From ambition to action: how EU-backed gigafactories could redefine AI investment

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The European Union (EU) is moving ahead with ambitious plans to assert its own place in the evolving AI ecosystem in order to compete with the dynamism and financial resources of the world's two technological superpowers – China and the USA. The EU's vision for gigawatt-scale campuses is intended to capture and drive the next evolution in AI forward towards a new generation of specialist applications. Investors should recognise the unique opportunity that these projects represent as an investment to shape Europe's AI future, but also that a careful demand assessment, financial modelling and collaboration with stakeholders are essential.

The EU has a clear vision to promote AI gigafactories

The EU's ambitious AI vision revolves around two key infrastructure initiatives: AI factories (designed to create ecosystems around the EuroHPC supercomputers)[1] and AI gigafactories. AI gigafactories are large-scale, sovereign compute campuses[2] that will be developed to train and serve advanced AI models for the European industry. They are backed by substantial investments from the EU.

At the AI Action Summit in Paris on 11 February 2025, the European Commission President Ursula von der Leyen announced the introduction of InvestAI, a public–private initiative aimed at mobilising EUR200 billion for AI development across the EU, including EUR20 billion for four AI gigafactories equipped with 100 000 next-generation AI chips each. Through initiatives like this, the EU is not only addressing critical gaps in its AI infrastructure but also creating a platform ripe for investment opportunities.

By June 2025, the European Commission had received 76 expressions of interest from 16 EU countries, demonstrating unprecedented cross-European engagement. The overwhelming response to the EU call from European entities underscores the importance of addressing a critical AI infrastructure gap. Most applicants remain confidential for competitive reasons, but several consortia have strategically chosen to go public with their proposals.[3] Public announcements can have some important benefits, including:

- **policy visibility, momentum building and establishing relationships** with key decision makers across Member States
- **capital attraction and investment readiness**, as it offers clear signals to the financial community and technological partners and also facilitates joint ventures and risk-sharing arrangements

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[1]   The EuroHPC supercomputers refers to the EU's public–private partnership, established by Council Reg. (EU) 2018/1488 and recast by Reg. (EU) 2021/1173. Its purpose is to deploy and operate world-class HPC and quantum infrastructure, develop European technologies and foster AI take-up by industry, especially for SMEs.

[2]   Compute campuses are public–private facilities that concentrate on next-generation accelerators, resilient power and advanced cooling.

[3]   Examples of initiatives going public are in Austria (city of Vienna, federal government, Wien Energie and some local tech companies), Czechia (CRA, Czech Ministry of Industry and Cordiant Digital Infrastructure), Finland (Nokia and Finnish government), France (Scaleway, French government and Opcore), Germany (IONOS and HOCHTIEF), Germany (Deutsche Telekom, Brookfield and RWE), Netherlands (Han de Groot, Eneco, CVC DIF, ABN Amro, ING, AMS-IX and ASML), Portugal (BPF and Start Campus), Spain (Telefónica, Spanish and Catalan governments and Submer).

- **risk mitigation and capability demonstration**, especially in those cases where there is tangible progress on construction
- **market positioning and competitive advantage**, establishing early market presence and customer relationships
- **strategic de-risking** through transparency with stakeholders such as regulators, local communities, governments and industry partners.

The EU now plans to publish an official call for establishing one or more gigafactories in the fourth quarter of 2025 under the EuroHPC Joint Undertaking.[4]

AI is expected to be the principal driver of future data-centre growth

From a global perspective, Analysys Mason forecasts an additional 300GW of IT power demand by 2035, requiring investment in infrastructure and equipment of over EUR6 trillion, equivalent to approximately 3.5% of the EU's GDP over the next 10 years.

Large language models (LLMs) have shaped recent development in AI, but the next wave of innovation will come from new applications in emerging areas such as:

- specialised AI models (which may be tailored to specific industries)
- AI for scientific purposes (in fields like biology, physics and materials science)
- generative AI (GenAI) beyond text (video, music, 3D modelling, etc.)
- neuromorphic computing, quantum AI, AI in robotics or new architectures and applications in fields that are almost inconceivable today.

AI gigafactories will require gigawatt-scale campuses to meet increased IT demand

To meet the expected IT demand in 2035, AI gigafactories will require the creation of gigawatt-scale power campuses – facilities comparable in energy consumption to small cities. Each campus is expected to require upwards of 1GW of electricity to stay operational, which underscores the need to secure sustainable, reliable and cost-effective energy sources. This scale will also demand significant investment in grid reinforcement, microgrid solutions and energy storage infrastructure to avoid bottlenecks and disruptions.

Addressing these challenges will bring opportunities for innovation, particularly in areas such as liquid and immersion cooling technologies, renewable energy integration, thermal waste management and infrastructure design. From reducing water consumption to harnessing waste heat (for example, for district heating initiatives), gigawatt-scale campuses operate at a scale that allows unprecedented standards in energy efficiency and environmental sustainability.

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4   The EuroHPC Joint Undertaking is the EU's public–private body that co-funds, procures and operates Europe's high-performance and quantum computing infrastructure. It is financed by EU programmes (Digital Europe, Horizon Europe, Connecting Europe Facility) and matched Member State contributions.

AI is becoming a strategic sovereign priority for European governments

The critical question is whether this initiative's strategic rationale is compelling. Unlike other models, Europe's AI gigafactories aim to democratise access to AI workloads for start-ups and small and medium-sized enterprises (SMEs) and will be focused on enabling collaborative development across industries. The key will be the balance between innovation and regulation in the EU.

Mitigating the demand risk is critical to investment in an AI gigafactory project

The gigafactory initiative is strategically important for the EU, and it is making large subsidies available. The EU's goal is to close the infrastructure gap and reshape the AI market. The aggregation of this demand at a gigawatt-scale will have an impact on cloud and AI compute pricing worldwide. It may strain and re-shape accelerator/optical supply chains, drive grid innovation and investment, accelerate new cooling technologies and likely accelerate the development of new emerging technologies. All of these factors will shape the future state of the global AI sector.

However, the schemes will require substantial private funding. Private stakeholders will need a comprehensive assessment of the demand and supply dynamics, and will need to mitigate risks associated with these investments. Capturing demand is a vital step, with a focus on identifying industries and use cases that would benefit from local, high-performance compute infrastructure. In parallel, understanding the initial capex and ongoing opex is essential if investors are to have confidence in the financial feasibility and scalability of a new concept in digital infrastructure. Revenue models must be carefully analysed, distinguishing between hyperscaler partnerships, AI-as-a-service offerings and co-location-based models. Certain opportunities and locations may succeed, but not all will require large-scale capacity infrastructure.

Analysys Mason brings extensive experience in technical operations and commercial models for data-centre operators, gained from projects across global markets with particular depth in European infrastructure development. We have undertaken strategic support, detailed market analysis and due diligence exercises with multiple stakeholders across the AI infrastructure value chain. This expertise positions us to support stakeholders in capturing the unprecedented opportunity represented by Europe's AI infrastructure investment while effectively managing the substantial technical, financial and regulatory complexities involved. For further information on our transaction support services for digital infrastructure, get in touch with Daniel Ponte Fernández.