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INSTITUTO NACIONAL DE ESTATÍSTICA
STATISTICS PORTUGAL

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Economic-environmental Indicators – Air emissions accounts
1995-2016

Global Warming Potential decreased by 2.9% in 2016, despite the growth of economic activity

In 2016, Global Warming Potential decreased 2.9%, Acidification Potential 2.0% and Troposphere Ozone Formation Potential 3.3%, while economic activity (measured by Gross Value Added at basic prices) grew 1.6%. This decoupling situation (reduction of environmental impact and economic growth) did not happen since 2010.

Portugal presented the sixth lowest Global Warming Potential *per capita* in the EU28 (75.7% of the European average) in 2015.

Statistics Portugal publishes Air Emission Accounts data for 2016 and revised data for the period 1995 to 2015. This revision was essentially motivated by the incorporation of the revisions of the National System of Emissions and Environmental Pollutants Removal Inventory (NSEEPRI) made by the Portuguese Environmental Agency.

On Statistics Portugal website, in the National Accounts release area (section of Satellite Accounts) tables with more detailed information are available.

Air Emissions Accounts allow for an analysis of the environmental implications of the country production standards, since their results, which are consistent with the National Accounts, enable the development of an integrated environmental-economic analysis.

1. MAIN RESULTS

For the assessment of environmental effects of various gases emitted by economic activity and households there are three important indicators: Global Warming Potential (GWP), Acidification Potential (ACID) and Troposphere Ozone Formation Potential (TOFP). Table 1 presents the evolution of these three environmental indicators for the period 1995-2015.

In 2016, these three environmental indicators, as a result of the reduction of emissions of most of the gases contributing to their calculation, decreased in relation to the previous year, contrary to the Gross Value Added (GVA) at basic prices, which increased by 1.6% in real terms. In cumulative terms, all environmental indicators registered significant decreases between 1995 and 2016, while GVA recorded a volume increase of 28.0%.

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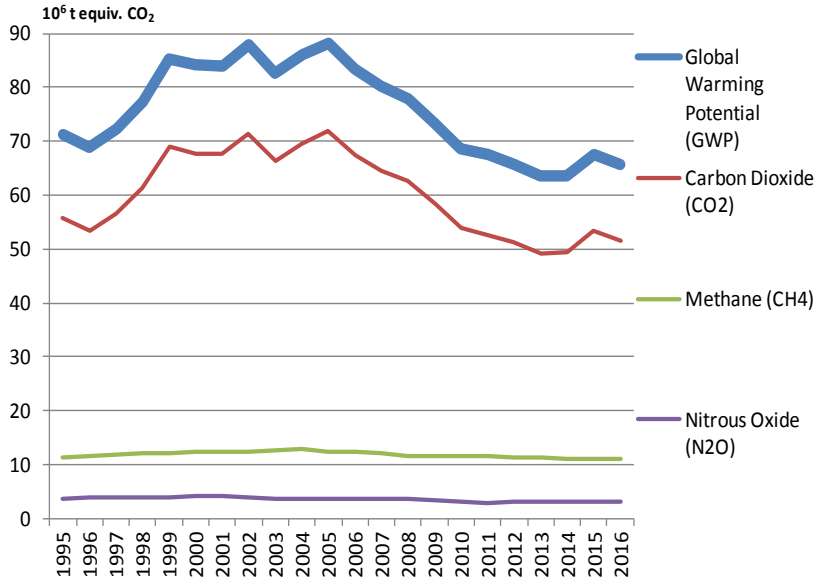
Table 1. Evolution of Global Warming, Acidification and Troposphere Ozone Formation Potentials

Indicators	Years		Change (%)			Annual average change (%)		
	2016	2015	2016/2015	2015/2014	2016/1995	1995 2016	2007 2016	2012 2016
GWP (1000 t equiv. CO_2)	65,714	67,647	-2.9	6.3	-7.6	-0.3	-2.3	-1.5
ACID (t equiv. SO_2)	280,229	285,999	-2.0	1.0	-58.8	-4.0	-5.3	-3.5
TOFP (t equiv. NMVOC)	412,152	426,028	-3.3	0.6	-40.2	-2.4	-3.6	-2.9
memorandum item GVA at basic prices (10^6 Euros)	153,670	151,219	1.6	1.6	28.5	1.2	0.1	0.1

2. GLOBAL WARMIMG POTENTIAL

By 2016, greenhouse gas emissions reached 65.7 million tonnes of CO_2 equivalent. **Global Warming Potential** (GWP) decreased by 2.9% over the previous year (although it is above the values observed in 2013-2014, the lowest in the series under analysis), resuming the downwards trend started in 2006. This evolution was mainly due to the reduction of carbon dioxide (CO_2) emissions by 3.6%.

Chart 1: Greenhouse gas emissions, 1995-2016



The emissions' level is highly dependent on the types of energy used by Industry and Energy, water and sanitation, since these industries have the highest relative weight, representing, on average, about 57.0% of GWP total emissions on the series. The water source has a significant weight in Energy, water and sanitation, being strongly conditioned by the levels of rainfall registered each year. However, this constraint has been diminishing gradually since 2005, with the gradual increase in the share of wind and solar energy in total electricity production.

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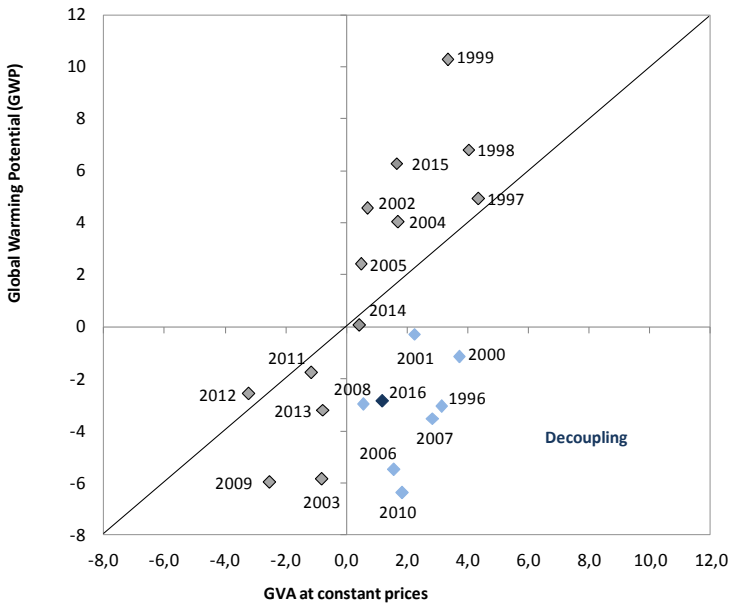
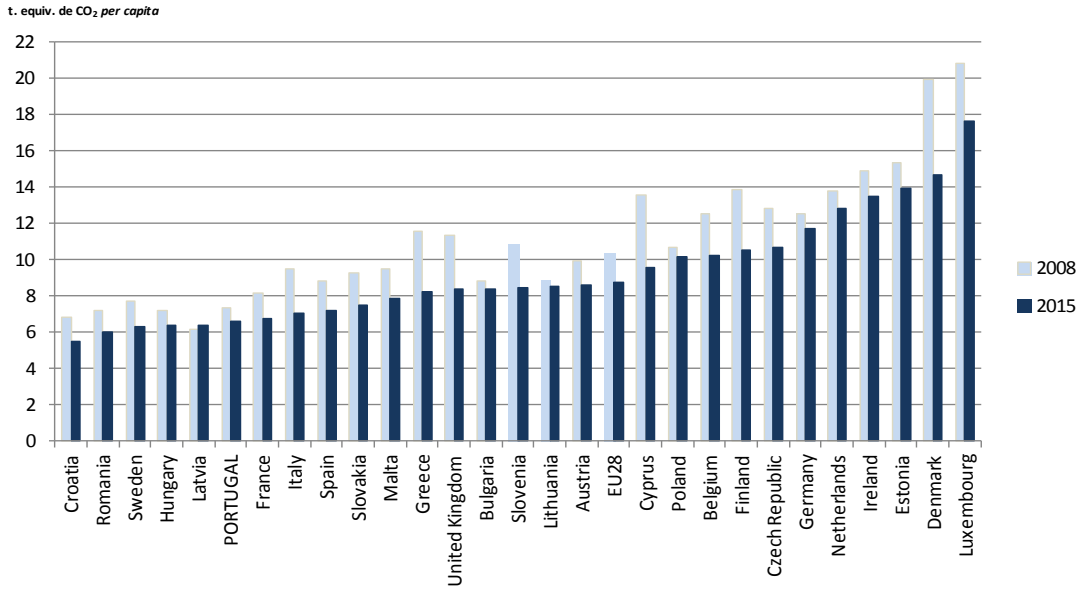
Chart 2: Dissociation between GWP and GVA - year-on-year change rate, 1996 – 2016



The increase in renewable energy production in 2016 has reduced the need to produce electricity from fossil fuels (notably coal, because of the lower price, is still preferential to natural gas). In 2016 there was "dissociation", i.e., a decrease in the GWP with growth in economic activity, something that had not happened since 2010.

The indicator "GWP *per capita*" for Portugal has been showing lower values comparing to most countries in the EU28, presenting the sixth lowest value in 2015 (last year with available information for the EU). In 2015, the EU28 average was 8.7 tonnes of CO_2 equivalent *per capita* while in Portugal it was 6.6 tonnes of CO_2 equivalent *per capita*, i.e. 75.7% of the European average. In 2008 this figure was 70.9%.

Chart 3. GWP per capita in EU28, in 2008 and 2015



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