Janus Henderson
INVESTORS

The next AI bottleneck: Power, permits and public support

The rapid expansion of AI infrastructure depends on more than capital and chips. As power availability, water resources, permitting, regulation and community support become critical determinants of project delivery, responsible development is emerging as a key factor in execution, competitiveness and long-term investment returns, explains Phoebe Lei.





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Key takeaways:

- Execution may matter as much as ambition in the AI infrastructure buildout, with access to power, resources, and permits often determining which projects move forward.

- Community support is becoming increasingly important, influencing both project economics and development timelines.
- Companies that are able to navigate these operational, regulatory, and stakeholder constraints effectively may be better positioned as the buildout continues.

Responsible development in the AI infrastructure race

The race to build artificial intelligence (AI) infrastructure depends on a growing number of interconnected inputs. Translating announced investment into operating capacity requires not only chips and capital, but also local resources, supporting infrastructure, a workable regulatory pathway, and sufficient community support.

As these factors become more material to project approval and execution, the ability to manage them can influence permitting, time to power, project economics and, potentially, the pace of broader AI adoption. In our view, responsible development is therefore not separate from the investment case. It is increasingly part of it.

Announced capacity is not the same as executable capacity

The data center pipeline is substantial, but headline gigawatt figures should be treated cautiously. More than 120 US projects worth approximately $200 billion were reportedly blocked or delayed in the first half of 2026, and significant portions of the capacity scheduled for delivery over the next two years have yet to enter construction . Equipment delays, labor shortages, permitting requirements, and community opposition can all extend the path from announcement to operation.

That does not mean the pipeline is collapsing. Early-stage announcements often include speculative projects, while delayed capacity may eventually be relocated or developed by another operator. Headline delay rates therefore need to be interpreted in context, as announced capacity may be an increasingly unreliable indicator of what will actually come online and when. Capital expenditure plans are better evaluated alongside the practical conditions required to deliver them, including secured power and resource access, permitting maturity, financing, infrastructure readiness, and community acceptance. Together, these factors provide a more realistic view of execution probability and time to revenue.

Social license is becoming hard project infrastructure

Community opposition is no longer a peripheral reputational issue. Concerns around electricity prices, grid reliability, water consumption, pollution, land conversion, noise, and the credibility of promised economic benefits are shaping permitting decisions, utility negotiations, and local politics.

These concerns can affect project timelines and economics. A developer that fails to address local concerns early may face redesign, litigation, relocation, or cancellation later. By contrast, one that addresses infrastructure requirements, engages communities early, and works constructively with local stakeholders may be better positioned to navigate the approval process. In that sense, social license is beginning to resemble scarce project infrastructure rather than corporate goodwill, with potential implications for deployment speed and, ultimately, returns on invested capital.

Community expectations are also increasingly being translated into regulation. Moratoria, large-load tariffs, cost-sharing requirements, incentive rollbacks, and tighter audit and disclosure rules can raise barriers to entry and slow development. More than 300 temporary or permanent bans have reportedly been passed at US state and local levels since 2023[2]. However, many of these measures are intended to shield existing customers, filter speculative applications, and establish clearer standards rather than prevent AI infrastructure construction altogether. Consequently, stricter and more consistent rules could ultimately produce a cleaner pipeline and favor companies with credible resource strategies, strong balance sheets, and established regulatory and community relationships.

Finding a cost-effective path to power and deployment

Power availability is a central determinant of the AI infrastructure race. No single energy source currently offers an obvious solution across the competing priorities of speed, scale, reliability, affordability, environmental considerations, and public acceptance.

Natural gas remains important, though equipment backlogs, pipeline constraints, fuel price volatility, and permitting and pollution concerns can affect its cost and deployment timelines. Renewables and storage can sometimes be deployed more quickly and may reduce exposure to certain emissions and air-quality concerns, although transmission and intermittency remain important constraints. Similarly, growing interest in behind-the-meter generation reflects the search for faster deployment pathways amid lengthening interconnection queues and evolving market reforms, yet these projects may still carry many of the same permitting, infrastructure and community risks as grid-connected developments.

A more practical model is likely to be diversified and phased, combining grid access with appropriate on-site generation, renewables, storage, nuclear, geothermal, fuel cells, flexible demand, and other emerging solutions. The relevant comparison may therefore be not simply which source offers the lowest levelized cost of electricity, but which portfolio offers the lowest total cost of deployment. A higher upfront cost may still support strong returns if it shortens delays, improves reliability, reduces exposure to fuel and policy risks, and preserves the project's longer-term license to operate. Improving compute and model efficiency is also part of the same equation, enabling more useful output per unit of p and easing resource intensity as demand continues to outpace supply.

How new capacity is supplied also carries wider significance. Data centers currently represent a relatively small share of global electricity use and emissions but are expected to account for a growing share of incremental growth in coming years. AI infrastructure is catalyzing one of the biggest investment waves in new power generation.

> Despite seventy years of technological progress since the invention of the integrated circuit, global carbon emissions have risen sevenfold, and we are yet to succeed in breaking the link between carbon emissions and economic growth. AI has great promise with regards to accelerating innovation and driving efficiencies, however, the build out of AI infrastructure is incredibly power and resource intensive. At a time when global temperatures keep on setting new records it is imperative that the companies involved in AI prioritize and support investment in low carbon energy sources and make sure it is part of the solution, not part of the problem.
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> – **Hamish Chamberlayne**, Head of Global Sustainable Equities

Managing water impacts at the local level

Water presents a different challenge because its availability and social value are highly location-specific. Portfolio-level efficiency or replenishment figures may look strong while individual communities still face competition for potable supplies, stressed infrastructure, wastewater concerns, or declining well levels.

More comprehensive approaches may combine efficient cooling technologies, recycled or non-potable supplies, investment in local infrastructure, site-level disclosure, and replenishment projects aligned with the affected watershed. At the same time, trade-offs remain: reducing water consumption can increase energy requirements, while closed-loop cooling can create wastewater-management risks if discharge is not adequately treated and monitored.

Responsible development as a source of differentiation

No operator has solved every trade-off involved in scaling AI infrastructure, and development models will vary by market. Nevertheless, differentiation is beginning to emerge. Some major hyperscalers and established developers appear further ahead in looking at these issues more holistically by combining diversified power procurement, water management, infrastructure readiness, operational discipline, transparency, and community engagement[3]. Recent projects are also beginning to demonstrate how these approaches could support faster deployment[4], while practices across the wider industry continue to evolve.

This creates an important distinction between companies that can convert capital expenditure into operating capacity while managing local impacts and those whose plans remain vulnerable to grid bottlenecks, permitting disputes, and public opposition. The likely winners in the AI capacity race will not simply be those announcing the most ambitious buildouts, but those able to secure and allocate capital efficiently, obtain reliable power and other critical resources, navigate equipment and labor constraints, and maintain sufficient political and community support. Viewed that way, responsible development is becoming a core part of infrastructure underwriting, and the constraints shaping the buildout today are also where durable competitive advantage and investment opportunity could accrue over time.

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