

Power First, Capital Next: What's Driving Data Center Growth

INSIGHTS FROM THE SEPTEMBER 2025
MARSHALL & STEVENS DATA CENTERS FORUM

Executive Summary

The future of data centers is being defined right now. Power scarcity, capital innovation, and modular strategies are converging to reshape how projects are financed, built, and scaled. This report highlights key insights from the Marshall & Stevens Data Centers Forum. It provides essential guidance for anyone navigating the next wave of digital infrastructure growth.

Whether you're a developer, investor, or policymaker, the insights from the Forum's panel of industry experts will provide a clear view of the challenges ahead and the opportunities for those who act decisively. More than just a recap of the two panels, this document offers a roadmap for navigating the next phase of digital infrastructure growth.

Forum Panelists:

Part ONE Panel - Moderator: Ralph Consola, *Marshall & Stevens*. Panelists: Anthony Orso, *Newmark*; Christy Rivera, *Norton Rose Fulbright*; Winston Connolly, *Connolly Inc.*; Sam Sixt, *1 Squared Capital*; Charles Miller, *NgenX Energy*.

Part TWO Panel - Moderator: Fernando Sosa, *Marshall & Stevens*. Panelists: Charles Miller, *NgenX Energy*; Akash Deshpande, *SkyBlue AI*; Anthony Festa, *Marshall & Stevens*; Paul Costanzo, *Kais-AIR*; Dino Barajas, *Baker Botts*.

This report distills the most important insights from the 2025 Marshall & Stevens Data Centers Forum. Inside, you'll find:

- **Financing innovation at scale** – How multi-billion-dollar projects are being structured, and why offshore vehicles are unlocking new pools of capital.
- **Energy as strategy, not utility** – Why grid dependence is no longer enough, and how bridge power, modular generation, and emerging technologies are redefining resilience.
- **Scaling smarter** – The shift to modular, prefabricated, and hybrid cooling models that accelerate timelines and hedge against unpredictable rack densities.
- **Market risks and outlook** – From supply chain volatility to uncertain terminal values, and how leading players are adapting investment strategies accordingly

Financing, Capital Flows & Investor Dynamics

The financing models supporting data center growth are diversifying and expanding to unprecedented scale. Projects once measured in the hundreds of megawatts now span multiple gigawatts and require \$20–30 billion or more in capital. In Part ONE, discussions highlighted how developers separate energy financing from data center financing, mirroring large-scale energy projects. This dual-structure approach reflects distinct risk and revenue profiles for power generation assets versus IT facilities.

Investor appetite remains strong, driven by hyperscalers with long-term leases that provide investment-grade credit quality. Offshore structures, especially Cayman Islands vehicles, are broadening liquidity and attracting family offices, sovereign wealth funds, and global banks. Part ONE emphasized how these structures enhance competitiveness and efficiency in financing. Yet both sessions highlighted long-term uncertainty: the terminal value of data centers remains difficult to model, complicating debt strategies.



Location, Infrastructure & Policy Environments

Both sessions underscored that power availability now dictates siting. In Part TWO, site selection was framed around interconnections, water, fiber, tax incentives, and reliable energy sources. Natural gas has emerged as both a bridge power and a resilience strategy.

Permitting and interconnection delays are equally decisive; in PJM and ERCOT, queues can stall projects for 5–7 years. These realities reshape not only delivery timelines but also financing models, as developers weigh interim power strategies against long delays.

Site economics are shaped by property taxes and insurance premiums. Part TWO noted ad valorem

taxes on power assets exceeding \$700 million can materially alter project viability. Developers increasingly use PILOT (Payment in Lieu of Taxes) agreements to stabilize long-term liabilities.

Regional competitiveness also reflects political and policy choices. As Part ONE noted, Pennsylvania leverages low-cost gas and reindustrialization policies, while Mexico and South America are seeing growth driven by geopolitical diversification but at a cost of higher lease rates.

Energy Supply, Flexibility & Emerging Technologies

Energy strategy is now central to development. Part ONE underscored that grid dependency is unreliable, with 'temporary' behind-the-meter facilities often becoming long-term solutions. Part TWO highlighted how AI workloads drive highly variable demand, forcing data storage at the rack level, UPS, and grid levels. This allows operators to tolerate less reliable service at lower cost, reshaping procurement economics.

Emerging technologies are adding resilience. Part ONE detailed pilots of fuel cells in 10–15 MW microgrids, while Part TWO explored hydrogen hubs and modular reactors as long-term solutions. Both sessions discussed selling excess or flexible generation back to the market as an ancillary revenue stream, demonstrating how energy strategy now underpins both resiliency and economics.

Build-to-Suit, Scaling & Operations

Scaling efficiently was emphasized in Part TWO. Rack density remains unpredictable, with current averages of 10–20 kW but AI racks pushing 100–150 kW. Developers are adopting modular build-to-suit models to hedge this variability. Prefabricated skids cut labor by up to 60% and enable parallel workstreams, compressing delivery schedules and mitigating workforce shortages.

Cooling strategies are adapting, with advanced air systems supporting up to 75 kW and liquid cooling reserved for the highest-density deployments. Hybrid models balance risk and capex. On-site generation also enhances efficiency; in some designs, waste heat is recycled into chilled water, lowering PUE below 1.0. Security was another focal point in Part TWO, where 'zero trust' approaches were noted as vital, with encryption alone adding up to 10% to facility power demand.

Market Risks, Trends & Future Outlook

The sessions emphasized both risks and opportunities. Part ONE highlighted the potential of repowering coal and peaker plants, leveraging existing interconnections (multiple speakers are currently involved in data center development utilizing repowered energy generation assets). Offshore capital flows are expanding, with Cayman structures enabling participation by Asian banks, Middle Eastern equity, and hedge funds. At the same time, supply chain delays for turbines, switchgear, and GPUs remain severe, while regulatory shifts around tariffs and interconnection add further volatility.

Above all, both sessions returned to the uncertainty of terminal value. Investors and lenders remain cautious given rapid obsolescence and shifts in workload demand. Legacy crypto facilities, now struggling to pivot to AI, serve as warnings. Despite these risks, consensus held that data centers have entered a new phase: they are now integrated utility-scale systems requiring close coordination among developers, financiers, and policymakers.

Conclusion

Taken together, the two forums reveal that the future of data centers depends on mastering the interplay of power, capital, and construction. Developers and investors must adopt flexible financing, modular strategies, and integrated energy approaches. Policymakers will shape outcomes through permitting, taxation, and interconnection policy. The sector's transformation is both a challenge and an opportunity: those who adapt financing models, embrace modular innovation, and plan for long-term uncertainty will not only participate in the next growth wave—they will define it.

Marshall & Stevens is a leading independent valuation consulting, transaction advisory, and litigation support firm. We work with clients across industries to deliver clarity and perspective on complex financial and infrastructure matters. Hosting this forum reflects our long-standing commitment to bringing together expertise, insight, and forward-looking discussion on the forces shaping tomorrow's economy.



Key Takeaways:

- Queue delays of up to 7 years now stall grid interconnections in key markets.
- Repurposing coal and steel facilities supports U.S. reindustrialization and attracts hyperscalers.
- AI workloads can spike rack demand from 20 kW to over 100 kW in seconds.
- Fuel cells and modular engines are expanding but remain constrained at hyperscale.
- Prefabrication reduces site labor requirements by 60% and accelerates schedules.
- Zero-trust security and encryption can add 5–10% to overall facility power demand.
- Offshore capital flows increasingly include Asian banks and Middle Eastern equity.

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