

21 November 2014

Environmental accounts. Atmospheric Emission Accounts.
Base 2008. Accounting series 2008-2012

In 2012, the Spanish economy emits 341.9 million tonnes of greenhouse effect gases, 1.4% less than in 2011

In the 2008-2012 period, emissions have been reduced by 14.7%

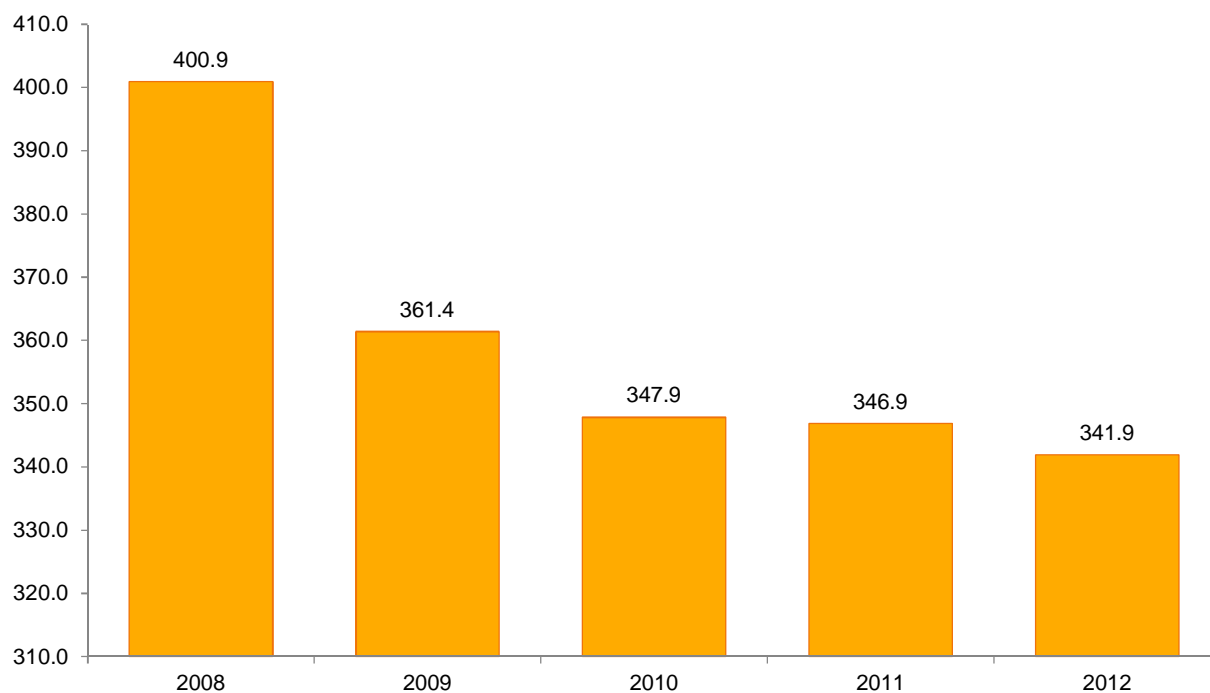
Greenhouse effect gas (GHG) emissions into the atmosphere decreased by 1.4% in 2012, as compared with 2011, reaching 341.9 million tonnes of equivalent CO₂ (tCO₂e)*.

In the last five years, emissions were reduced by 14.7%.

Greenhouse effect gases

Total emissions

Unit: millions of tonnes of equivalent CO₂



*In order to 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 branches of activity and households

The sectors that reduced their emissions the most in 2012 were *Transport and storage* (–7.9%), *Building construction* (–6.7%), and *Other services* (–5.3%). Households, as final consumers, decreased their emissions by 4.2%.

Greenhouse effect gas emissions by branches of economic activity and households

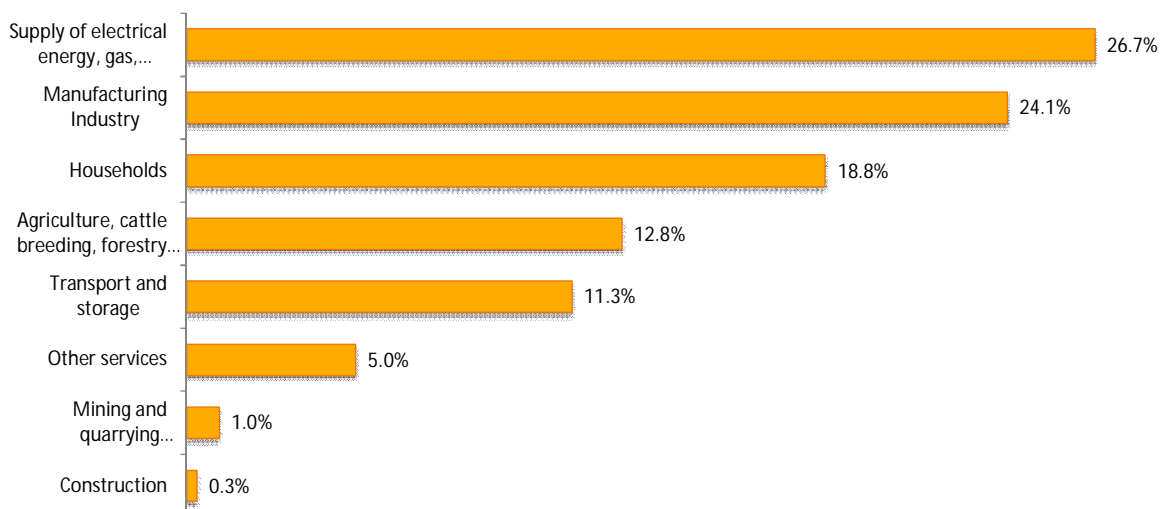
Unit: thousands of tonnes of equivalent CO₂

	2012	% over the total	% interannual variation
Agriculture, cattle breeding, forestry and fishing	43,769.3	12.8	-1.1
Mining and quarrying industries	3,308.4	1.0	-2.1
Manufacturing industry	82,503.0	24.1	-2.1
Supply of electrical energy, gas, steam, and air conditioning and water	91,298.8	26.7	5.2
Build construction	1,037.7	0.3	-6.7
Transport and storage	38,765.4	11.3	-7.9
Other services	17,027.5	5.0	-5.3
Households	64,203.6	18.8	-4.2
TOTAL	341,913.7	100.0	-1.4

Greenhouse effect gas emissions were mainly due to *Supply of electrical energy, gas, steam, air conditioning and water*, which concentrated 26.7% of the total number of emissions in 2012. In turn, *Manufacturing industry* emitted 24.1% of the total, and households did so by 18.8%.

Greenhouse effect gas emissions

Percentage structure in 2012



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 decreased by 1.5% in 2012, as compared with 2011. Within the 2008-2012 period, those emissions were reduced by 17.0%.

In 2012, CH₄ emissions registered the same levels as in the previous year. Within the 2008-2011 period, those emissions were reduced by 0.5%.

In turn, N₂O emissions were reduced by 2.6% in 2012 and by 6.7% within the 2008-2012 period.

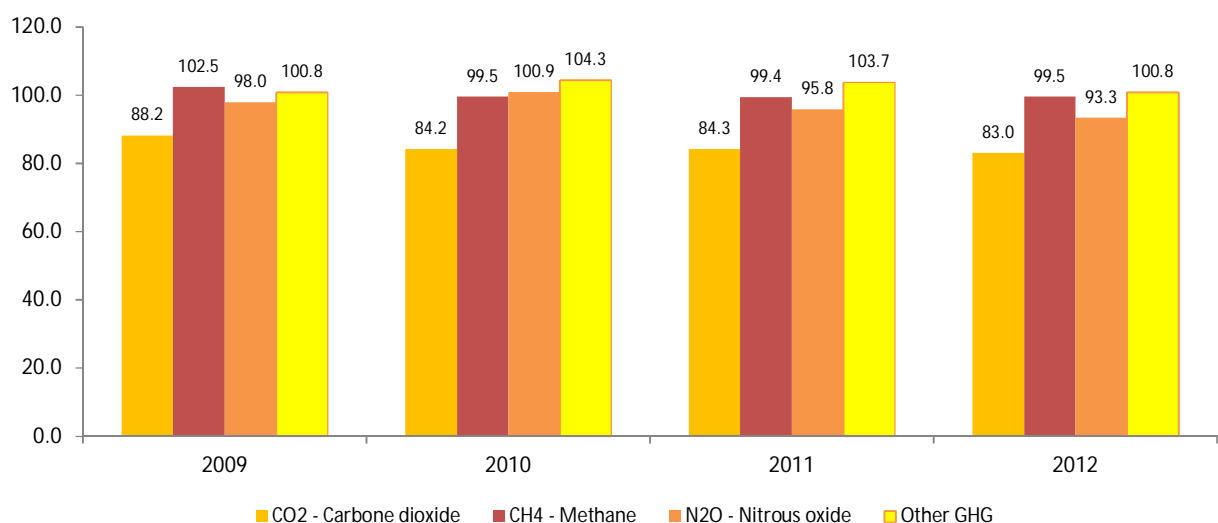
Greenhouse effect gas emissions by type of gas

Unit: thousands of tonnes of equivalent CO₂

	2012	% of the total	% interannual variation	% variation of 2008
CO ₂ – Carbon dioxide	281,946.0	82.4	-1.5	-17.0
CH ₄ – Methane	32,322.6	9.5	0.0	-0.5
N ₂ O – Nitrous oxide	18,371.3	5.4	-2.6	-6.7
Other GHG	9,273.8	2.7	-2.8	-0.8
TOTAL	341,913.7	100.0	-1.4	-14.7

Greenhouse effect gas emissions

Variation index. Reference year 2008=100



CO₂, CH₄ and N₂O emissions by branch of activity

In 2012, the greatest quantities of CO₂ emitted corresponded to *Supply of electrical energy, gas, steam, air conditioning and water*, which emitted 77.6 million tonnes, *Manufacturing industry*, which emitted 77.2 million tonnes of CO₂, and households, which emitted 60.2 millions. As a whole, they represented 76.2% of the total of CO₂ atmospheric emissions.

Agriculture, cattle breeding, forestry and fishing emitted the highest quantities of CH₄ and N₂O in 2012. More specifically, it was 18.0 million tonnes of CO₂ of equivalent CH₄ (55.6% of the total) and 14.2 millions of tCO₂e of equivalent N₂O (77.3%).

Supply of electrical energy, gas, steam, air conditioning and water was responsible for the emission of 11.7 millions of tCO₂e of equivalent CH₄ and 1.8 millions of tCO₂e of equivalent N₂O, representing 36.3% and 9.6% of the total emissions of these gases, respectively.

Emissions of CO₂, CH₄ N₂O

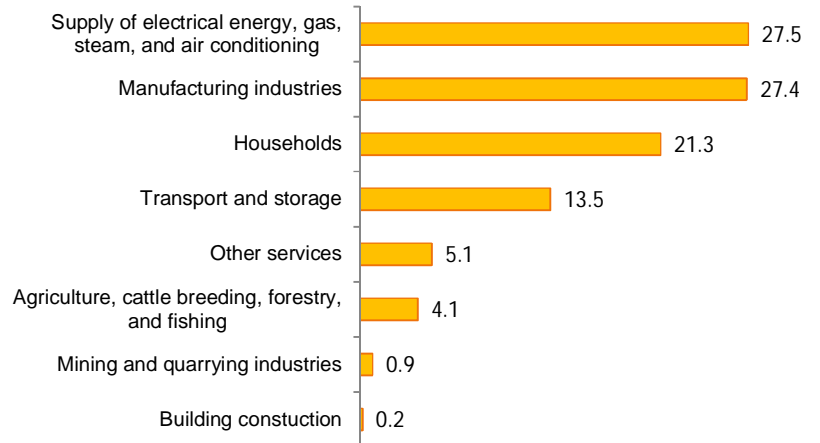
Total emissions. Year 2011

Unit: thousands of tonnes of equivalent CO₂

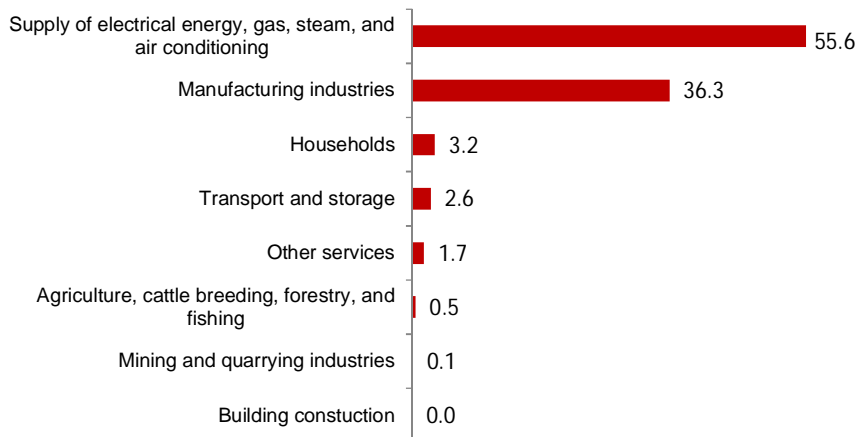
	CO ₂	CH ₄	N ₂ O
Agriculture, cattle breeding, forestry, and fishing	11,415.4	17.969.0	14.205.5
Mining and quarrying	2,519.3	551.8	35.2
Manufacturing industry	77,229.4	1.036.6	723.5
Supply of electrical energy, gas, steam, and air conditioning	77,583.4	11.740.7	1.770.1
Building construction	676.0	0.2	7.4
Transport and storage	38,027.2	39.1	355.5
Otros servicios	14,316.2	160.4	579.0
Households	60,179.2	824.9	695.3
TOTAL	281,946.1	32.322.7	18.371.5

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

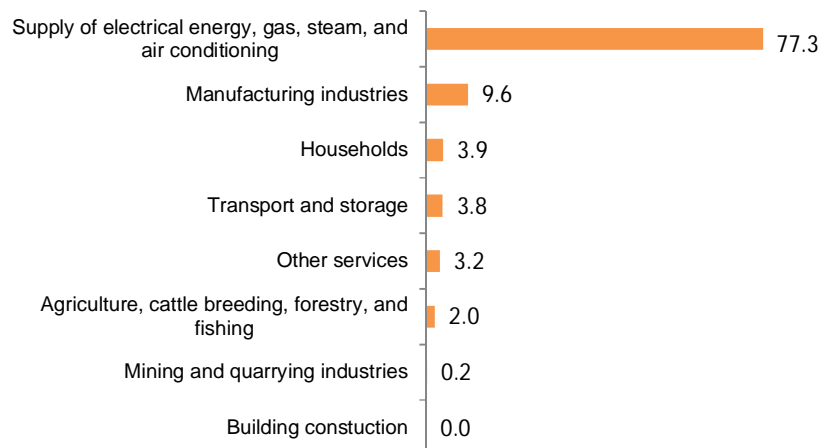
CO₂



CH₄



N₂O



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.