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**MEETING DOCUMENT**

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| From: | General Secretariat of the Council |
| To: | Working Party on Telecommunications and Information Society |
| Subject: | Boosting Cloud and AI Development in the EU - Presidency discussion paper |

Delegations will find in the annex the Presidency paper "Boosting Cloud and AI Developmnet in the EU"

**Boosting Cloud and AI Development in the EU**

**Presidency discussion paper**

## The role of cloud computing

For millions of users in the EU, the cloud is the entryway for accessing processing power, storage, and software. Through the cloud, users can access these features on-demand and have flexibility in adjusting to their needs the capacity that they purchase, without upfront infrastructure investments. It is also the entryway to the computing capacity needed for AI. Training an AI model demands massive computational resources, which can be provided by supercomputers. Once trained, the need for large, centralised computing decreases, and cloud and edge take centre stage for further AI application development ('fine-tuning') and inference. Cloud computing is thus a driver for innovation and competitiveness.

## Capacity gap and underlying problems

1) *The EU does not have the cloud and edge infrastructure it needs for becoming the AI continent*

Data centres house servers, storage devices, and network equipment: they are the physical infrastructure that powers the cloud. At present, EU is home to roughly 1240 data centres with an installed capacity of 8.3 GW. These data centres are heavily concentrated in geographical hubs[1]. However, use cases such as autonomous driving or smart city solutions require low latency, and are typically provided by edge nodes which process data closer to the data source. In 2024, around 1.800 edge nodes were deployed in the EU, but often pre-commercially and in a geographically unbalanced manner[2]. Europe's data centre capacity is set to grow to 13 GW by 2027, but future needs are expected to be 10 GW higher[3]. AI is an important driver of this demand increase, but not the only one[4]. Installed capacity in the US is already three times higher than in the EU (25GW) and is set to increase to 65-80 GW by 2030, depending on the US ability to access the necessary energy[5]. Investing in data centre roll-out is therefore an indispensable step on the path towards becoming the AI continent, and – more generally – towards a future where EU businesses and public administrations continue to have broad and affordable access to state-of-the-art data storage and processing services.

Data centres are important consumers of energy and water. Europe's data centre power demand is expected to almost triple by 2030[6], and comparatively high energy prices negatively affect the

[1] The biggest concentration of data centres in the EU can be found in Frankfurt, Amsterdam, Paris, and Dublin.
[2] Germany and France leading the way and Spain and Italy making notable advances. Bulgaria, the Czech Republic, Greece, and Hungary are only just beginning to adopt the technology, with limited experimentation and target deployments. Source: Edge Observatory for the Digital Decade, Third Edge Deployment Data Report, https://ec.europa.eu/newsroom/dae/redirection/document/109619
[3] https://pdf.euro.savills.co.uk/european/european-commercial-markets/spotlight-eu-data-centre---november-2022-.pdf
[4] According to Schneider Electric, AI workloads will make up 15-20% of total data centre workloads by 2028.
[5] Data centers and AI: How the energy sector can meet power demand | McKinsey
[6] See article published by the World Economic Forum: https://www.weforum.org/stories/2024/11/europe-data-centre-plus-other-technology-news-to-

competitiveness of data centres located in Europe compared to other regions of the world. On average, data centres use 26 million litres of water each year per MW of capacity[7]. The limited availability of (renewable) energy and water, in conjunction with high operational costs due to high-price energy costs in Europe, is a key bottleneck for data centre deployment and lends itself to winner-takes-all scenarios[8]. At the same time, technological innovation promises significant resource savings. For example, different forms of cooling can imply significantly lower water and energy consumption, but they require significant investments and pose other challenges, such as the use of particularly toxic PFAS materials in immersion coolants. A related aspect to consider regarding the construction of sustainable data centres is the emphasis on power usage effectiveness and power density[9]. Investing in highly sustainable data centres is therefore an opportunity for the EU to overcome the challenges posed by limited natural resources and high energy prices, and for EU businesses to claim technology leadership in the solutions that enable resource-efficient and AI-optimised data processing. These investments should ideally be accompanied by the development of high-capacity telecommunication networks linking data centres and edge nodes, which is essential for harnessing the full potential of such infrastructure.

The average time to obtain a permit to build a data centre and the related environmental authorisations lies upwards of 20 months. The average construction process takes an additional 12 to 24 months and can be affected by equipment supply bottlenecks or export controls, for example in relation to Nvidia GPUs or power transformers[10]. In 2023, average construction costs for a data centre in the EU reached €8.4 million per MW[11] and cloud providers point at investment needs of at least EUR 1 billion for 200-300 MW of installed capacity[12]. While the data centre market is highly profitable[13], the current high volume of borrowing for data centre expansion causes commercial banks to be reluctant to finance further data centre projects at favourable rates.

Simplifying permitting rules for sustainable data centres, in line with Commission communication on implementation and simplification, would enable faster deployment. This can be achieved through targeted legislative simplifications, reducing administrative burdens, and the adoption of innovative tools such as digital one-stop shops for permit applications and regulatory sandboxes to test new solutions under flexible oversight. The goal is to streamline the entire permitting process, making it more efficient (particularly for SMEs and mid-caps) while maintaining high environmental and regulatory standards. However, since permitting is often a national, regional,

know/#:~:text=Europe%20data%20centre%20power%20demand,new%20report%20from%20McKinsey%20%26%20Company

[7] Savills | European Data Centres – 2023

[8] In which a large data centre operator buys up available resources and thus pre-empts others from entering the market in a specific location.

[9] These metrics evaluate the energy efficiency and space utilization within the facility irrespective of the energy's origin.

[10] https://siteltd.co.uk/blog/what-does-it-cost-to-build-a-data-centre/#:~:text=Construction,time%20it%20takes%20to%20develop.

[11] Savills UK | Costs on the rise

[12] Google breaks ground on second Belgian data center campus worth $1bn - DCD; Amazon to invest $1.3bn expanding data centre presence in Italy - DCD; AWS to invest €15.7 billion into Spain, announces 600MW in renewable energy projects - DCD

[13] Revenue in the Data Centre market for different segments Worldwide 2018-2029 | Statista

or local competence, efforts to streamline the process must involve coordination across all levels of governance, rather than focusing solely on European-level simplifications.

*2) The EU lacks facilities for the training of very large AI models.*

The European AI industry is drawing attention to a lack of data centres and training capacity in Europe[14]. The EU boasts a strong network of high-performance computers, which the AI Factories Initiative will expand further and make increasingly usable for the training of AI models. But the training of very large (trillion parameters) AI models requires dedicated facilities with an estimated capacity of over 1 GW, between 70 and 150 Exa FLOP/s (Rpeak), and 100 000 000 cores. Such facilities currently are not in operation in the EU, and only announcements for future plans have been made public so far.

*3) The EU cloud industry struggles to be competitive.*

While the EU cloud market expanded in size, the market share of European[15] providers declined from 27% in 2017 to 13% in 2022.[16] The largest share of the market belongs to the US-based hyperscalers Amazon Web Services (AWS), Microsoft Azure, and – to a lesser extent – Google Cloud[17]. With their large investment capacity, these providers also drive the current expansion of data centre capacity in Europe, especially for AI-optimised services[18]. The largest cloud providers also offer the most popular ecosystems and (proprietary) tools for developing and deploying AI models. The leading providers of EU origin are SAP and Deutsche Telekom, which each account for 2% of the market. The largest European cloud infrastructure player, OVH, holds 1% of the European market. European providers focus increasingly on niche markets and specialised services. A recent trend is the emergence of offers where European companies partner with US hyperscalers to ensure, for example, that encryption is handled by the European entity[19].

**What has already been done?**

- *The AI Factories Initiative* will create the right conditions for AI start-ups and SMEs to develop AI models by ensuring access to high-performance computing capacity. In December 2024, the EuroHPC Joint Undertaking (EuroHPC JU) selected the sites that will host the first European AI Factories, set to be deployed in 2025.
- *The IPCEI Next Generation Cloud Infrastructure and Services* develops data processing capabilities, and software and data sharing tools that enable federated, energy-efficient and trustworthy cloud and edge distributed data processing technologies and related services.

[14] Mistral AI warns of lack of data centres and training capacity in Europe | Euronews
[15] Market statistics typically look at the European market, including Switzerland and the UK.
[16] Synergy Group. (2022). European cloud providers continue to grow but still lose market share. https://www.srgresearch.com/articles/european-cloud-providers-continue-to-grow-but-still-lose-market-share.
[17] Cloud computing in Europe - statistics & facts | Statista
[18] Examples include recent investments from Microsoft (EUR 4 billion investment in France, EUR 3.2 billion in Germany, and EUR 2.9 billion in Sweden), AWS (EUR 15.7 billion in Spain, EUR 7.8 billion in Germany) and Google (EUR 1 billion in Belgium, EUR 1 billion in Finland).
[19] See for example Clarence – an offer by Proximus Luxembourg and LuxConnect, based on Google technology: Clarence, le premier cloud vraiment souverain | Paperjam News.

Approved by the European Commission on 5 December 2023, it unlocked €1,2 billion in public funding and €1,4 in private investments.

- *The Data Act* paves the way for free, fast, and fluid switching from one cloud provider to another. It also pushes towards greater interoperability. By removing lock-in practices, the Data Act opens up space in the European cloud market for providers to distinguish themselves based on quality, innovation and price.
- *The Energy Efficiency Directive* paves the way for the adoption of an EU-wide scheme for rating the sustainability of data centres. A first Delegated Act was adopted in March 2024 and establishes common key performance indicators[20]. Over the course of 2025, the Commission will adopt a second Delegated Act establishing the rating scheme.

**Questions:**

1. How would the bottlenecks for data centre expansion best be addressed? How could the roll-out of highly sustainable infrastructure for data storage and processing be incentivised? How can the permitting process be simplified?
2. How can the EU advance the construction of new data centres and very large, AI-optimised facilities in a geographically balanced manner?
3. How can the EU ensure that highly critical use cases are operated using sovereign cloud capacity?

[20] Commission adopts EU-wide scheme for rating sustainability of data centres - European Commission