GLOBAL X INSIGHTS

Four Companies Supporting America's Electrification

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The United States is undergoing an unprecedented transformation in its power landscape, driven by the convergence of rapid technological change, mainly around surging electricity demand from data centers, manufacturing activity, and electrification initiatives. For investors, there is an entire ecosystem of companies enabling and benefiting from this massive infrastructure transition. These companies are building and maintaining the backbone of America's electrified future, from the transmission and distribution infrastructure through to the power generation and management systems.

In this piece, we highlight four key players leading different aspects of the U.S. electrification revolution.

- Constellation Energy - One of the largest clean energy providers in the U.S., focusing on nuclear and renewable generation.
- Quanta Services - A major infrastructure solutions provider specializing in power grid modernization and installation.
- Eaton Corp. – An intelligent power management company offering solutions across the electricity generation value chain.
- NuScale Power - An innovative company developing small modular nuclear reactors (SMRs).

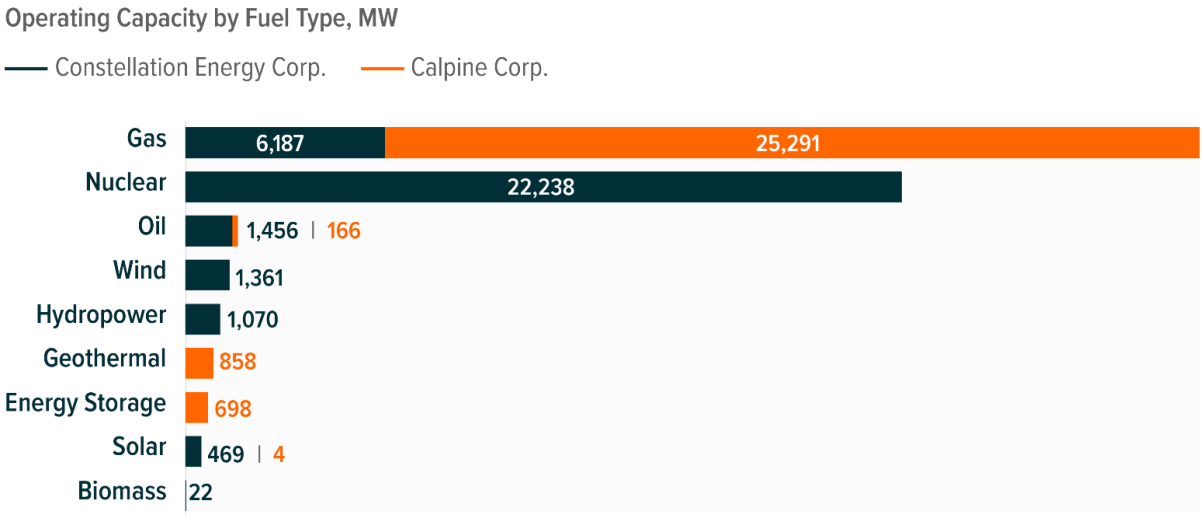
Constellation Energy: An Emissions-Free Powerhouse Diversifying into Natural Gas-Fired Generation

Constellation Energy stands as America's largest producer of emissions-free power, controlling over 20% of U.S. nuclear capacity.[1] Yet, the company is embarking on a potentially transformative expansion. In January 2025, Constellation announced they entered a definitive deal to acquire Calpine, America's largest generator of electricity from natural gas and geothermal resources, for $29 billion (including the assumption of debt). The acquisition could mark a strategic shift for Constellation, as the close of the transaction will combine the nation's largest nuclear fleet with substantial natural gas capabilities to create a diversified power generation powerhouse.[2] The Calpine acquisition will likely expands its total generation capacity to over 60GW across multiple resources, which could make Constellation the largest U.S. power generator.[3,4] While maintaining its position as the largest carbon-free generator with 22GW of nuclear capacity, the deal should add approximately 25GW of natural gas-fired capacity and 1.5GW of geothermal and renewables.[5,6] This strategic move is expected to significantly enhance the company's geographic footprint, particularly in key markets like Texas and California. The integration is also expected to yield over 20% earnings per share (EPS) accretion and generate more than $2 billion in annual free cash flow.[7]

The strategic rationale behind this combination addresses a core challenge in nuclear power economics. Nuclear plants operate most efficiently as baseload generators, running at consistent output levels regardless of market conditions. This operational inflexibility has historically meant that nuclear generators must accept prevailing market prices, even during periods of high demand when prices could potentially rise. The limitation stems from the presence of natural gas plants that can quickly enter the market during demand spikes, effectively setting price ceilings.

The Calpine acquisition transforms this dynamic by bringing a substantial natural gas portfolio under Constellation's control. This integration creates opportunities for more sophisticated market participation across multiple regions, as the company can now optimize between its always-on nuclear fleet and its flexible natural gas assets. In other words, beyond merely expanding Constellation's geographic reach into Texas and California, the deal represents a fundamental enhancement of the company's ability to capture value across different market conditions and demand scenarios.

CONSTELLATION ADDS SIGNIFICANT NATURAL GAS CAPACITY THROUGH CALPINE ACQUISITION



Source: S&P Global. (2025, January 10). Constellation shares soar on $26.6B Calpine acquisition.

Additionally, Constellation is positioning itself at the forefront of the AI-driven data center boom, which is projected to drive substantial electricity demand growth well into the 2030s. By the end of the decade, data centers could account for over 9% of total electricity consumption in the U.S., up from an estimated 4% share in 2024.[8] The company's nuclear assets are proving increasingly valuable in this context, as demonstrated by a landmark 20-year contract with Microsoft for the Three Mile Island facility. While the contracted price was not announced, Microsoft could pay a fixed rate of $110-$115 per MWh, which would be a premium to current market economics.[9,10] Constellation has proposed a three-year timeline for restarting and reaching full commercial operation.

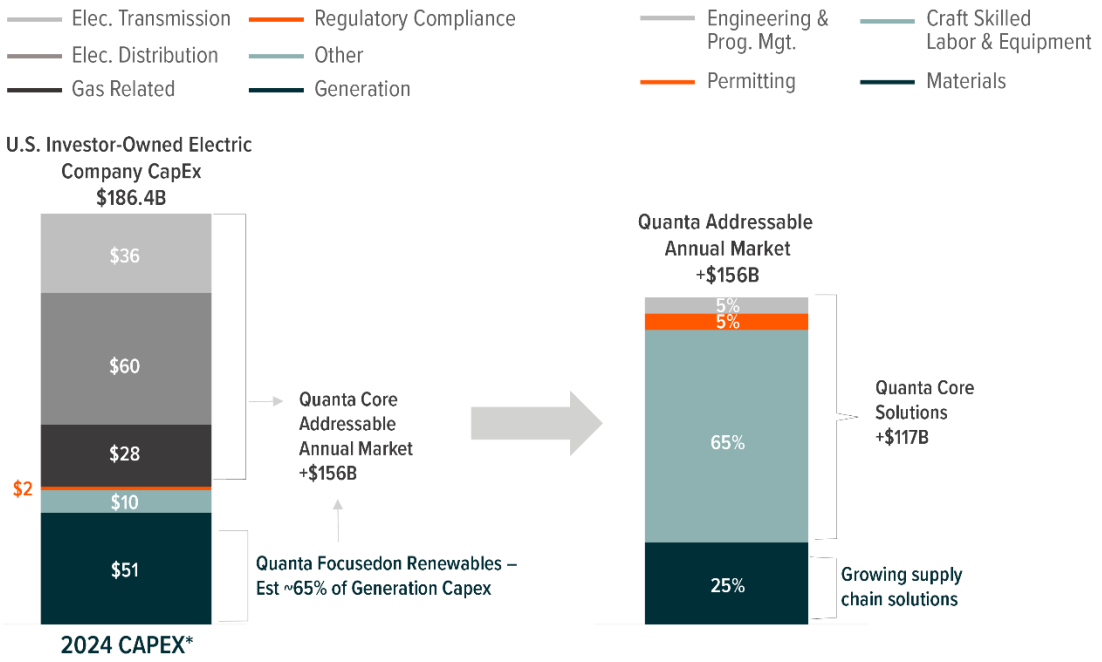
Constellation's commitment to carbon emissions-free leadership is evidenced by its other recent contract successes. The company secured a significant agreement worth over $1 billion to supply nuclear power to 13 Federal Government agencies.[11] This comprehensive deal includes the provision of approximately 1 million megawatt hours annually for 10 years starting in 2025, alongside an energy savings performance initiative valued at $172 million.[12]

Quanta Services: A Contractor Positioned to Assist with Growth Across the Electricity Supply Chain

Quanta Services stands as North America's premier specialty infrastructure contractor, uniquely positioned at the intersection of grid modernization and renewable energy integration. The company has established itself as a leading force in power delivery and renewable markets, with a comprehensive approach that spans from traditional utility infrastructure to cutting-edge renewable energy solutions. As a result, Quanta's clients include major U.S. communications providers, utilities, and renewables developers, such as Dominion Energy, Xcel Energy, Southern Company, NextEra Energy, and Duke Energy.

The scale of Quanta's addressable market is substantial, as U.S. investor-owned electric companies were projected to spend $186 billion in annual capital expenditures (capex) in 2024.[13] Of this total market, Quanta estimates its total addressable market (TAM) at $156 billion annually, with approximately 65% coming from craft skilled labor and equipment needs, and 25% from materials and supply chain solutions.[14] This represents a core solutions opportunity of $117 billion for the company. For context, the company's Electric Power segment revenue is only scratching the surface at less than 10% TAM penetration.[15]

QUANTA SERVICES' ADDRESSABLE MARKET SPANS THE U.S. ELECTRIC UTILITY VALUE CHAIN



*Indicates Estimate.
Source: Quanta. (2024, November 8). Investor Presentation.

In addition, the scale of required grid modernization presents a multi-decade opportunity. By one estimate, supporting the ongoing transformation of the power sector will require $1 trillion in investments for power grid infrastructure in the United States between 2024 and 2030.[16] Over the longer-term, a representative utility will need to invest approximately $240 billion between 2022 and 2042 just to replace and upgrade 96,000 circuit miles of transmission lines.[17] This massive infrastructure renewal program reflects the aging state of America's power grid, with significant portions of transmission infrastructure reaching 50 to 80 years in age.[18]

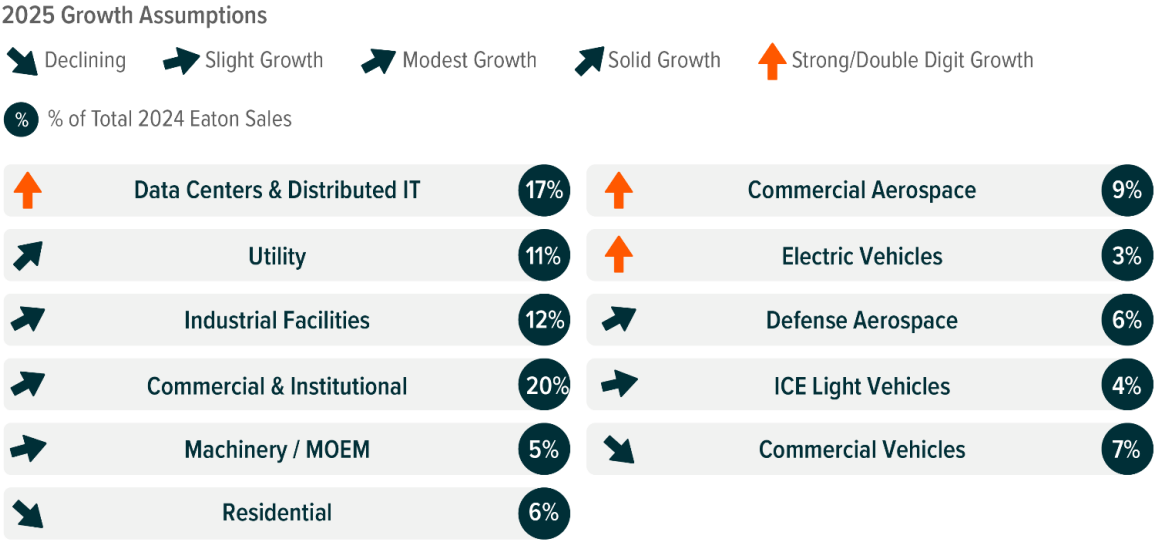
In 2024, Quanta made a strategic move to capitalize on the rapid growth in data center infrastructure by acquiring Cupertino in a transaction valued at approximately $1.54 billion.[19] The acquisition pairs Quanta's infrastructure expertise with Cupertino's established position as a top manufacturer of modular electrical systems for large-scale data centers. With installations across more than 20 million square feet of data center space, Cupertino brings immediate scale and specialized capabilities in this high-growth sector.[20] This strategic combination positions Quanta to capture a larger share of the expanding digital infrastructure market, particularly as data center power demands continue to accelerate.

Eaton Corporation: A Provider of Power Management Solutions for a Range of End Markets

Eaton is one of the largest providers of power management technologies and solutions in the United States, serving the utility, industrial, commercial, and mobility markets, among others. Energy storage systems, transmission, distribution, and control systems, EV charging systems, transformers, and advanced metering infrastructure are among its extensive product offerings. In addition, the company also provides electrical engineering services.

Eaton's diversified products and segments mean that the company is potentially well positioned to benefit from rising electricity demand, including from utilities, data centers, industrial facilities, and electric vehicles (EVs). These end markets alone accounted for a combined 43% of Eaton's sales in 2024, with the company anticipating modest to strong growth across these four segments in 2025.[21] More broadly, the company's negotiation pipeline for its electric segment in the Americas region, which includes power distribution units, breakers, and other products and services, has grown at an accelerated pace over the past five years, from $2.4 billion in 2019 to $8.6 billion in 2024, representing a 29% compound annual growth rate.[22]

DATA CENTERS ARE AMONG THE END MARKETS THAT HAVE THE STRONGEST NEAR-TERM GROWTH OUTLOOK



Source: Eaton. (2025, January 31). Fourth Quarter 2024 Earnings Release. [Presentation].

Data centers represent one of the fastest growing end markets for Eaton. The company's extensive expertise and services for power management include its 'Data Centers as a Grid' approach, which can unlock bi-directional power flow between the grid and data centers. Bi-directional power flow means that electricity can flow from the grid to the data centers, as well as from data centers back to the grid during times of lower electricity use. This solution could help data center operators gain new revenue while reducing emissions, maintaining power supply, and reducing energy costs.[23] Eaton's data center sales grew 45% year-over-year (y-o-y) in 2024, and the Data Centers & Distributed IT end market's share increased from 14% of company sales in 2023 to 17% of sales in 2024.[24,25] In 2025, Eaton expects U.S. hyperscalers' capex for data centers to grow 35% y-o-y to reach ~$295 billion, pointing to significant potential opportunities going forward.[26]

In February 2025, Eaton announced plans to invest $340 million to build its third U.S. manufacturing facility for three-phase transformers.[27] Transformer devices are central to powering data centers as well as modernizing and expanding U.S. grid infrastructure, and there are growing bottlenecks throughout the transformer supply chain.[28] In recent years, the average lead time for utilities or power project developers to procure transformers jumped from around 50 weeks in 2021 to 120 weeks in 2024.[29] Eaton's new production facility is expected to be located in Jonesville, North Carolina and begin operations in 2027.

Since 2023, Eaton has invested over $1 billion in North American manufacturing capacity for electrical solutions.[30] In addition to the transformer facility, the company has also expanded its manufacturing capabilities for voltage regulators, switchgears and switch boards, circuit breakers, and underground protective connectors at its facilities across the United Sates.

NuScale: A Developer of Next-Gen Nuclear Power Reactors

NuScale Power is developing small modular reactors (SMRs), which are advanced nuclear reactors that have a power capacity of up to 300MW per unit. Their small and modular design offers several potential advantages over traditional nuclear plants that are typically at least 3x larger, including lower costs, shorter construction timelines, and increased safety.[31] In the United States, SMRs are expected to become commercially available by the 2030s.[32]

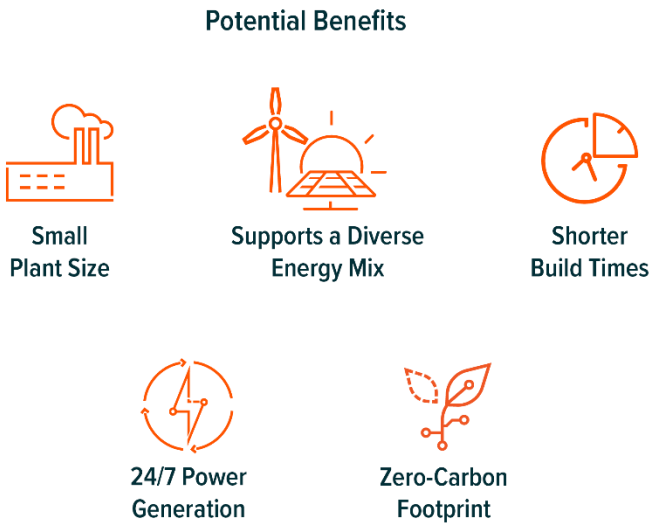
NuScale holds a unique position in the nuclear industry as the only publicly traded company to receive U.S. Nuclear Regulatory Commission (NRC) design certification for SMRs. This certification, achieved in January 2023, represents a crucial regulatory milestone that validates the safety and technical viability of NuScale's SMR design and positions it ahead of competitors on the path to commercialization.[33] Born from a 2002 research collaboration between Idaho National Laboratory and Oregon State University, and formally established in 2007, the company has evolved from a research project to the frontrunner in American SMR technology.

NuScale's approach to nuclear power generation fundamentally reimagines traditional nuclear economics and development. Its small modular reactors, each capable of generating 77 megawatts of carbon-free power continuously, offer a compelling solution for both traditional utilities and new power consumers such as data centers.[34] Overall investment costs for SMRs are projected to become increasingly cost-competitive to traditional nuclear power plants as the technology scales.[35]

NUSCALE'S SMALL MODULAR REACTORS (SMRS) CAN PROVIDE CLEAN BASELOAD POWER

Key Specifications of NuScale's SMR technology and Its Potential Benefits

Key Specifications	
Electrical Capacity	77 MWe
Modules per Plant	Up to 12 (924 MWe)
Design Life	60+ years
Fuel Supply	Existing light water reactor nuclear fuel
Safety	Walk-away safe
Emergency Planning Zone	NRC-approved site boundary EPZ



Source: NuScale. (2024, November). NuScale Power Investor Presentation; NuScale. (n.d.). Powering the Future of AI. Accessed February 20, 2025.
Note: 'Walk-away safe' means that a reactor core can safely shut down and passively cool without the need for external power sources, pumps, or operator action. EPZ = 'Emergency Planning Zone.

The company's intellectual property position is substantial, with over 500 patents protecting its technology.[36] Its design eliminates traditional complexities like coolant pumps and extensive piping systems, while enabling full factory fabrication of the power modules. This approach potentially reduces construction risks and timeline uncertainties that have historically plagued traditional nuclear projects.

NuScale's technology particularly resonates with the emerging power needs of data centers and AI computing facilities. The company's 77-megawatt modules could enable data centers to operate independently from the grid, providing reliable, carbon-free baseload power. Competitors such as Kairos Power have secured agreements with major technology companies like Google for up to 500 megawatts of power, and OpenAI's Sam Altman serves as chairman of competing SMR company Oklo, demonstrating the AI industry's strategic interest in nuclear solutions.[37] As the only company with NRC-approved SMR design, we believe NuScale is well-positioned to potentially secure similar partnerships in this rapidly growing sector.

Conclusion: Power-Related Companies Are Central to the Future

After two decades of near-stagnant growth, U.S. electricity demand is forecast to grow as much as 47% cumulatively between year-end 2023 and 2040, bolstered by surging demand from data centers, manufacturing, EVs, and other electrification efforts.[38,39] At the same time, the U.S. power grid is expected to transition to larger shares of alternative electricity sources like renewable energy, next-gen nuclear power, and energy storage systems. Accommodating significantly higher demand and shifting grid dynamics requires a substantial modernization and expansion of the U.S. power grid and related infrastructure. We expect that companies involved in U.S. electrification, like the ones highlighted here, can continue to benefit from the potential opportunities ahead as the U.S. power grid continues to transform.

Related ETFs

ZAP – Global X U.S. Electrification ETF

Click the fund name above to view current performance and holdings. Holdings are subject to change. Current and future holdings are subject to risk.

Footnotes

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