

Q2 2021

EUROPE DATA CENTRES

FRANKFURT, LONDON,
AMSTERDAM & PARIS MARKETS

CBRE

FLAP DATA CENTRE MARKETS EASE IN Q2 FOLLOWING RECORD Q1



Colocation supply
2,029MW (+17.0%)



Colocation availability
402MW (+13.1%)



Quarterly take-up
48MW (-47.6% QoQ)

Note: Arrows for supply and availability indicate change from same quarter in previous year. For take-up, this is based on the previous quarter.

RECORD START FOR 2021

- Q2 was a quieter quarter for the market after a record Q1. Data centre supply across FLAP, however, did surpass 2,000MW for the first time, having grown by 51MW.
- Activity is expected to regain pace in Q3. CBRE expects the market to see significantly more supply come online during H2 (256MW) than the 186MW that came online in H1. Supply-constrained Frankfurt will see the largest amount of new projects with more than 120MW yet to come online.
- A high number of pre-lets means FLAP is also likely to see more take-up during H2 (229MW) than in H1 (141MW).
- Providers are overall expecting a busier Q3, with many saying supply-chain challenges for IT equipment and mechanical and electrical equipment have continued to push out deals and deployments.

MARKET HIGHLIGHTS

- Equinix announced 32 xScale data centres with GIC, 19 of which are in Europe. They are five in Frankfurt, four in Madrid, three in Dublin, two each in London and Madrid, and one each in Helsinki, Milan and Warsaw.
- In the London market Global Technical Realty announced a 40.5MW campus in Slough due online in Q4 2022 and Iron Mountain announced a second data centre LON 2 (27MW) also in Slough. Pure Data Centres announced a 50MW campus at Borehamwood.
- DATA4 Group secured €620m in debt financing to pursue growth across Europe including entry into Warsaw with a 50MW campus.
- Interxion, a Digital Realty Company, broke ground on its fourth facility in Marseille and connected its portfolio of data centres in London with fibre creating a virtual campus.
- NTT announced new data centres at its campuses in Frankfurt, Bonn and Berlin.

Figure 1: FLAP market supply and take-up 2020 actual versus full-year 2021 forecast

YEAR	NEW SUPPLY	TAKE-UP
2020	173 MW	201 MW
2021F	442 MW	370 MW

Source: CBRE Research, Q2 2021

CLIMATE-CONSCIOUS COMMITMENTS & PACTS

The world has been turning its attention to the dramatic consequences of climate change. On a macro and micro level, this has put energy-intensive data centres under a spotlight. During Q2, a large number of providers across Europe made pledges towards sustainability, efficiency and renewable energy use. The European Climate Neutral Data Centre Pact also took its proposals to the EU with a pledge to make the sector climate neutral by 2030.

Providers that made individual pledges include:

- Equinix (commitment to be climate-neutral across operations and supply chain by 2030)
- CyrusOne/Colt (100% renewable power)
- DATA4 (joined French Planet Tech'Care manifesto to reduce environmental impact)
- Iron Mountain (tracking renewable power use by the hour)
- Digital Realty (signed up to Science-Based Targets Initiative for sustainability)

Efforts being made by providers include signing up to use renewable power only, district heating initiatives, reduced water use, green buildings and supply chain efficiencies.

SUPPLY

More than a year on and COVID-19 continues to impact the market. While many providers have found ways to adjust to limited staff on site and construction constraints, they are still suffering supply chain impacts, especially with regards to components used for M&E equipment. Customers are also suffering supply chain shortages for equipment, which is delaying the signing of some contracts partly due to global chip shortages for servers. Add European summer holidays post an incredibly busy record Q1 and you have a recipe for a slower quarter. Next quarter looks different. Providers expect to bring 130MW online, just short of the 136MW seen during Q1.

For the full year we expect to see 442MW come online, more than double that seen in 2020 and more than the last record year of 2019 which saw around 320MW come online.

The cost of bringing new supply online, however, is changing. COVID-19 along with other events have led to an increase in construction costs by as much as 10-15%. This is leading many providers to further consider designing new elements of efficiency into the build.

Q2 and forecasted build activity

Frankfurt

Supply was added at China Mobile, Interxion (FRA15) and NTT Global Data Centers (FRA4). We expect to see a further 125MW come online before the end of the year.

London

China Mobile brought 10MW online at its Slough data centre and Volta added 1.8MW in London. The rest of London's supply additions were small expansions. We expect to see a further 31MW come online in London before the end of the year.





Amsterdam

Similar to previous quarters, the Amsterdam market saw mostly smaller retail colocation expansions. We expect to see a further 64MW come online this year.

Paris

Paris saw some smaller retail colocation additions taking it to an additional 3.8MW but we expect to see the market grow a further 35MW by the end of this year.

Figure 3: New Supply in Q2

MARKET	Q2 NEW SUPPLY
 Frankfurt	30 MW
 London	14 MW
 Amsterdam	3 MW
 Paris	4 MW

Source: CBRE Research, Q2 2021

Figure 2: FLAP market full-year supply and forecast supply as of Q2, 2021



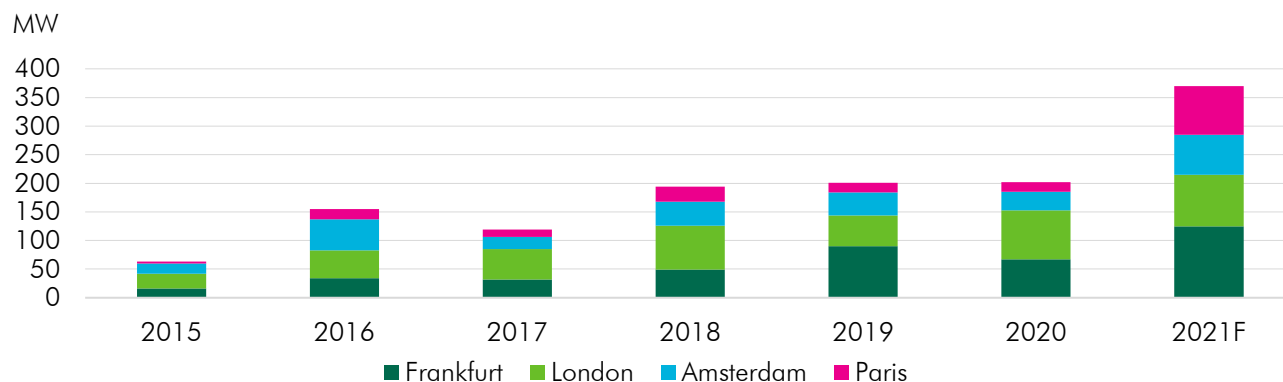
Source: CBRE Research, Q2 2021

TAKE-UP & PRE-LETS

Q2 saw just over half the record take-up realised during Q1 (48MW compared to 92MW). This is no indication of the year ahead, with full-year take-up of 370MW expected and a high number of pre-lets backing this high figure.

While cloud – in particular hyperscale cloud but also growing SaaS and other deployments – still makes up a large share of demand in terms of MW, the number of technology, enterprise and other deals also appears to be growing. Demand through Q2 included a broad mix of customers and many providers say they expect to see even more deals from customers that aren't hyperscalers eventuate during Q3. Enterprises, in particular, are continuing their digital transformation post-COVID, working with managed service providers and others to deploy for a post-COVID working environment. In some markets we have even seen an increase in cabinet-sized deals as companies move servers out of the office and into the data centre as they adopt work-from-home strategies. Through Q2, we have also seen an increasing interest in the FLAP markets from Asian hyperscale/Internet companies rolling out in line with China's Belt and Road initiative.

Figure 4: FLAP market take-up



Source: CBRE Research, Q2 2021

Q2 activity

London

Deals ranging from 1kW to 19MW. Cloud made up around 20MW of demand and the rest was technology, managed services, research and education and media, film and telco.

Frankfurt

Deals from 40kW to 12MW with cloud accounting for almost 17MW and the rest being technology and content related deals.

Paris

Deals ranging from 100kW to 1.3MW all being corporate or technology.

Amsterdam

Small number of deals ranging from 88kW to 1MW covering cloud and other mixed sectors.

Deals signed

62MW of deals have been signed so far this year have been for deployment in 2021, a further 144MW has been signed for deployment in 2022 and beyond taking the total number of deals signed to-date to 206MW.

Figure 5: 2021 forecasted take-up, pre-lets and new deals



Source: CBRE Research, Q2 2021

Pre-lets are take-up that has been signed for future months, or years. CBRE attributes take-up once a facility comes online. The Take-Up YTD bar above highlights the mix of pre-lets and new deals that have come online so far this year. The Forecast Take-Up bar shows what is expected through the remainder of the year.

Q2 2021

This year's take-up so far has included almost 80MW of pre-lets. We forecast there are more than 130MW of pre-lets to come online this year.





VACANCY

Vacancy rates across FLAP combined remained relatively stable during Q2. They rose slightly in the supply-constrained markets of Frankfurt and Paris by 2% in each market. Vacancy declined by 2% in London and remained stable in Amsterdam.

Wholesale and retail providers operate in two very different markets in terms of vacancy. The wholesale market saw vacancy decline from 24% in Q1 to 22% while new retail colocation supply contributed to a rise in vacancy across FLAP from 15% to 17%.

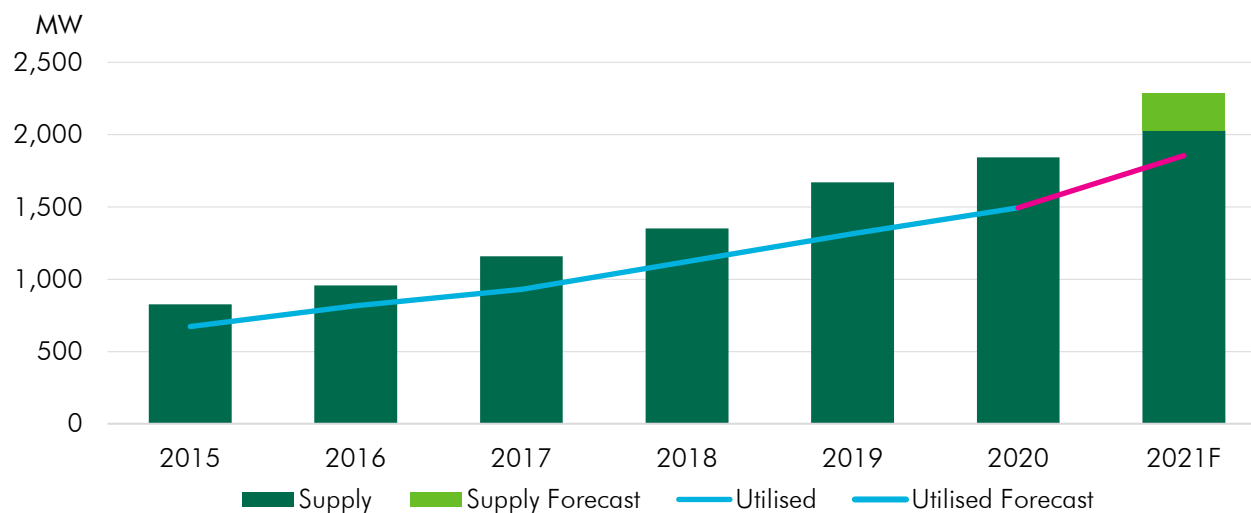
London's wholesale vacancy saw the largest shift from 28% to 25% while retail colocation vacancy in Frankfurt rose from 13% to 19% and in Paris from 13% to 17%. These shifts show that after quarters of supply constraints, there are now more opportunities in these markets for smaller enterprise and other deals.

Figure 6: FLAP market vacancy rates Q2 2021

MARKET	Q2 VACANCY	CHANGE ON Q1
 Frankfurt	13%	▲
 London	23%	▼
 Amsterdam	27%	▶
 Paris	12%	▲

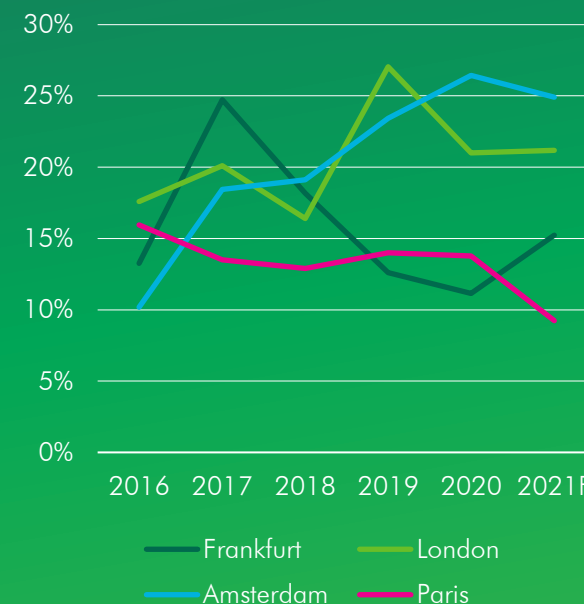
Source: CBRE Research, Q2 2021

Figure 7: FLAP market supply and utilisation



Source: CBRE Research, Q2 2021

Figure 8: FLAP market vacancy rates Q2 2021



Source: CBRE Research, Q2 2021



FRANKFURT

Frankfurt is expected to see more than 100MW of supply come online in H2 and just under 100MW of take-up. This could lead to continued supply constraints through to 2022. The Frankfurt government is also looking to place constraints on new build activity with a development agenda now being considered that will impact how and where data centres are built and how many resources they consume.

Market opportunities

Through Q2 we have continued to see increasing interest from cloud platform providers, gaming companies and Chinese hyperscale providers and enterprise and other clients.

Market challenges

The possibility of government restrictions on build activity and increasing construction costs and a lack of supply.

Total supply
500MW

Absorption
1.2 years

Vacancy
65MW



LONDON

London has seen a slight increase in demand, mostly from smaller retail colocation deals, some that are ending up in wholesale facilities with pockets of supply to spare.

Managed service providers and others helping customers through digital transformation projects have also been expanding and taking on new supply.

Market opportunities

London continues to see an increase in enterprise interest after Brexit and COVID-19. Hyperscalers are still seeking supply and many providers expect to see an increase in hyperscale deals through Q3.

Market challenges

Hyperscale self builds, build-to-suit activity, as well as challenges around access to land and power and increasing construction costs.

Total supply
810MW

Absorption
2.9 years

Vacancy
184MW



AMSTERDAM

Demand is increasing for non-hyperscale opportunities though a number of large pre-let facilities for cloud are scheduled around Schiphol-Rijk this year. Amsterdam has seen only 23MW of the 88MW scheduled to come online this year and 12MW of the forecast 70MW take-up. Many deals signed of late are below 1MW, for a mix of enterprise and hosting clients.

Market opportunities

Increasing interest from cloud platform providers building out availability zones, AI, IoT, media and hosting companies.

Market challenges

The market is overcoming challenges around power, planning and has limited hyperscale demand. Hyperscalers are also impacted, and some could use colocation to overcome constraints offering new market opportunities.

Total supply
446MW

Absorption
3.2 years

Vacancy
121MW



PARIS

Paris saw record take-up in Q1 (an annual and quarterly record) of 43MW but only 4MW during Q2. Providers expect to see increased activity during the remainder of the year with a further 39MW of take-up exceeding supply additions of 35MW. This will lead to a decrease in Paris vacancy to 9.3%.

Both hyperscale and enterprises are very active in this market as well as government customers and many providers are building out or seeking land to service these requirements.

Market opportunities

There are a high number of sub-2MW requirements in the French market right now including deals with French companies requiring dual sites and options right across the French market.

Market challenges

Competitive site selection and access to power.

Total supply
273MW

Absorption
1.8 years

Vacancy
32MW

NORWAY – A COUNTRY FIT FOR DATA CENTRE GIANTS

Norway is a data centre market that has been gaining more attention lately due to the country's positioning as a renewable energy production hub.

Like other Nordic locations, Norway's government has recognised the potential of data centres to fill a gap left as other energy-intensive industries wind down – from mining to forestry and paper mills. Now, as hyperscalers and other customers explore regions beyond FLAP, the government's efforts are starting to pay off with the Norwegian leased data centre market being set to grow by nearly 100MW by 2024, taking total market supply to more than 200MW for both retail and wholesale colocation.

The surge in new supply is linked closely to demand, with Norway currently having a vacancy rate of 24%. Enterprise and cloud customers are finding Norway's business environment makes it easy to deploy, and low-cost energy brings about efficiencies as well as enables companies to meet sustainability targets that are becoming increasingly important in today's climate-change-conscious world. Norway is part of the European Economic Area which provides it access to the European Union single market but is not part of the constitution which brings some ease in doing business. Increasing M&A activity is also driving market interest (recent acquisitions include Lefdal Mine, now owned 75% by Columbia Threadneedle, DigiPlex, now owned 100% by IPI, and Green Mountain, now owned 100% by Azrieli).

Take-up

The Norwegian leased data centre market saw 36MW of take-up in the last two years, and we suspect the majority of this can be attributed to international business. Companies taking data centre supply include Microsoft which has deployed an availability zone (AZ) to serve the Nordics. Many other hyperscalers are showing continued interest in the market, however, are yet to deploy regions or zones.

The market is currently being driven by larger deals that can benefit from deploying data centre environments at scale with lower costs. The wholesale colocation market accounts for 83% of take-up this year and CBRE expects it will reach above 90% in 2024.

Electricity market

The Norwegian data centre market is considered a gateway to sustainability and Environmental, Social & Governance (ESG) targets. Many traditional enterprise customers have deployed their less latency or security-sensitive operations to Norway, especially those environments that require high density supply, such as artificial intelligence (AI) or high performance compute (HPC) functions.

Norway's mostly hydro-powered electricity grid has been designed to cater for large electricity demand across the country and the wider Nordic region. Norway benefits from being able to resell excess electricity through its brokerage platform Nord Pool, where day-ahead pricing is offered to local electricity providers to purchase. This is despite the large consumption within country from energy intensive industries such as data centres, mining and engineering. The grid is more than capable of sustaining continuous reliable energy in a sustainable way.

Connectivity

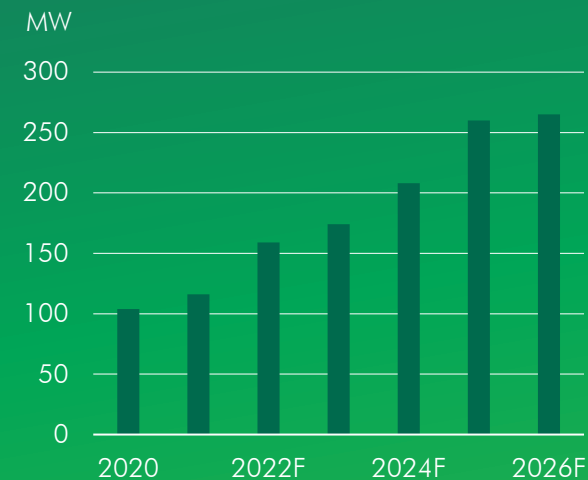
Norway's fibre connectivity is not as robust. As a result, the country has a reliance on partnerships with private sector organisations to upgrade the network. This can be seen with the recent infrastructure upgrade by BULK Infrastructure, where new HAVFRUE subsea fibre connectivity has been delivered to Norway.

Data centre developments are primarily focussed around Oslo, however, there have been some deployments in the western region of Stavanger and Måløy. These sites serve cloud and HPC among other deployments, offer good subsea connectivity and have access to cheaper power.

For more information on CBRE's detailed report on Norway, or other market reports available, contact:

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Figure 9: Norway leased data centre supply forecast 2020-2026



Source: CBRE Research, Q1 2021

CBRE'S PREMIER COLOCATION REPORT

CBRE has created the sector's Premier Colocation Report to provide the industry with the most in-depth market analysis in Europe. The report provides access to the key metrics specific to the Frankfurt, London, Amsterdam, Paris and Dublin (FLAPD) market on a quarterly basis.

This data includes: take-up, supply, availability, absorption (all of which are forecasted) as well as market maps, new schemes in the supply pipeline, colocation pricing analysis and occupier and investment commentary. It also provides insight into hyperscale activity.



For more details or to register for a demo of the report click here



Click here to download the full Premier Colocation Report

CONTENTS		MARKET VIEW	PREMIER SUBSCRIPTION
Supply	Aggregated, annual and YTD – chart	✓	✓
Let and available capacity	Aggregated, annual and YTD – chart	✓	✓
Take-up	Aggregated, annual and YTD – chart	✓	✓
High-level market commentary and quarterly highlights		✓	✓
Key metrics			
Key metrics	by market, current quarter – table		✓
Supply	by market, annual and YTD – chart		✓
Let and available capacity	by market, annual and YTD – chart		✓
Take-up	by market, annual and YTD – chart		✓
Net absorption	by market, annual and YTD – chart		✓
Supply projection, 2 years	by market, annual – chart		✓
Vacancy projection, 2 years	by market, annual – chart		✓
Take-up projection, 2 years	by market, annual – chart		✓
Market balance analysis	by market, annual and YTD – chart		✓
Supply pipeline, 2 years	by market – table		✓
Market map: key colocation hot spots in the market	by market – map		✓
Colocation pricing	by market, annual and YTD – table		✓
Detailed market commentary and quarterly highlights			✓
Occupier focus			
Occupier take-up review and trends			✓
Colocation pricing analysis			✓
Leading market focus			✓
Investment focus			
Corporate M&A tracker			✓
M&A market commentary			✓
Investment market commentary			✓
+ All charts and data available by individual market			✓
+ Data table with time series available for all charts			✓
+ Wholesaler and retailer split where appropriate			✓
+ Data tables available in Excel for in-house design and analysis			✓

DEFINITIONS



SUPPLY

Retailer colocation supply comprises fitted data centre space only – unbuilt shell phases of the data centre are excluded.

Wholesaler colocation supply includes both fitted and shell data centre space. Typically wholesale operators sell shell space which is built out to suit customers.



AVAILABILITY

Retailer availability of space is based on fully fitted space, vacant and available to sell.

Wholesaler availability is based on all vacant space.



VACANCY RATE

The vacancy rate is a product of availability/total supply.



COLOCATION TAKE-UP

This comprises data centre space sold at retailer and wholesaler colocation facilities in the relevant quarter.



FLAP (MARKETS)

The four largest colocation markets in Europe. FLAP is an acronym of Frankfurt, London, Amsterdam and Paris.



EUROPEAN DATA CENTRES

We use the four largest markets in Europe: Frankfurt, London, Amsterdam and Paris (FLAP Markets) to represent the European colocation market.



MARKET ABSORPTION

Market Absorption is the number of years it would take current vacant supply to be fully let based on the fixed average take-up of the previous five years (i.e. not including take-up in the current year).



SPACE TYPE

Shell: shell & core space is the base real estate of a data centre, a wind and watertight structure with exposed floor and ceiling slabs and exposed finishes to the walls. The landlord obtains permissions for data centre use and makes provisions for tenants to install their own chillers and

back-up power generating equipment, or the landlord would provide these on a build-to-suit basis.

In addition, an incoming diverse raw HV (high voltage) power supply would usually be provided.

Fitted: fully fitted space is ready for tenant IT equipment to be installed almost immediately or subject only to minor works being carried out to account for bespoke equipment and layouts.

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CBRE DATA CENTRE SOLUTIONS

CBRE formed a Data Centre team in 1994 to address the specialised technical real estate needs of high-tech firms such as telecommunications companies, data centre operators and corporates.

Core technical real estate services provided by the CBRE Data Centre Solutions team include:

- Acquisition – one-off assignments, worldwide network rollouts
- Disposal – one-off assignments, multi-site marketing campaigns
- Investment – due diligence and transactional services
- Consultancy – consolidation strategies, mergers & acquisitions
- Asset Valuation – bank, corporate
- Project management, development monitoring, due diligence, building and M&E surveys
- Research – market statistics, forecasting
- IT Consultancy

CBRE has monitored worldwide colocation supply statistics since 1999. This bulletin relates only to the four largest European Colocation markets. Additional market statistics are available on request.

To learn more about CBRE Data Centre Solutions group, please visit:

www.cbre.co.uk/services/industries-and-specialties/data-centre-solutions

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