IRON MOUNTAIN®
DATA CENTERS

INFRASTRUCTURE PLANNING REPORT

# EMEA – MADRID

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Iron Mountain Data Centers (IMDC) has compiled this Infrastructure Planner to give you a balanced overview of key colocation markets - their strengths and weaknesses, and the latest issues and opportunities.



IRON MOUNTAIN®
DATA CENTERS

# EUROPEAN **INFRASTRUCTURE**

## 2020 to 2028

**EU** colocation growth will **ACCELERATE** at a **CAGR** of almost **13%**

**EU** Colocation **MARKET VALUE** **30B**

**44%** of the growth will originate from **IT SERVICES**

With surging demand, colocation data center investment in Europe is reaching record highs. According to Grand View Research, the European colocation market will expand at a CAGR of over 13% percent over the next few years to reach a value of over $30 billion by 2028.

Colocation users in the region can currently be divided in half in terms of spend: Retail colocation users are enterprises and organisations who expect a fully managed and serviced facility. Wholesale users – mainly hyperscale cloud businesses like AWS, Google, Apple and Microsoft - contract core design and build and manage the fit-out and operations themselves.

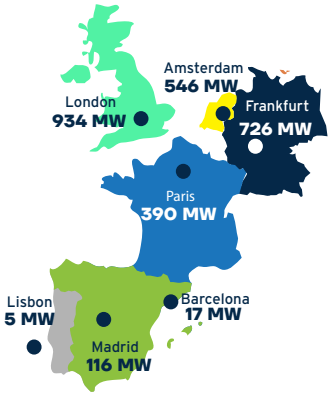
GDPR, the latest set of European Union data regulations, is driving the dissemination of data into a larger number of facilities in different countries, by stipulating that data is stored in the country in which it is generated. Edge growth – the movement of data closer to the 'edge' of the Internet to support high-speed high-bandwidth applications such as IoT and AR/VR running on 5G networks – is also driving a new disseminated build pattern.

However, the vast majority of colocation space in Europe – around 70% of capacity - is still concentrated in four cities - Frankfurt, London, Amsterdam and Paris. These top data center markets are known as the FLAP region. Between them they now offer more than 2,000 MW of capacity.

**SOUTHERN EUROPE**

While Southern Europe used to be bypassed by intercontinental connections, the situation has been changing fast, with data and supporting infrastructure CAGR exceeding that in the FLAP region at around 20%. New international gateway metros are emerging to handle increasing amounts of data from the 50 plus subsea cables that land in the south, connecting Europe to the Middle East and Asia, Africa and North and South America. The fastest-growing gateways are Marseille, Milan, Sofia and Madrid.

**IT SUPPLY (MW) IN MAIN EUROPEAN MARKETS (2022)**




source: CBRE

# THE **MADRID** MARKET

Due to its strategic position, high and growing levels of local traffic, and advanced digital infrastructure, Madrid is a fast-growing hub for Southern Europe.

With six million residents and accounting for 20% of Spanish GDP, the city offers solid macroeconomic fundamentals, an appealing real estate market, a growing and competitively-priced green energy market, and major cloud potential. As it handles growing intercontinental data flows, it has the potential to become Southern Europe's new data hotspot.

**EXPONENTIAL EXPANSION**

There have been many major recent commitments from data center service providers to new infrastructure in the region, with a wide range of new facilities either announced or under construction. According to CBRE Data Center Solutions, if all current expansion projects are taken into account, Madrid has the potential to grow its 2022 capacity of 116 MW of IT supply to 435 MW by end 2024, allowing Madrid to catch up with the FLAP markets, achieving a similar level of capacity to Paris.

**CLOUD ZONES**

All of the hyperscalers have confirmed that Spain is a priority for expansion. There is a Microsoft Cloud Region in Madrid; the city hosts IBM's first Spanish Multi-Zone Cloud Region (MZR - in Madrid, Las Rosas and Alcobendas); Meta is developing a large campus in Toledo and a 2,000-employee Meta Lab in Madrid; AWS is building a data center in Aragon with a €2.5 billion local 10-year investment plan; Google is building Spain's first Google Cloud Region there and Oracle recently opened a Madrid Oracle Cloud Infrastructure (OCI) region.

**SITE DISTRIBUTION**

The majority of data centers are spread across a low-latency 'golden triangle' which overlaps with these cloud availability zones. They are distributed close to the city center to the north and north east of Madrid. There are notable clusters in Tres Cantos and Alcobendas to the north and Simancas and San Blas Canillejas and San Fernando de Henares further south, with some developments further east extending out further to the town of Alcala de Henares.

# ISSUES & **OPPORTUNITIES**

Madrid is a dynamic and exciting infrastructure destination. Some of the key issues and opportunities worth considering are:

**PRICING**
Madrid colocation pricing is competitive compared to the FLAP markets. A typical mix of services in Madrid costs less than in Frankfurt, Amsterdam, Paris or Milan and up to 90% less than London. IP transit prices in Madrid are also now comparable with the most competitive markets in Europe, a key factor in promoting local data transactions.

**DOMESTIC INFRASTRUCTURE**
In recent years Spain has been investing heavily in domestic data infrastructure. It now has the highest FTTH (fiber to the home) penetration rate of any country in the European Union. Ultrafast broadband covers 87% of the country, compared to 60% across Europe as a whole. Spain ranks eighth among countries best prepared for 5G technology deployment, having auctioned 30% of its frequency spectrum compared to an average of 14% in the EU. 5G is currently available to the majority of the population.

**TRANSFORMATION GAP**
The Spanish public and private sector still have to cover a lot of ground to digitally transform, but progress is accelerating. Spanish enterprises are migrating many of their IT workloads to the cloud, and the Spanish government is aiming at a 20% reduction in CO2 emissions via increased energy efficiency due to digitization. The Spanish smart cities program and other initiatives are part of a massive digitization of the public sector, with digital services rising from <10% to 50% as a proportion of total public services.

**SUSTAINABILITY TARGETS**
At the EMEA level, The European Commission's 2020 paper "Shaping Europe's Digital Future" states that data centers must be carbon-neutral by 2030. Many of Europe's major data center operators, including Iron Mountain Data Centers, are already in step with this, having signed the Climate Neutral Data Centre Pact, initiated by EUDCA.

Like Iron Mountain Data Centers, most data center providers in Europe already use sustainable energy sources. Wind and solar are the top renewable energy sources at present, and there is work being done with hydropower and other forms of renewable energy. However, there is always more that can be done, such as sharing carbon credits with customers to encourage a greener grid, reducing embodied impact through Asset Lifecycle Management, and achieving 24x7 renewable power usage.


# POWER & **INTERCONNECTIONS**

For a long time Spain lagged behind other European countries in terms of digital infrastructure and transformation. The latest growth phase creates both challenges and significant potential for power and interconnection.

**POWER PLANNING**

The rapid build-out of power-hungry data centers is not something which has been integrated with Madrid's metropolitan infrastructure planning. Ensuring adequate capacity requires long-term investment and negotiation.

**RENEWABLES**

The green grid in Spain is advanced and expanding fast. In 2021 renewables generated 46.7% of Spain's electricity needs, the majority from wind (23.3%), followed by hydroelectric (11.4%), then solar (9.9%).

**INTERCONTINENTAL CROSSROADS**

Madrid is the largest interconnection hub on the Iberian peninsula, with around three times the capacity of Barcelona, the next largest hub. Peering takes place locally at two key Internet Exchanges - Espanix and DE-CIX, both handling volumes of over 1 Tbps.

Madrid's international Internet landscape has also seen a significant shift. The Madrid metro's connections to North Africa have accelerated more than 70% compounded annually over the last five years, and now account for over 10% of Madrid's international connectivity.

Capacity between Madrid, the US and South America is also growing fast. While other connectivity hubs in Europe approach saturation point, recent submarine cables are growing Madrid's international backbone. Marea (Vizcaya - Virginia), EllaLink (Madrid-Lisbon-Sao Paulo) and Orval (Valencia-Algeria) and the new 2Africa cable have significantly strengthened Spain's transatlantic and North African routes. The planned 3A route connecting Bilbao with Hong-Kong will also add stronger connectivity between Europe and Asia

# IRON MOUNTAIN DATA CENTERS **IN MADRID**

IMDC operates MAD-1, on what is potentially the largest data center campus on the Iberian peninsula. The facility is just north-east of the city in Madrid's 'Golden Triangle' (within hyperscaler availability zones and close to the city center) just 10 minutes from Barajas International Airport.

## MAD-1

MAD-1 is a purpose-built 4,000 m2 facility on the 60,000 m2 San Fernando Park campus. The campus is in an emerging industrial area ("Corredor del Henares") with excellent road and rail communications.

The 3 MW data center is currently being upgraded to 10 MW, with further rapidly-phased expansions planned to fully build out the campus in the pipeline.

A carrier-neutral facility, MAD-1 is located on top of the main Barcelona-Madrid fiber backbone, the highest-capacity fiber highway in the country. It offers a wide range of competitively-priced connectivity options.

Powered by 100% renewables, current PUE is 1.4 and will fall as new capacity comes online.

The campus has huge potential, with power allocated for the development of up to 131 MW (with approximately 79 MW of IT load). At full build-out the MAD-1 campus will be the largest in Spain.

# ABOUT IRON MOUNTAIN DATA CENTERS

Iron Mountain Data Centers operates a global colocation platform that enables customers to build tailored, sustainable, carrier and cloud-neutral data solutions. As a proud part of Iron Mountain Inc., a world leader in the secure management of data and assets trusted by 95% of the Fortune 1000, we are uniquely positioned to protect, connect and activate high-value customer data. We lead the data center industry in highly regulated compliance, environmental sustainability, physical security and business continuity. We collaborate with our 1,300+ customers in order to build and support their long-term digital transformations across our global footprint, which spans three continents.

**IRONMOUNTAIN.COM/DATA-CENTERS**

To discuss your plans and requirements please contact us on:

US: +1 833 476 2656
NL: +31 800 272 4433
UK: +44 844 417 8379
DE: +49 800 408 0000

Email: **datacenters@ironmountain.com**

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