



BTM: Behind the Meter

The Next Frontier in Energy Infrastructure



Insights Amidst Change

Tortoise Capital has more than 20 years of experience investing across the energy value chain with \$10.8 billion in assets under management (as of March 31, 2026).

The firm's perspective spans upstream, midstream, and downstream assets, as well as electrification and infrastructure.

We believe our specialized view of the energy sector provides a strong foundation for evaluating how new trends will affect markets and investors.

In this whitepaper, we are pleased to share our perspectives on a transformational change underway in the energy sector: Behind-the-Meter (BTM) electric power generation.



Matthew Sallee, CFA
Executive Vice President,
Head of Investments



Robert Thummel
Senior Portfolio Manager



James Mick, CFA
Senior Portfolio Manager



Brian Kessens, CFA
Senior Portfolio Manager

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Executive Summary

The New Power Play: Behind the Meter (BTM)

Power is Evolving: So Must Our Thinking.

Global electricity demand is accelerating, driven by tectonic shifts:

Advances in artificial intelligence

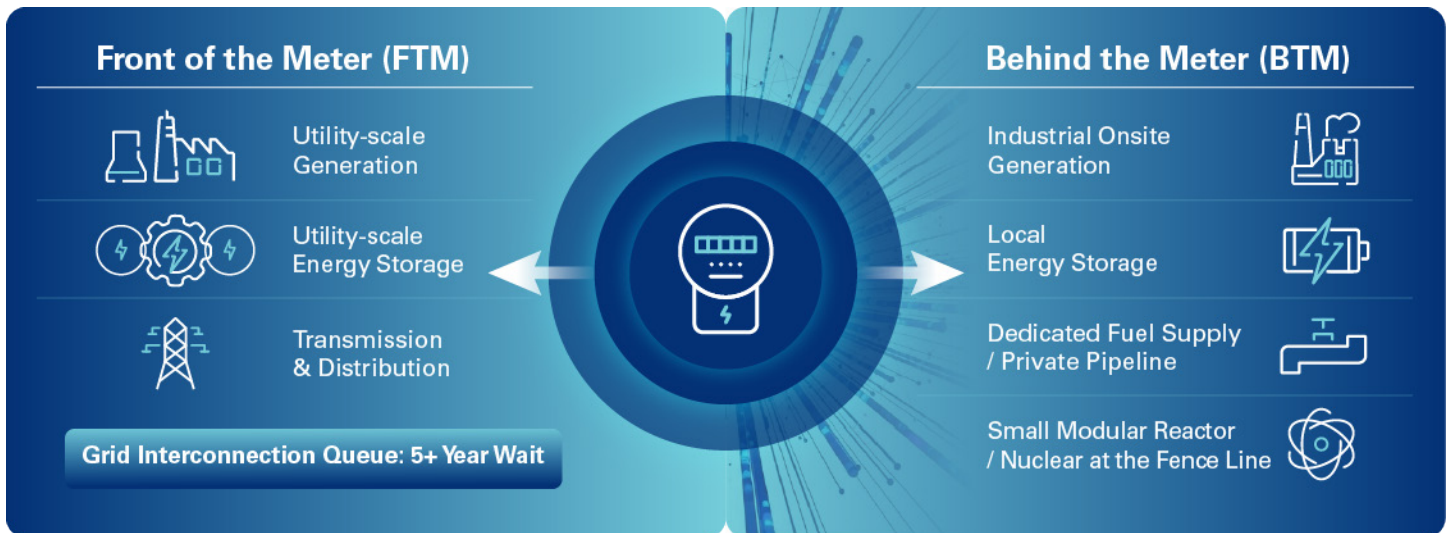
The boom in digital infrastructure

Electrification of transportation and industry

Worldwide population growth and economic development

According to the International Energy Agency, electricity demand is expected to double by 2050¹. This structural growth is prompting a reevaluation of how and where power is generated, stored, and delivered.

Meeting this demand requires a full-spectrum approach to power generation and delivery. Front-of-the-meter (FTM) infrastructure—utilities drawing from natural gas, renewables, and nuclear—is the historical foundation. Behind-the-meter systems deploy comparable fuel sources at the customer level, enabling on-site generation and storage.



¹International Energy Agency, World Energy Outlook 2024, October 2024. [iea.org/reports/world-energy-outlook-2024](https://www.iea.org/reports/world-energy-outlook-2024).

This paper focuses on the evolving opportunity set within BTM infrastructure on the customer side of the utility meter. Once niche, BTM solutions—onsite natural gas, solar with storage, even emerging microreactors—are increasingly seen as strategic complements to the grid. The appeal is straightforward: speed-to-power, resilience, cost control. But BTM doesn't stand alone. These solutions work within (not against) the grid's broader utility and regulatory frameworks..

From grid-scale to ground-level, power systems are becoming more distributed, digitized, and diversified. BTM investments are one thread in a broader energy fabric that includes:



Natural Gas

for continuous, grid-independent generation



Renewables

primarily solar, with contributions from wind, geothermal, and biofuels



Nuclear

an aspirational frontier, with small modular reactors under development

The question is not which technology wins: but how much, where, and when?

Tortoise Capital has invested across the energy value chain for over two decades. We see opportunity in this evolving spectrum, driven not just by policy, but by demand pressure and private-sector innovation. By analyzing both the infrastructure and investment implications of this transformation, we aim to illuminate where long-term capital can play a catalytic role in building a next-generation power ecosystem.

What Does “Behind the Meter” Mean?

Behind the meter (BTM) refers to power that is generated or stored on-site and consumed directly by the end user, without first passing through the utility grid. Common examples include natural gas generators, rooftop solar, battery storage, and backup power systems, often deployed in combination to serve high-demand facilities like data centers.

Today, BTM systems are less about bypassing the grid and more about working alongside it, to enhance reliability, sustainability, and cost control.

BTM infrastructure enables end users to:

Enhance reliability by reducing dependence on utility grid performance

Accelerate deployment by bypassing long permitting and interconnection timelines

Improve cost control through direct energy management and load optimization

Relieve grid congestion by localizing power supply and demand

Serve communities by reducing competition for power between homes and industry

1. Electricity is the New Oil

Megatrend

Demand is Bending Up. And Energy Investing is Changing.

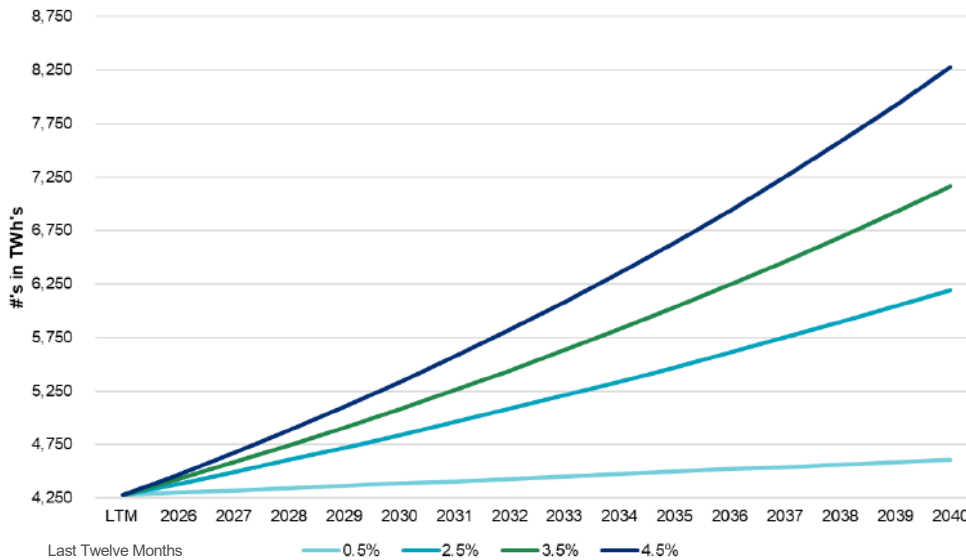
For decades, oil was the lifeblood of global energy. It powered transportation, shaped geopolitics, and drove economic growth. But a new force is emerging—quieter, digital, and equally transformative: electricity.

Artificial intelligence, cloud computing, and automation are energy as well as technology revolutions. The physical infrastructure behind the digital age is built on electrons. And the demand is surging.

U.S. electricity demand had been largely flat since the early 2000s, thanks to efficiency gains and offshoring. But that plateau is ending. According to industry forecasts, U.S. data centers alone could account for more than 11% of the nation’s power consumption by 2030². Add in AI training clusters, electric vehicle (EV) charging, and electrified manufacturing—and the growth curve steepens.

According to McKinsey, U.S. power demand “is forecast to grow about 3.5% annually through 2040.”³ This will see U.S. electricity generation rise from approximately 4,250 terawatt-hours in 2025 to nearly 7,250 terawatt-hours in 2040.

Forecast: Rising Power Demand to Drive U.S. Electrical Generation Higher



Source: Tortoise Capital Advisors analysis based on McKinsey Energy Solutions, Global Energy Perspective 2024, September 2024.

As a global phenomenon, the estimated investment needed for power infrastructure by 2040 is \$23 trillion for energy generation, transmission, and distribution, also according to McKinsey.

This is about energy demand as well as who needs the power and how fast they need it. Data center developers often do not have the flexibility to wait years for utility hookups. They’re contracting or building their own on-site power sources.

² Lawrence Berkeley National Laboratory, Queued Up: Characteristics of Power Plants Seeking Transmission Interconnection, 2025 Edition. emp.lbl.gov/queues.

³ McKinsey Energy Solutions, Global Energy Perspective 2024, September 2024.

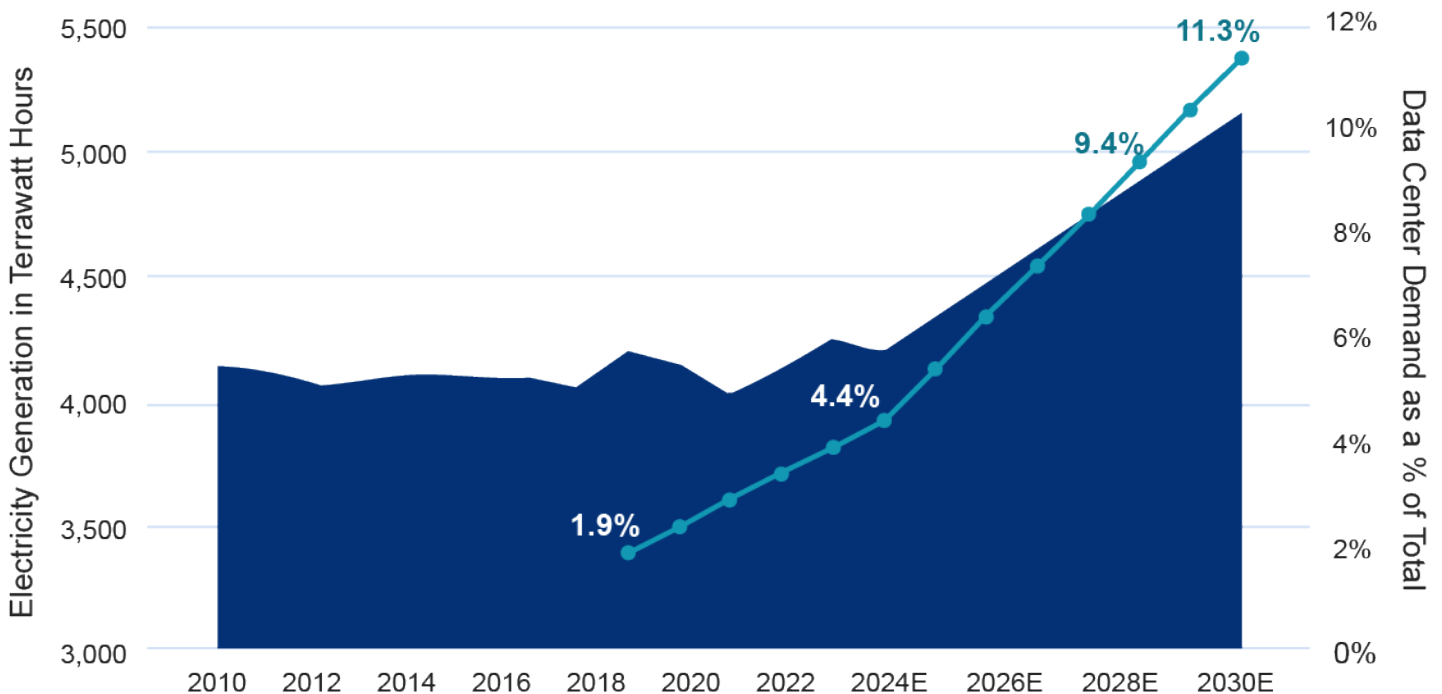
“We’re entering a second great age of electrification. The first powered cities and factories. This one fuels AI, automation, and digital infrastructure.”

Increasingly, large users are rightsizing their dependence on the grid, using on-site generation for primary power and keeping the grid in reserve. This hybrid model delivers shorter timelines, fewer pricing surprises, and power plans tailored to specific facility needs.

In this world, electricity becomes the new oil: mission-critical, scarce in key places, and deeply investable. For institutional portfolios, this means energy exposure must adapt. Investors need to think beyond traditional midstream and utility allocations. They must understand where the new demand is emerging, how it bypasses legacy infrastructure, and which businesses will capture change.

We’re entering a second great age of electrification. The first powered cities and factories. This one fuels AI, automation, and digital infrastructure—at a speed the old grid can’t match.

Age of Electricity: Data Center Demand & U.S. Electricity Generation



Source: EIA and DOE as of December 31, 2024.

2. Worldwide Surge

Demand is Global

Electricity Demand is Rising Worldwide—and Accelerating

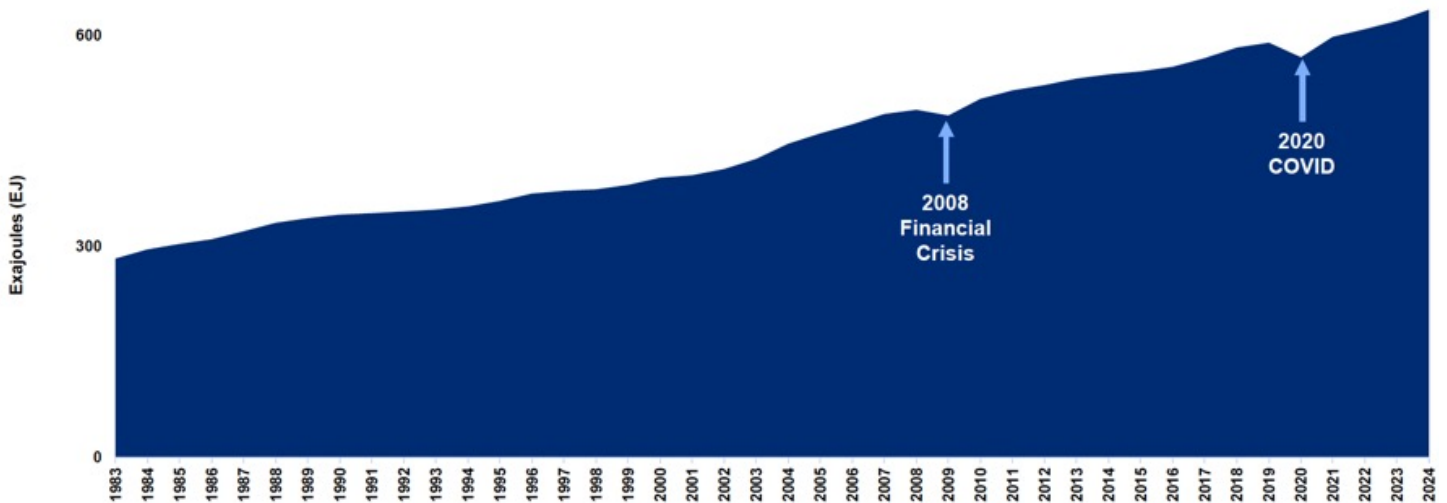
Global energy demand has risen in 40 of the past 42 years: and the digital era isn't slowing that trend. Urbanization, rising incomes, advances in technology, and the electrification of everything from factories to scooters are turbocharging power use around the world.

Even as energy systems get cleaner and more efficient, the total volume keeps growing. While developed economies like the U.S. and Europe see consistent growth in energy demand, emerging economies like China and India forecast even higher demand growth rates. The next billion people gaining access to electricity won't use less than the rest of us.

That strain is clearest in power systems. Data centers in Ireland are expected to consume nearly a third of the country's electricity within a few years, up from 5% a decade ago. In China, industrial electrification is surging. Across the Global South, power grids are struggling to keep up with urban growth. The challenges encompass both new power generation and community impact.

This is a structural, not cyclical, trend. And it puts a premium on energy solutions that are local, flexible, and fast to deploy, whether on or off the grid.

Annual Global Energy Demand



Source: Energy Institute Statistical Review of World Energy June 2025. An exajoule (EJ) is a unit of energy in the International System of Units (SI). It is commonly used to measure very large-scale energy consumption, such as global or national energy use.

3. Demand Is Decentralizing

Structural Shift

From Grid Dependency to Hybrid Power Models

In the past, electricity demand followed a predictable path: from centralized generation through high-voltage transmission to homes, offices, and factories. Utilities controlled the grid. Power flowed in one direction. And large-scale capital projects drove incremental capacity.

That world is fragmenting. Demand is emerging in new places—at new speeds—and the grid can't keep up.

Data centers, AI clusters, cloud storage, crypto mines, electric vehicles, and advanced manufacturing are reshaping the demand map. Some of these new consumers don't want to wait—or can't wait—years for a utility hookup. They want high-capacity power where they build, when they need it, and increasingly, they're willing to generate it themselves.

Hybrid Models


Increasingly, large users are rightsizing their dependence on the grid, using on-site generation for primary power with public utilities as a complement. This hybrid approach can deliver shorter timelines, fewer pricing surprises, and power customized to specific facility needs. BTM projects pair large-scale energy users with on-site generation: natural gas turbines, battery systems, microgrids, and in some cases, renewables. A private wire at the fence line does the heavy lifting, and the grid fills in the gaps. This doesn't replace the grid: it right-sizes dependence on it.

"We're seeing demand bypass the grid."

We're seeing demand bypass the grid. Why? Not because it's trendy, but because it's faster, clearer on cost, and even steadier when things wobble.

That has profound implications for investors. Traditional utility capex is no longer the sole gateway to growth. Energy infrastructure must follow the customers, not the grid map. The opportunity lies in companies enabling this decentralized buildout: from gas suppliers and pipeline operators to grid-edge developers and integrated power providers.

Just as cloud computing decentralized information technology, electrification is decentralizing energy. Institutions that understand this shift early will be best positioned to capture the next wave of energy alpha.



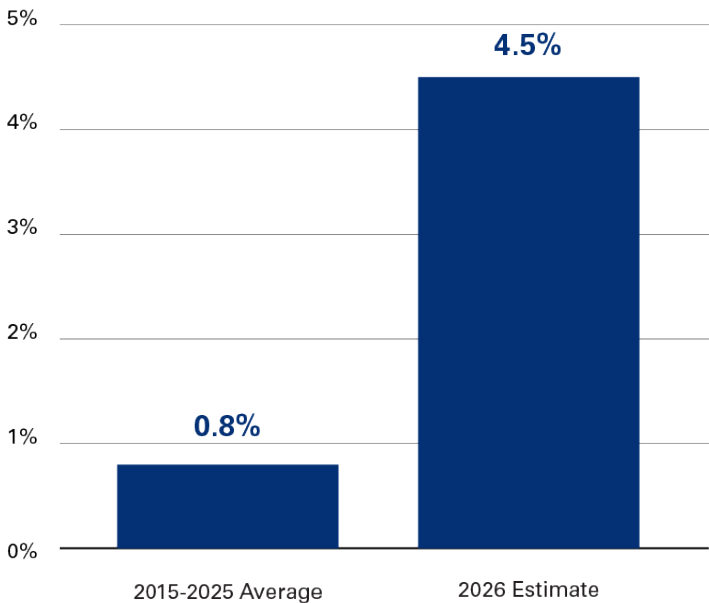
"Institutions that understand this shift early will be best positioned to capture the next wave of energy alpha."

Spectrum of Principal U.S. Energy Sources

Natural Gas		43%
CCGT: Combined Cycle Gas Turbines	Gas and steam turbines for efficient, sustained power	
Peaker	Fast start for high-demand periods	
Grid	Reliable, but subject to connection wait times	
Renewables		21%
Onshore Wind	Largest source of U.S. renewable energy (offshore secondary)	
Hydro	Low cost and reliable, but U.S. infrastructure is aging	
Solar	Fastest-growing source of new electric generation in U.S.	
Batteries	Storage of intermittent power from renewables	
Nuclear		19%
Large Scale	Renaissance for 24/7 clean energy, but capital intensive	
SMR: Small Modular Reactors	Emerging as flexible, lower-cost alternative	
Coal		16%
Coal	Shrinking: no new coal power plants in over a decade	

Source: U.S. EIA, Electric Power Monthly, 2/24. Percentages subject to rounding.

Commercial Electricity Sales Growth



Source: EIA Short Term Energy Outlook June 2025.

Community Impact

Beyond speed and resilience, BTM and hybrid models also help shield local communities from rising energy costs. As data centers and AI clusters pull massive loads from regional grids, utilities often need to expand transmission and generation capacity, costs that ultimately flow through to local ratepayers.

By producing or managing power on-site, BTM can relieve stress on the grid and limit the pass-through of higher prices to surrounding households and businesses. In effect, these models decouple community energy affordability from the explosive growth in industrial demand. For some communities, BTM can offer protection against power shortages if industry and residential demands conflict during periods of peak demand.

For municipalities and regulators, this it's about both private-sector efficiency and public-interest alignment. If energy-intensive industries can help meet their own power needs, availability and pricing can remain stable and equitable for surrounding regions.

4. Behind-the-Meter (BTM): A New Frontier for Energy Alpha

Channeling Capital

An Historic Shift in Energy Investing

While much of the media remains fixated on the visible symbols of AI—chatbots, humanoid robots, and billion-parameter models—the real transformation is happening where investors aren't looking: behind the meter.

As allocators assess opportunities in AI, most attention focuses on chips, software, and cloud platforms. But what powers those platforms, literally, is being overlooked. AI doesn't run on code alone. It runs on electricity.

The rising tide of data centers and AI training clusters is triggering a second-order surge in power demand: one that legacy utilities were not designed to meet. The surge faces transmission bottlenecks, multi-year delays, and regulatory constraints. The traditional grid wasn't built for this.

Beyond a shift in power generation, this is a geographic and economic inversion of the entire electricity system. Instead of relying on distant utility-scale plants and overloaded transmission lines, hyperscalers, industrials, and even communities are building their own power—right where it's needed.

Enter behind-the-meter (BTM) infrastructure. AI has catalyzed this transformation, but the drivers run deeper:

- **Speed to deployment**—bypassing multi-year utility approval timelines
- **Price certainty**—via long-term power purchase agreements (PPAs)
- **Carbon accountability**—meeting emissions targets
- **Resilience**—through on-site redundancy and control

The payoff is tangible: you trade waiting and price guesswork for a power plan you can point to on a calendar and in a contract. Good managers don't wave at these benefits—they measure them, lock them in writing, and structure deals accordingly.

BTM investing channels capital into:

- On-site generation: modular natural gas, renewables with power storage, microgrids
- Pipeline and fuel access infrastructure
- Private power developers with speed-to-permit advantage
- Contracted assets with long-term revenue visibility

The result: an asset class offering new cash flows, contracted revenues from investment-grade counterparties.

Building the energy system AI demands may be a new source of uncorrelated returns and the next frontier in investment alpha.

5. Data Centers Are the New Factories

Power-Data Nexus

Compute is Scaling. Power Must Keep Up.

In the 20th century, factories powered industrial growth. In the 21st century, data centers power everything else: from artificial intelligence to financial systems to national security.

These mission-critical facilities are no longer just warehouses of blinking servers. They resemble military installations, with armed security, hardened infrastructure, and rigorous uptime guarantees. They are becoming the new industrial backbone of the digital economy. And they're growing fast:

- A single AI training center can consume as much electricity as 150,000+ U.S. homes.
- Hyperscalers are building billion-dollar campuses across diverse U.S. markets with hundreds of billions in annual capex estimated through 2030.
- Power demand is growing as much as 10–15% annually in key markets, such as Texas and Virginia), potentially doubling in less than a decade.

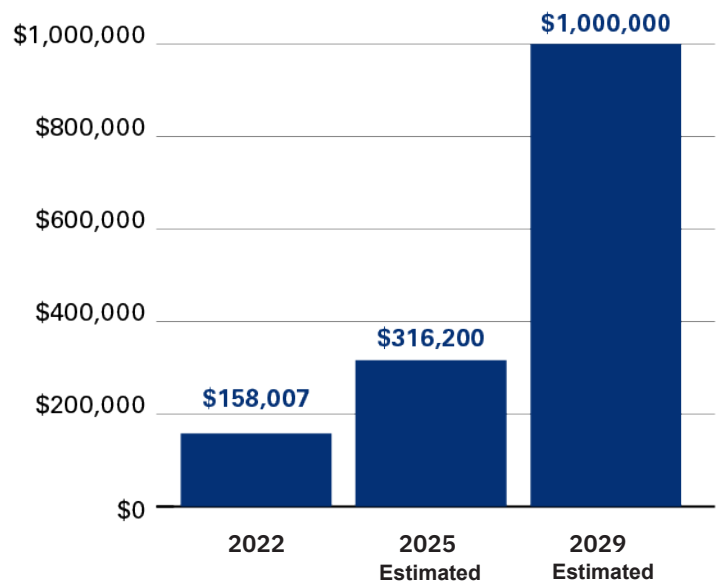
Modern AI and cloud campuses are heavy, steady loads. They need massive amounts of electricity, delivered predictably and without interruption. That's why developers increasingly demand power at the fence line: on-site, dispatchable energy that bypasses slow and unpredictable utility interconnects.

But there's a bottleneck. Each breakthrough in computational technology may require a parallel breakthrough in energy delivery. Unfortunately, interconnect delays, regulatory lag, and grid congestion are holding up power infrastructure. The digital world is racing ahead, and the physical world is stuck in permitting.

This is the heart of the Power–Data Nexus: a fast-forming, codependent relationship between data's exponential growth and the energy systems needed to sustain it. Wherever this relationship breaks down, investors can step in and close the gap.

Hyperscaler Capital Expenditures

(\$ millions)



Source: 2022 & 2025 data is sum of capital spending of Amazon, Google Meta, and Microsoft. 2029 forecast by Dell'Oro Group .

**“Match the power plan to the compute plan.
Let the grid play backup.”**

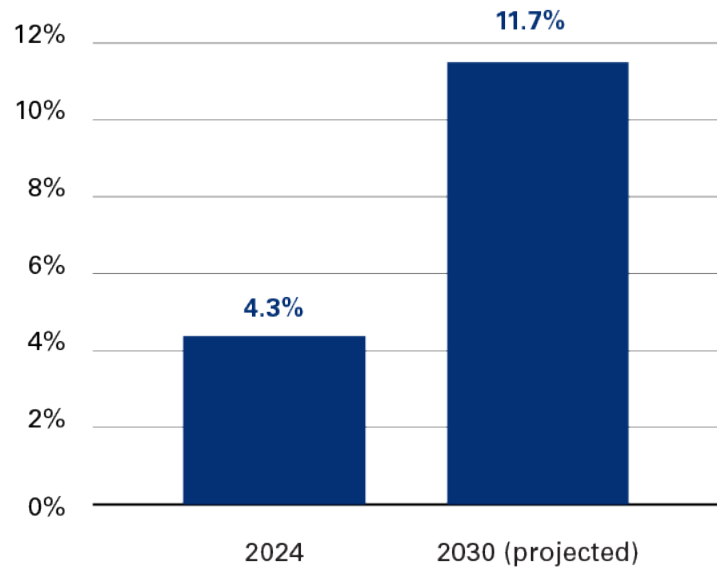
Why This Matters for Investors

The gap between data and power creates scarcity.

BTM projects seek to address this gap. By bringing reliable power to the site—faster than the utility ever could—investors can participate in the economics of digital infrastructure.

If you can deliver power where and when the grid cannot, you've created a durable operational and economic edge.

Data Center Consumption of U.S. Electricity



Source: McKinsey & Company, The Week in Charts, “AI’s power binge,” November 6, 2024.

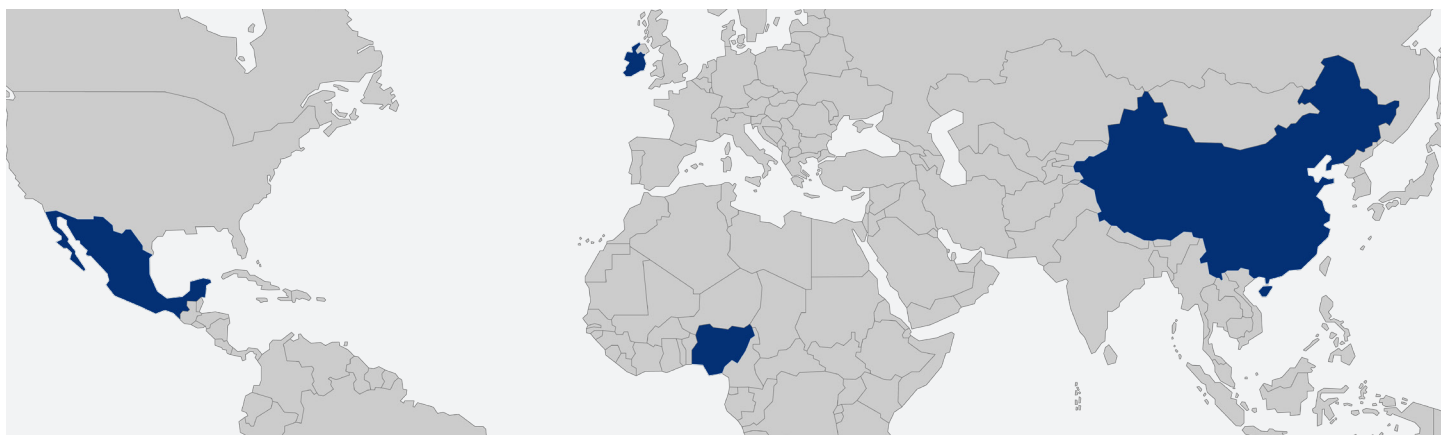
“The gap between data and power creates scarcity.”

6. Flashpoints: Where Digital Demand Meets Infrastructure Limits

Global Urgency

Flashpoints Become Proof Points for BTM

The tension between surging power demand and grid capacity is playing out worldwide, with consequences that extend beyond economics into public policy, community welfare, and development strategy. BTM can provide solutions globally.



China: Industrial Electrification at Scale

China's push toward advanced manufacturing and AI infrastructure is driving unprecedented industrial power demand. Provincial grids are struggling to keep pace, prompting some policy makers and industries to prioritize BTM solutions and distributed generation to avoid transmission bottlenecks that could slow economic development.

Mexico: Data Centers and Community Resources

Large-scale data center development in Mexico has created tensions over power and water access. In some regions, facilities drawing massive loads have strained local infrastructure, affecting clinics, schools, and homes. These conflicts illustrate why on-site generation and water management are becoming essential components of data center planning in resource-constrained markets.

Ireland: Data Centers vs. National Grid

Data centers now consume over 20% of Ireland's electricity, with some forecasters predicting a 30% share in the near future, up from 5% a decade ago. Public debate has intensified over whether hyperscale facilities should continue expansion when residential and industrial users face capacity constraints. Some policymakers have proposed moratoriums on new data center development in the Dublin region.

Nigeria: Distributed Solar as Essential Infrastructure

With nearly half the country lacking reliable grid access, Nigeria has become a global laboratory for behind-the-meter solar deployment. Rooftop and standalone systems are providing power where utilities cannot, demonstrating how BTM solutions can enable economic activity in grid-constrained markets.

Investment Implications

These flashpoints illustrate a global pattern: where digital infrastructure growth outpaces grid capacity, BTM solutions are shifting from optional to essential. For investors, these are signals of structural demand.

7. Natural Gas: The Quiet Enabler of BTM Growth

Ready Now

Flexible, affordable, and available.

Natural gas is the dominant fuel for U.S. power generation and the primary enabler of behind-the-meter infrastructure growth. Its role is especially critical in BTM installations, where reliability, cost, and speed-to-deployment determine project feasibility.

Why Natural Gas Matters for BTM

- **Cost Advantage:** U.S. natural gas prices are among the lowest globally, a long-term competitive edge for domestic power-intensive infrastructure.
- **Power at the Fence Line:** For hyperscalers and industrial users, BTM natural gas generation provides energy certainty in regions where utility delays or grid congestion threaten timelines.
- **Scalability and Flexibility:** Modular gas-powered solutions can be customized to fit site loads, respond to peak demands, or serve as transition technologies alongside renewables.
- **Emissions Accountability:** Modern natural gas systems emit significantly less than coal and are often deployed with carbon capture, battery pairing, or efficiency upgrades—offering a clear path for emissions reduction while maintaining credibility.

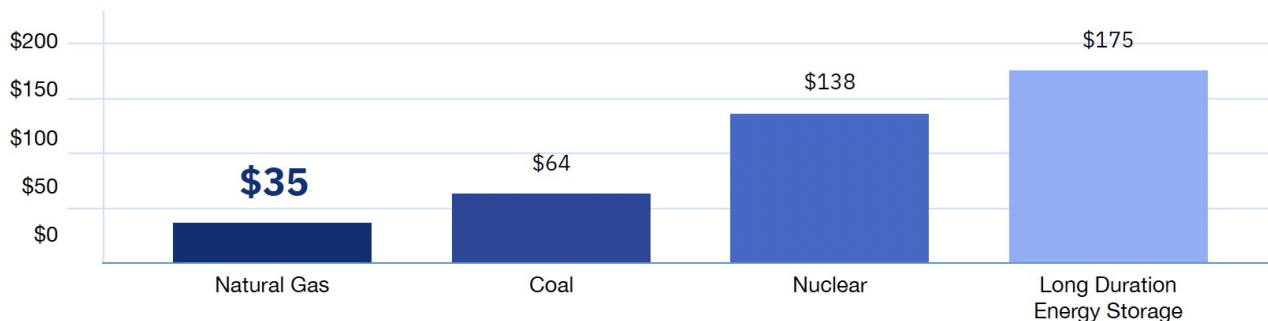
From an allocator’s lens, natural gas serves as the reliable energy backbone accelerating deployment of: AI training centers, advanced manufacturing, and industrial campuses.

Energy Addition, Not Just Transition

Tortoise Capital views this moment as a convergence. The rise of digital demand is driving what we call “energy addition,” not a replacement of existing systems, but a rapid expansion of diverse power sources to meet exponential growth. This is the next phase beyond “energy transition”: a world where demand grows faster than any single fuel or technology can supply, requiring all available resources to scale simultaneously.

Natural gas is not incidental to this expansion. It is the essential enabler—delivering the reliability, speed, and economic viability that establish BTM infrastructure as a significant and growing theme in energy investing.

Cost of Electricity (\$/megawatt-hour)



Source: McKinsey & Company, September 2023 and Lazard LCOE study, April 2023.

8. Behind the Meter: Asset Allocation Perspectives

Investment Implications

Positioning a Structural Theme Within an Allocator's Toolkit

Behind-the-meter (BTM) energy is not a standalone asset class, but it represents an increasingly influential investment dynamic reshaping how and where energy infrastructure capital is deployed.

For asset allocators, the opportunity lies not in a dedicated "BTM allocation," but in recognizing how this structural shift influences investment selection across existing infrastructure and energy portfolios.

Investment Characteristics of BTM-Aligned Assets

BTM-related infrastructure tends to exhibit several characteristics valuable to institutional portfolios:

- **Contracted Cash Flows:** Long-term agreements with investment-grade counterparties provide revenue visibility and downside protection.
- **Inflation Sensitivity:** Revenue structures often include inflation escalators or cost pass-through mechanisms, offering natural inflation hedging.
- **Duration Match:** Long-horizon BTM assets align well with liability-driven investment strategies, particularly for pensions and insurance allocators.
- **Differentiated Returns:** BTM-enabling infrastructure can provide return profiles with lower correlation to traditional equity and fixed income markets.

Portfolio Implementation

Direct pure-play BTM investments remain limited, but allocators can position for this theme across an evolving set of sectors:

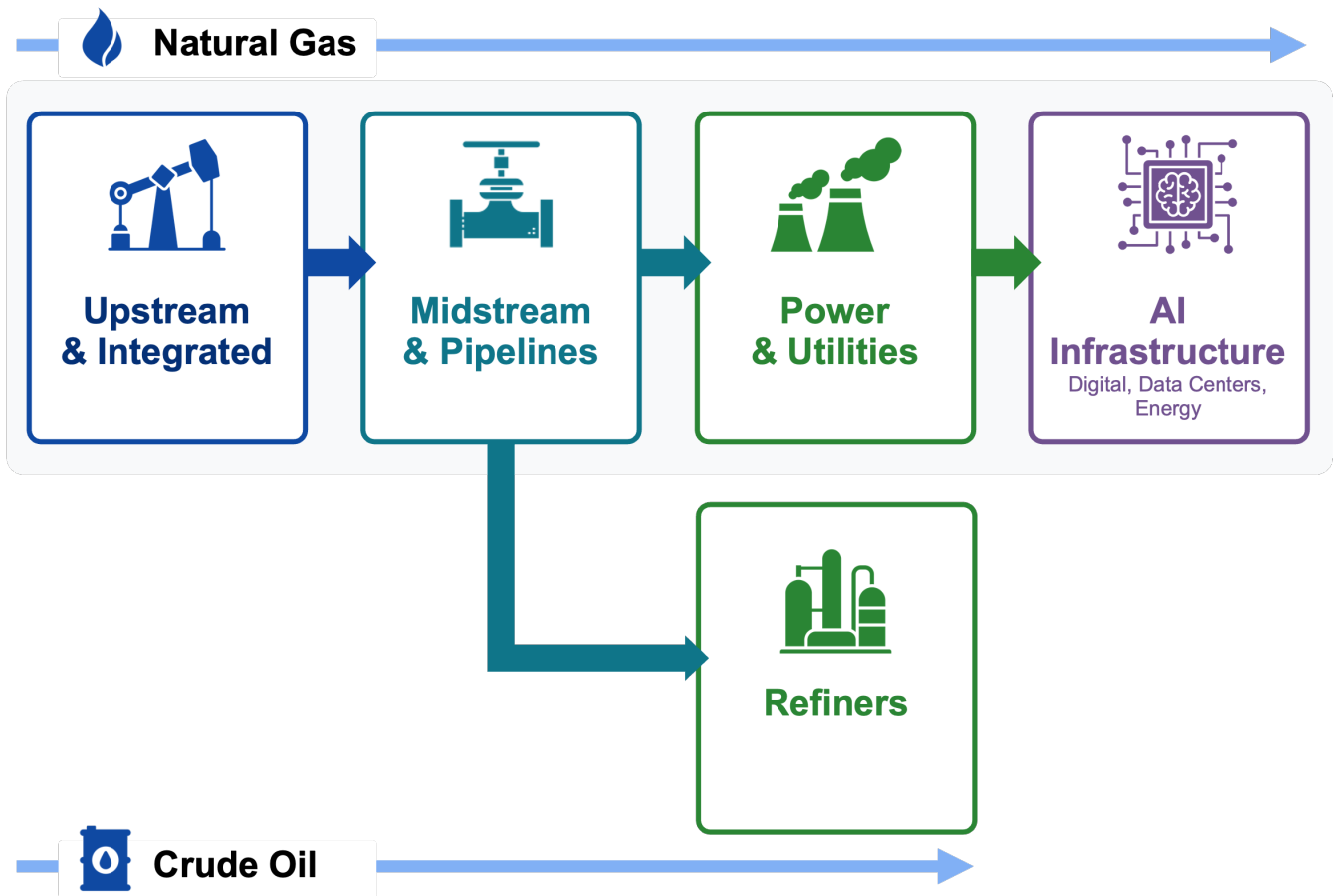
- Midstream natural gas infrastructure
- Independent power producers and distributed generation developers
- Advanced nuclear technology providers
- Emerging on-site and private-wire power developers

As energy systems grow more distributed and customer-driven, BTM will reshape allocations across equities, infrastructure, and real assets, driving diversification for long-term investment programs.

The Tortoise Capital Perspective

With more than two decades of experience investing across the energy value chain, Tortoise Capital views the BTM opportunity as part of a broader reordering of power infrastructure. The firms and assets enabling this shift—through fuel supply, generation, or integrated solutions—represent a growing component of how institutional capital accesses the next phase of energy infrastructure growth.

Investing Across the Energy Value Chain





Case Studies

BTM: Behind the Meter



BTM Case Study #1

Total Solution

Combining Natural Gas and New Bespoke Power Plants

Prometheus Supercluster Data Center and Socrates North and South Power Solutions

Meta, through its real estate holding company, is developing a new supercluster data center campus in Ohio—code-named Prometheus—to power the next generation of AI models. While the Prometheus of legend stole fire from the gods, this modern version turns to Williams for the flame: two behind-the-meter power plants providing a dedicated and resilient energy source.

Williams is constructing a pair of 200-megawatt (MW) natural gas-fired plants, dubbed Socrates North and Socrates South, each capable of powering roughly 150,000 to 200,000 homes (rule of thumb). The plants deploy a mix of combustion turbines, reciprocating engines, and diesel backup generators for reliability across load demands. The first facility is expected online by Q3 2026, delivering electricity directly to Meta's expanding campus, fully bypassing the grid.

For Williams, this marks a transformational pivot. Long known as a midstream energy operator—focused on gathering, processing, and transporting natural gas—Williams is now stepping into power generation for hyperscale clients. The project, approved after regulatory review and public hearings, reflects the company's forward-looking strategy to capture the high-growth data center market while implementing high efficiency and emissions control technologies

Sector Significance

This case highlights how midstream operators are evolving in the era of AI and electrification. While Williams is directly developing and operating the facility, others may instead focus on supplying fuel to third-party generators. Either way, the line between gas logistics and power delivery is blurring, especially for hyperscale clients demanding speed, control, and reliability.



Ohio

New Albany

Highlights

Power Provider: Williams (WMB), ~\$90B market cap (as of Oct. 2026), through subsidiary Will-Power OH, LLC

Power User: Meta (META), ~\$1.3T market cap (as of Oct. 2026)

Williams' Role: Builder/operator of dedicated onsite electrical generation for hyperscale data center complex

User Objective: Power titan-class AI supercluster "Prometheus" in New Albany, OH

BTM Model: Two 200-MW plants (Socrates North & South) approved to run entirely behind-the-meter; natural gas supply via two 24-inch pipelines (subject to separate filing)

Strategic Implication: Long-term, campus-linked energy cash flows; WMB extends from pipeline operator to infrastructure partner in AI electrification; model replicable in power-constrained markets

BTM Case Study #2

Fuel Backbone

Gas as Infrastructure: Powering AI at the Edge

Oasis Pipeline to Supply Natural Gas to an AI and High-Density Computing Campus

CloudBurst is developing a massive AI and high-performance computing campus near San Marcos, TX, engineered to support workloads traditional data centers can't handle. With utility timelines too slow to meet demand, CloudBurst is building onsite power infrastructure and turning to Energy Transfer (ET) to supply the fuel.

Energy Transfer, one of the largest U.S. midstream operators, signed a 10-year firm gas agreement via its Oasis Pipeline, delivering up to 450,000 MMBtu/day, enough to support ~1.2 GW of behind-the-meter generation. The natural gas will power onsite plants located directly on the CloudBurst campus, providing electricity off-grid, independent of local utilities. The project's first phase could go live as early as Q3 2026, pending final investment decision (FID) and entitlements.

While Energy Transfer isn't developing or operating the power facility, its role as fuel backbone makes this one of the first long-term, indexed gas deals directly tied to AI infrastructure.

Sector Significance

This case illustrates how midstream gas operators can expand from commodity throughput providers to critical enablers of AI-scale energy systems. Hyperscale campuses like CloudBurst demand speed, reliability, and autonomy—needs that traditional utility timelines can't meet. Onsite generation, fueled by long-haul infrastructure, offers a faster path forward.



Texas

San Marcos

Highlights

Power Supplier: Energy Transfer (ET), ~\$67B market cap (as of Oct. 2026)

Campus Developer: CloudBurst, AI/High-Performance Computing (HPC) data center platform

ET's Role: Long-term gas supplier via Oasis Pipeline

Fuel Contract: 10-year firm supply, up to 450,000 MMBtu/day

BTM Model: Onsite gas generation (not grid-connected), targeting ~1.2 GW of capacity

Strategic Implication: Midstream enters the AI power stack; creates durable volume growth tied to data infrastructure; replicable across ET's pipeline network

BTM Case Study #3

Nuclear at the Fence Line

Industrial-Scale Behind-the-Meter Nuclear Power

Small Modular Reactors for Electricity, Process Steam, and Decarbonization

The energy challenges at **Dow's** Seadrift chemical complex on the Texas Gulf Coast reached an inflection point. For decades, a combination of grid power and on-site fossil generation kept the lights on and the plants running. However, that approach was hitting its limits. The site requires large, continuous volumes of both electricity and process steam: too critical to interrupt, too large for intermittent renewables to serve, and too carbon-intensive to leave unchanged.

Dow's answer is a partnership with advanced nuclear developer **X-energy** to deploy Xe-100 small modular reactors (SMRs) directly at the Seadrift site. The project will provide both electricity and high-temperature process steam through a private-wire connection. This is behind-the-meter in the most literal sense: generation located at the load, integrated into the facility's operating systems.

The project received a \$50 million U.S. Department of Energy award as part of the Advanced Reactor Demonstration Program, validating its technical and commercial credibility. It is among the most advanced industrial SMR deployments in the United States underway, and one of the few true BTM nuclear projects currently in development at commercial scale.

Sector Significance

The BTM story to date has been largely about natural gas. But Dow and X-energy point to where BTM is heading next.

Energy-intensive industries — chemicals, metals, advanced manufacturing — have a power problem distinct from data centers. Beyond scale, these facilities require process heat at temperatures that electricity alone cannot efficiently deliver. Advanced nuclear, specifically high-temperature gas-cooled reactors like the Xe-100, can support long-term decarbonization while preserving the reliability that industrial operations demand.

For allocators, the Seadrift project illustrates how BTM investment themes extend beyond the current AI-driven data center cycle.

At 125 years old, Dow is not a technology startup chasing the AI build-out. A company with a long history is making a durable decision about how to power critical operations, and is showing allocators what to track.



Texas

Seadrift

Highlights

Power User: Dow Inc. (DOW), \$20+ billion market cap (as of 2026); global leader in specialty chemicals and materials science

Nuclear Developer: X-energy, advanced nuclear technology company; developer of the Xe-100 high-temperature gas-cooled reactor (HTGR)

X-energy's Role: Designer and developer responsible for reactor technology, licensing, and deployment

Site: Dow's Seadrift complex, opened 1954; one of the largest integrated chemical manufacturing sites in North America: ~4,700 acres ~1,200 staff

BTM Model: SMRs deployed on-site at an energy-intensive industrial facility; electricity and process steam delivered directly, bypassing the grid

Fuel Type: TRISO (TRistructural ISOtropic) fuel particles, the size of poppy seeds; carbon and ceramic coating for safety and high-temperatures; "the most robust nuclear fuel on earth" says the U.S. DOE

DOE Support: \$50M+ grant under the Advanced Reactor Demonstration Program (ARDP); validates commercial viability and de-risks early deployment

Strategic Implication: BTM nuclear as a scalable template for long-term, low-carbon power

BTM Case Study #4

Public Policy as Prime Mover

Oklahoma Goes All-In on Behind-the-Meter

Legislate the Load: Enabling Private Onsite Power to Unlock Growth

Across the U.S., grid connection wait times for industrial electricity now average nearly five years—up from less than two in the 2000s—with low completion rates.

Oklahoma responded by moving faster than nearly any state to authorize behind-the-meter (BTM) power for large loads. In May 2025, Governor Kevin Stitt signed the unanimously passed Senate Bill 480 to let businesses develop and manage their own onsite electric power systems, positioning BTM as a key tool for manufacturing, data centers, and AI campuses.

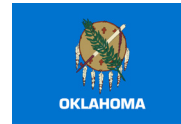
Advocates framed the law as cutting red tape, easing grid pressure, and inviting private investment in onsite generation.

The bill was sponsored by Republican Senator Grant Green, former owner of Green’s Propane, an energy business founded by his father. “This legislation puts Oklahoma on the forefront of energy innovation and economic competitiveness while ensuring we continue to support and respect the role of our longtime electric utilities,” Green said. “Senate Bill 480 sends a clear message that our state is ready to welcome major investment from companies looking to build, expand and lead in emerging fields ... and AI-driven businesses.”

Originally passed as HB 1374, the bill promotes BTM to ease bottlenecks and attract billions in new projects, especially for AI and manufacturing. Leadership highlighted the bill as a source of economic growth, job creation, and as a means to capitalize on Oklahoma’s natural gas industry.

Oklahoma is codifying what many hyperscalers already do: build power at the fence line. The policy’s north star: speed-to-power. Companies can build renewables or other onsite power, grid use optional, and cut years off timelines.

Oklahoma stands out nationally as a policy first-mover in BTM power, while much of the nation remains bogged down in long approval processes for new power generation.



Highlights

Policy Enacted: State of Oklahoma SB 480 (unanimous vote, May 2025) and HB 1374 (unanimous vote, March 2025); enables BTM development by private industry

Target Users: Large manufacturers, data centers, and AI/high-performance computing (HPC) campuses

BTM Generation Allowed: Fossil fuel or renewables; grid use optional or as backup

Economic Rationale: Potential billions in investment and job creation

Strategic Implication: Oklahoma stakes out BTM-friendly advantage—a competitive edge while other states struggle with long permitting delays.

What's Next: Emerging Models to Watch

As the BTM revolution accelerates, new models are beginning to take shape. The following projects offer a glimpse into the next frontier:

OpenAI, Oracle (ORCL), and SoftBank (ADR: SFTBY)

Stargate MicroGrid


This ambitious joint venture envisions gas-based microgrids purpose-built for AI infrastructure. Still early-stage, it reflects growing urgency among tech platforms to secure localized power in the face of interconnection delays and grid volatility.

Equinix (EQIX)

Fuel Cell Systems Across Multiple Locations

The data center giant continues to scale Bloom Energy's fuel cell systems across multiple campuses. By deploying reliable, on-premises capacity, Equinix offers a real-time lab for continuous, carbon-aware operations.

Each of these efforts shows that the energy infrastructure story is far from over.



“The energy infrastructure story is far from over.”

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• Contacts

For additional information, please reach out to us:



Brett Wright
Chief Revenue Officer
913.981.1020
bwright@tortoisecapital.com



Rob Bernstein
Head of Institutional
617.501.3825
rbernstein@tortoisecapital.com



Carter Sims
Senior Vice President,
Financial Institutions Group
610.585.1121
csims@tortoisecapital.com



Alexis Paolantonio Pickard
Vice President,
Strategic Relationships
610.850.1828
apickard@tortoisecapital.com

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Tortoise Capital

5901 College Boulevard, Suite 400 Overland Park, KS 66211

(913) 981-1020

info@tortoisecapital.com

www.tortoisecapital.com

