



13 October 2023

Economic-environmental Indicators – Air emissions accounts
1995-2021

IN 2021, GLOBAL WARMING POTENTIAL DECREASED AGAIN DESPITE ECONOMIC GROWTH

In 2021, a year still affected by the effects of the COVID-19 pandemic, the Global Warming Potential (GWP) decreased again (-1.6% compared to the previous year), in an economic context marked by strong economic growth, Gross Value Added (GVA) increased by 5.5% in volume, the biggest positive development since 1990. On the other hand, the other environmental stress indicators worsened: Acidification Potential (ACID) and Tropospheric Ozone Formation Potential (TOFP) increased by 2.8% and 3.8% respectively.

The activity sectors that contributed most to the decrease in GWP were Energy, water supply and sewerage (-12.6%) and Industry (-4.5%). On the other hand, showing signs of recovery after the significant restrictions on activity resulting from the pandemic, there were increases in greenhouse gas emissions in Transport, information and communication (23.8%), Construction (10.3%) and Trade and food service activities (7.6%).

The combination of the reduction in GWP emissions and the increase in Gross Domestic Product (GDP) led to a reduction in the Carbon Intensity of the Portuguese economy of 6.9 per cent compared to the previous year, reaching the lowest value since 1995, the beginning of the series of observations.

Statistics Portugal publishes Air Emissions Accounts data for 2021, and also presents revised data for the period 1995 to 2020. [More detailed information](#) is available on the Statistics Portugal's website.

Table 1. Evolution of Global Warming (GWP), Acidification (ACID) and Tropospheric Ozone Formation (TOFP) Potentials

| Indicators | Years | | Change (%) | | | Annual average change (%) | | |
|---|---------|---------|------------|-----------|-----------|---------------------------|-----------|-----------|
| | 2020 | 2021 | 2021/2020 | 2021/2012 | 2021/1996 | 1995-2021 | 2012-2021 | 2017-2021 |
| GWP (10 ³ t equiv. CO ₂) | 59 476 | 58 550 | -1.6 | -15.5 | -16.9 | -0.7 | -1.9 | -5.8 |
| ACID (t equiv. SO ₂) | 265 829 | 273 374 | 2.8 | -12.6 | -60.0 | -3.5 | -1.5 | -2.7 |
| TOFP (t equiv. COVNM) | 380 862 | 395 418 | 3.8 | -11.9 | -45.9 | -2.3 | -1.4 | -2.2 |
| GVA at basic prices (10 ⁶ Euros) | 162 645 | 171 550 | 5.5 | 9.0 | 35.9 | 1.2 | 1.0 | 0.6 |

Source: Statistics Portugal ([Air Emissions Accounts](#); [National Accounts – Table A.1.4.4.5](#)).