

Statistical bulletin

Experimental estimates of quarterly greenhouse gas emissions (residence basis), UK: Quarter 2 (Apr to June) 2023

Experimental estimates of UK quarterly greenhouse gas emissions on a residence basis using the Chow-Lin regression-based temporal disaggregation method.

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1 . Main points

- UK greenhouse gas (GHG) emissions on a residence basis were estimated to be 119 million tonnes of carbon dioxide equivalent (Mt Co2e) in Quarter 2 (Apr to June) 2023, around 2.5% lower than in Quarter 2 2022.
- In Quarter 2 2023, 0.19 tonnes of Co2e were emitted per million pounds of UK economic activity (gross value added), around 2.9% lower than Quarter 2 2022.
- These are experimental quarterly estimates of UK GHG emissions; they use additional data and improved predictor indicators to provide a more precise indication of the quarter-on-quarter changes than the first experimental estimates released in July 2023.
- All emission estimates in this bulletin and accompanying data are produced using modelling techniques, with estimates for Quarter 1 (Jan to Mar) 2023 and Quarter 2 2023 subject to greater uncertainty.
- 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 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 emissions, published by the Department for Environment, Food and Rural Affairs (Defra), account for emissions from trade.

2 . Experimental estimates of quarterly greenhouse gas emissions (residence basis), UK data

[Experimental estimates of quarterly greenhouse gas emissions](#)

Dataset | Released 3 November 2023

Experimental estimates of UK quarterly greenhouse gas emissions (GHG) and carbon dioxide (CO2) emissions on a residence basis.

[Atmospheric emissions: greenhouse gas emissions by industry and gas](#)

Dataset | Released 9 October 2023

The emissions of carbon dioxide, methane, nitrous oxide, hydro-fluorocarbons, perfluorocarbons, sulphur hexafluoride, nitrogen trifluoride and total greenhouse gas emissions, by industry (SIC 2007 group, around 130 categories), UK, 1990 to 2021 and (provisional) 2022.

[Energy Trends](#)

Dataset | Released 28 September 2023

Quarterly publication which presents data on the supply and demand of all the major fuels in the UK.

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 source of information and predictor indicators for producing these experimental estimates are:

- the UK [annual estimates](#) of greenhouse gas (GHG) emissions on a residence basis
- 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 [Experimental estimates of UK quarterly greenhouse gas emissions \(residence basis\), Quality and Methodology Information](#).

4 . Related links

[Experimental estimates of quarterly greenhouse gas emissions \(residence basis\), UK: Quarter 1 \(Jan to Mar\) 2023](#)

Bulletin | Released 25 July 2023

Experimental estimates of UK quarterly greenhouse gas emissions on a residence basis using the Chow-Lin regression-based temporal disaggregation method.

[Developing quarterly greenhouse gas emissions accounts, UK: December 2022](#)

Bulletin | Released 16 December 2022

Update on work to develop a measure of quarterly UK greenhouse gas (GHG) emissions on a residency basis, and future development and publications plans.

[Greenhouse gas emissions, UK: provisional estimates: 2022](#)

Bulletin | Released 9 October 2023

Measuring the air emissions generated by UK economic activities.

[Measuring UK greenhouse gas emissions](#)

Article | Released 1 November 2021

The UK is required to report its estimated greenhouse gas (GHG) emissions on a range of different bases (territorial, residence and footprint) to fulfil a wide range of international agreements as well as for domestic policy making purposes.

[UK territorial greenhouse gas emissions national statistics](#)

Bulletins and data | Last updated 30 March 2023

Links to the latest estimates of UK territorial greenhouse gas emissions.

5 . Cite this statistical bulletin

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