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DIGITALEUROPE's concise policy brief on the hottest tech topics.

In this edition:

DATA CENTRES: A POWERFUL ENABLER OF EUROPE'S TWIN TRANSITION

What do we think?

In recent years, data centres have surged to the forefront of public interest, as they are crucial to our increasingly digital world. With the rapid advancements in digital technologies including AI used across the economy, data centres **are now the backbone of key sectors** such as healthcare and transport, because they store and process vast amounts of data that enable the services and technologies that we've come to rely on.

But as their importance grows, **so has concern over their energy consumption and associated greenhouse gas emissions.**

The good news? **Data centres are at the heart of green innovations, helping to decarbonise other sectors and driving the development of renewable energy by adding new capacity to the grid.** Take smart grids, for example—powered by data centres, these systems are revolutionising energy distribution, minimising energy waste by perfectly balancing supply and demand. Or consider electric vehicles: the vast amounts of data needed to manage EV charging networks flow through these very centres, driving the shift away from fossil fuels and toward a cleaner future.

What are data centres and why are they critical for Europe?

A data centre is a physical space—like a building or a campus—where IT equipment needed to run and deliver applications, technologies and services, and store and manage data, is housed. There are different types of data centre models, including the enterprise model, which serves a single organisation, and commercial data centres, which provide infrastructure and/or IT services to multiple customers.

Data centres, with the infrastructure and IT equipment that power them, can significantly contribute to economic growth in Europe by creating new jobs across sectors like engineers, electricians, heating and cooling

specialists, facilities managers, construction, and security specialists, stimulating local economies and supporting local suppliers. In addition, they play a crucial role in ensuring cybersecurity by providing a secure and reliable environment for data storage and processing.

Data centres also enable secure and innovative solutions across key sectors such as e-commerce, financial services and healthcare. Regions with advanced data centres can attract major investments enhancing Europe's position as a global tech hub.

Going deeper

What role are data centres playing in achieving Europe's twin transition (digital + green)?

1. Enabling digital transformation:

- ▶ **Key to Europe's digital future:** Data centres support innovations like remote work, e-government services, and AI development, ensuring broad access to the digital economy, and reuse industrial data within Common European Data Spaces initiative.
- ▶ **Fostering European competitiveness:** Companies in Europe across different sectors rely on data centres to store and process the data underpinning digital services and their digital transformation, enabling them to gain efficiency, innovate and compete globally.
- ▶ **Boosting European AI competitiveness:** The EU needs more data centre and supercomputer capabilities to develop Large Language Models independently.¹
- ▶ **Supporting research and innovation:** Data centres provide essential infrastructure for advancements in sectors like healthcare, enabling the development and deployment of cutting-edge technologies.

2. Driving green innovation:

- ▶ **Reducing emissions across sectors:** Data centres help cut emissions in industries like construction by enabling technologies such as Building Information Modelling and efficient HVAC systems, significantly contributing to emissions savings.

Overall, these technologies can save 9.7x more emissions than they produce.²

- ▶ **Supporting grid stability and energy efficiency:** Advanced energy management systems enabled by data centres help stabilise the power grid, supporting grid reliability as industries electrify.
- ▶ **Offsetting their own environmental footprint: Data centres currently use nearly 2% of global electricity**, a figure expected to potentially double by 2026³, driven by the increasing demands of AI and other computational workloads supporting the 21st century digital economy. The industry is committed to reducing its energy and emissions impact through best practices, including:
 - Data centres drive renewable energy adoption through significant investments that enable new renewable energy to be added to the grid through Power Purchase Agreements (PPAs) and energy efficiency measures. Since 2018, they have added 11.6 GW⁴ of clean energy through PPAs and other mechanisms to match their energy consumption.⁵
 - **Innovative cooling solutions:** AI-optimised and liquid cooling solution in data centres can enhance energy and water efficiency, contributing to reduced environmental impact. For example, some data centres employ AI-powered recommendation systems on a project basis, achieving consistent energy savings of roughly 30%.⁶
 - **Waste heat reuse:** Where local infrastructure allows, data centres are finding opportunities to capture and reuse their heat for nearby buildings and industries, including schools, swimming pools, and residential areas.⁷

¹ DIGITALEUROPE, The EU's Critical Tech Gap – Rethinking economic security to put Europe back on map, June 2015, available at https://cdn.digitaleurope.org/uploads/2024/06/DIGITALEUROPE-EU-CRITICAL-TECH-GAP-REPORT_WEB_UPDATED.pdf

² GeSI, #SMARTer2030 ICT Solutions for 21st Century Challenges, June 2015, https://smarter2030.gesi.org/downloads/Full_report.pdf

³ IEA, Electricity 2024 – Analysis and forecast to 2026, January 2024, available at <https://iea.blob.core.windows.net/assets/6b2fd954-2017-408e-bf08-952fdd62118a/Electricity2024-Analysisandforecastto2026.pdf>

⁴ RE-Source, PPA deal tracker, available at <https://resource-platform.eu/buyers-toolkit2/ppa-deal-tracker/>

⁶ DIGITALEUROPE, Digitalisation as a key enabler for resilient and sustainable energy ecosystem, February 2023, available at <https://cdn.digitaleurope.org/uploads/2023/02/Digitalisation-as-an-enabler-for-an-independent-and-sustainable-energy-system-4.pdf>

⁷ Danfoss, HPE and Danfoss partner to curb data center energy consumption and reuse excess heat, June 2024, available at <https://www.danfoss.com/en-us/about-danfoss/news/dcs/hewlett-packard-enterprise-and-danfoss-partner-to-curb-data-center-energy-consumption-and-reuse-excess-heat/>

How can policymakers help?

► **Ensure consistent rules across the EU:**

Policymakers should continue to work on harmonising regulations across all Member States, aligning requirements in areas like the EU Taxonomy, AI Act, Corporate Sustainability Reporting Directive, and Energy Efficiency Directive. Europe competes globally for data centre investment, so consistent, long-term regulations are important for consideration.

► **Avoid one-size-fits-all energy standards:**

When developing an energy rating scheme for data centres it's important not to impose uniform minimum energy performance or other standards. Data centres differ in location, climate, purpose and available resources, making it difficult to apply a single minimum standard across the entire EU. Some data centres may use more energy to recover waste heat or to save water, which can be necessary depending on local climate conditions. Others may also take different approaches to add renewable energy to the grid to match their consumption.

► **Strengthen grid stability and reliability:**

European governments should invest in strengthening grid stability and digitalisation to ensure data centres operate efficiently and securely.

► **Invest in joint EU infrastructure:** To boost Europe's ability to develop and scale critical technologies, policymakers should support joint EU investments in infrastructure like data centres and manufacturing plants.

► **Facilitate waste heat reuse:** Introduce a supportive policy framework to encourage waste heat reuse in municipal heating and cooling plans, promote incentives and financing schemes, and raise awareness of collaboration opportunities between data centres, municipalities, and beneficiaries.



Read more



- [Europe 2030: A Digital Powerhouse](#)
- [The EU's Critical Tech Gap](#)
- [Digitalisation as a key enabler for resilient and sustainable energy ecosystem](#)

Case studies

DANFOSS case study: Energy reuse and heat recovery



Danfoss, a Danish company and a global leader in engineering solutions that improve energy efficiency and sustainability across various industries, including data centres.



The company provides advanced solutions such as oil-free compressors, improving cooling efficiency by up to 30%, and systems for capturing and reusing excess heat from data centres.

For example, Danfoss's solutions for enhanced modular data centres, which facilitate the scaling of AI, can reduce energy consumption and emissions. These data centres are equipped with technology that supports the external reuse of excess heat, which can be redirected to nearby buildings or industrial processes.

In the EU, approximately 2,860 TWh/year of excess heat is generated nearly matching the total energy demand for heating and hot water in residential and service buildings.⁸



⁸ Danfoss, The world's largest untapped energy source: Excess heat, available at <https://www.whyeenergyefficiency.com/solutions/all-solutions/the-worlds-largest-untapped-energy-source-excess-heat>

Case studies

SAP case study:

A green approach to data centre management



SAP, a German company and a global leader in enterprise software solutions, is dedicated to driving sustainability and innovation across its operations, including data centre management.

SAP's data centre sustainability strategy is focused on addressing the growing energy demands of AI while minimising environmental impact, with a focus on:⁹

- ▶ **Environmental impact:** SAP's data centres in Germany and North America are ISO14001-certified, with an Environmental Management System implemented at over 50 sites globally, ensuring high standards of environmental responsibility.
- ▶ **Renewable electricity:** All SAP-owned data centres run on 100% renewable electricity, supported by EKO energy-certified Energy Attribute Certificates, aligning with SAP's commitment to reducing its carbon footprint.
- ▶ **Cooling optimisation:** SAP optimises cooling systems by setting intake temperatures to 27°C to effectively manage waste heat.
- ▶ **Water efficiency:** SAP uses adiabatic cooling and closed-water circuits to minimise water usage while maintaining optimal equipment temperatures.



⁹SAP, SAP Cloud Strategy Focuses on Green Data Centers, June 2023, available at <https://news.sap.com/2022/06/sap-cloud-strategy-focuses-on-green-data-centers/>



DIGITALEUROPE

DIGITALEUROPE is the leading trade association representing digitally transforming industries in Europe. We stand for a regulatory environment that enables European businesses and citizens to prosper from digital technologies.

We wish Europe to grow, attract, and sustain the world's best digital talents and technology companies. Together with our members, we shape the industry policy positions on all relevant legislative matters and contribute to the development and implementation of relevant EU policies, as well as international policies that have an impact on Europe's digital economy.

Our membership represents over 45,000 businesses who operate and invest in Europe. It includes 106 corporations which are global leaders in their field of activity, as well as 41 national trade associations from across Europe.

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