

MARKET INSIGHTS

AI's Infrastructure Buildout: Capital at Risk, Returns at Stake

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We believe this is where the investment debate becomes more nuanced. AI may live in the cloud, but the cloud lives on the ground. The constraint is not simply the volume of electricity available; it is whether the right power can be delivered to the right place with the reliability and timing AI infrastructure requires.

So the investment question is not simply whether AI demand grows. It is whether the physical system can deliver what AI requires, at what cost, on what timeline and at what return on capital. This is why we see AI infrastructure as a rich active-management problem. The investment theme may be obvious; the distribution of profit pools is not.

In our view, the edge comes from testing simple narratives against physical constraints, cost inflation and financial returns — and from connecting insights across sectors. That cross-sector collaboration is central to how we work: bringing together perspectives from energy and capital goods to understand bottlenecks, beneficiaries and the risks of overcapitalization

The power equation: magnitude matters — but so do location and reliability

A useful starting point for our investigation is the scale of the incremental power requirement implied by AI investment scenarios. A US\$1.5 trillion AI capex scenario implies roughly 230GW of new global AI power demand by 2030¹, with about two-thirds assumed in the US (around 152GW)², on top of roughly 39GW of non-AI US demand growth from GDP, reshoring and EVs³. To put that into context, the US grid is currently producing roughly 500GW, while the total capex numbers and associated power have increased about 50% since September.⁴

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What assumptions move those numbers most? One key variable is power consumed per chip. Next-generation AI GPUs draw roughly three times the power of chips from four years ago; a reminder that compute ambition can translate quickly into real-world load growth.

Even if aggregate capacity is built, we believe “quality of power” can be just as binding: AI data centers require baseload power and extremely high reliability (referred to as “five nines,” or 99.999% uptime). That reliability requirement means renewables may be part of the solution in some configurations, but intermittency limits their ability to serve as the dominant near-term answer on their own.

Where does the power come from? The rise of “speed-to-power” solutions

The first incremental lever is upgrading the existing generation fleet as a short-term solution — squeezing a bit more out of existing gas and nuclear assets — which is estimated to add up to 40GW over the next several years. Looking beyond that into the medium term, we are analyzing how quickly the supply mix is changing. A year ago, grid interconnection might have been assumed to do most of the heavy lifting, but the last nine months have seen a surge in behind-the-meter (BTM) solutions as interconnection queues can be upward of five years. With “speed-to-power” a priority for hyperscalers, BTM solutions could represent power for roughly one-third of AI data centers over the next five years. As an example, companies like Caterpillar and Baker Hughes are stacking up small turbines that were previously used in oil and gas production. On a longer-term basis, we think nuclear will be a big part of the solution as it's a great source of base power and is cleaner than gas.

This shift has two important investment implications. First, it widens the opportunity set as well as the risks beyond traditional grid buildout. Second, it underscores why active management matters: if bottlenecks can be worked around creatively, profit pools may migrate across sub-sectors faster than the market expects.

Price signals show scarcity is real but they're uneven across the chain

One of the most useful ways to separate opportunities from hype is to watch where price signals are already appearing. Prices for gas turbines made by GE Vernova, Siemens Energy and Mitsubishi Heavy are almost three times 2024 levels. We also see regulated utility capex plans where the generation component has doubled in the last year for the 2026–2029 period.

At the same time, power-price movement has happened but not yet to an unprecedented magnitude. This suggests that some parts of the value chain may be absorbing inflationary pressure while others enjoy pricing power.

We believe this unevenness is the point. Markets like simple narratives; our job is to test those narratives against physical constraints, cost inflation and financial returns. This helps us to identify where scarcity is real versus merely cyclical.

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Capital goods: demand is broad but durability varies by distance to the chip

From a capital goods perspective, AI-driven demand has been broad-based, with pickup beginning in 2024 and accelerating into 2025 as data-center exposure became more meaningful across the sector. For example, data-center exposure has grown 50%–100% and added meaningful acceleration to topline growth for historically diversified companies — spanning electrical equipment (transformers, switchgear), HVAC and cooling required to ready data centers for new GPUs.

Closer to the chip level, we have seen increasing demand for connectors, cold plates and cooling components designed into each generation. This was initially led by NVIDIA but is broadening as companies like Google and Amazon develop their own chips. Looking upstream, aggregates and construction equipment are benefiting as data-center demand reaches across the industrial complex.

A key nuance is that equipment closer to the chip may have more durable growth because it must keep pace with fast-changing specifications, while “grey-space and shell” (power, cooling, and facilities) requirements may ramp hard but peak earlier. We believe this is an important framework for distinguishing durable compounders from cycle beneficiaries and for avoiding overpaying for peak earnings where capacity is likely to normalize.

Shifting constraints: where returns are won (or lost)

The buildout is unlikely to be constrained by one bottleneck forever; the constraint can shift. Today's constraints are power generation and transmission, with transformer and switchgear capacity still stretched, even as customers work around interconnection and permitting via BTM solutions and favorable locations. The availability of labor such as licensed electricians, welders and mechanics is also a key constraint which may take longer to overcome; it is easier to add factory square footage than to attract and train a new class of skilled tradespeople.

In our view, this is where the “capital at risk” question becomes concrete. When growth attracts new entrants, we are cautious of companies emerging without differentiated technology or long-term customer relationships. These emergent companies often gain share because higher-quality partners are sold out, but they carry higher execution risk and are likely to decelerate first as supply opens up. We believe discipline matters: benefitting from the steep ramp is not the same as assuming today's growth rates persist indefinitely.

Cross-sector research helps us to track the next industry constraint

It is worth noting how quickly industry adapts. Where the grid might have been expected to dictate pace, companies have developed creative BTM configurations of power. Examples include industrial engine makers repositioning as data-center power providers and legacy electrical equipment companies adding significant capacity to meet hyperscaler demand.

We believe these examples reinforce why cross-sector collaboration matters. Understanding what is happening in power markets, industrial supply chains, services and customer relationships helps us assess not only who benefits today, but who can sustain returns as the system evolves.

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Active management lens: don't just buy the theme, underwrite the returns

Investors face a challenge: demand for energy and capital goods may be real, but returns will vary with management execution, contract structure, customer relationships, margin quality, capital intensity, balance-sheet flexibility and reinvestment discipline.

This is why we prefer businesses with above-average margins, ROIC above WACC, strong capital allocation and close customer relationships. We also assess the attractiveness of service opportunities, for example, selling an engine or turbine today while attaching a long-dated service annuity versus selling components that may never be replaced. As an example, GE Vernova sells a turbine upfront, but they also sell a long-term service agreement which can last 10 years.

Valuation discipline is also important in the AI buildout, with caution about extrapolating growth rates for lower-tech electrical and mechanical components over 5 to 10 years. While we seek to participate in the ramp up, we remain cautious of out-year valuations and position sizing where confidence declines.

We are also cognizant of signals that could indicate a thesis is changing, including hyperscaler capex, power capacity coming online versus demand forecasts and company backlogs. If speed-to-power becomes less urgent, higher-cost prefabricated configurations may slow first. With companies adding capacity where they may have been reducing it in recent years, we're carefully assessing two things: the quality of management to understand if they have a growth mindset, and whether their business is diversified so the extra capacity could be used in business lines outside of data centers if needed.

Conclusion: Knowledge is seeing the buildout, wisdom is knowing who gets paid

We believe AI may ultimately be a productivity story, but the path matters. In the near term, the buildout is capital- and input-intensive in an economy where power, equipment, labor, materials and time are no longer structurally cheap.

AI is not one trade and not one sector. It is a cross-sector capital cycle touching technology, energy, utilities, industrials and materials across both labor and balance sheets. In our view, winners will not simply be the companies most exposed to AI demand. They will be the companies that can convert that demand into durable free cash flow at returns above their cost of capital.

That is why we remain confident in active management: the investment edge comes from doing the harder work: testing demand against physical availability, separating temporary bottlenecks from durable scarcity, and distinguishing companies with real pricing power and capital discipline from those benefiting from a crowded theme. ▲

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¹ Morgan Stanley AX cycle model; Enlight / McKinsey forecasts.

² JPMorgan 2026 Spring Call Series; Bernstein "US Long View: 2026 Edition".

³ Alliance Resource Partners; Morgan Stanley X-Energy initiation.

⁴ US EIA Short-Term Energy Outlook (May 2026); Bernstein.

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