2023 GLOBAL DATA CENTER MARKET COMPARISON

This live event will begin shortly...
TODAY’S SPEAKERS

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**Anne Rosenau**
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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
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Market Size (MW)

Source: datacenterHawk DC Byte, Cushman & Wakefield Research
Vacancy (%)
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*
   Portland*
03/ Atlanta*
   Chicago*
   San Francisco Bay Area*
06/ Dallas
07/ Phoenix
08/ Seattle
09/ Toronto
10/ Montreal

* Ranking tie
North America Development Growth

![Graph showing MW under construction for different cities in North America, with data for 2021, 2022, and 2023 under development. The graph indicates the significant growth in development across various cities, with DC-Northern Virginia leading at 965 MW under construction in 2021. Other notable cities include San Francisco Bay Area, Phoenix, Portland, Austin, Dallas, Atlanta, Queretaro, Columbus, Nashville, Las Vegas, Santiago, Montreal, Toronto, Sao Paulo, Denver, NY-Northern NJ, and Salt Lake City, each showing varying levels of development across the years.]
Land Pricing & Expansion to Outlying Areas

Price Per Acre

- 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

$/kWh/mo


2019 2020 2021 2022 2023

$80 $90 $100 $110 $120 $130 $140 $150 $160 $170

Northern Virginia Chicago Phoenix San Francisco Bay Area Portland

Northern Virginia Chicago Phoenix San Francisco Bay Area Portland

CUSHMAN & WAKEFIELD
APAC OVERVIEW

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TOP 10 MARKETS

01/ Singapore
02/ Hong Kong
03/ Sydney*
04/ Seoul*
05/ Tokyo
06/ Beijing
07/ Mumbai
08/ Shanghai
09/ Melbourne
10/ Kuala Lumpur

* Ranking tie
APAC Markets Maturity Index

GROWTH SCORE

Northern Virginia
7,012MW

Developing
Secondary
Established
Powerhouse

EMERGING
PRIMARY
Hyderabad will become the largest market for hyperscalers in India

**KEY INDICATORS**

- **In operation:** 35MW
- **UC / Planned:** 170MW
- **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

**KEY INDICATORS***

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

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

**CENTRAL TOKYO**

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

**REST OF TOKYO**

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

**INZAI**

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

*Cushman & Wakefield*
EMEA OVERVIEW

Andrew Fray
Head of Data Center Advisory Team, EMEA
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TOP 10 MARKETS

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

* Ranking tie
EMEA Markets Capacity vs Power Cost

POWER COST

TOTAL CAPACITY (EXISTING & UNDER DEVELOPMENT)

Amsterdam
Frankfurt
Reykjavik
Berlin
Stockholm
Zurich
Paris
Marseille
Milan
Oslo
Johannesburg
Dublin
Warsaw
Nairobi
Munich
Madrid
London
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
Q&A

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THANK YOU

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.