Office for National Statistics

Statistical bulletin

Estimates of quarterly greenhouse gas emissions (residence basis), UK: Quarter 3 (July to Sept) 2023

These official statistics in development are estimates using Chow-Lin regression-based temporal disaggregation method.

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To be announced

Notice

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Please note that the intensity of quarterly greenhouse gas emissions section erroneously refers to tonnes instead of the correct thousand tonnes. We apologise for any inconvenience caused and recommend you use the latest bulletin in this series for the correct text.

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1 . Main points

- UK greenhouse gas (GHG) emissions on a residence basis were estimated to be 102 million tonnes of carbon dioxide equivalent (MtCO2e) in Quarter 3 (July to Sept) 2023, which was 3.8% lower than Quarter 3 in 2022.
- In Quarter 3 2023, the UK emitted 0.18 tonnes of CO2e per million pounds of economic activity (gross value added), a similar level as has been seen since Quarter 2 2021, broadly in line with our final 2021 estimate.
- All emission estimates in this bulletin and accompanying data are produced using modelling techniques, with estimates for Quarter 2 and 3 2023 subject to greater uncertainty, as we do not yet have emission data for 2023.
- Our quarterly emissions estimates complement and draw on our annual estimates on a residence basis, published on 9 October 2023.

We refer to residence-based (also known as production) emissions in this release. This is one of three official measures of UK greenhouse gas emissions. Territorial emissions, published by the Department for Energy Security and Net Zero (DESNZ), is the measure generally used for greenhouse gas emissions targets. Footprint (or consumption) emissions, published by the Department for Environment, Food and Rural Affairs (Defra), account for emissions from trade.

2 . Estimates of quarterly greenhouse gas emissions (residence basis) data

Experimental estimates of quarterly greenhouse gas emissions
Dataset | Released 29 January 2024
Experimental estimates of UK quarterly greenhouse gas emissions (GHG) and carbon dioxide (CO2) emissions on a residence basis.

3 . Measuring the data

All estimates presented in this bulletin and our accompanying dataset have been produced using temporal disaggregation and modelling techniques and are therefore subject to uncertainty. Please see the Glossary section of our previous bulletin for definitions of these terms.

The main sources of information and predictor indicators for producing these estimates based on official statistics in development are:

- the UK annual estimates of greenhouse gas (GHG) emissions on a residence basis, published in our Atmospheric emissions: greenhouse gases by industry and gas dataset
- the Energy trends publication from the Department for Energy Security and Net Zero (DESNZ), which provides information on UK energy production, consumption, and trade for energy overall and specific fuels

All estimates of the annual GHG series and the latest quarter of the energy trends are provisional and subject to revisions.

This bulletin presents non-seasonally adjusted estimates. Estimates on both a non-seasonally adjusted and seasonally adjusted basis are available in our accompanying dataset.

Quality

More quality and methodology information on strengths, limitations, appropriate uses, and how these quarterly estimates were created is available in our Estimates of UK quarterly greenhouse gas emissions (residence basis), Quality and Methodology Information.

4 . Related links

UK Environmental Accounts
Statistical bulletin | Released 5 June 2023
Measuring the contribution of the environment to the economy, impact of economic activity on the environment, and response to environmental issues.

Greenhouse gas emissions, UK: provisional estimates, 2022
Headline release | Released 9 October 2023
Measuring the air emissions generated by UK economic activities.

5 . Cite this statistical bulletin

Office for National Statistics (ONS), released 29 January 2024, ONS website, headline release, Estimates of quarterly greenhouse gas emissions (residence basis), UK: Quarter 3 (July to September) 2023