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The Age of "Gigascale": Why rural towns are the new frontier for AI infrastructure



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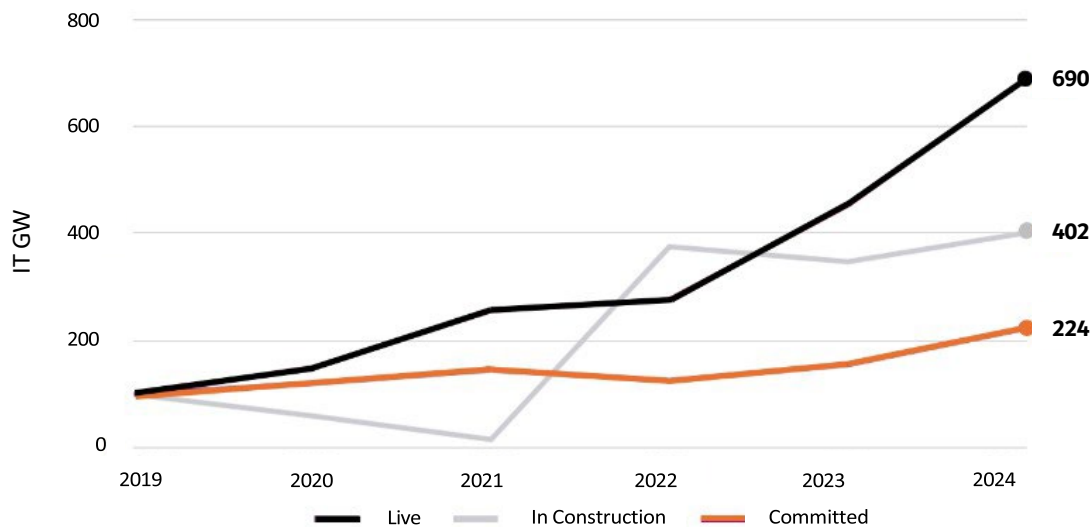
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The Age of "Gigascale": Why rural towns are the new frontier for AI infrastructure

Since 2019, global demand for data center capacity has surged seven-fold. This explosive growth is fueled by the steady expansion of cloud computing and a seemingly insatiable appetite for Artificial Intelligence (AI). Consequently, competition for "powered land" among data center operators has become fierce; the existing power grid simply cannot keep pace with the massive electricity requirements of new **gigawatt-scale (GW)** AI projects.¹

At Alpen, our recent work highlights the industry's shifting center of gravity. New developments have moved from congested legacy hubs like Northern Virginia, Silicon Valley and even Phoenix to secondary markets. Now they are venturing further beyond to rural communities where land availability and self-contained power options offer a solution to the grid congestion crisis. However, as these massive infrastructure investments move into smaller communities, success depends on more than just engineering. To thrive, projects must proactively dispel public misperceptions, accelerate workforce planning, and maintain a culture of transparent community engagement.

Global Supply Index (2019 = 100)



Source: DC Byte, 2025 Global Data Centre Index

¹ McKinsey Private Capital. (2025). *Scaling bigger, faster, cheaper data centers with smarter designs.*

The Shift to "Energy Autonomy"

As legacy hubs stall, certain rural markets are meeting demand with land and an appetite for investment. Take Utah, where over 15.5 GW of projects are currently planned across two rural regions alone:

- **Southwestern Utah:** A 1.5 GW planned “infrastructure-ready” campus is being welcomed with a dedicated on-site natural gas power plant and site characterization that makes for a turn-key product.²
- **West-central Utah:** A 4 GW planned project is being designed to utilize on-site natural gas and massive battery storage, allowing for fully off-grid operations in a constrained market.³
- **West-central Utah:** A 10 GW project of unprecedented scale is being developed with a multi-pronged energy approach, blending solar, gas, and aspirational nuclear power to support one of the world’s largest data center projects.⁴

To put this in perspective, Utah’s current statewide power generation sits at roughly 10 GW.⁵ These combined projects represent 15.5 GW of planned capacity—effectively a 150% increase over the state’s total current production. State and local officials are proactively managing these energy demands, most notably through Governor Spencer Cox’s nationally recognized 'Operation Gigawatt', an initiative designed to double the state's energy production within the next decade, and legislation accommodating large capital investments such as AI data centers.^{6 7}

“Utah refused to accept false choices. The nation will look to Utah as the model for building a complete, domestic energy ecosystem that actually works.”

— Utah Governor Spencer J. Cox
Interview with Alpen Associates, January 2026

² Alpen Associates. (2026). *Confidential Data Center Campus: Economic Impact Study*.

³ Data Center Frontier. (2025). *Joule Capital Taps Caterpillar to Power Huge AI, HPC Data Center in Utah*.

⁴ KSL News. (2025). *Creekstone Energy closes funding round to advance world's largest data center campus in Utah*.

⁵ U.S. Energy Information Administration (EIA). (2024). *US Electricity Profile 2024*.

⁶ Alpen Insights. (2026, January). *Alpen CEO interview with Governor Spencer Cox*.

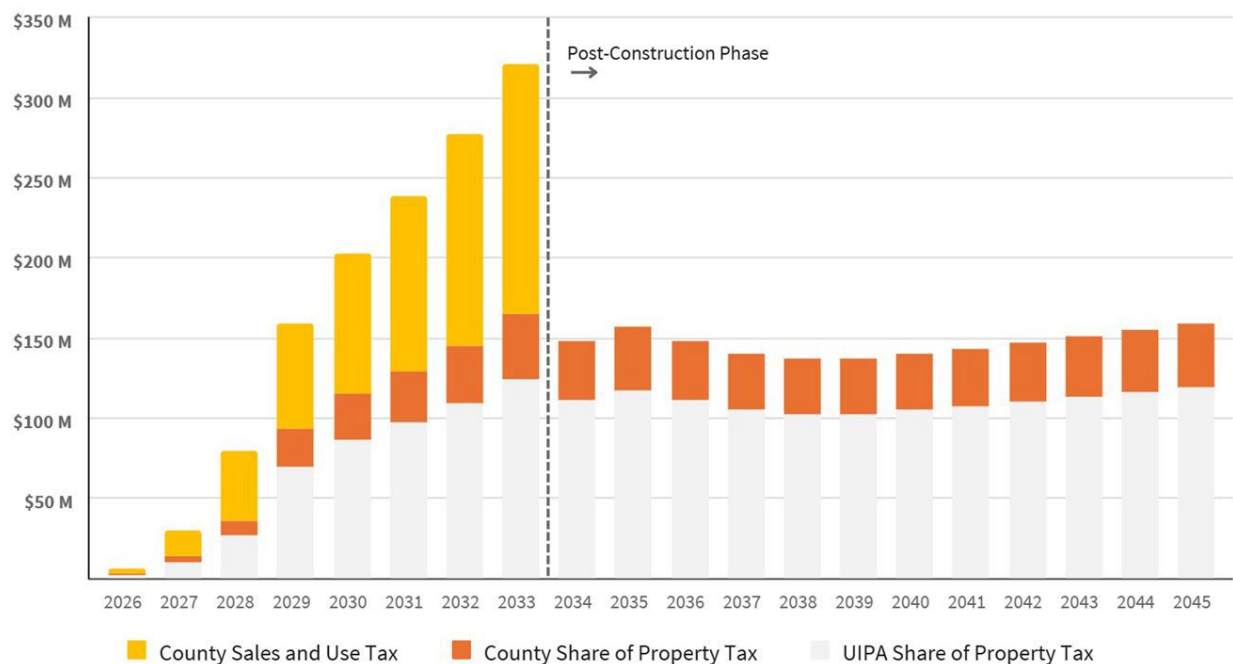
⁷ Utah State Legislature. (2025). *Senate Bill 132: Energy Amendments*. (Regarding "Large-Scale Generation Providers" and "Closed Private Generation Systems").

Separating Fact from Fiction

While gigascale projects command tens of billions in capital, they are sometimes scrutinized by rural and urban populations alike who fear 'jobless growth'—a scenario where resource consumption outweighs the actual economic benefit to the local workforce. Alpen's Economic Impact Study of a 1.5 GW project in rural Utah challenges these perceptions, demonstrating significant localized returns that extend well beyond the initial construction phase.⁸

- **Massive Employment:** A 1.5 GW buildout averages nearly 11,000 direct and indirect skilled trade jobs annually over 8 years.
- **High Wages:** Post-construction, the project can sustain nearly 700 direct operational roles with average compensation exceeding \$115,000— 79% higher than the average wage.
- **Fiscal Impact:** These projects act as massive fiscal anchors. In the study, projected revenue totaled 134% of the county's annual general fund budget, even after incentives were applied.

20-year Revenue Projection Including Abatements and Incentives (county only)



Source: Alpen Associates analysis of data center campus county tax data. Note: "Post-construction" denotes the transition from Sales and Use Tax (construction phase) to steady-state Property Tax. Portions allocated to the Utah Inland Port Authority (UIPA) are reinvested into the project area. Data excludes state taxes and non-county incentives.

⁸ Alpen Associates. (2026). *Confidential Data Center Campus: Economic Impact Study*. Analysis conducted via Chmura JobsEQ platform and Alpen's proprietary tax model.

Navigating Obstacles

Equipping policy makers, civic leaders, and community members with accurate information about data center projects with self-contained power designs and their outsized economic benefits can go a long way to shape public sentiment. However, there are other critical socio-economic hurdles to address to successfully get off the ground and drive a project to completion:

- **Fiscal Optimization:** A sudden influx of capital requires discipline. Communities need a detailed revenue forecast and economic development strategy to ensure this windfall translates into long-term community amenities to avoid political strife seen elsewhere.⁹
- **The "Boomtown" Bottleneck:** Multi-gigawatt projects can create housing shocks. Alpen advocates and supports robust workforce planning in partnership with state and local educational institutions, and planning for modular housing solutions to absorb the temporary surge of tradespeople.
- **The Water-Energy Nexus:** Analysis confirms that modern closed-loop cooling systems use over 80% less water consumption than legacy evaporative systems.¹⁰ This point is important to socialize, especially in areas experiencing water scarcity like Utah.

Next Steps: Strategic Planning for Your Frontier

The surging demand for AI compute is rewriting the global infrastructure map, positioning rural communities as the new frontier for large-scale investment. However, capturing the full economic potential of a gigascale project requires more than just land—it requires objective data and multi-faceted expertise. Alpen provides the experience necessary to navigate this complex transition. With a proven track record supporting hyperscale and edge data center clients scale across Europe, South America, and the U.S., our team brings global insight to local projects through rigorous program management, site selection, and advanced data analysis.



⁹ Uberti, D. (2025, November 4). *What Happened When Small-Town America Became Data Center, U.S.A.* The Wall Street Journal.

¹⁰ Data Center Magazine. (2025). *"How are Data Centers Shifting to Zero-Water Cooling Tech?"*

Secure your project's future. Whether you are a public sector leader managing growth, a land developer validating project viability, or a data center operator entering a new market—contact us today to explore the roadmap for realizing your project's success.



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