Quarterly greenhouse gas emissions in the EU

Statistics Explained

Data extracted in February 2026
Planned article update: 15 May 2026

Highlights

In Q3 2025, the EU economy's seasonally adjusted greenhouse gas emissions were estimated at 828 million tonnes of CO2-equivalents, a 1.1% increase compared with the second quarter of 2025.

This article is about quarterly emissions of greenhouse gases (GHG emissions) in the European Union (EU) classified by emitting economic activities (industries and households). The GHGs comprise carbon dioxide (CO2), nitrous oxide (N2O), methane (CH4) and fluorinated gases (hydrofluorocarbons (HFC), perfluorocarbons (PFC), sulphur hexafluoride (SF6) and natrium trifluoride (NF3). Eurostat records and publishes these in air emissions accounts (AEA) , one of the modules in the European environmental economic accounts (for which the legal basis is Regulation (EU) No 691/2011). AEA are suited for integrated environmental-economic analyses such as calculating emission intensities or 'footprints'.

Greenhouse gas emissions

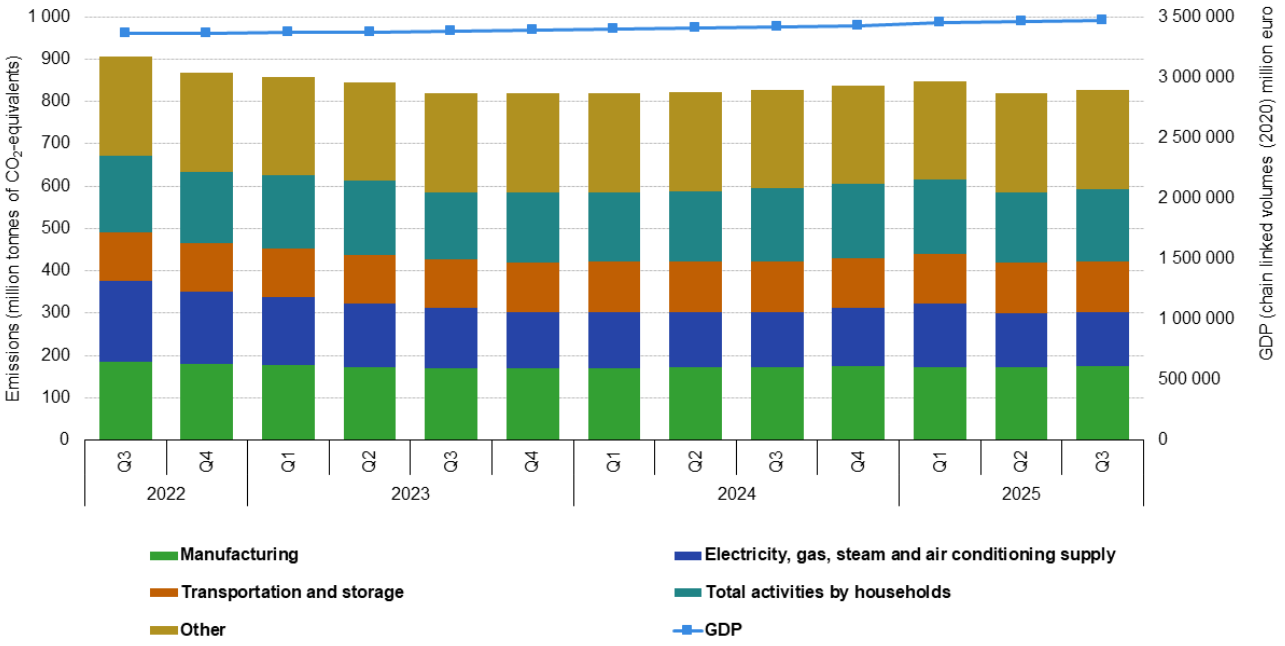
In Q3 2025, the EU economy's seasonally adjusted greenhouse gas emissions were estimated at 828 million tonnes of CO2-equivalents, a 1.1% increase compared with the second quarter of 2025.

Compared with the third quarter of 2024, seasonally adjusted emissions remained unchanged, while the EU's seasonally and calendar adjusted GDP increased by 1.6%.

Emissions by economic activity

Seasonally adjusted greenhouse gas emissions in Q3 2025 increased by 1.1% compared with the second quarter of 2025, while the EU's gross domestic product (GDP) increased by 0.4% in the third quarter of 2025, compared with the previous quarter of 2025.

Greenhouse gas emissions by the economy and GDP, EU, Q3 2022 - Q3 2025
(million tonnes of CO_2-equivalents, chain linked volumes (2020), million euro, seasonally adjusted)



Source: Eurostat (online data code: env_ac_aigg_q, namq_10_gdp)

eurostat

Figure 1: Greenhouse gas emissions by the economy and GDP, EU, Q3 2022 - Q3 2025 Source: Eurostat (env_ac_aigg_q), (namq_10_gdp)

In Q3 2025 the economic sectors contributing the most to the total greenhouse gas emissions were manufacturing (21.2%), households (20.9%) and electricity, gas, steam and air conditioning supply (15.2%). The grouping 'Other' is responsible for around one-third of the total emissions and is composed of the remaining sectors of the economy: agriculture, forestry and fishing; mining and quarrying; construction; water supply, sewerage, waste management and services (except transportation and storage) (see Figure 1).

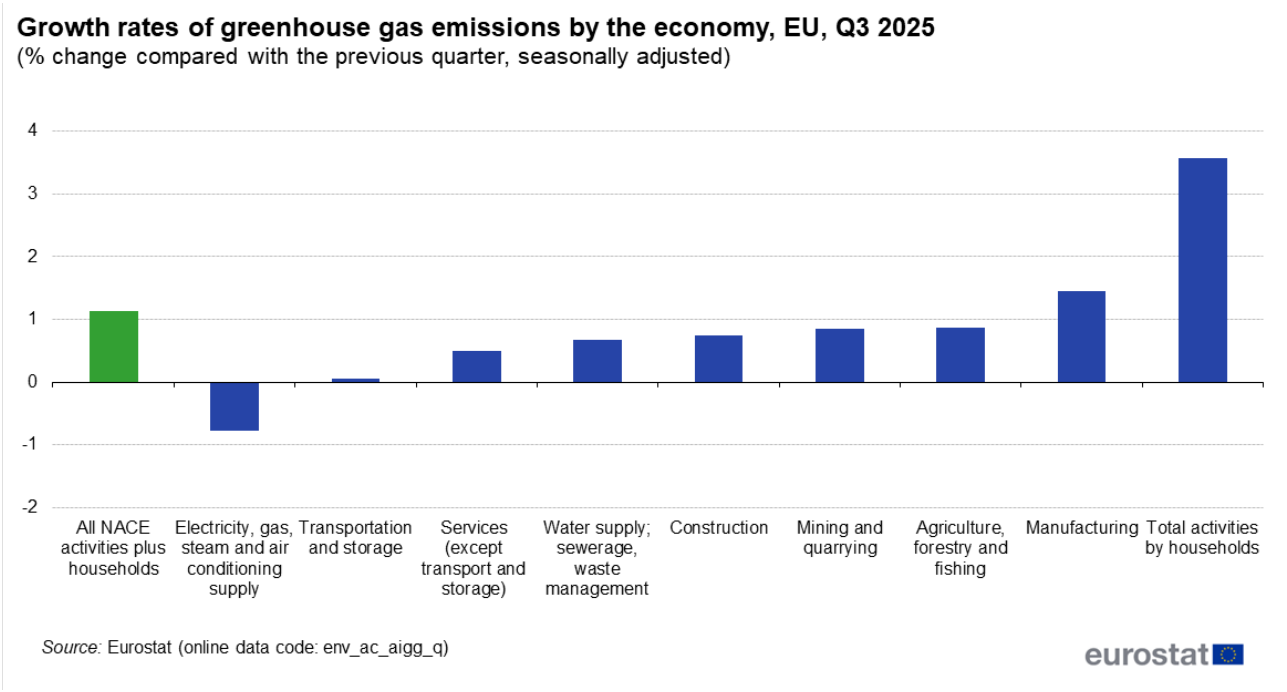


Figure 2: Growth rates of greenhouse gas emissions by the economy, EU, Q3 2025 Source: Eurostat (env_ac_aigg_q)

The economic sectors with the largest increases in greenhouse gas emissions were households (+3.6%), manufacturing (+1.4%) and agriculture, forestry and fishing (+0.9%). Electricity, gas, steam and air conditioning supply (-0.8%) was the only sector that recorded a decrease. (see Figure 2).

Greenhouse gas emissions across EU countries

In the third quarter of 2025, seasonally adjusted greenhouse gas emissions increased in 17 EU countries and decreased in 10 countries compared with the second quarter of 2025. The largest reductions in greenhouse gases were estimated for Estonia (-17.4%), Slovenia (-5.7%) and Cyprus (-5.2%). Out of the 10 EU countries that registered decreases in greenhouse gas emissions, only Lithuania recorded also a decline in GDP. The other 9 EU countries (Bulgaria, Estonia, Croatia, Cyprus, Latvia, Lithuania, Portugal, Romania and Slovenia) have decreased emissions while growing or maintaining their GDP levels.

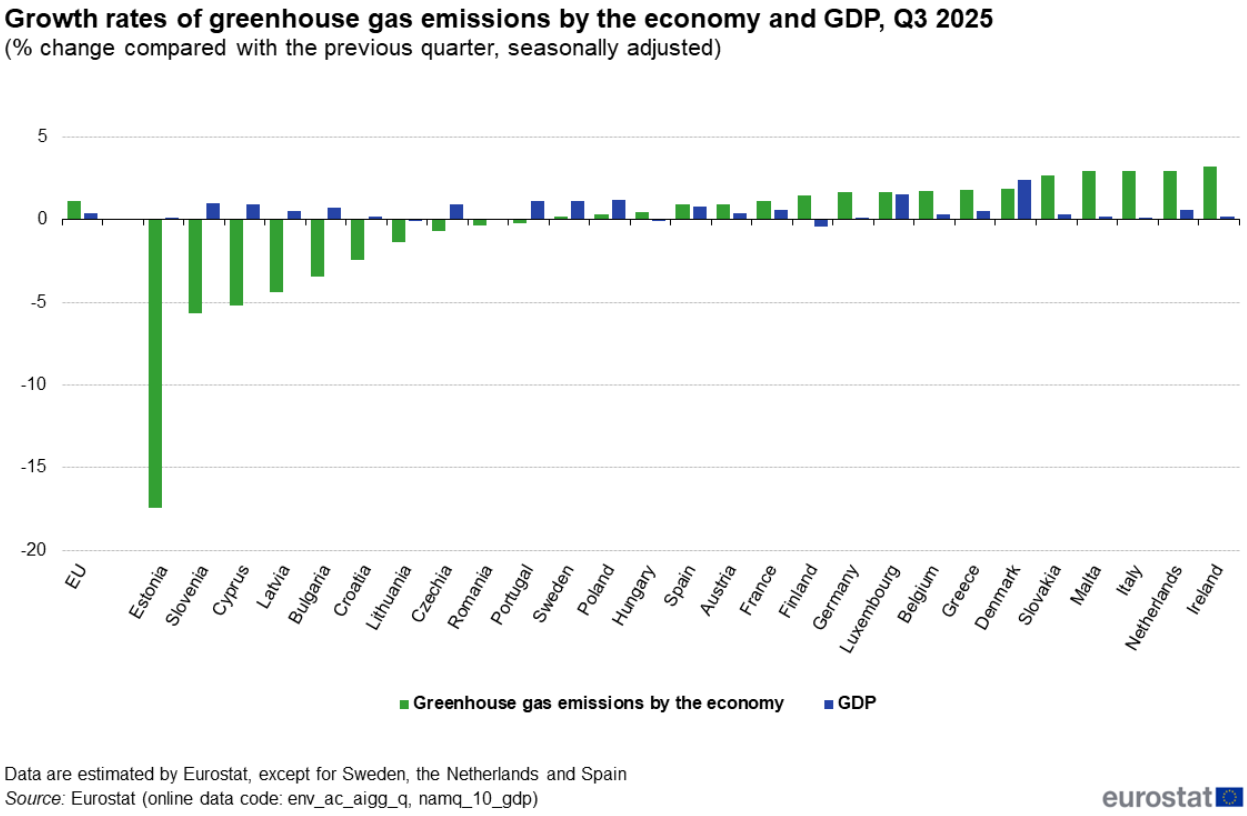


Figure 3: Growth rates of greenhouse gas emissions by the economy and GDP, Q3 2025 Source: Eurostat (env_ac_aigg_q), (namq_10_gdp)

Source data for tables and graphs

- Download Excel file

Data sources

Quarterly data are estimated by Eurostat applying the methods described in the methodological note on Eurostat's Estimates of Quarterly Greenhouse Gas Emissions Accounts . The quarterly estimates are based on sub-annual activity data and annual air emissions accounts (AEA). The Netherlands, Sweden and Spain provide their own data.

The figures presented in this article are seasonally adjusted. Data provided by countries are seasonally adjusted by Eurostat. These adjusted series enable quarter-on-quarter change analyses. More information on the seasonal adjustment is provided in the technical note on Seasonal adjustment of quarterly greenhouse gas emissions .

In AEA, the emissions data are organised by economic activity, using the NACE classification. This arrangement makes it possible to have an integrated environmental-economic analysis to supplement national accounts. The scope encompasses production by all businesses resident in the country, including those operating ships, aircraft and other transportation equipment in other countries.

Air emissions accounts also include households as consumers. Their emissions are accounted for whenever household consumption is directly responsible for environmental pressures. For example, emissions from a privately owned car are accounted under households, whereas cars owned by transport businesses (such as taxis) are accounted under transportation and storage.

The following groupings of economic activities are used in this article:

- agriculture, forestry and fishing — NACE Rev. 2 Section A;
- mining and quarrying — NACE Rev. 2 Section B;

- manufacturing — NACE Rev. 2 Section C;
- electricity, gas, steam and air conditioning supply — NACE Rev. 2 Section D;
- water supply, sewerage, waste management — NACE Rev. 2 Section E;
- construction - NACE Rev. 2 Section F;
- transportation and storage — NACE Rev. 2 Section H;
- services (except transportation and storage) — NACE Rev. 2 Sections G to U minus H;
- households — households as consumers;
- other - sum of agriculture, forestry and fishing; mining and quarrying; construction; water supply, sewerage, waste management and services (except transportation and storage)

In addition, Eurostat disseminates greenhouse gas emissions classified by technical processes. These are recorded in GHG emission inventories , including data for international climate policies. Furthermore, Eurostat estimates and disseminates 'footprints' which are greenhouse gas emissions classified by final products that are demanded by households or government, or that are invested in or exported.

Each greenhouse gas has a different capacity to cause global warming, depending on its radiative properties, molecular weight and the length of time it remains in the atmosphere. The global warming potential (GWP) of each gas is defined in relation to a given weight of carbon dioxide for a set time period (for the purpose of the Kyoto Protocol a period of 100 years). GWPs are used to convert emissions of greenhouse gases to a relative measure (known as carbon dioxide equivalents: CO2-equivalents). The weighting factors currently used are as defined in the IPCC Fifth Assessment Report : carbon dioxide = 1, methane = 28, nitrous oxide = 265 and sulphur hexafluoride = 23 500; hydrofluorocarbons and perfluorocarbons comprise a large number of different gases that have different GWPs.

Context

The data obtained from air emissions accounts may subsequently feed into political decision-making, underpinning policies that target both continued economic growth and sustainable development, including the European Commission's European Green Deal . Air emissions accounts measure the interplay between the economy and the environment with respect to air emissions, in order to assess whether current production and consumption activities are on a sustainable path of development. Measuring sustainable development is a complex undertaking as it has to incorporate economic, social and environmental indicators.

Explore further

Other articles

- Greenhouse gas emission accounts
- Quarterly national accounts - GDP and employment
- Environmental accounts - establishing the links between the environment and the economy
- National accounts and GDP
- Air pollution statistics - air emissions accounts

Database

- Environment (env)
- Emissions of greenhouse gases and air pollutants , see:

Air emissions accounts (env_air_aa)

env_ac_aigg_q
env_ac_ainah_r2
env_ac_aibrid_r2
env_ac_aeint_r2

- Air emissions accounts - Data Browser

Thematic section

- Environment
- Emissions of greenhouse gases and air pollutants

Publications

- Manual for air emissions accounts, 2015 edition

Methodology

- Eurostat's Estimates of Quarterly Greenhouse Gas Emissions Accounts - Methodological Note
- NACE background
- System of Environmental-Economic Accounting - Central Framework

External links

- United Nations Framework Convention on Climate Change (UNFCCC) — UN Climate Change — Newsroom
- State of Europe's environment
- EU Climate Action Progress Report 2025