

BUILDING EUROPE'S DIGITAL SOVEREIGNTY

THROUGH METROPOLITAN
DATA CENTERS

June 2026

 MNES



Data centers are strategic assets: they underpin enterprise IT, cloud services, research computing, and, increasingly, AI inference use cases. As such, they are a key component of Europe's digital sovereignty.

The market gap is material. Europe's installed data-center capacity stands at c.12 Giga Watt (GW), versus c.54 GW in the United States and c.32 GW in China, leaving Europe with roughly a 3x capacity-to-GDP deficit versus the US. To meet projected demand by 2030, Europe will need nearly 19 GW of additional capacity and around €190bn of investment, taking installed capacity above 30 GW. Yet only c.2.5 GW is currently under construction, highlighting both the scale of the shortfall and the depth of the investment opportunity.

The 30GW that Europe needs by 2030 will serve not only AI training but a broad and resilient mix of workloads.

Unlike remote campus-scale projects build primarily for AI training, metropolitan data centers are best positioned to address the diversity of workloads, reaching a broader range of operators and offering alternative development options.

Capturing the metropolitan data centers opportunity requires more than capital. In constrained metropolitan markets, value creation depends on local developers able to source land, secure grid access, navigate complex permitting, and deliver projects with credible time to market. This makes the segment structurally fragmented and operationally demanding, but also highly attractive for investors with genuine energy, real-asset, and digital-infrastructure expertise. In our view, backing local metropolitan developers is one of the most direct ways to convert Europe's sovereignty agenda into operating capacity while generating attractive returns.

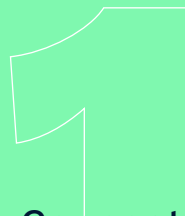
1. WHAT IS A DATA CENTER?



A data center is a physical infrastructure designed to host servers used to store and process data on behalf of third parties. Data centers began to emerge meaningfully in the 1990s, initially to secure the data of major financial institutions. As economies have progressively digitized, companies' data needs have grown rapidly, leading them to increasingly outsource these infrastructures to dedicated sites that offer a higher level of security (physical and power security), operational efficiency (notably cooling), and scalability.

BOX 1_ WORKLOADS

Data centers can address three broad categories of needs, known as workloads:



Connectivity

providing connectivity and networking infrastructure, mostly to telecommunications operators



Storage

providing storage capacity to corporates and public institutions



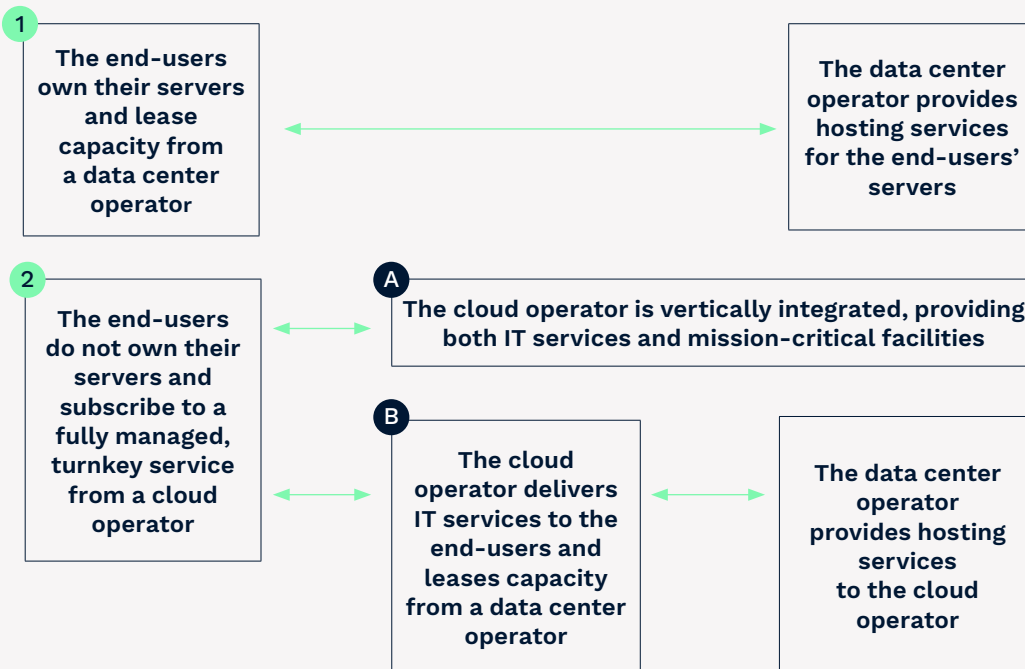
Compute

providing computing power that can serve dedicated customers (aerospace, finance, etc.), AI labs to train their models, and tomorrow the needs related to AI inference (see Box 2).



1. WHAT IS A DATA CENTER?

FIGURE 1_ END USER, CLOUD OPERATOR AND DATA CENTER OPERATOR



The purpose of data centers is to provide secure infrastructure capable of hosting critical IT equipment. Except for vertically integrated operators, data-center operators generally do not own the servers they host. Their model is based on the design, financing, construction, and operation of assets that include:

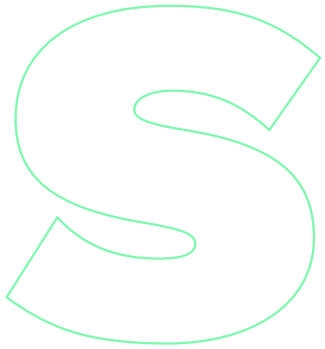
- a secure building;
- fiber connectivity linked to the main Internet exchange points;
- electrical equipment (transformers, distribution systems, batteries, generators, etc.), required to power servers and cooling systems;
- cooling equipment designed to dissipate the heat generated by servers.

FIGURE 2_ CAPEX BREAKDOWN FOR A DATA-CENTER PROJECT – EXCLUDING SERVERS

	EQUIPMENT	SHARE OF TOTAL COSTS
Land	Land plot fully permitted	5% - 15%
Building	Civil works, Building envelope Security & safety	20% - 30%
Power infrastructure	Substation, transformers UPS, batteries Back-ups	30% - 40%
Cooling	Chillers, CRAC, Piping, Water treatment	15% - 25%
Other	Soft costs, Contingencies	5% - 15%

2. WHY ARE DATA CENTERS ESSENTIAL TO PRESERVING EUROPEAN SOVEREIGNTY?

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Since 2020, the issue of sovereignty has come to the forefront in Europe. It first emerged unexpectedly during the COVID crisis, through shortages of masks and medical supplies, and concerns around food self-sufficiency. The war in Ukraine then highlighted a dual dependency: on the United States militarily and on Russia energetically. Finally, geopolitical tensions in the Middle East and recurring threats to the security of the Strait of Hormuz are a reminder that control over strategic territories and infrastructure is a major lever for destabilization in a globalized economy. Taken together, these crises have strengthened awareness of the urgency of preserving Europe's sovereignty and strategic autonomy.

Among the key building blocks of this sovereignty are data centers. This infrastructure is essential to host the data of individuals, companies, and public-sector bodies, and to support the computing and digital simulation capabilities of research laboratories and R&D centers.

It is true that, at the software layer, the United States currently dominate the cloud-services market, with American players accounting for close to 70% of market share in Europe. And when one adds the fact that NVIDIA overwhelmingly dominates the global GPU market, one could conclude that it would be futile to develop data center capacity in Europe since the sovereignty battle has already been lost.

We believe, on the contrary, that Europe's ability to develop and control mission-critical facilities hosting IT infrastructure is imperative for several reasons.

What stands out most when looking at the data center value chain is the degree of interdependence among its participants. Cloud operators and end customers clearly depend on NVIDIA, but NVIDIA itself depends on a small number of critical suppliers, some of them European, such as ASML, as well as on data-center operators that provide the infrastructure required to run GPUs. And while technological disruptions in semiconductors — or even in compute architectures



2. WHY ARE DATA CENTERS ESSENTIAL TO PRESERVING EUROPEAN SOVEREIGNTY?



such as quantum computing — could alter competitive dynamics over time, it is clear that the power and cooling infrastructure owned and operated by data-center operators, and required to support computing capacity, will remain a critical link in the value chain.

Second, locating data in assets subject to the European legal framework provides a lever to limit exposure to extraterritorial legislation. Even when hosting international customers, European data-center operators comply with the GDPR and national laws, thereby strengthening the legal protection of data hosted on European soil.

Finally, recent conflicts have highlighted the growing vulnerability of digital infrastructure, now recognized as critical infrastruc-

ture in the event of crisis or conflict. Relying on capacity located in geographies exposed to geopolitical tensions can therefore represent a direct risk for European corporates and public-sector bodies. Conversely, locating this infrastructure within Europe strengthens collective control over these strategic assets.

This sovereignty imperative is increasingly reflected in the European regulatory framework. Beyond the GDPR, the EU Data Act (applicable since September 2025) reinforces user control over industrial and machine-generated data and constrains non-EU access. The NIS2 Directive classifies data centers as essential entities, imposing heightened cybersecurity, resilience, and incident-reporting obligations. The AI Act introduces additional requirements for

the infrastructure underpinning high-risk AI systems. Together, these frameworks raise the bar for operators and reinforce the structural advantage of Europe-based, EU-compliant infrastructure in terms of resilience and cybersecurity.

The challenge for Europe in the years ahead is therefore clear: it must ensure that European data-center developers are sufficiently capitalized to retain control over the capacity that will be built across the continent. Private equity can play a highly effective role in this effort by backing the right operators and putting in place alignment mechanisms that support the long-term development of the European ecosystem.

3. €190BN REQUIRED BY 2030 TO MEET GROWING DEMAND IN EUROPE

3.1 CURRENT CAPACITY SHOWS THAT EUROPE IS SIGNIFICANTLY BEHIND THE US AND CHINA

Europe is significantly behind the United States and China. In absolute terms, installed capacity in 2025 totals c.12 GW in Europe versus c.32 GW in China and c.54 GW in the United States¹. Even when adjusted for Gross Domestic Product (GDP), the gap remains very significant, showing that the European economy is behind in digital infrastructure. At comparable GDP, the US has 3.1x more digital capacity and China 2.9x more. In this respect, Europe is therefore largely dependent on others' capacity.

The gap is set to widen further when capacity under construction is taken into account, as less than 2.5 GW is currently under construction in Europe versus more than 25 GW in the United States and around 8 GW in China².

FIGURE 3_ CURRENT DATA CENTER CAPACITY PER GDP UNIT³

	EU	US	CHINA
Current capacity- GW	11.9	53.7	31.9
GDP - \$tn	21.1	30.6	19.4
DC capacity per unit of GDP	0.6	1.8	1.6

¹Source : International Energy Agency

²Source : Cushman Wakefield, RystadEnergy

³Source : International Monetary Fund GDP figures as of 2025

3.2 STRONG GROWTH DRIVEN BY RESILIENT, LONG-TERM DEMAND DRIVERS

Demand for data-center capacity in Europe is going to grow very significantly in the coming years. This demand will not be driven primarily by AI, but by traditional workloads—more specifically IT outsourcing. Most European markets have not yet reached maturity in this respect; although there are meaningful differences across countries, cloud spending as a share of GDP in Europe is on average about half that of the United States. In addition, the reshoring of data currently hosted outside Europe into Europe-based data centers—already

underway—will accelerate in the coming years, particularly for companies handling sensitive data.

AI-related needs—and more broadly High Power Computing—should account for less than 40% of the 19 GW of additional capacity. This forecast is fairly volatile, as it depends in particular on the pace of adoption of AI inference workloads, which remain nascent today, even though they should ultimately represent the vast majority of AI-related compute demand (see box 2).



3. €190BN REQUIRED BY 2030 TO MEET GROWING DEMAND IN EUROPE

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BOX 2_ AI: TRAINING VS. INFERENCE

The development of artificial intelligence relies on two distinct stages. Training consists of “educating” a model by feeding it massive volumes of data so it learns to recognize patterns in language. It is a one-off process, extremely compute-intensive, that needs to be performed only once for each model generation. Inference, by contrast, refers to the day-to-day use of the model once trained: every question asked to an AI assistant, every medical diagnostic aid, every optimization of an industrial logistics chain is an act of inference.

Today, training dominates demand for AI infrastructure, because we are still in a model-building phase for foundation models. However, this dominance is by nature temporary. As models stabilize and their use becomes widespread across the economy, inference will become the main growth driver for data-center demand, because it is directly

proportional to the number of users and real-world use cases. In Europe, inference is expected to represent more than half of outsourced AI demand as early as 2030. And this trend will only intensify over the next ten to twenty years, as artificial intelligence becomes embedded across every facet of economic and daily life — from health to education, industry, and public services.

This shift has a major implication for infrastructure. Training, which is less sensitive to latency, can be carried out in remote data centers. Inference, however, requires data center capacity close to end users, because it is subject to strict latency constraints and therefore to geographic proximity to population and economic activity hubs.



3.3 A DEEP, LARGELY UNTAPPED DEVELOPMENT OPPORTUNITY

Delivering the 19 GW of new capacity and €190bn of investment needed by 2030 implies a sustained build-out pace over the next five years. Yet only 2.5 GW is currently under construction, and less than 10 GW is in development⁴— part of which will not cross the finish line due to grid constraints, complex regulations, stakeholders’ management, and other hurdles.

The development potential therefore remains very deep in Europe, all the more so as additional capacity required beyond 2030 is expected to increase even more significantly.

⁴ Projects with an identified site, and a plan for development but not yet in construction

4. THE METROPOLITAN DATA-CENTER SEGMENT OFFERS AN ATTRACTIVE RISK/RETURN PROFILE

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Projects designed to meet the needs of AI model training are not constrained by latency or proximity to end customers (see *Box 2*). They therefore have moved to increasingly remote areas where land is inexpensive and power is abundant. However, these projects—campus-scale, as they can reach several hundred MW and even exceed the GW threshold—can only address a limited set of workloads and, moreover, serve mostly the needs of non-European players.

Conversely, the metropolitan data-center segment is far more resilient. These assets are located close to major metro areas and are designed to handle most workloads generated by the real economy: connectivity, data storage, and inference. The demand side of metropolitan capacity encompasses:

- Cloud and colocation providers deploying edge and availability-zone nodes close to end users;
- Telecom and network operators anchoring interconnection points;
- Corporates handling latency-sensitive workloads (e.g. financial sector, traffic management, etc.) ;
- Latency-sensitive AI inference workloads (e.g. autonomous vehicle, robotics in the industry, advanced telemedicine, etc.)

This breadth of demand underpins the resilience of the metropolitan segment and reduces concentration risk.

From an investor's perspective, this segment is highly attractive: projects address a broader portion of the market—hence a wide universe of customers and buyers—and land located near metropolitan areas has intrinsic value and offers great optionality and alternative-use potential.



4. THE METROPOLITAN DATA-CENTER SEGMENT OFFERS AN ATTRACTIVE RISK/RETURN PROFILE

BOX 3_ POWER AND SUSTAINABILITY

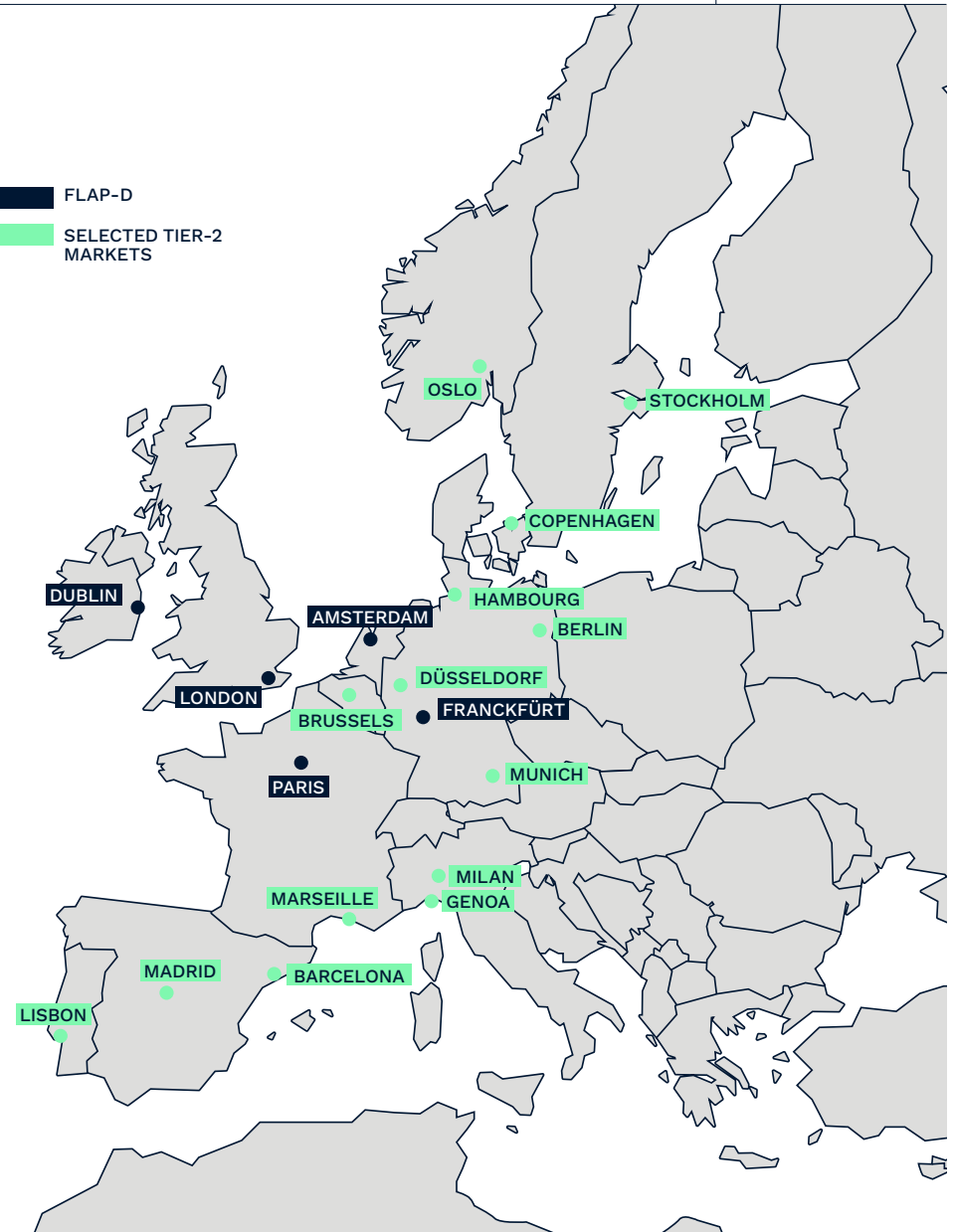
As of now, power availability is the single most binding constraint on metropolitan data-center development, and sustainability has shifted from a marketing topic to a hard operating and regulatory requirement.

Three dimensions matter in practice. First, energy efficiency: best-in-class metropolitan facilities now target a PUE (Power Usage Effectiveness) below 1.3, versus a European average historically closer to 1.6. Second, decarbonization: low-carbon PPAs are becoming standard to secure long-term

power and meet customers' Scope 2 commitments. Third, heat reuse: in dense urban environments, connecting data centers to district heating networks turns a waste stream into a local utility — already mandatory in some jurisdictions (Germany's EnEg requires heat reuse for new builds above 1 MW starting in 2026) and increasingly expected elsewhere. In this context, operators able to combine grid access, renewable sourcing, and heat reuse will hold a structural edge in securing both permits and customers.

The market potential for metropolitan data centers is substantial. We estimate that by 2030, the capital required for this segment will reach €115bn to address the needs of Europe's main metropolitan areas. These needs are spread not only across already established markets (FLAP-D) but, due to constraints on land and power grids, also across other fast-growing markets (Milan, Oslo, Berlin, Marseille, etc.) that concentrate economic activity, population and connectivity.

■ FLAP-D
■ SELECTED TIER-2 MARKETS



5. LOCAL DEVELOPERS ARE A KEY PART OF THE VALUE CHAIN



In these areas, opportunities are more complex to capture than in very remote locations: land is scarcer; it is sometimes already developed/built; regulations are numerous and complex; power is harder to secure; and developers must be able to navigate between the DSO⁵ and the TSO⁶ to optimize supply and align it with customer needs.

In these conditions, local developers and operators—with boots on the ground and direct access to stakeholders (utilities, municipalities, local players)—are best positioned to seize the most attractive development opportunities. These developers identify sites with proven commercial potential and with zoning compatible with a data-center project, negotiate with grid operators to secure access to energy with an optimized time to market, and obtain the necessary administrative authorizations.

Local developers are therefore a key part of the value chain, since they control the essential “raw material” on which the data-center market depends. This is also why major international operators regularly form partnerships with these developers to secure the upstream part of the value chain.

The developer market is inherently fragmented, because required skills are tied to local ecosystems: regulatory knowledge, stakeholder management, site identification, and so on. Developers come from the digital world, but also from energy (notably renewables) and from logistics. Indeed, development cycles for logistics and data-center projects are similar: in both cases, projects are large-scale, shape the regions where they are built, and require numerous environmental and planning permits.

Supporting these developers effectively requires a granular understanding of the project development cycle, particularly its energy and real-asset components, in order to optimize the risk/return profile.

This is where Omnes' dual expertise in energy and metropolitan real asset development gives us a clear edge in identifying, funding, and supporting local operators — and, ultimately, in strengthening Europe's digital autonomy.

⁵ DSO (Distribution System Operator) and ⁶ TSO (Transmission System Operator)

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