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Behind-the-Meter Power Solutions for Data Centers: Legal and Practical Considerations

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Sean P. Byrne

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By: [Sean Byrne](#)

Introduction

As data center power demands reach hundreds of megawatts or even gigawatts, particularly driven by AI applications, traditional power delivery models are facing significant constraints. Behind-the-meter (BTM) or bring-your-own-power (BYOP) strategies are increasingly attractive solutions for data center developers facing power availability challenges. This article examines the key considerations when implementing these alternative power approaches.

Power Source Options

Data center operators must balance commitments to clean energy with the practical need for 99.995% uptime and 100% availability. Several options present different advantages and challenges:

Renewable Energy

While many data center developers have made commitments to renewable energy sources, practical limitations exist:

- Large-scale projects require substantial acreage for solar or wind installations
- Significant battery storage needs to maintain 24/7/365 operations
- Intermittent nature of solar and wind creates reliability challenges

Nuclear Power

Nuclear power offers several advantages for data centers:

- Low carbon emissions
- Capacity to meet gigawatt-level power demands
- Smaller physical footprint compared to renewables
- Emerging Small Modular Reactor (SMR) technology shows promise

However, nuclear power introduces:

- Complex federal regulatory requirements
- Higher construction and operating costs
- Longer development timelines

Natural Gas

Currently the predominant choice for BTM power projects:

- Familiar technology with established infrastructure
- Lower carbon emissions than coal or oil
- Balance of reliability and environmental impact
- Sufficient power generation capacity without extensive land requirements
- Fewer regulatory hurdles than nuclear power

Regulatory Framework

BTM power solutions face varying regulatory landscapes:

Federal Regulation

- Nuclear power: Subject to Nuclear Regulatory Commission and Federal Energy Regulatory Commission (FERC) oversight
- Natural gas transmission: FERC regulation applies, though existing transmission infrastructure may mitigate some concerns

Case Study: The ongoing Talen Energy and AWS dispute illustrates regulatory challenges. In November, FERC denied plans for AWS to utilize on-site power from Talen's Susquehanna nuclear plant. Despite an appeal, FERC issued another rejection on April 10, 2025, creating uncertainty for the project.

State Regulation

Regulatory environments vary significantly by state:

- Some jurisdictions are creating favorable frameworks for BTM solutions
- Recent example: On May 15, 2025, Ohio's Substitute House Bill 15 expanded opportunities for large customers to self-generate or partner for BTM power without violating exclusive utility territory

provisions

Each state has unique approval processes that can extend from several months to over a year, requiring careful planning and engagement with regulatory authorities.

Development Considerations

BTM facilities create additional complexities in the development process:

- Environmental permitting: Projects may require "major source" (Title V) air permits
- Timeline misalignment: Regulatory approvals for power generation typically take longer than data center building permits
- Construction sequencing challenges: Developers may need to begin data center construction before securing BTM power permits

These factors necessitate careful project planning and risk management strategies.

Tax Implications

The ownership structure of BTM power facilities can significantly impact tax treatment:

- Utility personal property taxes may apply differently depending on ownership structure
- Data center ownership of BTM facilities may receive different tax treatment than third-party ownership
- Lease structure matters: Capital leases (implying ownership) versus operating leases may affect tax exemption eligibility
- Local incentives may provide partial or complete exemptions in some jurisdictions

Conclusion

As power constraints intensify and data center demands grow, BTM/BYOP solutions offer viable alternatives to traditional utility service. However, successful implementation requires comprehensive understanding of the regulatory, development, and tax considerations.

These projects are best approached as two distinct but interconnected initiatives rather than a single project. This perspective allows for appropriate attention to the unique challenges of power generation alongside data center development, particularly when considering different ownership structures and varying state regulations.