

SHORT PRESENTATION AT STREAMSAVE+ DIALOGUE MEETING

Main findings from the Assessment of the energy performance and sustainability of data centres in the EU

Simon Hinterholzer, 22.01.2026



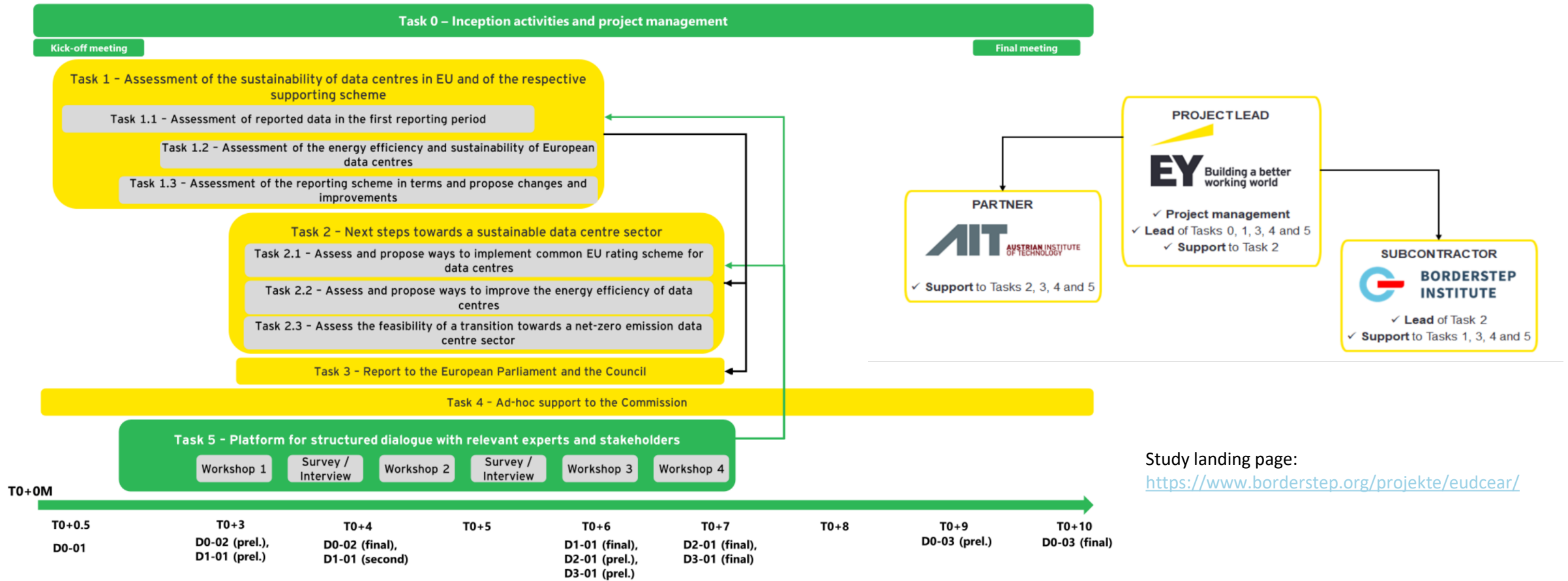
BACKGROUND: European Union Data Centre Energy Efficiency Assessment and Reporting Scheme (EUDCEAR)

Technical Assistance in support of implementing Article 12(5) of Directive 2023/1791 on the energy performance and sustainability of data centres

1. By 15 May 2024 and every year thereafter, Member States shall require owners and operators of data centres in their territory with a power demand of the installed information technology (IT) of at least 500kW, to make the information set out in Annex VII publicly available, except for information subject to Union and national law protecting trade and business secrets and confidentiality.
2. Paragraph 1 shall not apply to data centres used for, or providing their services exclusively with the final aim of, defence and civil protection.
3. The Commission shall establish a European database on data centres that includes information communicated by the obligated data centres in accordance with paragraph 1. The European database shall be publicly available on an aggregated level.
4. Member States shall encourage owners and operators of data centres in their territory with a power demand of the installed IT equal to or greater than 1 MW to take into account the best practices referred to in the most recent version of the European Code of Conduct on Data Centre Energy Efficiency.
5. By 15 May 2025, the Commission shall assess the available data on the energy efficiency of data centres submitted to it pursuant to paragraphs 1 and 3 and shall submit a report to the European Parliament and to the Council, accompanied, where appropriate, by legislative proposals containing further measures to improve energy efficiency, including establishing minimum performance standards and an assessment on the feasibility of transition towards a net-zero emission data centres sector, in close consultation with the relevant stakeholders. Such proposals may establish a timeframe within which existing data centres are to be required to meet minimum performance.

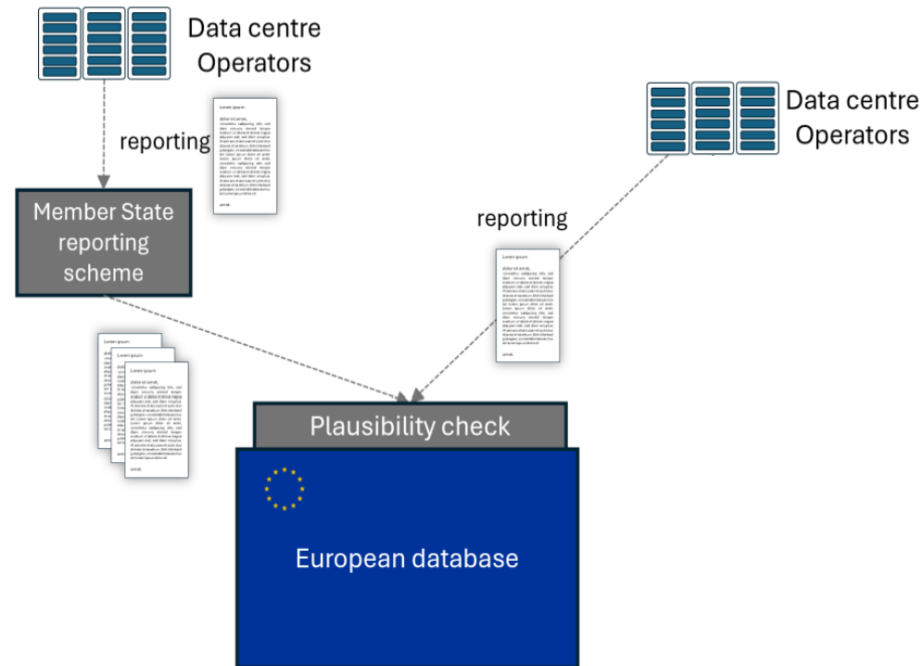


Collaboration and study timeline



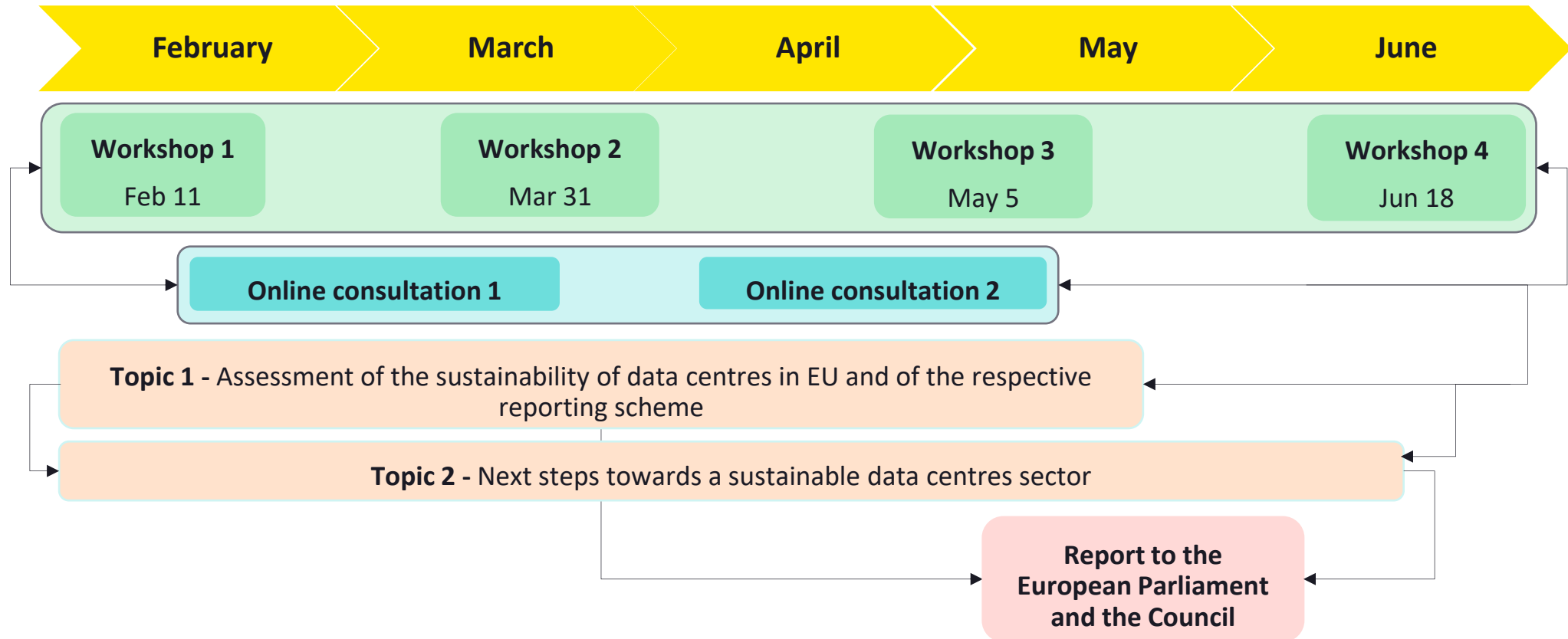
Study landing page:
<https://www.borderstep.org/projekte/eudcear/>

Basis: EU-wide reporting of data center data (reference year 2023)



- » Unfortunately, data came only piece by piece
- » Many data incorrect: Additional plausibility check of the data necessary
- » A total of ~760 data centers reported in Europe
- » Participation rate possibly even below 30%

Engage stakeholders in data verification and discuss actions



Study results are split into two reports



[LINK](#)



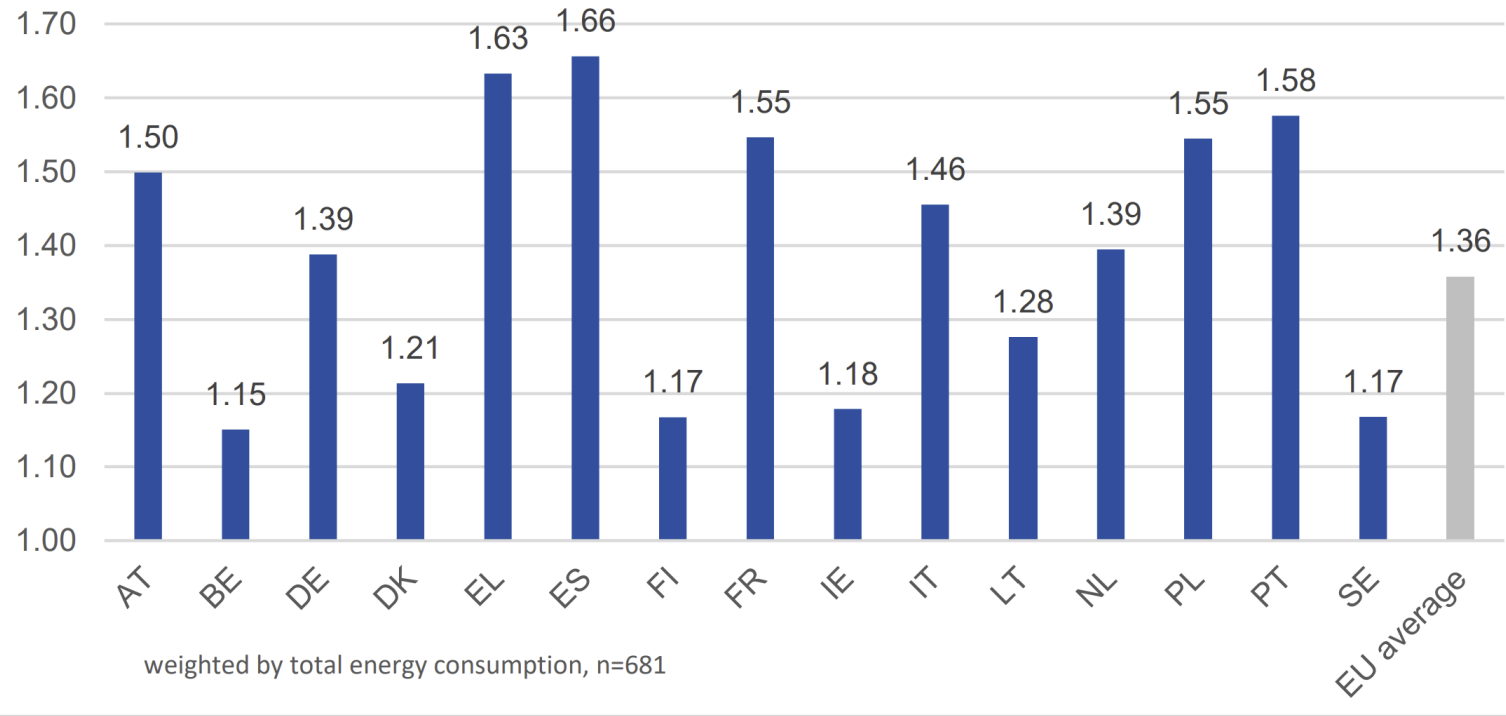
[LINK](#)



Results of the first report: Assessment the current sustainability of data centres



Average PUE of data centres by Member State

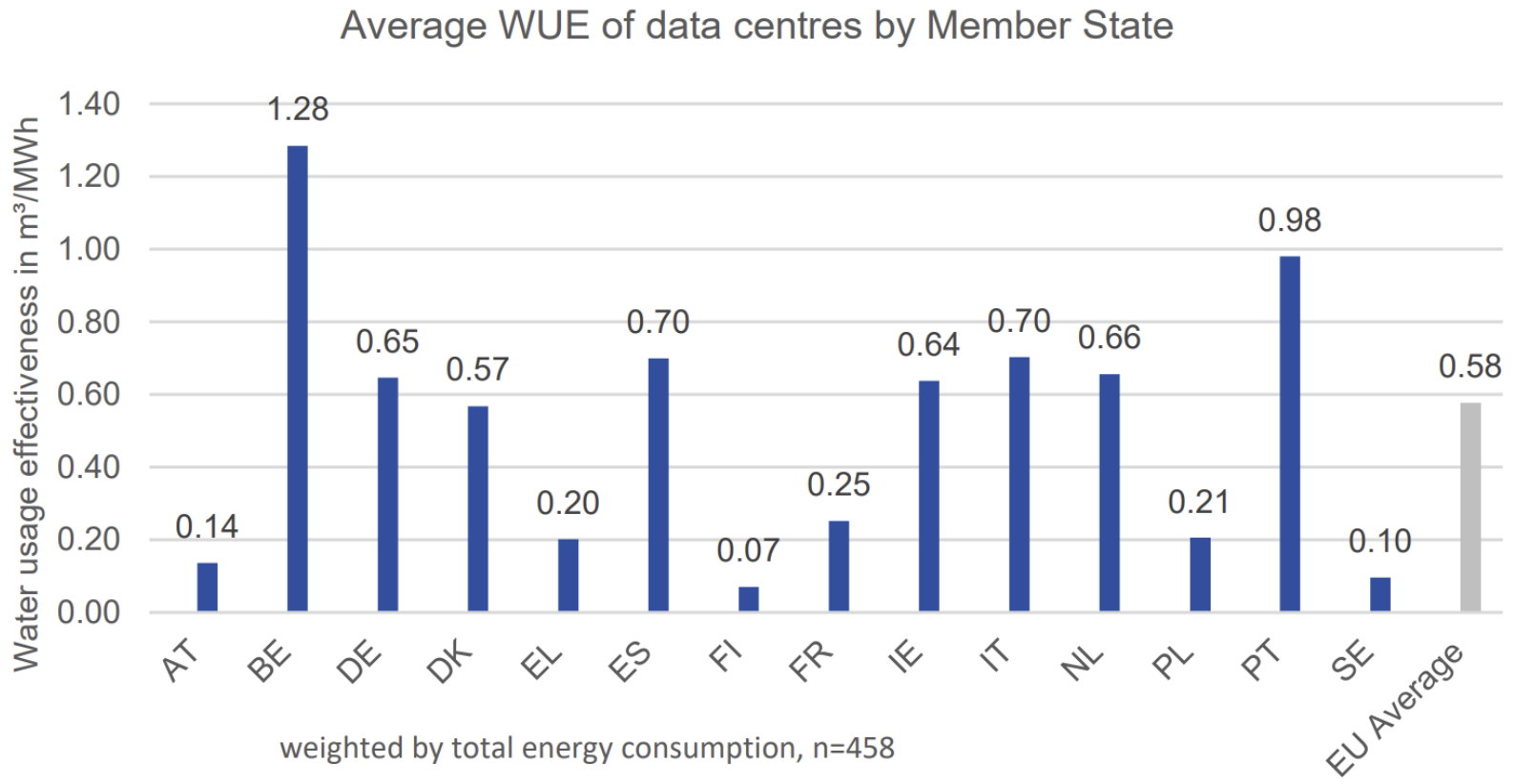


Wide variations regarding the PUE

- EU PUE performance is moderate and very heterogenous between MS
- larger and newer data centres performing better.
- Many existing facilities do not yet meet future policy targets (e.g. PUE ≤ 1.3)
- PUE data is relatively robust and mature compared to other KPIs.



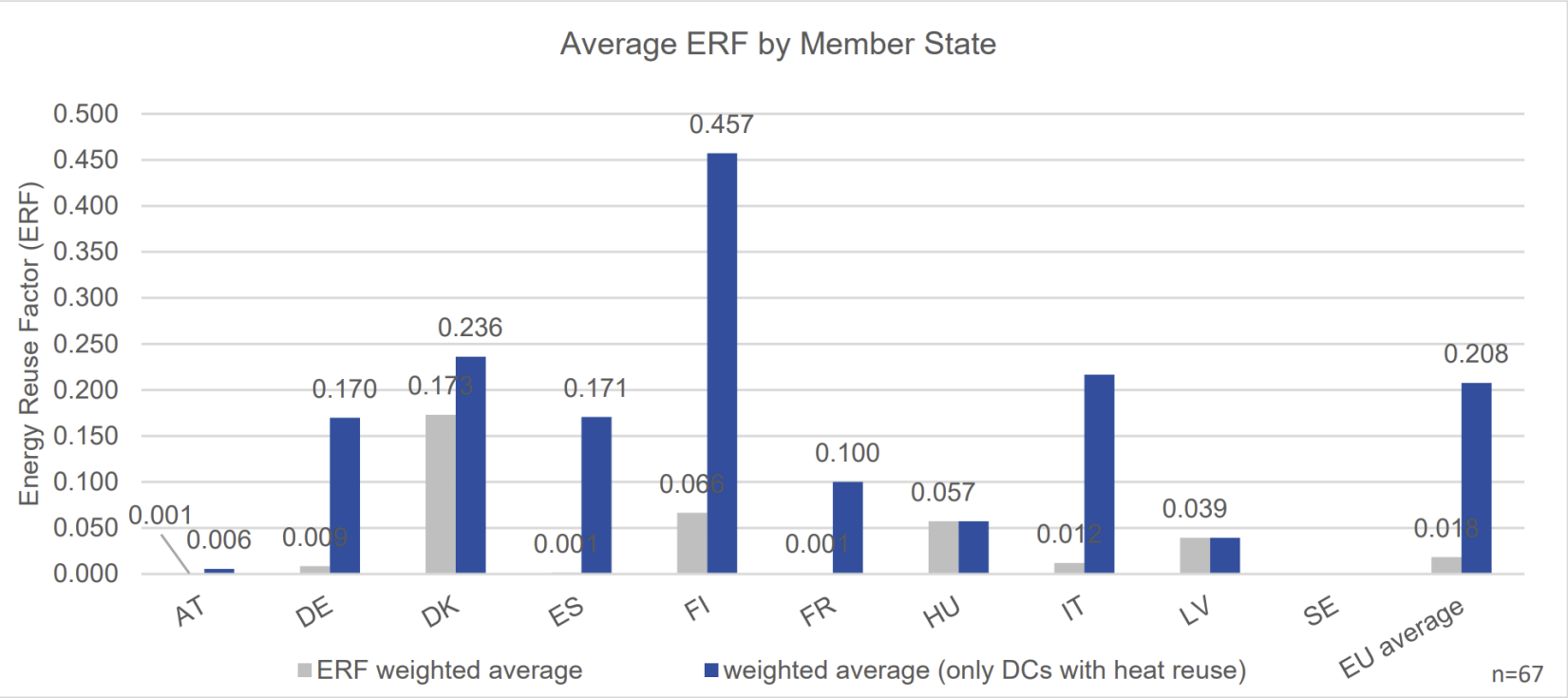
Water usage of data centres in the EU



- WUE shows high variability due to climate and cooling technology
- Reported values lack context on water source and local water stress
- Rising capacity may increase regional water pressure.

Energy reuse (=heat reuse) in data centres in the EU

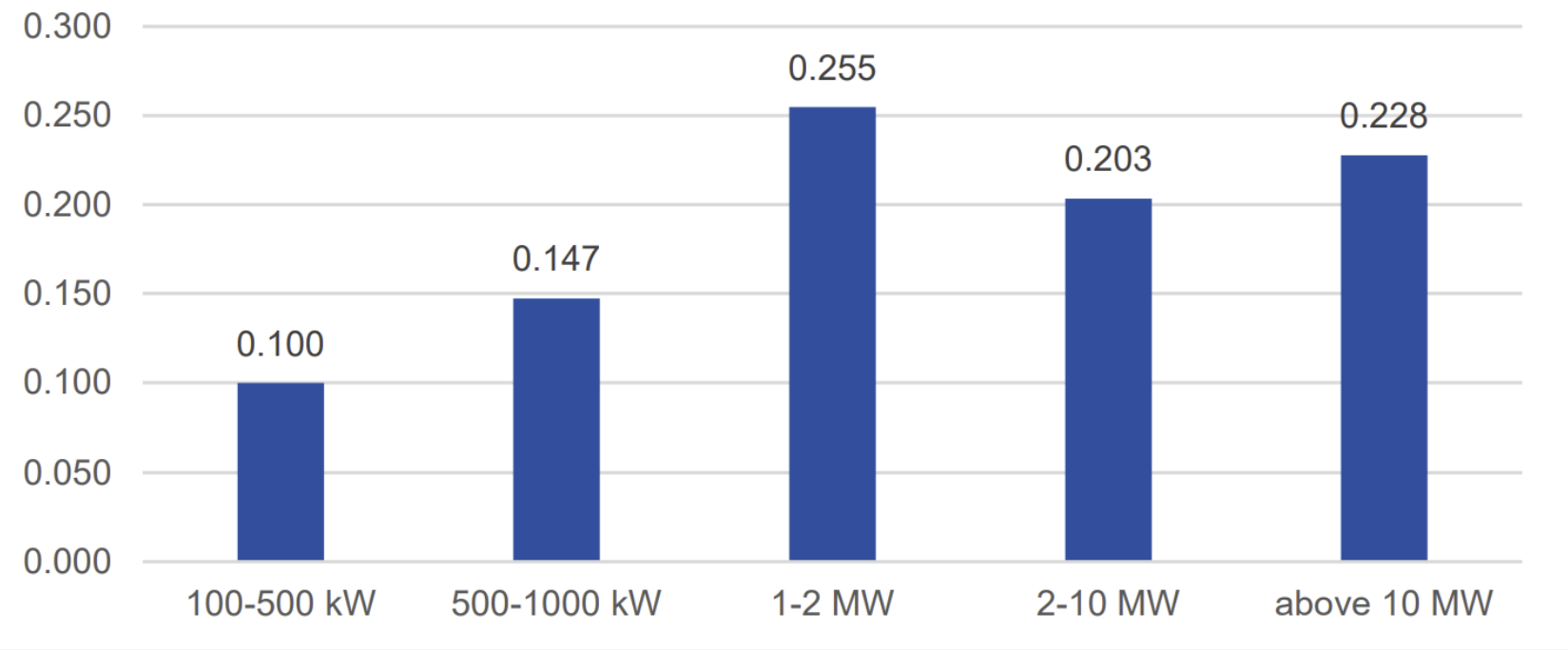
- Waste heat reuse is still very small for most EU Member States
- There is large untapped potential, especially via district heating
- ERF reporting is currently (2023 data) limited and low quality



Energy (heat) reuse in data centres in the EU

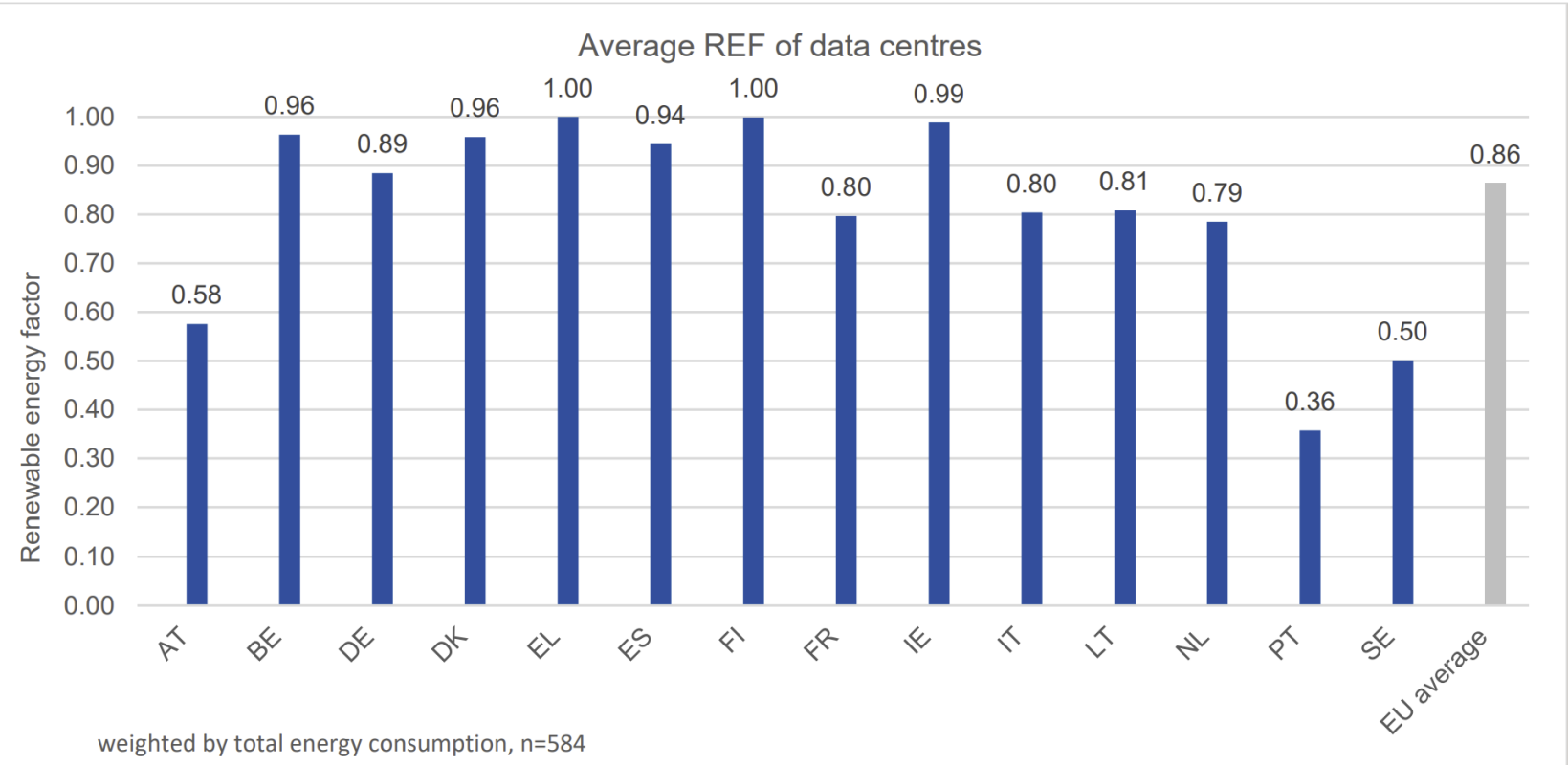
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Average ERF per size category



Renewable Energy is widely used in data centres in the EU

- Many data centres report high REF
- Renewables are mainly purchased via Guarantees of Origin
- On-site renewables and PPAs remain limited
- Reported REF may overstate real decarbonisation progress



Results of the second report: Rating label and minimum performance standards for data centres



Name and relevant information (context) on the data centre

Origin of energy and resources

Upstream sustainability impacts of data centre operations

Efficient use of energy and resources

How efficient are the energy and resources used in the data centre?

Other sustainability actions and data centre circularity measures

What other sustainability measures are being applied and what are the downstream impacts?

A sustainability label for data centers

Datacentre: [Data centre name]

Operator: [Owner and operator of the data centre]

Type: [Type of data centre]

Start of operation: [Year and month of entry into operation]

Reference Year: [Year, on which the data below refers to]

Size: [rated IT power kW/MW]

Location: [Location of DC; LAU level]

Origin of energy and water

Total energy consumption: [Total energy consumption in MWh/a]

Renewable Energy Factor (REF): [no unit]

GHG emissions

Scope 1 emissions (on-site): [t/a]

Scope 2 emissions (market based²): [t/a]

Scope 2 emissions (location based³): [t/a]

Impact on regional water situation

Water consumption : [Total water consumption in m³/a]

Type of water

Local water depletion^{**}: %

Efficient use of energy and resources

Energy efficiency PUE

<1.1

<1.2

<1.3

<1.4

<1.5

<1.6

<1.7

<1.8

<1.9

≥1.9

Design PUE 1.2

PUE X.YY

Water efficiency WUE

<0.01

<0.025

<0.05

<0.1

<0.2

<0.3

<0.4

<0.5

<0.6

≥0.6

Building efficiency

Context information

WUE category: [1,2,3]

PUE category: [1, 2, 3]

Local cooling degree days*: [CDDs °Cd]

Availability/ redundancy Level: [Availability Class¹]

Data centre performance

Perf_{CPU} Compute performance of data centre: [aggregated value]

Total Processing Performance (TPP) of data centre accelerators¹: [aggregated value] (alternatively FLOPS)

C_{Stor}: [Aggregated storage capacity in EB]

ICT performance

Other sustainability actions and data centre circularity measures

Heat-reuse-ready and offering heat? [YES/NO]

Ratio of heat reused in reference year ERF: [%]

voluntary

Further sustainability measures

Other heat reuse actions (excluded in ERF)

Grid functions

Hardware circularity/ e-waste program

Low GWP refrigerant

Liquid cooling >75%

Brownfield approach (>75% of area used before)

Water stewardship programme

High share of hourly matched green power

+further features

PPA: Power purchase agreement
GoO: Guarantees of origin

*Automatically filled by Eurostat data **automatically filled with data from Eurostat or WRI Aqueeduct data
¹Perf_{CPU} as defined by EN 303 470 Section 5.2
²Scope 2 emissions calculated with the power mix a data centre purchases (PPA, GoO, on-site etc.)
³Scope 2 emissions calculated with the average grid mix of the country the
⁴Availability Class according to EN50600 (alternatively ISO/IEC 22237)

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Summary of proposed MPS

Based on the reported data and considering the stakeholders' input, both obtained by 24. 04. 2025, the following MPS were suggested:

PUE

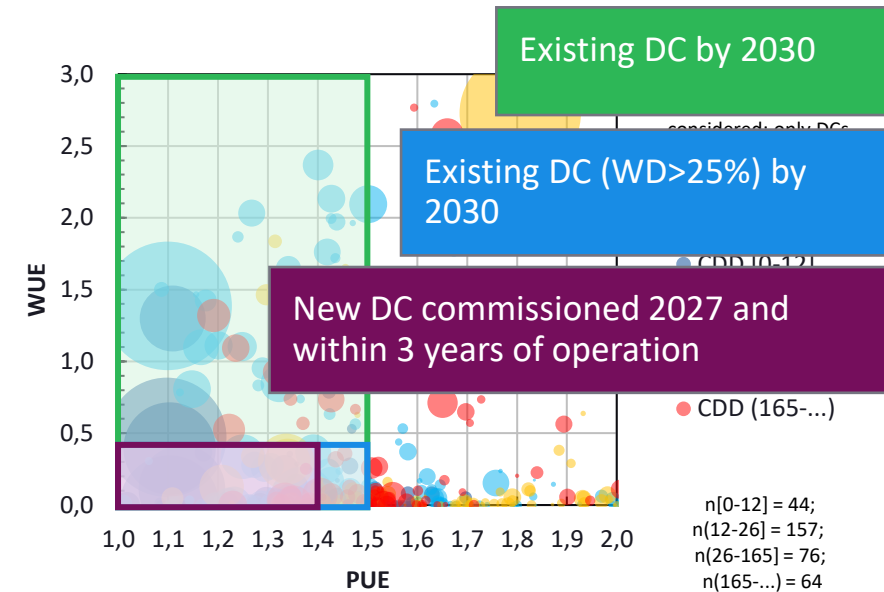
- Operational PUE < 1.5 for existing DC by 2030
- Design PUE < 1.3 for DC commissioned 2027 and later, operational PUE < 1.4 achieved within 3 years of operation

WUE

- WUE < 0.4 m³/MWh for **DCs in areas with water depletion > 25%** by 2030
- WUE < 0.4 m³/MWh for **DCs in areas with water depletion > 25%** commissioned 2027 and after
- Further encourage using non-potable water and efficiency
- Only Category 2 reporting from 2030**

REF

- REF = 100% for all DC (regardless of origin) by 2030
- Further focus on the origin of renewable energy (**encourage hourly matching**)



ERF

We do not believe that mandating a EU-wide criterion is feasible – we propose for it to be assessed locally.

For all MPS, we encourage policy makers to introduce stricter regulations on national level, where deemed necessary and feasible.

Outlook: Announcement of EU Data centre Energy Efficiency Package (DCEEP)

Energy efficiency awareness >

Deliverables 2025-2026

As a priority, the Commission will focus on



Setting up an « **Efficiency Action Forum 2030** » with EU countries - to be launched during the Informal Council of Danish Presidency in 2025



Preparing the ground for **energy efficiency tripartite contracts** - which would provide the framework for faster roll-out of energy efficiency measures across various sectors



Launching a **guarantee scheme** for energy efficiency for small and medium sized enterprises



Boosting the **energy services market** - a first pilot as part of the Clean Industrial Deal package and Affordable Energy Action Plan deliverable



Putting forward a **data center energy efficiency package** - to be published together with the Strategy Roadmap on Digitalisation and AI (Q1 2026)



Presenting the **Electrification Strategy** and the **Heating and Cooling Strategy** - with industrial energy efficiency actions helping to reduce overall electricity demand from electrification by 10-20% and unlock 11% of EU heat demand from waste heat recovery

EU-Kommission 2025

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ENERGYWIRE

European Commission to present new data center energy rules early 2026

In Europe, the surge in energy-hungry artificial intelligence is pushing power grids to their limits and redrawing the data center map.

BY: MATHIEU POLLET, GABRIEL GAVIN | 06/13/2025 07:04 AM EDT

ENERGYWIRE | BRUSSELS — The European Commission plans to tighten data center energy performance standards as part of a new “energy efficiency package” due in early 2026.

According to the International Energy Agency, global power use by data centers is set to more than double in just five years. In Europe, the surge in energy-hungry artificial intelligence is pushing power grids to their limits and redrawing the data center map.

At the IEA’s Global Energy Efficiency Conference in Brussels on Thursday, Energy Commissioner Dan Jørgensen said almost €100 billion (\$116 billion) had been saved from energy bills as a result of the rollout of renewables, but

Politico 2025

EU plans energy saving measures for data centres

By Reuters

June 12, 2025 9:57 AM GMT+2 · Updated June 12, 2025



European Union flags flutter outside the EU Commission headquarters in Brussels, Belgium March 18, 2025. REUTERS/Yves Herman/File Photo Purchase Licensing Rights

BRUSSELS, June 12 (Reuters) - The European Union is preparing a package of measures to improve data centres' energy savings, the bloc's energy commissioner said on Thursday.

Reuters 2025

Thank you very much for your attention

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Q&A

