

Energy and Power: The Defining Factor in Data Center Development

INSIGHTS FROM THE SEPTEMBER 2025
MARSHALL & STEVENS DATA CENTERS FORUM

Introduction

Energy was the unifying thread across both sessions of the Marshall & Stevens Data Centers Forum. As participants emphasized, power is no longer just an operational input. It is the single most important determinant of whether projects move forward, how they are financed, and how they are ultimately valued.

From site selection and technology adoption to investor appetite and regulatory risk, energy availability and economics now sit at the center of every conversation about data center growth.

Panelist Overview:

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

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

Emerging Themes

Several themes cut across both Part ONE and Part TWO of the Data Centers Forum discussions:

- **Energy scarcity defines competitiveness.** In markets where grid access is constrained, projects are delayed or reshaped. Those able to secure reliable power quickly enjoy outsized returns.
- **Data centers are becoming power plants.** With bridge power, behind-the-meter generation, and battery storage, operators are increasingly self-supplying, creating facilities that look more like independent utilities than traditional IT campuses.
- **AI and new workloads transform demand.** Rapid increases in rack density are forcing operators to design for higher per-rack power loads, reconsider cooling strategies, and invest in flexible modular energy systems.
- **Energy is reshaping financing.** The capital stack now separates power infrastructure from real estate, with multibillion-dollar energy financing packages attracting sovereign funds, family offices, and offshore structures.
- **Policy and regulation add volatility.** Shifting laws, incentives, and interconnection policies can alter project economics overnight, making proactive planning and advisory support essential.



Key Insights

Power as the Foundation of Growth

Energy supply now dictates where and when data centers can be built. Developers can no longer assume that grid interconnections will be available within a reasonable timeframe. In many regions, the wait for transmission capacity is measured in years, not months. Power has become the “first gate” in project feasibility.

Scarcity and Grid Strain

The rise of AI, hyperscale cloud, and GPU-heavy computing is pushing campuses into the gigawatt range. Unlike in past cycles, projects can no longer rely on tapping into reserve margin capacity. Instead, developers are competing for scarce transmission rights, navigating lengthy permitting cycles, and paying premiums for rapid delivery. This scarcity has elevated time-to-market as a core differentiator for operators and investors alike.

Bridge Power and Behind-the-Meter Strategies

To overcome grid delays, developers are increasingly turning to behind-the-meter generation, often powered by natural gas, smaller modular engines, or combined heat and power (CHP) systems. What was once considered “backup” is now frequently the primary power source for years at a time. These strategies introduce new costs, risks, and regulatory considerations, but also create more control and flexibility for operators.

Batteries and Storage at Every Level

Energy storage has moved from optional to essential. Forum participants outlined three levels of storage integration: near-GPU storage to smooth volatile AI loads, UPS-level storage to manage

fluctuations within the data hall, and grid-scale storage to balance renewable integration. This layered approach allows operators to contract for less reliable — and therefore less expensive — power while maintaining uptime commitments.

Financing Energy as a Distinct Asset Class

The Forum highlighted a structural shift in financing: energy infrastructure is now raised and modeled separately from data center real estate. Investors view power as its own asset class, attracting capital from family offices, offshore funds, and sovereign investors. Power purchase agreements (PPAs) remain central, but their structure is evolving to account for storage, renewables, and grid volatility.

Technology Shifts and AI Load Profiles

Rack densities are rising rapidly, with demands for 50–132 kW per rack becoming increasingly common. While liquid cooling is often seen as the default response, operators are balancing with high-capacity air-cooled options and direct DC power delivery to reduce inefficiencies. On-site generation also allows heat recovery for cooling, which can dramatically improve energy efficiency metrics.

Novel Energy Sources and the Path to Decarbonization

Natural gas remains the dominant near-term solution, but the Forum spotlighted emerging interest in hydrogen hubs, small modular nuclear reactors, and carbon capture-enabled projects. Renewable energy is increasingly tied to corporate ESG goals and regulatory pressures, even if intermittency challenges persist.

Policy, Incentives, and Regulatory Risk

State and federal incentives, from tax credits to renewable energy mandates, are reshaping siting strategies. Yet shifting laws, from Texas SB6 to PJM interconnection rules, introduce risk that can destabilize cost models mid-project. Participants noted that policy risk must now be embedded into financial proformas, with advisors continuously updating assumptions.

Conclusion

The Marshall & Stevens Forum made one reality clear: energy is the new currency of data center growth. The industry is no longer just about land, fiber, or capital. Projects succeed or fail based on their ability to secure, finance, and manage power. As workloads become more energy-intensive and regulatory scrutiny grows, the convergence of **digital infrastructure and energy** infrastructure is redefining both industries. The winners will be those who master not only megawatts and cooling but also financing, regulation, and long-term resilience in a volatile energy landscape.

How we can help

Marshall & Stevens understands the complexities involved with the development and valuation of data centers. Our specialists provide valuation of early stage through operating data centers, energy generation and storage projects and other infrastructure projects, assets, real estate, and businesses enterprises.

For more information about our transaction advisory opinions and valuations for financial reporting, tax reporting, financing, insurance, and matters in dispute, please visit our website at marshall-stevens.com or contact:

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