4E

Energy Efficient End-use Equipment
International Energy Agency

ENERGY EFFICIENCY POLICY BRIEF

EDNA22

Public Data On Data Centre Energy Use

The Efficient, Demand Flexible Networked Appliances (EDNA) Platform of the 4E TCP provides analysis and policy guidance to members and other governments aimed at improving the energy efficiency and demand flexibility of connected devices and networks.

This briefing summarises the key findings of the EDNA report: ***Public Data on Data Centre Energy Use*** which examines what data on energy use by data centres is publicly available and how this can be collected, stored and presented on a regular basis. To evaluate the quality and utility of current public data. The reports covers national and regional building energy benchmarking schemes that includes data centres. Public data for individual data centres was found for twelve U.S. jurisdictions (states, counties, and cities) and aggregate data for data centres in one country, France.

Recommendations for Policy Makers

Adopt a framework with building elements, such as those presented below:

Data Centre Energy Reporting Framework

Dedicated Reporting Schemes

- Move beyond general building energy benchmarking programmes
- Capture data centre-specific metrics beyond Energy Use Intensity (EUI)
- Enable targeted policy development

Key Metric to Report

- IT capacity and power consumption
- Type of operation (colocation/enterprise)
- Infrastructure and IT equipment energy use separately
- Utilisation rates

Compliance Mechanisms

- Regular submitting of submitted data
- Publication of compliance rates by building category
- Identification of non-reporting sales
- Enforcement of penalties

Standardised Data Formats

- Consistent data quality checks
- Automated data collection and analysis
- Meaningful cross-jurisdiction comparisons

MORE INFORMATION

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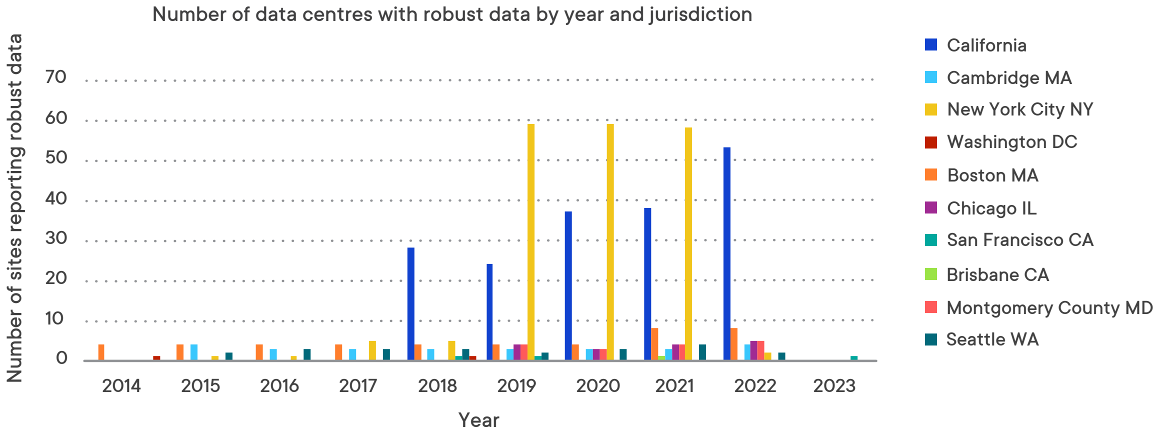
The EDNA report on **Public Data On Data Centre Energy Use** as well as further information can be found on the **EDNA website** and by contacting the EDNA Platform Manager at **edna@iea-4e.org**.

Key Findings

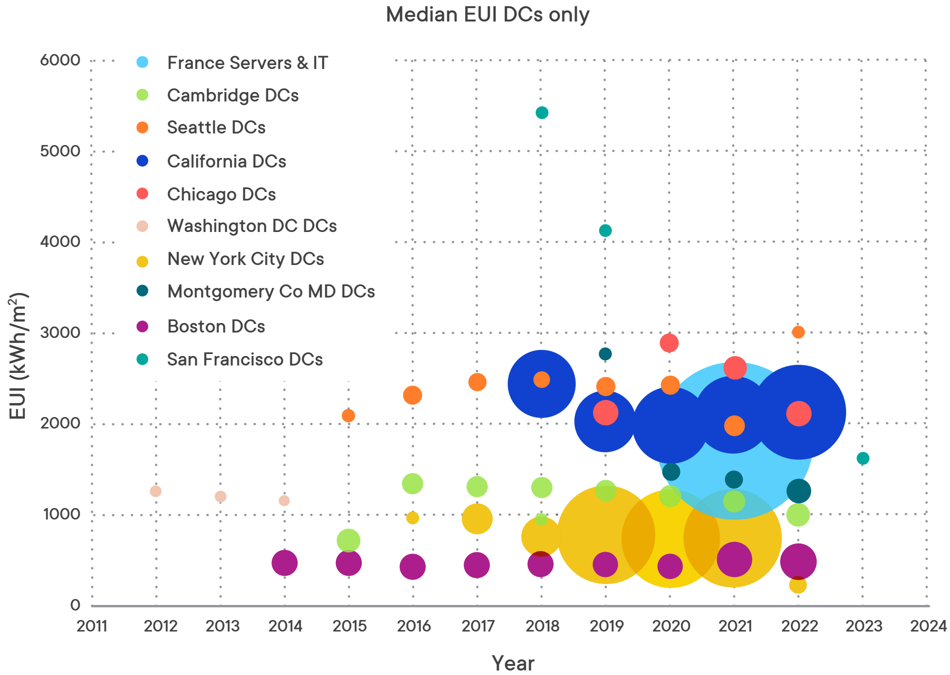
Limited Coverage and Data Quality

Current building energy benchmarking schemes capture only a small fraction of total data centre energy use. The combined reported energy use from all US schemes was about 3 TWh in 2022, while global data centre energy use is estimated at 200-500 TWh. Poor reporting compliance and inconsistent categorisation further limit the usefulness of the data.



Wide Variation in Energy Use Intensity

Data centres show large variations in Energy Use Intensity (EUI) both within and between jurisdictions, with no clear trends over time. This variation cannot be properly analysed due to lack of context about data centre type, capacity, and utilisation.



Significant Non-Electric Energy Use

Contrary to expectations, many data centres report significant use of natural gas (>5% of total energy use) in multiple jurisdictions. This may indicate a trend toward on-site power generation using fuel cells or backup generators that was not previously well documented.

These findings highlight the need for more comprehensive, standardised data collection specifically designed for data centres rather than general building energy reporting schemes.