**BIG TECH
DATA CENTRES**

*A threat to UK
decarbonisation*

+2.7m
tonnes
CO_2

10 New
Data
Centres

Switch To
Electric
Cars

-2.9m
tonnes
CO_2

FOXGLOVE

global
action
plan

Foxglove *is an independent non-profit organisation that fights to make tech fair for everyone.*

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Global Action Plan *is an environmental charity focused on issues where the connection between the health of people and our planet is most tangible.*

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Introduction

The data centres being planned and built across the country will require large amounts of electricity, adding significantly to our carbon emissions.

Developers' own figures indicate that just ten of the largest data centres in planning or construction will cause annual emissions equivalent to 2,745,538 tonnes of CO2.

A 2.7m tonne increase in annual emissions from data centres would effectively wipe out the carbon savings expected in 2025 from the switch to electric cars (2.9m tonnes)[1]

However, even this figure is just the tip of the iceberg – there are many more data centres planned which have not provided emissions figures; in addition, those figures provided by developers are likely in many cases to be an underestimate.

No reliable, overall figure for expected emissions driven by data centre growth is available from government or industry – we need the government to properly scrutinise and act on the environmental impact of data centres.

The UK is facing a vast expansion of data centres – large warehouses full of computer equipment. There is no official figure available, but the BBC has reported that there are 100 in planning or construction. However, **Foxglove** and **Global Action Plan** estimate the real number to be significantly higher.[2]

The new generation of data centres – often referred to as 'hyperscale' – will be significantly larger than those already in the country, and will demand vast quantities of electricity to run and cool their computing equipment. Some of the largest being planned will have a 'capacity' – that is, a maximum power use – of over one gigawatt. For comparison, the peak electricity demand for all of Britain in August was 30 gigawatts.[3]

Due to their high levels of electricity use, these data centres will be responsible for a significant increase in carbon emissions, as they are seeking to connect to the UK's electricity grid – which is far from being fully decarbonised. In doing so, they will create significant additional demand which is likely to drive up prices, and will make it much more difficult for the UK to reduce carbon emissions from its electricity sector.

Foxglove, a tech justice non-profit, and **Global Action Plan**, an environmental charity, are concerned about the impact of a huge increase of data centres on UK emissions. We are also concerned about data centres' use of large volumes of water, although that is not the focus of this report.

Knowledge gaps

It is widely accepted that the new generation of planned data centres will lead to a significant increase in electricity demand in the UK. The UK Government has set up an AI Energy Council to advise on the *"energy demands needed to power AI data centres."* It is also establishing 'AI Growth Zones' which will *"streamline"* the process for constructing data centres, and will be required to have access to *"at least 500MW of power."*[4] The CEO of National Grid estimated in March 2024 that *"Demand from commercial data centres will increase six-fold, just in the next ten years"*.[5]

NESO have doubled their 2022 estimate of data centres' projected future energy needs and now expect them to use 71TWh by 2050, equivalent to the entire commercial sector's energy demands today.[6]

However, we have been unable to find any more detailed estimate of the impact that the growing electricity demand from planned data centres will have on the UK's carbon emissions.

We have therefore sought to provide some indicators based on the information which is publicly available. However, as we will explain, this information is in many places flawed, incomplete or inconsistent – as well as being entirely sourced from the data centre developers themselves, which leads to concerns over bias.

Emissions from data centres
– developers' estimates

We have aimed to build up a picture of data centre developers' views of their planned facilities' expected emissions by looking at planning documents.

The headline finding is that just ten of the larger planned data centres we were able to identify will, according to their developers, result in annual carbon emissions of 2,745,538 tonnes of CO_2 equivalent. This is roughly the same as the annual carbon saving in 2025 from the public's switch to electric vehicles, which the Climate Change Committee (CCC) puts at 2.9 million tonnes.

However, even this large total figure of 2.7m tonnes from planned data centres is just a partial picture, based on conservative and in some cases flawed or inconsistent figures. With over 100 data centres currently in the planning or construction process, many of which do not provide carbon emissions figures or even clarity on the size of the data centre, the true total for all data centres will be many times higher.

The following table sets out all the large-scale data centres currently in

the planning process or under construction in England which Foxglove and Global Action Plan have been able to identify. 'Large scale' for the purposes of this report is defined as 100MW or above in terms of the 'capacity' of the data centre. We have excluded from this list data centres where a figure is not available for the planned scale of the data centre; or where the developer has not provided an estimate of carbon emissions from the power use of the data centre during its operational phase.

We have however included developer estimates of emissions caused by electricity use even where they appear to be extremely low compared to other facilities of a comparable size. This highlights the lack of clarity or consistency in how the emissions resulting from planned data centres are being assessed.

The overall emissions figure this produces should therefore be seen only as one part of the picture. It will be a substantial underestimate for several reasons: first, it only covers proposed data centres in England, not across the UK; second, there may be others in the planning process which we have been unable to identify, or which have been listed since the research was carried out; third, it only includes data centres where the developer has provided a carbon emissions estimate; and fourth, it includes developer figures which we believe may be an underestimate by one or two orders of magnitude, when compared to other similar facilities.

Data Centre name, developer, application yr	Size (MW)	Status	Developer carbon emissions estimate (tCO2e per year)
Cambois (QTS) (2024)	1100	Outline approved 03.2025	184,160
Elsham Tech (Greystoke) (2025)	1000	Pending outline	857,254
Humber Tech (Greystoke) (2024)	384	Approved	387,805
DC01 (2024)	320	Outline approved 02.2025	6,056
Thurrock (Google) (2025)	225 (estimated)	Pending	568,657
Virtus Saunderton (2022)	300	Under Construction	101,660
International Trading Estate (GTR) (2025)	256	Permission pending	219,031
G-Park Docklands (GLP) (2025 – RM)	210	Under Construction	1,148
North Weald (Google) (2025)	164	Under Consultation	419,427
103MW Court Lane (2022)	103	Approved	340
Total	**4137**		**2,745,538**

It is worth considering the following issues regarding the data in the table above:

Total absence of emissions figures for many proposed developments

Foxglove was able to identify twice as many data centres in the planning system which appeared to be 100MW or above, but we did not include these here as we were not able to find carbon emissions estimates for their operational phase from their developers.

Absence of an overall national picture

The information above had to be drawn from local planning authorities, which means trawling a very wide number of sources to try to build up a national picture. There are therefore likely to be absences in the above. In addition, because of the scale involved, we were only able to look at England in detail, and so this does not include data for the other nations in the UK.

Vast inconsistences between estimates

We have not been able to determine why developers for data centres of a similar size (in terms of energy use, MW) have arrived at emissions estimates which vary by as much as two orders of magnitude. For example, DC01 appears to estimate annual carbon emissions of 6,056 tonnes for a 320 MW facility; whereas Google estimates carbon emissions of 568,657 tonnes – nearly 100 times higher – for its Thurrock site, which we would estimate to be of a smaller scale.

Strong indications of underestimates

Based on one figure we have been able to find for emissions caused by an existing data centre, it seems reasonable to assume that even the higher estimates in the table above are on the optimistic side. Data produced for the UK Government's Climate Change Agreements (CCA) scheme indicate that an existing, unknown data centre, run by Digital Realty, reported emissions of 408,041 tonnes CO2 equivalent in 2021. As the new generation of data centres are likely to be significantly larger than ones already in operation in the UK, it is hard to understand how their emissions could be lower to such an extent.

Conclusion

The figures provided in this report are the tip of the iceberg – they do not include most data centres in planning, and the figures used are in many cases inconsistent and likely to involve significant underestimates.

However, as they are the developers' own figures they can be seen as an absolute minimum level of climate emissions that will result if just these ten facilities – out of a list in excess of 100 – are constructed.

They therefore demonstrate that

1. **data centres are a significant and growing source of carbon emissions that need to be taken very seriously;**

2. **there is a need for a clear, consistent, unbiased picture of the impact of planned and existing UK data centres on the environment;**

3. **the Government needs to act urgently on this threat to the UK's decarbonisation efforts.**

Endnotes

1. The Climate Change Committee projects savings of 2.9 million tonnes of CO2 equivalent in 2025 from electric cars – see 'Progress in Reducing Emissions,' 2025 report, figure 5: https://www.theccc.org.uk/publication/progress-in-reducing-emissions-2025-report-to-parliament/

2. See 'Data centres to be expanded across UK as concerns mount,' BBC News, 15/08/2025: https://www.bbc.co.uk/news/articles/clyr9nx0jrzo The underlying report for the BBC's story does not appear to be freely available, however we believe it significantly underestimates the real total. For example, the article states that just one data centre is planned for Scotland when there are two currently in the planning process for Edinburgh alone.

3. According to NESO, "Demand for electricity was at its highest of 29,694MW on 12 August at 6:30pm." See 'Great Britain's Monthly Energy Stats,' accessed 25/09/2025: https://www.neso.energy/energy-101/great-britains-monthly-energy-stats

4. See 'AI Energy Council to ensure UK's energy infrastructure ready for AI revolution,' 08/04/2025: https://www.gov.uk/government/news/ai-energy-council-to-ensure-uks-energy-infrastructure-ready-for-ai-revolution

5. 'Transforming the supergrid of the 1950s to a network built on an electrified future for generations to come,' John Pettigrew, 26/03/2024, available at: https://www.linkedin.com/pulse/transforming-supergrid-1950s-network-built-future-come-john-pettigrew-jpbcf/?trackingId=pfbUu%2B%2BXSmej4gv7AdNTtA%3D%3D

6. See 'Future Energy Scenarios: Pathways to Net Zero', July 2025, p.110 onwards https://www.neso.energy/document/364541/download

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