Data Centers and the Future of Brazil's Power Sector

Issue 92 29.09.2026 3 min read

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Data centers are no longer solely a digital infrastructure issue. The rapid growth of artificial intelligence, cloud computing, the digital economy, and the electrification of a growing range of economic activities is driving demand for data processing and storage capacity, creating new pressures on energy infrastructure.

For the electricity sector, the impact of data centers goes beyond higher power consumption. They represent a new class of load, characterized by large power requirements, stringent reliability expectations and, often, significant geographic concentration.

Accommodating these characteristics will require regulatory and contractual frameworks capable of supporting the growth of the digital economy while preserving the reliability and efficiency of the power system.

The challenge, therefore, extends beyond securing adequate power supply. Deploying data centers at scale requires mechanisms capable of accommodating large, continuous loads with demanding reliability requirements. This has important implications for expansion planning, grid access, energy procurement models, and coordination among the various stakeholders involved.

Against this backdrop, regulatory developments will play an increasingly important role in supporting the expansion of digital infrastructure in Brazil. The reform of the electricity sector under Law 15.269/2025 reinforces the gradual liberalization of the power market and may facilitate long-term contracting arrangements between large consumers and generators, especially where renewable energy projects are involved.

The recent introduction of Special Tax Regime for Data Center Services (Redata – Regime Especial de Tributação para Serviços de Datacenter) also contributes to creating favorable conditions for building new data centers and expanding existing facilities, by suspending federal taxes on the purchase and import of equipment, subject to compliance with sustainability, research, development and innovation requirements. Together with the developments in the electricity sector, Redata has the potential to reduce barriers to new projects, strengthening Brazil's position in the global competition for long-term investment in cloud computing and artificial intelligence infrastructure.

Energy procurement is only part of the equation. Grid connection and transmission planning are becoming equally important considerations. Depending on their location, data centers may require significant investments in transmission and distribution infrastructure, as well as greater certainty regarding access timelines, costs, and connection conditions. As projects grow in scale, coordination among developers, network operators,

regulators, and planning authorities will be critical to avoiding bottlenecks and ensuring that risks are allocated efficiently among the parties involved.

The regulatory response, therefore, cannot be limited to expanding generation capacity. It must also support better transmission planning, enable shared connection solutions, allow network upgrades to move forward when backed by firm investment commitments, and consider how these new loads can contribute to the efficient operation of the power system.

Flexibility solutions, energy storage, and demand response can also help accommodate these new loads, particularly as the sector seeks to reconcile high levels of consumption and reliability with the operational realities of the power system. At the same time, contractual arrangements must remain closely aligned with the capabilities and limitations of the underlying network. Otherwise, energy procurement may become disconnected from transmission constraints and other operational risks. The goal should be to ensure that the growth of the digital economy is matched by the evolution of the energy infrastructure on which it depends.

The ability to address these challenges effectively could become an important competitive advantage for Brazil. With a predominantly renewable power mix, abundant energy resources, and growing interest from global investors, the country is well positioned to become a leading destination for digital infrastructure investment. Achieving that outcome will require regulatory predictability, effective planning, and efficient access to the grid. Projects are already being developed, financing is becoming available, and competition for these investments continues to intensify. Brazil's response must therefore be agile, focused, and well coordinated.

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