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Q3 2025 Data Center Activity Report

LandGate

LandGate is the leading provider of data solutions for site selection, origination, development, financing, and market analysis of U.S. infrastructure projects and renewable energy project: data centers, solar, energy storage, wind, carbon, and CCS.

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The U.S. data center sector continued its rapid expansion in Q3 2025, driven by the explosive growth of artificial intelligence (AI), cloud computing, 5G, and digital services. Total energy consumption reached an estimated 250 terawatt-hours, roughly 11% of national electricity usage.

With a 9GW in planned projects seen over this quarter in Northern Virginia alone, data center development is expected to exceed 30GW by the end of the decade. Despite unprecedented construction levels, the market remains heavily supply-constrained: colocation vacancy rates hover near 1% and preleasing exceeds 90%.

Hyperscalers deployed over $350 billion in new capital this quarter, spanning AI-focused campuses, edge deployments, and integrated energy solutions. Cooling and energy infrastructure innovations have become central to operational resilience, efficiency, and sustainability.

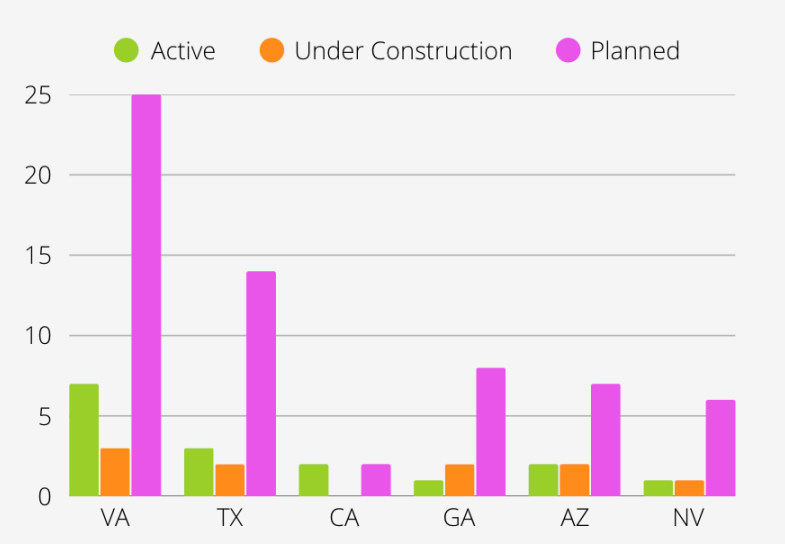
Industry Momentum & Market Drivers

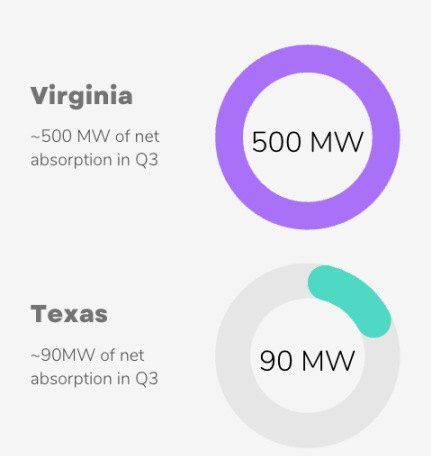
AI workloads are driving hyperscale deployments of 10–20 MW GPU-dense pods, while edge facilities of 5–15 MW support latency-sensitive applications. Primary markets Northern Virginia, Silicon Valley, Dallas–Fort Worth, and Atlanta continue to dominate absorption, although emerging secondary markets like Ohio, Indiana, and Wisconsin are capturing incremental demand. National energy demand rose approximately 10% quarter-over-quarter, amplifying constraints on available grid capacity. Developers are increasingly evaluating emerging markets for expansion due to saturation in core hubs, although secondary regions cannot yet fully absorb the shortfall.

Supply Constraints

Vacancy in primary markets is near zero, with virtually all absorption driven by preleasing. **The national construction pipeline totals around 8 GW, but roughly 80% is precommitted**, limiting immediate occupancy options. Extended build timelines are driven by power scarcity and skilled labor shortages, particularly in mechanical, electrical, and controls engineering trades. Urban-adjacent expansions require rezoning and entitlements, further complicating development. These bottlenecks underscore a growing gap between surging demand and power-ready capacity availability.

TOP STATES BY GW





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Hyperscale CapEx

Capital deployment remained unprecedented in Q3 2025. **AWS committed $3.5 billion in Ohio** for a 450 MW expansion, while **Meta prebuilt 100 MWh of battery storage** for grid resilience. **Intel advanced over 700 MW** in HPC-adjacent facilities, and **Google scaled AI-dense campuses** with integrated energy and cooling systems. **Nvidia's data center business alone runs at roughly a $160B annualized rate**, highlighting the direct link between AI infrastructure demand and hyperscale capex.

These investments reflect a trend beyond building traditional data centers: developers are now creating tightly integrated compute, energy, cooling, and storage ecosystems. Locking in long-term energy strategies of private wire agreements, on-site generation, and advanced cooling which is critical to project feasibility and timely delivery.

Energy Strategies & Transition

Energy reliability and decarbonization have become key determinants of project viability.

Nuclear partnerships at Susquehanna and Three Mile Island provide stable baseload power. Microgrid architectures are expanding, combining solar, small modular reactors (SMRs), gas turbine peakers, and battery storage to enable site-specific resilience. Private wire arrangements allow operators to bypass congested ISO interconnection queues (PJM, MISO, ERCOT), securing predictable capacity.

Developers now consider not only availability but also cost competitiveness, carbon footprint, and regulatory alignment when evaluating new sites.

Cooling Innovations

The global data center cooling market is projected to grow from $11.08 billion in 2025 to $24.19 billion by 2032 (CAGR ~12%). Advanced technologies of liquid and immersion cooling, direct-to-chip solutions, and rear-door heat exchangers are central to managing AI-driven heat densities while improving efficiency. PUE improvements of 1.1–1.2 are now achievable, and water consumption is reduced, critical in drought-prone regions. Integration with microgrids and energy storage further enhances resilience, making cooling strategy a core operational and competitive differentiator.

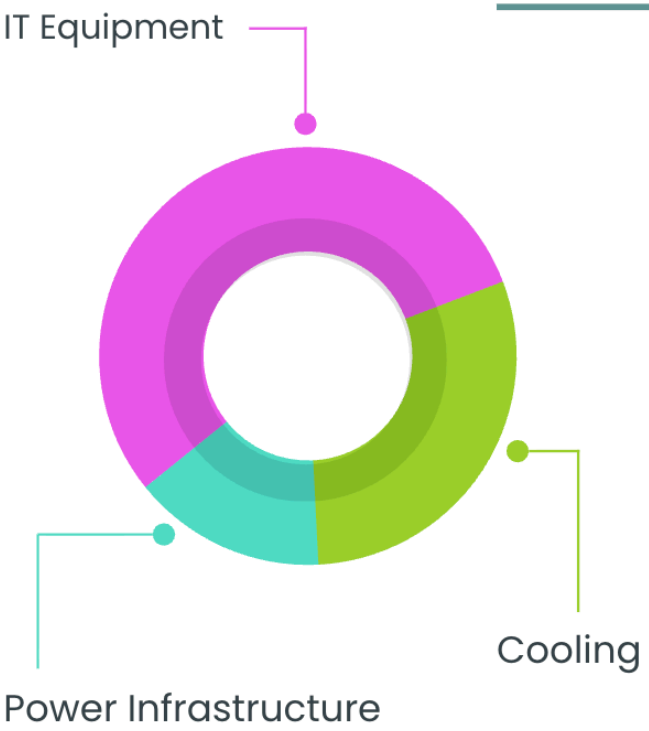
Operational & Technical Considerations

Ensuring reliability, performance, and efficiency remains a top priority for data center operators, particularly at AI-intensive sites. Power redundancy continues to follow N+1 and 2N configurations, safeguarding against outages and ensuring uninterrupted operation for high-density workloads.

Connectivity and latency are equally critical, with core-to-edge networks achieving 5-8 millisecond round-trip times, prompting strategic fiber co-location near major compute campuses to optimize performance for latency-sensitive AI and cloud applications.

At the same time, operators are closely monitoring water usage, Power Usage Effectiveness (PUE), and behind-the-meter energy adoption, both to meet stringent sustainability requirements and to control operating costs. Together, these operational and technical strategies form the backbone of resilient, efficient, and high-performing data center infrastructure.

Data Center Power Distribution



IT Equipment 55%

Including: Servers, Storage Devices and Networking Equipment

Cooling 30%

Including: CRAC, Chillers + Cooling towers, Liquid Cooling and Water Usage

Power Infrastructure 15%

Including: UPS, Power Distribution Units, Generators, Lighting, Security and Fire Suppression

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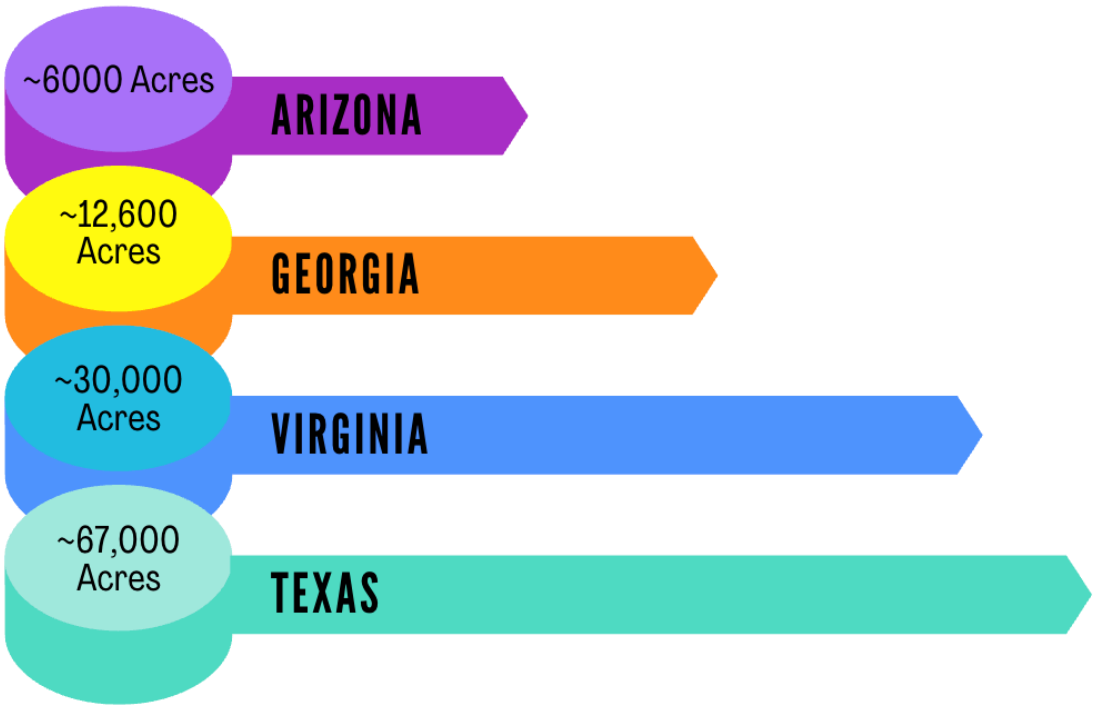
TOP DATA CENTER STATES BY ACRES



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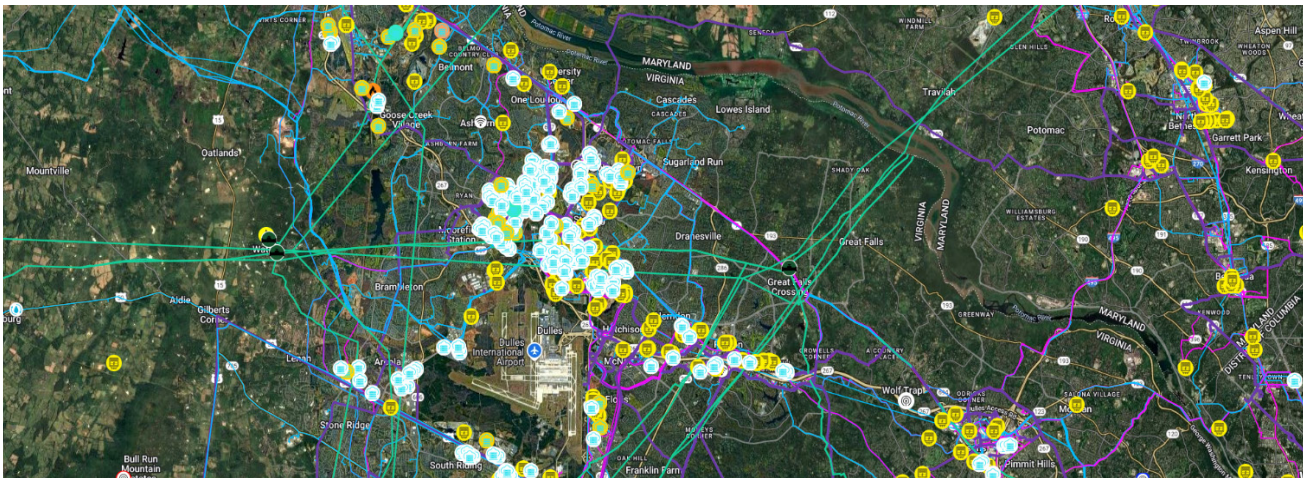
Local Economic Impact

The rapid expansion of hyperscale and AI-focused data center campuses is generating profound economic effects for host communities. In states such as Ohio, Georgia, and Wisconsin, land values near major data center corridors have tripled, reflecting intense competition for prime development sites and highlighting the strategic importance of proximity to power and connectivity.

In Loudoun County, Virginia, data centers are projected to contribute to over 45% of commercial parcel revenue by 2026, underlining their central role in local tax bases and municipal funding. Beyond fiscal impacts, the sector is driving significant job creation across multiple trades, including construction, mechanical, electrical, plumbing, and AI-adjacent operations, supporting both the physical buildout and ongoing technical operations of these facilities.

However, workforce shortages remain a persistent challenge, prompting community colleges and technical schools to expand certifications and degree programs in relevant fields. These initiatives aim to address the growing demand for skilled labor while simultaneously strengthening the local talent pipeline, ensuring that communities can continue to benefit from the sector's economic growth.



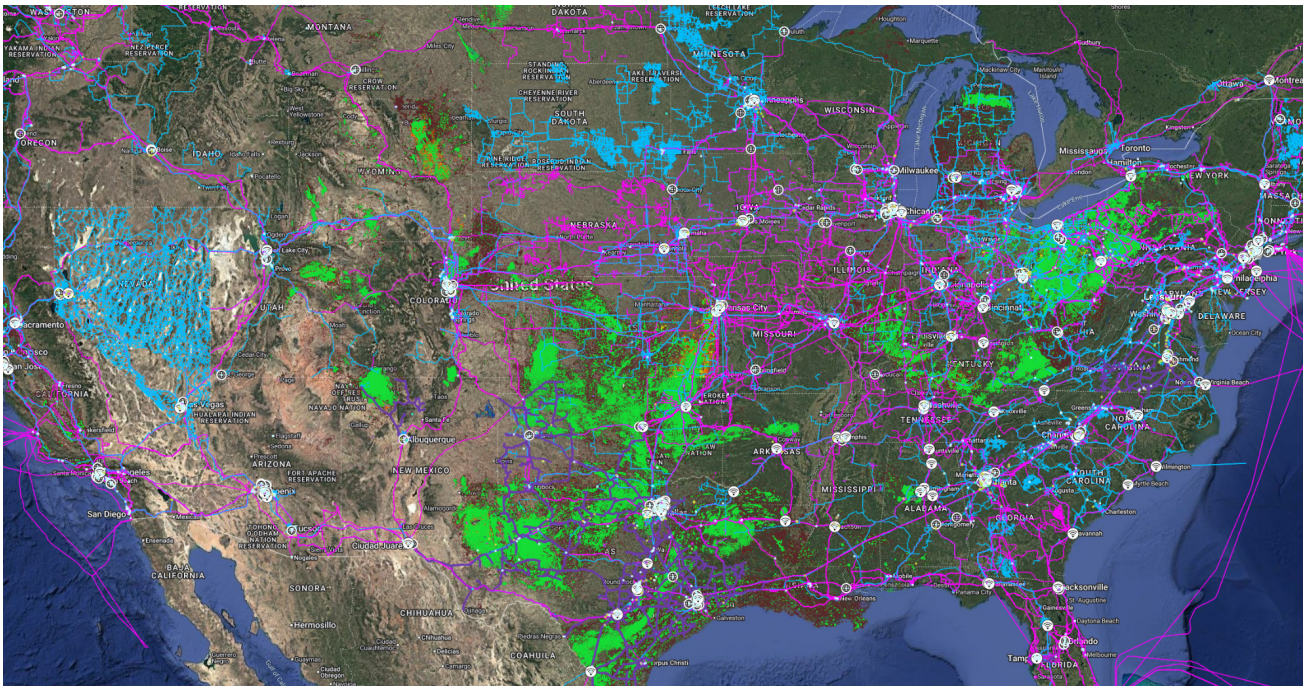
Data Center Development in Louden County, PA | LandGate Data Layers

Investment & Financing Trends

The US data center sector remains one of the most attractive real estate asset classes, fueled by insatiable tenant demand, limited supply, and rising rents. Preleasing activity is now the primary driver of absorption, and it underpins financing across all phases of development, including construction loans, transitional financing, and stabilized asset loans.

The lender pool is broadening, encompassing commercial real estate banks, life insurance companies, debt funds, and project finance lenders, reflecting the growing confidence in the sector's long-term prospects. At the same time, the adoption of behind-the-meter and private wire energy solutions which provide operational autonomy and reliability has increased overall capital requirements but simultaneously reduces project risk by securing stable power sources.

Financing for horizontal development projects is also on the rise, particularly in regions where energy partnerships are key to unlocking new supply. These arrangements allow developers to mitigate interconnection challenges and regulatory hurdles while ensuring projects remain financially viable, making energy-forward development an increasingly central component of the data center investment thesis.



US Data Center Infrastructure | LandGate Data Layers

Looking Ahead Q4 2025

Deal sizes and AI-driven capex remain robust, with projects typically ranging from 50–100 MW. GPU-dense and edge deployments will dominate new capacity. Anticipated FERC and ISO reforms are expected to streamline interconnection, reduce speculative queue filings, and influence site selection. Cooling, energy efficiency, and sustainability are emerging as differentiators. Workforce development and ESG engagement will remain central to operational resilience.

Overall, the Q3 report underscores a market defined by AI-driven growth, constrained supply, energy innovation, and strategic investment, setting the stage for a highly competitive and sustainable U.S. data center landscape in the coming quarters.

To learn more about LandGate's tools, data, and modeling for the data markets, book a demo with our dedicated energy team.

LandGate Corp.

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