

Public

Ref: FOI/24/0041

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24 March 2025

Dear requester

Request for Information

Thank you for your request for information which we received on 16 February 2025, and for the subsequent clarification that you provided on 21 February 2025.

Your request has been considered under the Environmental Information Regulations 2004 (EIR).

Request

You asked us:

1. *Why are the figures of 258 TWh (page 47 of the Clean Power 30 Report) and 263 TWh (page 3 of Annex 1 to CP30 Report) different and which is more accurate?*
2. *With reference to Chart CP01 of the Clean Power 30 Data Workbook, specifically the generation figure (292,681 GWh) for the United Kingdom for 2023, and the demand figures above - Is total generation different to total demand? And why?*
 - a. *Does 'generation' refer to the supply to the grid only, excluding supply direct to industry?*
 - b. *Is the difference due to the 'generation' figure in the Data Workbook being for the United Kingdom, and the demand figures in the Main Report and Annex 1 being for Great Britain?*
3. *Recent UK figures for greenhouse gas emissions by generation source including supply chains*
4. *Emissions savings enabled by nuclear power - would it be right to assume that 1GWh of extra nuclear generation would displace 1GWh of gas? If not, how much gas would 1GWh of nuclear generation displace? (In 2024, or the near future, on average)?*

5. *Load factors – will future nuclear stations have lower load factors than older ones?*

Our response

We confirm that we hold information in scope of your request.

1. Why are the figures of 258 TWh (page 47 of the Clean Power 30 Report) and 263 TWh (page 3 of Annex 1 to CP30 Report) different and which is more accurate?

The value of 263TWh is from Future Energy Scenarios 2024 (FES 2024). For more information on FES please see: [Future Energy Scenarios \(FES\) | National Energy System Operator](#).

The value of 258TWh is the value used in the Clean Power 2030 modelling. This figure is the most recent and reflects the latest information available at the time the CP30 modelling was undertaken.

2. With reference to Chart CP01 of the Clean Power 30 Data Workbook, specifically the generation figure (292,681 GWh) for the United Kingdom for 2023, and the demand figures above – Is total generation different to total demand? And why?

a. Does 'generation' refer to the supply to the grid only, excluding supply direct to industry?

There is a difference between generation and demand. Annual generation represents the sum of all electricity generation. Generation is used to meet demand but can also be exported to neighbouring countries or lost due to network or storage losses.

Oversupply of generation (i.e., where excess renewable generation is greater than is required) is curtailed. This curtailment is calculated in modelling but not included in the generation figures.

2b. Is the difference due to the 'generation' figure in the Data Workbook being for the United Kingdom, and the demand figures in the Main Report and Annex 1 being for Great Britain?

The CP30 report lays out pathways for how Great Britain can reach a clean power system by 2030. Several of the underlying demand values in CP30 were common to those in FES24. The [FES24 data workbook](#) has a useful breakdown of electricity demand (tab ED2).

The data in Chart CP01 of the CP30 data workbook refers specifically to historical generation data for the United Kingdom.

3. Recent UK figures for greenhouse gas emissions by generation source including supply chains

NESO does not hold recorded information in scope of this question.

For information, we use data on greenhouse gas emissions held by the Department for Energy Security and Net Zero (DESNZ). DESNZ publishes statistics on UK greenhouse gas emissions: [DESNZ: UK greenhouse gas emissions statistics](#).

4. Emissions savings enabled by nuclear power – would it be right to assume that 1GWh of extra nuclear generation would displace 1GWh of gas? If not, how much gas would 1GWh of nuclear generation displace? (In 2024, or the near future, on average)?

NESO does not hold recorded information on emissions savings resulting from the use of nuclear power in isolation from other changes in the generation and demand mix.

For information:

- The [FES 2024 publication](#) considered three different net zero pathways with a wide range of nuclear capacities from 13.5GW to 22.2GW in 2050.
- We hold data for emission levels from the power sector in our pathways, for example the 'Electricity without BECCS' data published in tab WS2 in the [FES 2024 data workbook](#).

5. Load factors – will future nuclear stations have lower load factors than older ones?

NESO does not hold recorded information that meets the scope of the question.

In responding to a request under the EIR, a public authority is not required to create new information. We can advise that a national average load factor from future large and small nuclear power plants can be calculated from tab ES1 in the [FES 2024 data workbook](#).

This concludes our response to your request.

Next steps

You can ask us to review our response. If you want us to carry out a review, please let us know within 40 working days and quote the reference number at the top of this letter.

If you are still dissatisfied after our internal review, you can complain to the Information Commissioner's Office (ICO). You should make complaints to the ICO within six weeks of receiving the outcome of an internal review. The easiest way to lodge a complaint is through their website: www.ico.org.uk/foicomplaints. Alternatively, they can be contacted at: Wycliffe House, Water Lane, Wilmslow, SK9 5AF.

Thank you for your interest in the work of the National Energy System Operator (NESO).

Regards,

The Information Rights Team, National Energy System Operator (NESO)