

19 November 2013

Environmental accounts. Atmospheric Emission Accounts. Base 2008.
Accounting series 2008-2011

In 2011, the Spanish economy emitted 351.9 million tonnes of greenhouse effect gases, 12.2% less than in 2008

The manufacturing industry emitted 27.2% of the total

In the framework of the Regulation of the European Union on environmental accounts, the National Statistics Institute (INE) published today, for the first time, this press release on Atmospheric emissions accounts. Accounting series 2008-2011.

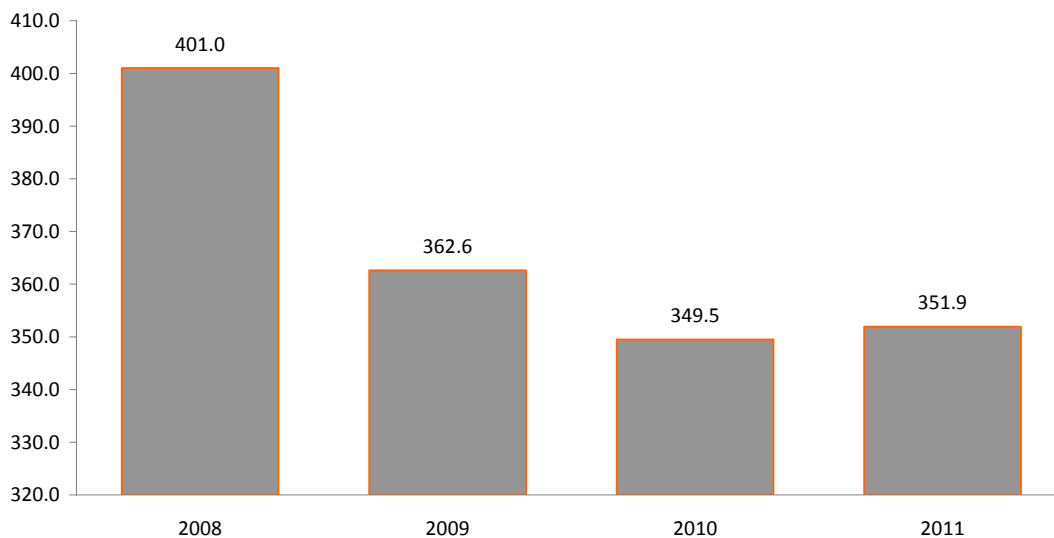
Greenhouse effect gas (GHG) emissions into the atmosphere increased by 0.7% in 2011, as compared with 2010, reaching 351.9 million tonnes of equivalent CO₂ (tCO₂e)*.

In the last 4 years, the emissions were reduced by 12.2%.

Greenhouse effect gases

Total emissions

Unit: millions of tonnes of equivalent CO₂



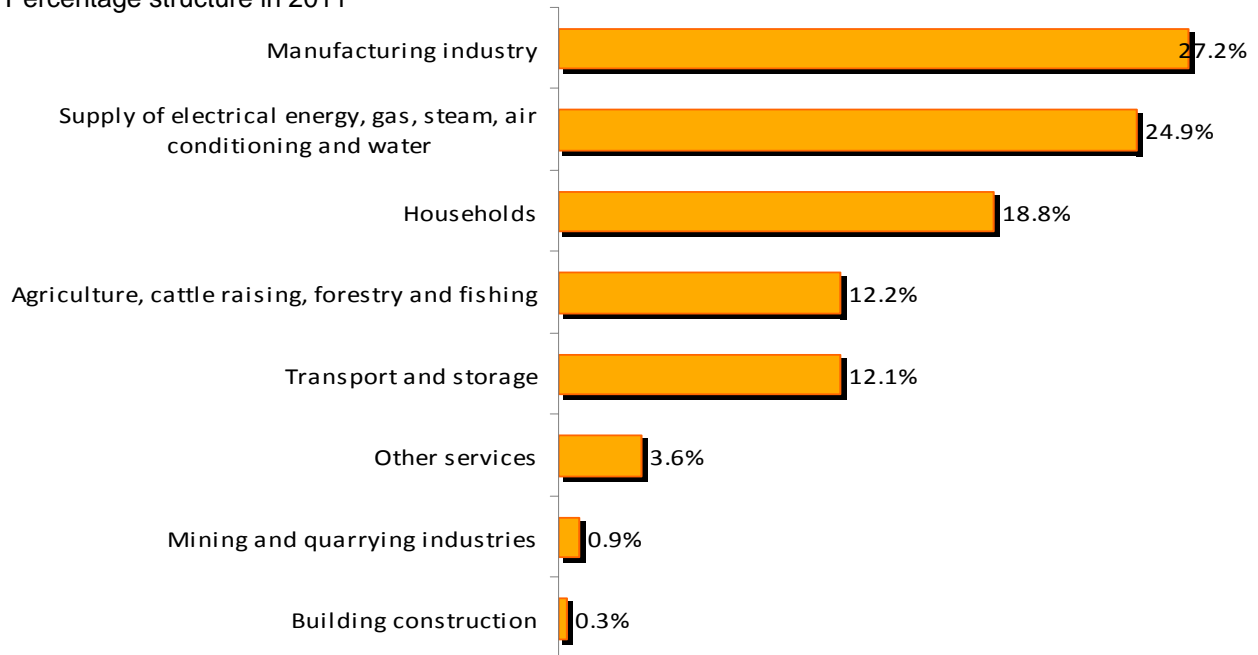
*In order compare the atmospheric emissions, greenhouse effect gases other than carbon dioxide are transformed into their equivalent value of carbon dioxide (CO₂e) multiplying the mass of the gas in question by its global warming potential.

Results by branch of activity and households

Greenhouse effect gas emissions were mainly caused by the Manufacturing industry, which concentrated 27.2% of the total emissions in 2011. In turn, the supply of electrical energy, gas, steam, air conditioning and water emitted 24.9% of the total, and Households as final consumers concentrated 18.8% of the total emissions.

Greenhouse effect gas emissions

Percentage structure in 2011



During the 2008-2011 period, the sectors that reduced their emissions the most were Building construction (-31.4%), Transport and storage (-17.5%), Supply of electrical energy, gas, steam, air conditioning and water (-17.0%) and Manufacturing industry (-12.4%).

Greenhouse effect gas emissions by branches of economic activity and households

Unit: thousands of tonnes of equivalent CO₂

	2008	2009	2010	2011
Agriculture, Cattle breeding, forestry and fishing	43,230.5	43,264.1	43,884.2	42,871.7
Mining and quarrying industries	3,443.4	3,292.3	3,253.1	3,236.5
Manufacturing industry	109,024.6	94,443.3	97,542.7	95,547.0
Supply of electrical energy, gas, steam and air conditioning and water	105,714.7	90,630.8	74,221.6	87,700.4
Building construction	1,666.3	1,199.4	1,216.7	1,142.7
Transport and storage	51,753.9	45,846.2	44,453.6	42,701.9
Other services	12,842.3	12,969.0	13,107.4	12,639.0
Households	73,356.4	70,980.9	71,832.0	66,070.3
TOTAL	401,032.1	362,626.0	349,511.1	351,909.4

Emissions by type of gas

There are different types of greenhouse effect gases. By level of emission, the main greenhouse effect gases are carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O).

CO₂ atmospheric emissions increased by 1.1% in 2011, as compared with 2010. Within the 2008-2011 period, those emissions were reduced by 14.7%.

In 2011, CH₄ emissions decreased by 0.6%, as compared with the previous year. Within the 2008-2011 period, those emissions were reduced by 0.3%.

In turn, N₂O emissions were reduced by 5.4% in 2011 and by 4.7% within the 2008-2011 period.

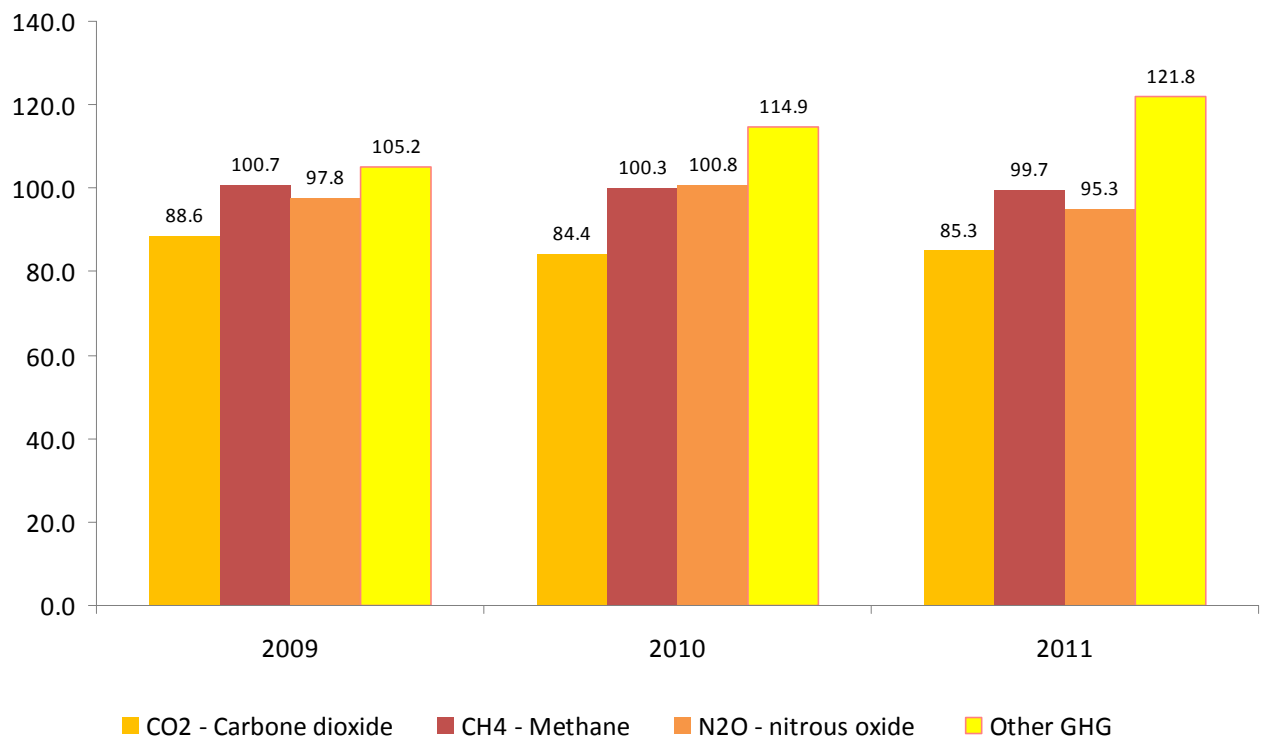
Greenhouse effect gas emissions by type of gas

Unit: thousands of tonnes of equivalent CO₂

	2008	2009	2010	2011
CO2 - Carbon dioxide	339,673.8	300,978.8	286,582.0	289,601.6
CH4 - Methane	33,265.3	33,497.9	33,353.9	33,159.4
N2O - Nitrous oxide	19,126.1	18,714.6	19,275.4	18,225.2
Other GHG	8,968.0	9,434.0	10,300.0	10,923.0
TOTAL	401,032.1	362,626.0	349,511.1	351,909.4

Greenhouse effect gas emissions

Variation index. Reference year 2008=100



CO₂, CH₄ and N₂O emissions by branch of activity

In 2011, the Manufacturing industry emitted 89.3 million tonnes of CO₂, Households emitted 61.5 millions and Supply of electrical energy, gas, steam, air conditioning and water emitted 73.0 millions. As a whole, they represented 77.3% of the total of CO₂ atmospheric emissions.

Agriculture, cattle breeding, forestry and fishing emitted 17.8 millions of tCO₂e of CH₄ (53.8% of the total) and 13.8 millions of tCO₂e of N₂ (75.9%).

Supply of electrical energy, gas, steam, air conditioning and water emitted 12.7 millions of tCO₂e of CH₄ and 1.8 millions of tCO₂e of N₂O, representing 38.2% and 9.7% of the total emissions of this gases.

Emissions of CO₂, CH₄ N₂O

Total emissions. Year 2011

Unit: thousands of tonnes of equivalent CO₂

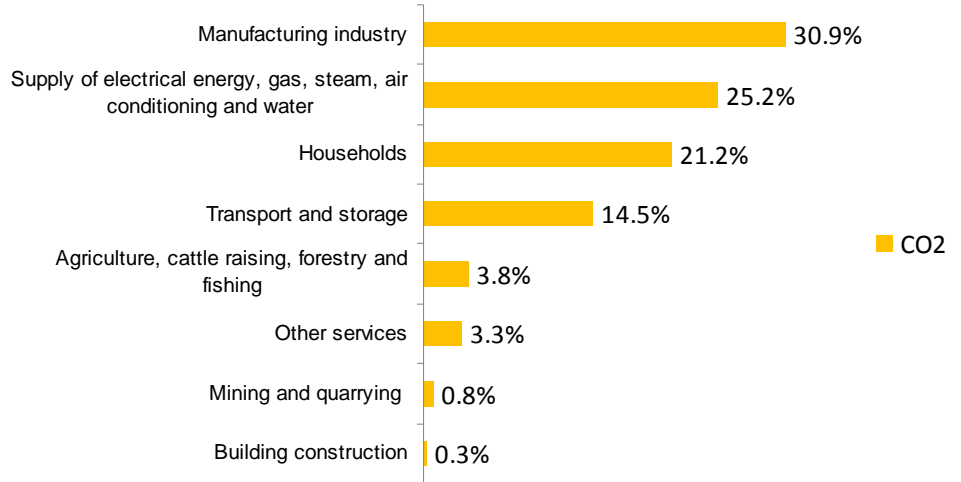
	CO ₂	CH ₄	N ₂ O
Agriculture, Cattle breeding, forestry and fishing	11,009.6	17,829.3	13,833.3
Mining and quarrying	2,353.2	639.5	19.2
Manufacturing industry	89,350.4	1,209.2	893.1
Supply of electrical energy, gas, steam and air conditioning	73,028.8	12,676.3	1,768.0
Building construction	772.9	0.2	8.5
Transport and storage	41,928.7	39.4	352.0
Other services	9,648.6	78.4	670.4
Households	61,509.4	687.0	680.7
TOTAL	289,601.6	33,159.4	18,225.2

Manufacturing industry was main CO₂ emitter, whereas Agriculture, cattle breeding, forestry and fishing were the sectors emitting the greatest amount of CH₄ and N₂O.

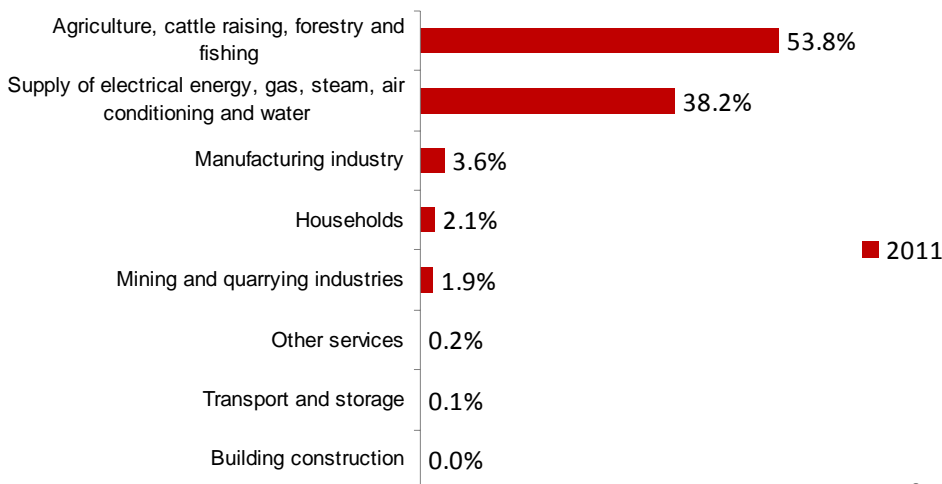
By order of importance, Supply of electrical electric, gas, steam, air conditioning and water was the second sector, regarding the amounts emitted of the three gases.

Emissions of CO₂, CH₄ N₂O
Percentage structure (year 2011)

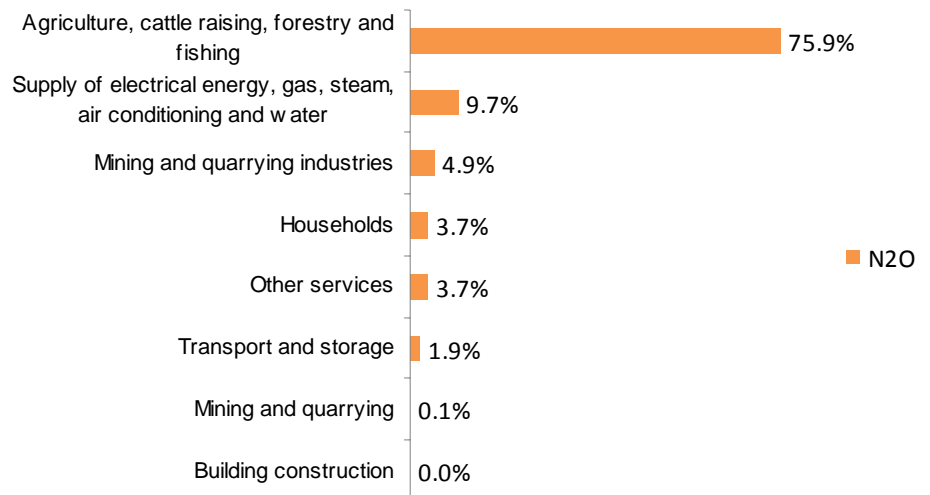
CO₂ - Carbon dioxide



CH₄ - Methane



N₂O - Nitrous oxide



Methodological note

The **Environmental Accounts** (EA) are a synthesis statistical option with the general objective of integrating environmental information coherently in the central system of National Accounts, following the methodology of the United Nations' System of Integrated Environmental and Economic Accounting (UNSD), which constitutes the conceptual framework of the EA.

[Regulation \(EU\) No 691/2011 of the European Parliament and of the Council of 6 July 2011 on European environmental economic accounts](#), constitutes the reference framework of concepts, definitions, classifications, and common accounting regulations whose purpose is to draft Environmental accounts and incorporates for the first time a module on this account, for annual transmission.

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

The estimates of the Air Emission Accounts are carried out using the National Atmospheric Emission Inventories, compiled by the Ministry of Agriculture, Food and the Environment, using the EMEP/CORINAIR methodology developed by the European Environmental Agency, with the SNAP nomenclature (Selected Nomenclature for Air Pollution), which groups emissions functionally, by process.

The Inventories present the emissions of all of the sources in the country, regardless of whether they are domestic economic activities (principle of residence) or not. Moreover, it includes the emissions of non-economic agents (nature) and the absorption of substances by nature (carbon by biomass). In order to prepare the estimates for the Emission Account, it is necessary to adapt the emissions to the principles of the System of National Accounts.

Regarding the distribution, by branch of activity and Households as final consumers, most of the inventory categories correspond to a single economic activity registered in a branch of activity, but in certain cases, the emissions must be divided into several branches (combustion plants, transport and other). Since atmospheric emissions are distributed by branch of economic activity in accordance with the rules of the National Accounts system, those resulting from secondary and auxiliary activities are grouped with those of the main activity of economic units. Households as final consumers considers the direct emissions corresponding to their own transport, heating and other emissions of a secondary nature.

The complete methodology of the account is published in the INE website www.ine.es.