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GLOBAL MARKET COMPARISON REPORT
OVERVIEW

Jacob Albers
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GLOBAL TOP 10

01/ Northern Virginia*
   Portland*

03/ Singapore

04/ Hong Kong

05/ Atlanta*
   Chicago*
   Silicon Valley*

08/ Dallas

09/ Phoenix

10/ Seattle

* Ranking tie
<table>
<thead>
<tr>
<th>HIGH-WEIGHT</th>
<th>MID-WEIGHT</th>
<th>LOW-WEIGHT</th>
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<tbody>
<tr>
<td>Fiber Connectivity</td>
<td>Incentives</td>
<td>Power Cost</td>
</tr>
<tr>
<td>Market Size</td>
<td>Taxes</td>
<td>Land Price</td>
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<tr>
<td>Cloud Availability</td>
<td>Political Stability</td>
<td>Environmental Risk</td>
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<td></td>
<td>Vacancy</td>
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<td>Development Pipeline</td>
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<td>Sustainability</td>
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<td>Smart Cities</td>
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</table>
Market Size (MW)

Source: datacenterHawk DC Byte, Cushman & Wakefield Research
Vacancy (%)  

Source: datacenterHawk DC Byte, Cushman & Wakefield Research
Development Pipeline (MW Under Construction)

Source: datacenterHawk DC Byte, Cushman & Wakefield Research
Power Cost ($/kWh/month)

Source: Find Energy, Electricity Local, Cushman & Wakefield Research
AMERICAS OVERVIEW

Anne Rosenau
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TOP 10 MARKETS

01/ Northern Virginia*
03/ Atlanta*
06/ Dallas

07/ Phoenix
08/ Seattle
09/ Toronto
10/ Montreal

* Ranking tie
North America Development Growth

- DC-Northern Virginia: 965 MW Under Construction
- Chicago: 399 MW Under Construction
- San Francisco Bay Area: 356 MW Under Construction
- Phoenix: 338 MW Under Construction
- Portland: 293 MW Under Construction
- Austin: 265 MW Under Construction
- Dallas: 255 MW Under Construction
- Atlanta: 228 MW Under Construction
- Queretaro: 160 MW Under Construction
- Columbus: 144 MW Under Construction
- Nashville: 129.8 MW Under Construction
- Las Vegas: 100 MW Under Construction
- Santiago: 73.8 MW Under Construction
- Montreal: 45 MW Under Construction
- Toronto: 41 MW Under Construction
- Sao Paulo: 35 MW Under Construction
- Denver: 19.5 MW Under Construction
- Salt Lake City: 15 MW Under Construction

Legend:
- 2021 Under Development
- 2022 Under Development
- 2023 Under Development
Land Pricing & Expansion to Outlying Areas

Price Per Acre

<table>
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<tr>
<th>Price ($/Acre)</th>
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<td>$8M</td>
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</table>


- Northern Virginia-DC
- Phoenix
- Portland
- Chicago
- San Francisco Bay Area

Outlying Expansion Example: Sample NoVa Land Transactions

- Frederick, MD
- Leesburg/Ashburn/Beaumeade
- Prince William County
- Culpeper
- Richmond

50 miles
North America Pricing Changes

Wholesale Average Lease Pricing

Hyperscale Average Lease Pricing

CUSHMAN & WAKEFIELD / 21
APAC Markets Maturity Index

CUSHMAN & WAKEFIELD
Hyderabad will become the largest market for hyperscalers in India

**Key Indicators**

<table>
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<th>In Operation</th>
<th>UC / Planned</th>
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<tr>
<td>35MW</td>
<td>170MW</td>
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- No. of DCs: 4
- Vacancy rate: 16%

*Definition: Key indicators are based on operational Hyperscale Cloud, Colo, Edge & Telco data centre facilities in the market and excludes Captive & ICT.*
Greater Tokyo takes up about 80% of Japan’s entire data center market

**Greater Tokyo**

**KEY INDICATORS**

- **In operation:** 865MW
- **UC / Planned:** 1,105MW
- **No. of DCs:** 93
- **Vacancy rate:** 12%

**CENTRAL TOKYO**

- **361MW** in operation across 57 data centres
- **3%** vacancy rate
- **59MW** UC / planned

**INZAI**

- **252MW** in operation across 12 data centres
- **33%** vacancy rate
- **585MW** UC / planned

**REST OF TOKYO**

- **252MW** in operation across 24 data centres
- **9%** vacancy rate
- **461MW** UC / planned

*Definition: Key indicators are based on operational Hyperscale Cloud, Colo, Edge & Telco data centre facilities in the market and excludes Captive & ICT.*
EMEA OVERVIEW

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TOP 10 MARKETS

01/ Amsterdam
02/ Paris
03/ Zurich
05/ Madrid*
05/ Dublin*
06/ London
07/ Frankfurt
08/ Stockholm*
08/ Oslo*
10/ Berlin

* Ranking tie
EMEA Markets Capacity vs Power Cost

TOTAL CAPACITY (EXISTING & UNDER DEVELOPMENT)

Amsterdam
Frankfurt
London

Reykjavik
Berlin
Marseille
Stockholm
Zurich
Oslo
Johannesburg
Warsaw
Dublin
Munich
Nairobi
Milan
Paris
Madrid

CUSHMAN & WAKEFIELD
Carbon Intensity: Europe vs. North America

Source: https://app.electricitymaps.com/map
EMEA Growth Markets

NORDICS: SHOC-R
1,162 MW Operational
15% vacancy rate
810 MW UC / planned

FLAP-D
4,462 MW Operational
7% vacancy rate
4,127 MW UC / planned

CENTRAL EASTERN EUROPE
251 MW Operational
14% vacancy rate
201 MW UC / planned

MEDITERRANEAN (M³+)
609 MW Operational
18% vacancy rate
698 MW UC / planned

W/E AFRICA + MIDDLE EAST
605 MW Operational
24% vacancy rate
652 MW UC / planned

Source: DC Byte, Cushman & Wakefield Research
CUSHMAN & WAKEFIELD
Developing Scenarios

Growth in 'Everything, Everywhere, All At Once'

Technology Saves The Day

Data Purpose Analysis and/or Data Taxation

SUSTAINABLE DEVELOPMENT GOALS

CLIMATE NEUTRAL DATA CENTER
About Cushman & Wakefield

Cushman & Wakefield (NYSE: CWK) is a leading global real estate services firm that delivers exceptional value for real estate occupiers and owners. Cushman & Wakefield is among the largest real estate services firms with approximately 52,000 employees in over 400 offices and approximately 60 countries. In 2022, the firm had revenue of $10.1 billion across core services of Property, facilities and project management, Leasing, Capital markets, and Valuation and other services. To learn more, visit www.cushmanwakefield.com or follow @CushWake on Twitter.

A recording of this webinar will be available soon.