock, forestry and fishing* (1,039.9 thousand tons of tSO<sub>2</sub>e), *Manufacturing industry* (162.4) and *Transportation and storage* services (127.8).

# Emissions of atmospheric particles by branches of activity and households. Year 2020 Units: thousands of tonnes.

	Acidifying gases	Tropospheric ozone precursors	Particulates < 2.5µm
Agriculture, livestock, forestry and fishing	1,039.9	523.0	51.1
Manufacturing industry	162.4	389.4	12.8
Electricity, gas, steam, air conditioning and water supply	68.4	100.2	3.2
Transport and storage	127.8	210.4	5.2
Other productive sectors	30.7	72.5	5.3
Households	126.0	337.2	44.3
TOTAL	1,555.2	1,632.7	121.9

<sup>&</sup>lt;sup>2</sup> For the aggregation of gases due to environmental problems, the mass of the corresponding gas is multiplied by a calculation factor established by the European Environment Agency (EEA) and Eurostat.



On the other hand, *Agriculture, forestry and fishing* emitted the highest amounts of ozone precursor gases (523.0 thousand tons of equivalent NMVOC), followed by *Manufacturing* (448.5 thousand tons).

The highest amounts of emissions of particles with an aerodynamic diameter less than 2.5 microns ( $PM_{2.5}$ ) corresponded to *Agriculture, forestry and fishing* (51.1 thousand tons) and Households (44.3).

Emissions of atmospheric pollutants by branches of activity and households. Year 2020 Percentage



## **Data Review and Update**

The data published today is provisional and will be revised when next year's data is released.

# Methodological note

The objective of the Environmental Accounts (EA) is to integrate environmental information into the central system of National Accounts in a coherent way. They include a set of satellite accounts, which are transmitted annually, compiled using the accounting formats applicable to the different sectoral and territorial areas, with a strong use of physical data. They show the interaction between the economy, households and environmental factors.

The Air Emissions Accounts present data regarding the polluting emissions into the atmosphere, in a way that is compatible with the National Accounts System, registering the emitting agents, broken down by branch of economic activity and households as final consumers.

The estimates of the Account of emissions to the atmosphere are made from the National Inventories of Emissions to the Atmosphere, prepared by the Ministry for Ecological Transition and the Demographic Challenge, which use the IPCC and EMEP/EEA methodology, with the NFR/CRF nomenclature (*Nomenclature for Reporting / Common Reporting Format*), which groups emissions into sectors, categories and subcategories.

For more information, the methodology can be accessed at:

https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=Estadistica\_C&cid=1254736176941 &menu=metodologia&idp=1254735976603

The standardized methodological report is at:

https://www.ine.es/dynt3/metadatos/es/RespuestaDatos.html?oe=30084

INE statistics are produced in accordance with the Code of Good Practice for European Statistics, which is the basis for the institution's quality policy and strategy. For more information see the section on <u>Quality at INE and the Code of Best Practices</u> on the INE website.

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Press Office: Telephone numbers: (+34) 91 583 93 63 /94 08 – gprensa@ine.es Information Area: Telephone number: (+34) 91 583 91 00 – www.ine.es/infoine/?L=1