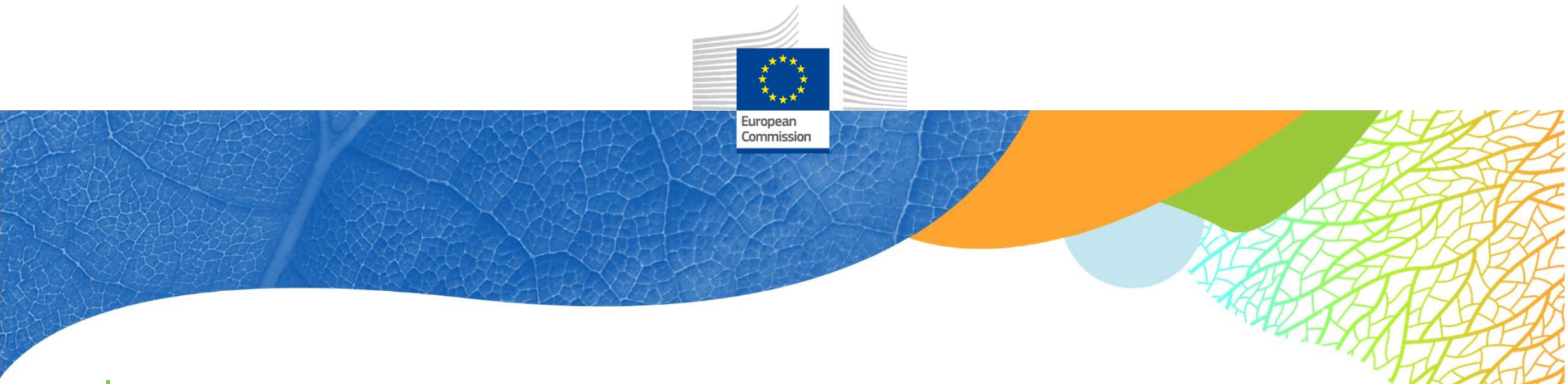

Role of Data Centres in the energy system and in the EU energy and climate policy

CA EED Workshop on Data Centres and Energy Efficiency
24–25 November 2021, Brussels

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Why does the EU need climate neutral, energy-efficient and sustainable data centres?

- The increasing digitalisation and the associated need to capture, transfer and process more and more data have an impact on energy, water and material consumption;
- As reported in the Commission study “Energy-efficient Cloud Computing Technologies and Policies for an Eco-friendly Cloud Market”, in 2018, edge data centres accounted for 2% of the energy used by data centres and this share is expected to rise to 12% by 2025.

What is the EU doing in this direction?

- Ecodesign Regulation (EU) 2019/424 on servers and data storage products;
- JRC's EU Code of Conduct on Data Centre Energy Efficiency;
- EU Green Public Procurement criteria for data centres, server rooms and cloud services;
- The Taxonomy Regulation and its Delegated Act adopted in July 2021 set the framework for investments to be qualified as sustainable, including for data centres;
- Support to the deployment of innovative green and secure cloud via its funding programmes;
- Study to address the lack of commonly accepted definitions and methods to assess the energy-efficiency, climate-neutrality and overall sustainability of data centres;
- Proposal for a Directive on Energy Efficiency (recast) introduces new elements to improve the energy efficiency of data centers;
- Water Reuse Regulation (EU) 2020/741

Ecodesign Regulation (EU) 2019/424 on servers and data storage products

- Ecodesign regulations are aimed at covering products and not systems
- However, they can facilitate forms of more virtuous uses
- A new study will evaluate the Ecodesign Regulation by early 2024

- The Sustainable products initiative (SPI) will review the entire framework of the eco-design directive
- Expand the scope of the ecodesign directive by adding new products in the ecodesign framework
- The Commission's proposal is scheduled for Q1 2022

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The EED revision

Reap unexploited energy savings potential across the economy

Reflect the increased energy efficiency ambition from the Climate Target Plan

Provide Member States with measures compatible with the increased ambition towards 2030 climate target 55%

Energy efficiency is a pre-condition for all decarbonisation scenarios of the Climate Target Plan

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EED & data centres

The EED revision looked at, previously unaddressed, sectors with significant energy consumption, including the **data centres**. The proposal includes relevant policy measures:

- assess the economic feasibility of increasing energy efficiency of heat supply by using waste heat from data centres larger than a certain threshold
- monitor and report the energy performance of data centres with the aim of later establishing "data centre sustainability indicators"
- make best efforts to purchase only products and services that respect at least the technical specifications set in the relevant EU GPP criteria, including among others for data centres, server rooms and cloud services

Existing data centres owned by non-SMEs are already subject to regular energy audits in line with Article 8 of the EED

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Reuse of data centres' heat waste

- Locating the data centre where there are available uses for waste heat can be achieved by promoting the integration of data centres in urban planning, which can contribute to improve district heating systems
- Promoting the use of waste heat from data centres also contributes to the circularity of the energy system and to the objective of making data centres climate-neutral by 2030
- The revised directive introduces stricter requirements for heating and cooling supply and supports those data centres whose waste heat is or will be re-used by exempting them from cost-benefit analysis obligation

Data centre sustainability indicators

- For data centres with a ***significant energy consumption***, data and indicators about, *inter alia:*
  - the name of the data centre; the name of the owner and operators of the data centre; the municipality where the data centre is based
  - the floor area of the data centre; the installed power; the annual incoming and outgoing data traffic; the amount of data stored and processed within the data centre
  - the performance, during the last full calendar year, of the data centre about its energy consumption, power utilisation, temperature set points, waste heat utilisation, water usage, and use of renewable energy

Use of GPP criteria for the procurement of data centres and cloud services

- The EU GPP criteria are designed to facilitate the inclusion of green requirements in public tender documents
- Their use is purely voluntary
- The proposed text establishes that in award procedures for public contracts and concessions, Member States will be required to make best efforts to purchase only products and services that respect at least the technical specifications set in the relevant EU GPP criteria for data centres, server rooms and cloud services

Digitalisation of Energy Action Plan

- The Action Plan on the digitalisation of the energy system is one of the actions listed in last year's **Energy System Integration Strategy**
- "*... we need to design a modern EU energy system that relies on clean energy technologies and that will also contribute to making Europe fit for the digital age in a way that can benefit our citizens, businesses and the environment.*"
- Expected adoption: March 2022

- Area 5 of the Action Plan: **Carbon footprint of ICT solutions**
- "*... measures that increase energy efficiency, reuse waste heat, and promote the use of renewable energy sources*"

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Other considerations?

- Data centres and the pledges for 100% RES
  - Strong demand for PPA and GO
  - More granular (temporally and geographically) GO in the future?
- Data centres as part of the energy system
  - Demand-side management & flexibility
  - Time and location shifting of load
  - Computation and storage as service?
  - Grid frequency services?
  - Batteries and (decarbonisation of) back-up power?

Thank you!

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