Instituto Nacional de Estadística

Press Release

21 November 2018

Environmental accounts. Air Emission Accounts
Preview 2017 and year 2016

The Spanish economy emitted 344.0 million tonnes of greenhouse gases in 2017, 2.6% more than in 2016.

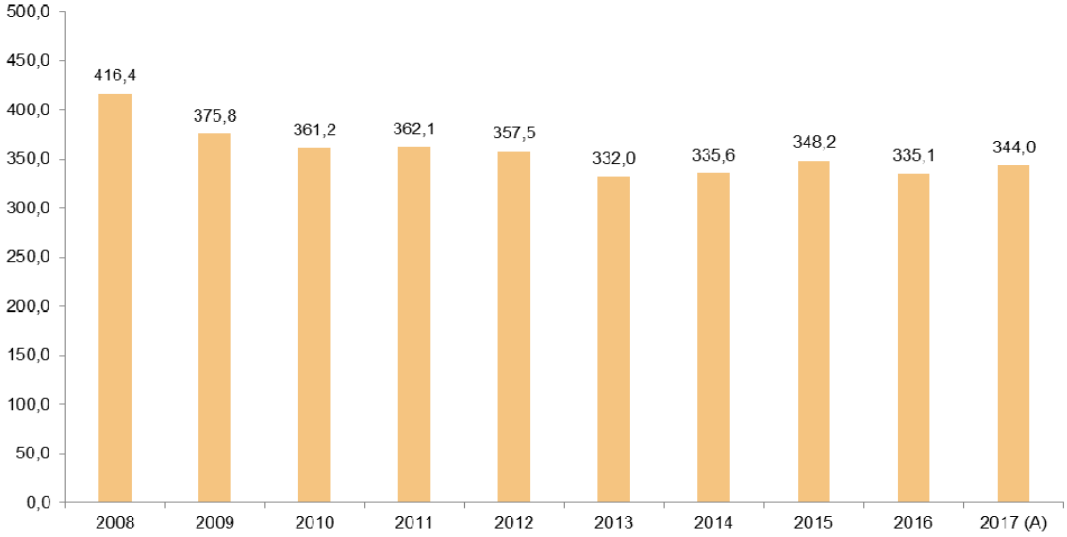
20.9% of emissions corresponded to households

The Air Emission Accounts record the emissions made by resident economic units, both within and outside the economic territory. The INE is today presenting the results preview of 2017 for Greenhouse Gases (GHG), as well as detailed estimates for the period 2008-2016.

Greenhouse Gas Emissions

Greenhouse gases increased by 2.6% in 2017 and stood at 344.0 million tonnes of Carbon Dioxide (CO_2) equivalent (tCO_2e)[1].

Greenhouse Gas Emissions
Unit: million tonnes of Carbon Dioxide equivalent (tCO_2e)



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

[1] 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_2e) value by multiplying the mass of the gas in question by its global warming potential.

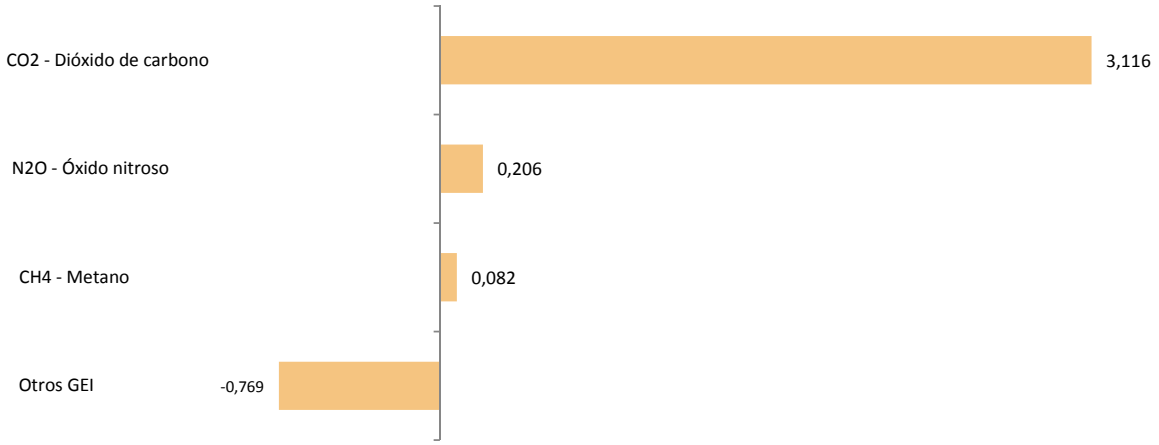
In 2017, Carbon Dioxide emissions to the atmosphere increased by 3.8%, Methane by 0.9% and Nitrous Oxide by 4.1%.

Carbon Dioxide (CO_2) emissions contributed the most to the annual variation rate, accounting for 3,116 points to the growth. Conversely, Other GHGs—Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs) and Sulphur Hexafluoride (SF_6)—decreased by 21.0% and had the greatest negative influence (-0.769 points).

Greenhouse gas emissions by type of gas. Year 2017
Unit: thousand tonnes of Carbon Dioxide equivalent (tCO_2e)

	Total	% of the total	% annual variation	impact
CO_2 - Carbon dioxide	285,238.8	82.9	3.8	3.116
CH_4 - Methane	31,577.7	9.2	0.9	0.082
N_2O - Nitrous oxide	17,432.7	5.1	4.1	0.206
Other GHGs	9,708.3	2.8	-21.0	-0.769
TOTAL	343,957.5	100.0	2.6	

Greenhouse Gas Emissions. Year 2017
Contribution to the variation rate by type of gas



The sectors with the highest increases in GHG emissions in 2017 were *Electricity, gas, steam, air conditioning and water supply* (12.2%) and *Extractive industries* (6.6%). On the other hand, households increased their emissions by 1.0%.

In contrast, *Agriculture, livestock, forestry and fishing* was the sector that most reduced their emissions (-7.7%).

Greenhouse Gas Emissions by productive sectors and households. Year 2017
Unit: thousand tonnes of Carbon Dioxide equivalent (tCO_2e)

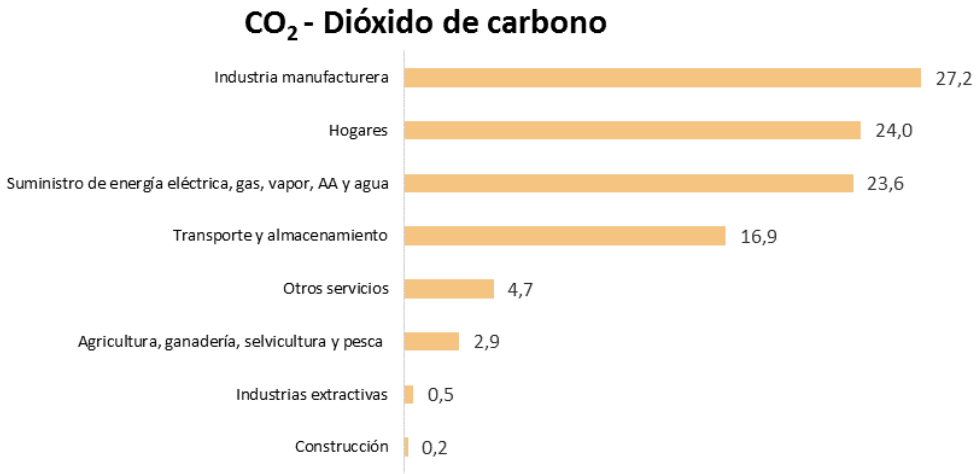
	TOTAL GHG	% annual variation	Carbon Dioxide (CO_2)	Methane (CH_4)	Nitrous Oxide (N_2O)
Agriculture, livestock, forestry and fishing	40,398.3	-7.7	8,320.8	18,782.1	13,267.6
Extractive industries	1,732.9	6.6	1,590.7	116.9	15.2
Manufacturing industry	85,066.1	2.1	77,752.4	1,829.6	698.2
Electricity, gas, steam, air conditioning and water supply	79,584.2	12.2	67,321.8	9,972.2	1,851.2
Construction	707.3	-6.5	455.8	0.8	6.2
Transport and storage	48,807.2	3.5	48,124.2	27.7	528.0
Other services	15,794.2	-3.4	13,296.7	89.4	382.2
Households	71,867.3	1.0	68,376.4	759.0	684.1
TOTAL	343,957.5	2.6	285,238.8	31,577.7	17,432.7

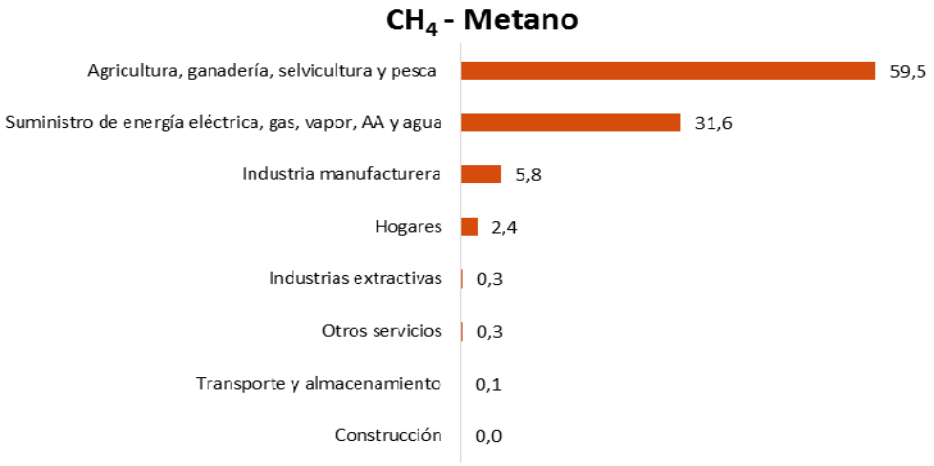
The *Manufacturing industry* accounted for 24.7% of total greenhouse gas emissions in 2017. On the other hand, *Electricity, gas, steam, air conditioning and water supply* emitted 23.1% of the total and households 20.9%.

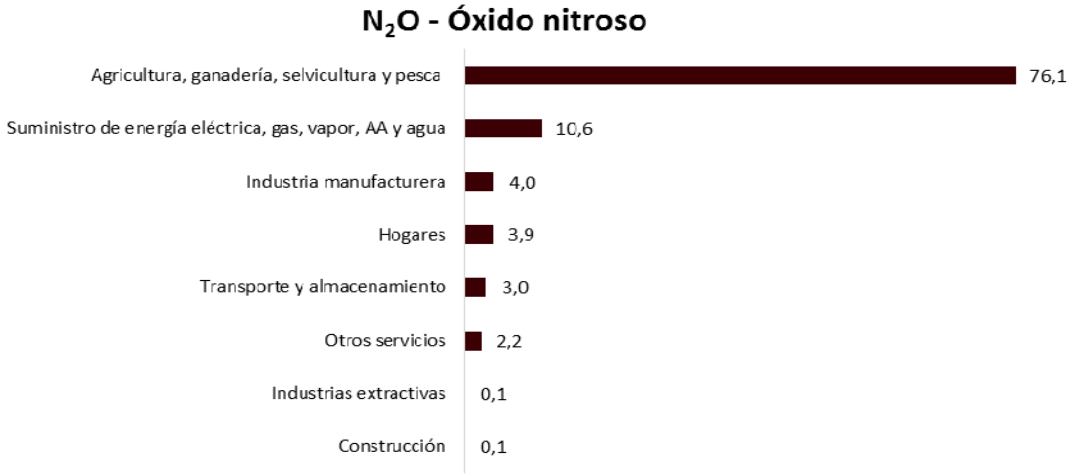
The largest amounts of Carbon Dioxide emitted corresponded to the *Manufacturing industry* (77.8 million tonnes), households (68.4 million) and *Electricity, gas, steam, air conditioning and water supply* (67.3 million). Together, these three sectors accounted for 74.8% of total carbon dioxide emissions into the atmosphere.

Meanwhile, *Agriculture, livestock, forestry and fishing* emitted the largest quantities of Methane and Nitrous Oxide. Specifically, 59.5% of the total Carbon Dioxide equivalent of methane and 76.1% of Nitrous Oxide.

Emissions of carbon dioxide (CO_2), methane (CH_4) and nitrous oxide (N_2O)
Year 2017
Percentage structure







Other atmospheric emissions. Year 2016

Nitrogen Oxides (NO_x) include both Nitrogen Monoxide (NO) and Nitrogen Dioxide (NO_2).

Nitrogen Oxide emissions reached 913.0 thousand tonnes of Nitrogen Dioxide equivalent (tNO_2e) in 2016, 4.9% less than in 2015.

By sectors, the largest quantities of Nitrogen Oxides emitted corresponded to *Transport and storage* (239.7 thousand tonnes of NO_2 equivalent), *Agriculture, livestock, forestry and fishing* (216.4) and households (170.6). Together, these three sectors accounted for 68.7% of the total.

Emissions of Nitrogen Oxides (NO_x) by branches of activity and households. Year 2016
Unit: thousand tonnes of Carbon Dioxide equivalent (tCO_2e).

	Total	% of the total	% annual variation
Agriculture, livestock, forestry and fishing	216.4	23.7	-2.8
Extractive industries	2.9	0.3	3.6
Manufacturing industry	129.3	14.2	-1.1
Electricity, gas, steam, air conditioning and water supply.	128.8	14.1	-20.0
Construction	2.0	0.2	0.0
Transport and storage	239.7	26.3	-3.1
Other services	23.3	2.5	-5.7
Households	170.6	18.7	0.9
TOTAL	913.0	100.0	-4.9

Emissions of particles with an aerodynamic diameter of less than 10 microns (PM_{10}) reached 202.3 thousand tonnes in 2016, 1.3% more than in 2015.

The largest quantities of PM_{10} particles emitted corresponded to *Agriculture, livestock, forestry and fishing* (91.2 thousand tonnes) and to households (64.2). Together, these two sectors accounted for 76.9% of the total.

Emissions of PM_{10} particles by branches of activity and households. Year 2016
Unit: thousand tonnes

	Total	% of the total	% annual variation
Agriculture, livestock, forestry and fishing	91.2	45.1	0.1
Extractive industries	6.0	3.0	-1.5
Manufacturing industry	20.2	10.0	-3.7
Electricity, gas, steam, air conditioning and water supply.	9.6	4.7	38.3
Construction	2.3	1.1	21.4
Transport and storage	5.9	2.9	7.0
Other services	2.9	1.4	10.1
Households	64.2	31.8	-0.2
TOTAL	202.3	100.0	1.3

Review and update of data

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

Methodological note

The Environmental Accounts (EA) is a synthesis statistical operation whose general objective is to integrate environmental information in a coherent way into the central system of National Accounts, following the methodology of the System of Environmental-Economic Accounting (SEEA) developed by the United Nations, which constitutes the conceptual framework of the EA.

Regulation (EU) No. 691/2011 of the European Parliament and Council of 06 July 2011 in relation to the European environmental-economic accounts, constitutes the reference framework for concepts, definitions, classifications and common accounting standards for the preparation of the Environmental Accounts and includes a section of this account, for its annual submission.

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 emissions of atmospheric pollutants recorded are those of greenhouse gases (CO_2-carbon dioxide, CH_4-methane, N_2O-nitrous oxide, HFC-hydrofluorocarbons, PFC-perfluorocarbons and SF_6-sulfur hexafluoride), emissions of air pollutants and those responsible for acid rain (SO_x-sulfur oxides, NO_x-nitrogen oxides, NH_3-ammonium), ozone layer precursors (CO-carbon monoxide, and the aforementioned HFCs, PFCs and SF_6), gases responsible for photochemical pollution (NMVOCs-volatile organic compounds (except methane) and NO_x) and particles emissions (PM_{10}-particles of aerodynamic diameter less than 10 microns and $PM_{2.5}$-particles with an aerodynamic diameter of less than 2,5 microns).

The estimations of the Air Emission Accounts are made using the National Inventories of Air Emissions, prepared by the Ministry for the Ecological Transition, 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.

Inventories present emissions from all sources in the national territory, regardless of whether they are national economic activities (principle of residence) or not. In addition, it includes emissions from non-economic agents (nature) and the absorption of substances by nature (carbon from biomass).

For households as final consumers, direct emissions corresponding to their own transport, heating and other secondary emissions are considered.

For more information you can access the methodology at:
http://www.ine.es

And the standardised methodological report at:
http://www.ine.es/dynt3/metadatos/en/RespuestaDatos.html?oe=30063

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