

YOUR DATA CENTER EXPERTS

RIDER LEVETT BUCKNALL

At Rider Levett Bucknall (RLB), our approach allows us to deliver successful outcomes to property and construction projects by tailoring our services to match client goals and needs. Our team specializes in creating, evaluating, and managing project controls that address the critical issues of time, cost, scope, and quality in the built environment.

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DATA CENTERS

THINGS TO WATCH OUT FOR

DATA CENTERS IN THE UNITED STATES

Enterprise companies such as Amazon, Microsoft, Meta, and Google are rapidly securing electrical power, land, and construction resources across the country to meet the anticipated demand for artificial intelligence (AI) capacity via new hyperscale data centers. Instead of acquiring space in existing or newly built colocation facilities, they are swiftly developing their own data center campuses.

Data center developers and owners are beginning to shift their focus away from major hubs such as Virginia and Silicon Valley, and are instead seeking secondary fiber locations like Chicago, Denver, Texas, and Georgia. The power requirements for AI clients have increased significantly, moving from megawatt

capacities constructions to gigawatt capacities,

resulting in a substantial impact on the United States' energy consumption. Between 2018 and 2022, the power capacity used by data centers in northern Virginia has doubled to 2,767 megawatts. According to Dominion Energy, this growth in capacity comes with major transmission infrastructure, ultimately built to better serve the data center market¹.

Adversely, the industry is experiencing a reverse effect: copper prices rising due to the increased demand from data centers and other electrical uses, including renewable energy and electric vehicles.



GOVERNMENT INFLUENCE

Support from local and federal governments remains unchanged, for the most part. An exception to this is Georgia, where their local government have repealed incentives for data centers due to EPA regulations becoming more stringent for generators.



TRENDS

Data centers remain in high growth as AI deployments and high-cloud capacity demands surge, globally. Forecasted annual cloud and AI revenue, excluding colocation providers, are set to exceed \$212B USD by 2028 as companies scale up their enterprise operations². As the data center market expands, developers face the need to modify their builds to accommodate ever-increasing power demand, resulting in higher power consumption to cool increasingly dense server racks. The average hyperscale rack density is projected to increase from 36 kW/rack to as much as 49 kW/rack by 2026¹. Renewables and sustainable energy remain a goal for new builds as state and federal regulations trend towards guidelines and increased regulation of embodied carbon emissions.





Approximated North America market size

\$100 B



\$418 B

Global market value forecast by 2030³



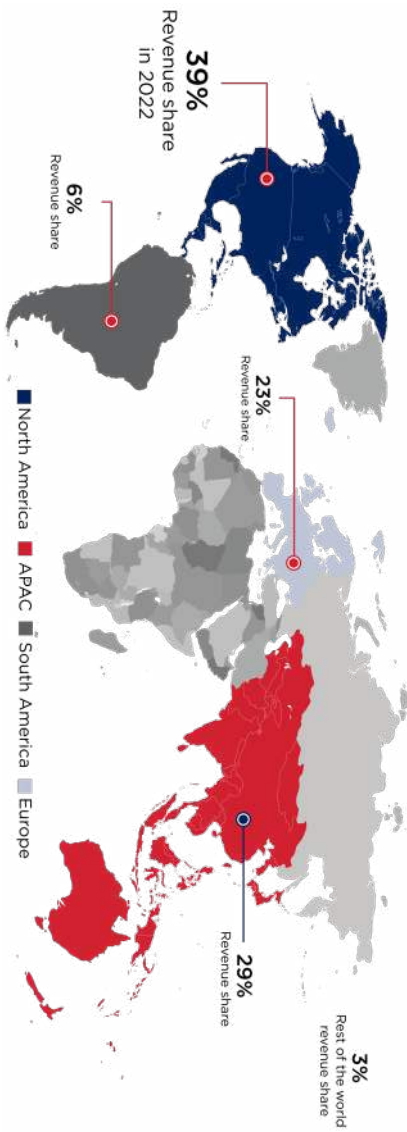
9.6%

CAGR from 2023 to 2030³

DATA CENTER MARKET INSIGHT

ABOUT THE CHARTS

The map below represents the world's data center construction market, according to Industry/ARC³.



WHAT'S DRIVING THE MARKET

The surge of AI-powered services are increasing demand in the data center market, from lessees to developers. The demand correlates to higher energy consumption and expenditures for colocation and hyperscale additions globally. Power Usage Efficiency ratios are being improved by the introduction of smart power management solutions, allowing for more efficient cooling and power distribution to racks, which in turn enables higher rack density and revenue per rack. Cooling demands in turn are exacerbating the use of liquid cooling in data center facilities, supporting or entirely supplanting air-based cooling for increasing rack densities. These are often a substantial additional investment upfront for developers who are looking to maintain competitive rack densities while building new facilities in 2024.

DATA CENTER CONSTRUCTION COST DRIVERS

5.41%

National YOY Escalation Rate



SELECT MATERIALS	APPROX. CHANGE Q1-Q2 2024	APPROX. CHANGE YEAR-OVER-YEAR
Rebar	▲ 1.2%	▼ -4.3%
Structural Steel	▲ 0.1%	▲ 1.4%
Ready-Mix Concrete	▲ 2.0%	▲ 7.4%
Copper Wire	▲ 7.0%	▲ 2.8%
Copper Tube	▲ 9.9%	▲ 0.8%
Electrical Conduit	▼ -1.8%	▼ -27.3%
Diesel	▲ 21.1%	▲ 2.2%
Aluminum	▲ 0.2%	▼ -4.4%
Aluminum Wire	▲ 1.1%	▼ -2.1%
AHU Equipment	▲ 1.2%	▲ 2.6%
Sheet Metal	▲ 1.3%	▲ 1.9%
Generators	▲ 1.2%	▲ 4.1%

¹Industry/ARC - Data Center Market - Forecast (2024 - 2030) - Industry Trend & Forecast 2030 Report Code: ITR 0306