Clean Power 2030 metrics: methodology

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Key headlines

This article documents the methodology used to calculate the Clean Power 2030 metrics, as set out in the Clean Power 2030 Action Plan, page 26.

The metrics are based on the same data used to produce official statistics and will be updated annually[1] alongside Energy Trends and published here.

The metrics reflect actual electricity supply and demand in each period and are not weather corrected.

Background and key terms

The Plan for Change aims to make Britain a Clean Energy Superpower by clean sources producing at least 95% of Great Britain's generation. In addition to this overarching target, the Clean Power 2030 Action Plan states that in a typical weather year, the 2030 power system will see clean sources produce at least as much power as Great Britain consumes in total, reducing the carbon intensity of electricity generation to well below 50gCO_2e/kWh in 2030.

From this, the three Clean Power 2030 targets are, in a typical weather year:

- Clean sources produce at least 95% of Great Britain's generation
- Clean power sources produce at least as much power as Great Britain consumes in total
- Carbon emissions intensity of Great Britain's electricity generation is well below 50gCO_2e/kWh

The metrics to measure progress against these targets are based on the same data used to publish official statistics. They are calculated over a rolling 12-month period, to ensure the statistics are not complicated by seasonal variations in electricity generation. For example, electricity demand is higher in the winter when conditions are cold and dark. Wind speeds are typically higher over winter months and sun hours higher over summer months.

The metrics are based on actual generation and do not reflect 'a typical weather year'.

Differences compared to Energy Trends Table 5.1

The Clean Power 2030 Action Plan covers Great Britain's power system whilst Energy Trends aims to cover all UK electricity supply and demand. Additionally, and in order to align with Clean Power 2030 definition, the below elements are excluded from the metrics.

- Northern Ireland generation – in line with the Clean Power 2030 Action Plan.
- Energy from Waste (EfW) – EfW is excluded on the basis that this is primarily a waste management solution, in line with the Technical Annex of the Clean Power 2030 Action Plan, p. 7.
- Combined Heat & Power (CHP) – CHP is excluded because CHP plants are primarily a heat solution, with electricity being cogenerated alongside[2].

[1] Dates for the publication of the 2025 metrics will be announced in line with the Department's usual practice and noted here.

[2] This is a refinement from the Technical Annex of the Clean Power 2030 Action Plan, p.7

- Electricity discharged from pumped storage and battery storage – to avoid double counting of electricity generation. Storage losses are included in GB electricity demand.

The metrics are calculated as follows:

Clean sources produce at least 95% of Great Britain's generation

From the data used to produce Energy Trends Table 5.1, excluding (for the reasons outlined above):

- Northern Ireland generation
- Energy from Waste (EfW)
- Combined Heat & Power (CHP)
- Electricity discharged from pumped storage and battery storage

Great Britain's generation includes electricity generation from power plants, non-CHP autogeneration, and microgeneration such as domestic, commercial, and industrial rooftop solar panels.

Clean power sources produce at least as much power as Great Britain consumes in total

Total UK demand from Energy Trends Table 5.2, minus Northern Ireland electricity demand from the regional electricity article = Great Britain electricity demand.

Demand met by Energy from Waste and Combined Heat & Power in Great Britain is deducted (for the reasons outlined above) = qualifying Great Britain electricity demand.

Great Britain clean generation calculated above is divided by qualifying Great Britain electricity demand.

Carbon emissions intensity of Great Britain's electricity generation is well below 50gCO2e/kWh

Annual power sector emissions from the Greenhouse Gas Inventory, divided by total electricity supplied in Great Britain (excluding Energy from Waste, Combined Heat & Power, and storage discharges, as above). Electricity supplied = generation minus electricity used by generators.

Power sector emissions for 2024 are not yet available with sufficient detail to align with the metric scope and have therefore been estimated using the latest energy data and 2023 carbon intensity by fuel.

This publication is available from: https://www.gov.uk/government/collections/energy-trends

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