



Electricity demand and Artificial Intelligence

Innovation for Cool Earth Forum

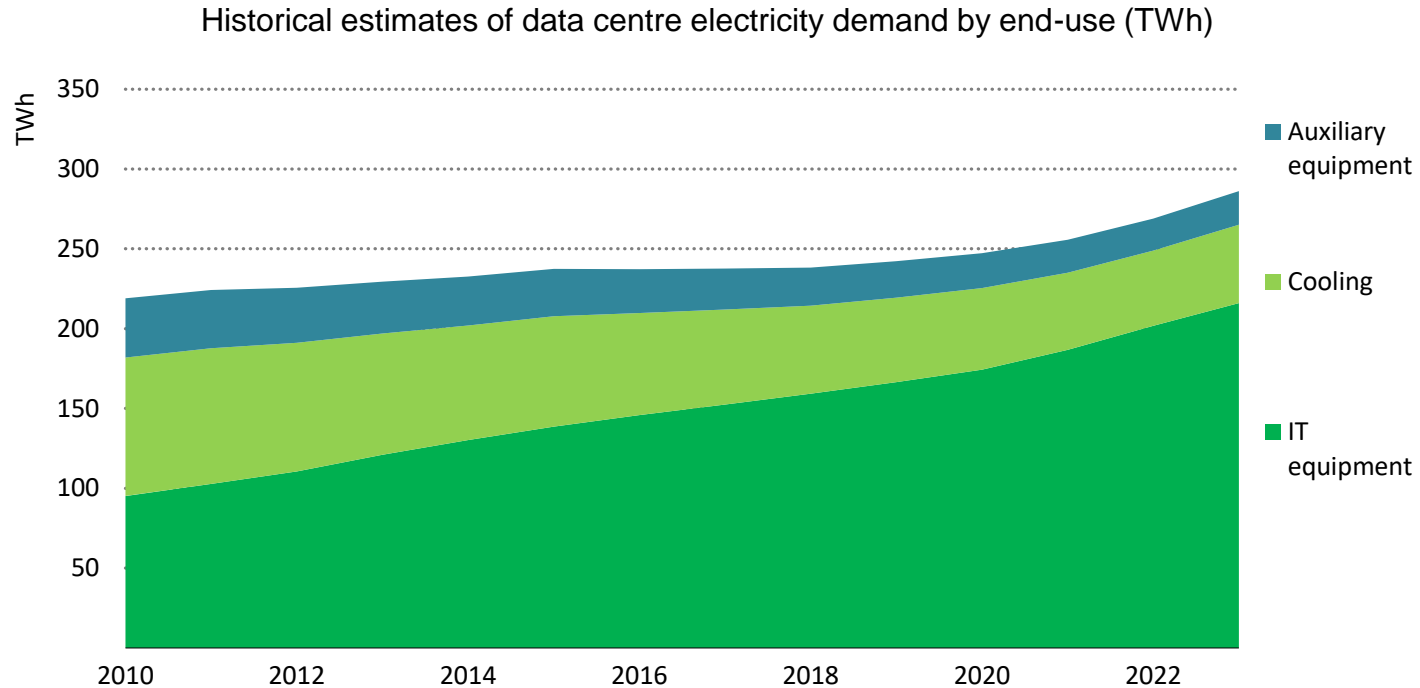
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10.10.2024

- In June 2024, we launched a new, cross-agency initiative focusing on the implications of AI for the energy sector and of energy for AI.
- A cross-agency team is conducting research on all aspects of the energy-AI nexus, including:
 - Applications of AI in the energy system to **improve efficiency, safety and reduce emissions**
 - Applications of AI to **accelerate innovation and demonstration** of novel energy technologies
 - The **energy footprint of AI** and ways to meet growing electricity demand sustainably
- The initiative will have three pillars:
 - **Stakeholder consultations**, including workshops and expert surveys
 - A **major, high-level conference** in December 2024 at the IEA
 - A **Special Report on Energy and AI** slated for publication in the first half of 2025

➤ Throughout this project, we will consult actively and **seek your input!**

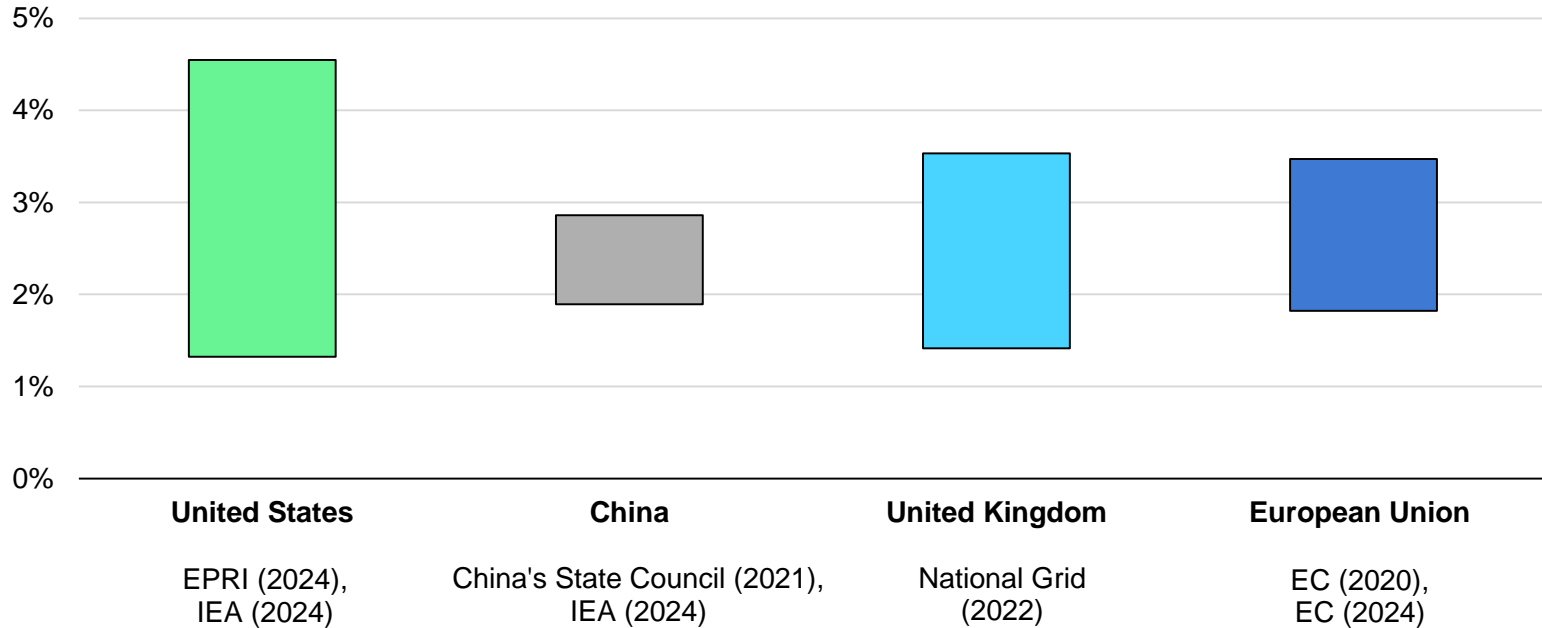
A recent acceleration in data centre electricity consumption



After a decade of a broad plateau, data centre electricity demand is now accelerating - significant efficiency gains are being overtaken by growing service demands

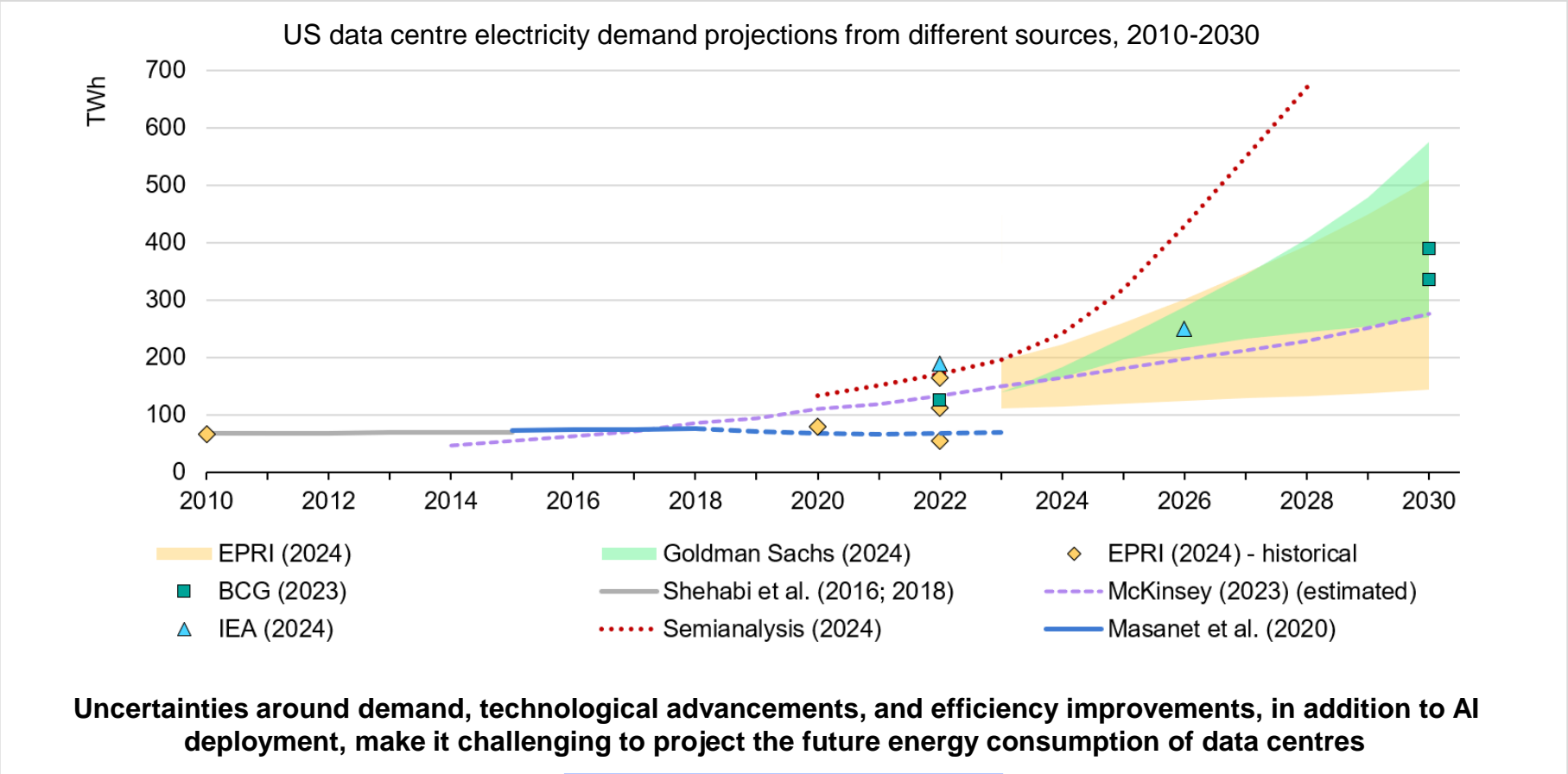
Stocktaking of data centres' energy use needs to be improved

Range of data centre electricity consumption estimates as a share of total electricity demand in the United States, China and Europe for the year 2022



A lack of reliable data in many countries contributes to the substantial uncertainty in consumption levels.

Electricity demand forecasts of data centres show a very wide range



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