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Building the AI Economy: The Fastener Demand Opportunity in the United States

Artificial intelligence is moving from a software story into an industrial buildout. The United States is building multi-gigawatt data centers, upgrading power infrastructure, expanding advanced chip manufacturing and connecting campuses with high-speed networks. That physical expansion could become a major new source of construction and mechanical, electrical and plumbing demand for the fastener industry.

AI will not transform the fastener industry because an AI model uses more bolts. The opportunity comes from the physical system required to make AI work. For fastener manufacturers and distributors, the key questions are which parts are being constructed, which phase each project has reached, and what specifications and delivery requirements will control procurement. Demand could be substantial, but it will not be evenly distributed.

The scale of the opportunity is becoming clearer as AI workloads push data-center power demand higher. The Lawrence Berkeley National Laboratory's United States Data Center Energy Usage Report: 2025 Update estimates that U.S. data centers used 192 terawatt-hours of electricity in 2024, or 4.7% of national consumption. Its reference case projects 649

terawatt-hours in 2030, equivalent to 11.8% of projected U.S. electricity use. The study's broader uncertainty range reaches 521 to 843 terawatt-hours, or 9.5% to 15.3% of national consumption.

Those figures do not translate directly into a fastener forecast. Electricity demand can be met through new construction, expansion, more efficient chips and higher utilization. Even so, the direction is important: the AI economy requires continuing investment in physical infrastructure.

The U.S. Department of Energy has explicitly defined AI infrastructure as more than a building full of servers. In a 2025 request for information, the department grouped data centers with specialized cooling facilities and associated energy supply, including generation, transmission, substations and storage. That is a useful framework because each layer creates different connection points and purchasing channels.

AI Data Centers and Reputable Demand

The data center itself will remain the most visible source of demand. **AI facilities are often designed for high density, rapid deployment and phased expansion. The buildings must support heavy electrical equipment, large cooling systems, extensive cable pathways and dense server installations. That produces a wide range of fastener requirements rather than one dominant product category.**

Construction can require structural bolts and anchor rods for steel, concrete anchors, threaded rod and strut hardware for mechanical and electrical systems, self-drilling screws for panels and roofing, pipe-support connections, cable-tray hardware, equipment anchors and fasteners used in HVAC and fire-protection systems. Interior fit-out adds rack and enclosure connections, raised-floor components and hardware for power-distribution equipment.

The piece count can be significant because the same connection is repeated across large buildings and multiple halls. A supplier that wins an approved vendor position may participate in several phases, with recurring replenishment as capacity expands.

Meta's Richland Parish project in Louisiana illustrates the scale of this local economic activity. Meta says the four-million-square-foot campus will house its largest multi-gigawatt AI training cluster, known as Hyperion. One year after breaking ground, the company reported more than US\$875 million in contracts with Louisiana businesses, work involving more than 160 local businesses, 3,700 construction workers supported to date and a peak construction workforce expected to reach 5,000. The project's surrounding investments also include more than US\$300 million for roads, water and wastewater infrastructure.



Microsoft's Fairwater development in Wisconsin offers another indication of how AI facilities can generate repeated construction demand. Microsoft says its local hyperscale construction spending is expected to reach US\$4.7 billion between 2024 and 2028. Its first facility is operational, while a second adjacent facility is under construction, including foundation work, steel erection and underground utilities. The company says nearly 10,000 construction workers contributed to development of the first facility.

These projects also show why schedule performance matters. Data centers are built to bring revenue-generating computing capacity online quickly. A missing anchor or unavailable specialty fastener can hold up an entire trade. Suppliers that offer kitting, bar-coded packaging, vendor-managed inventory, local stocking and rapid replenishment may compete with project reliability rather than unit price alone.

Power Infrastructure

The largest indirect opportunity may sit outside the data-center fence. AI campuses require substantial and reliable power, which can mean new substations, transformers, switchgear, distribution systems, transmission connections, backup generation and batteries.

These projects use fasteners in structural steel, equipment supports, busbar and cable systems, grounding assemblies, enclosures, pipework, access platforms and maintenance infrastructure. Outdoor substations and generation sites also create demand for galvanized, coated or stainless products that can withstand weather, moisture, chemicals and thermal cycling.

Power infrastructure is typically procured through utilities, electrical contractors, engineering-procurement-construction firms and equipment manufacturers rather than directly by a data-center operator. A fastener manufacturer may benefit from the AI boom without ever selling to a cloud company; its customers may be a substation fabricator, transformer supplier, generator integrator or utility contractor.

DOE's AI infrastructure request underscores the importance of this market. It asks about co-locating data centers with energy sources and identifies long lead times for power and onsite-energy equipment as a potential challenge. For fastener suppliers, long-lead equipment creates



an incentive for early qualification and stocking agreements, especially where a fastener is part of a certified assembly or must meet a particular coating, strength or traceability requirement.

AI servers generate a different infrastructure profile from conventional enterprise computing. Higher chip density increases the need for advanced power distribution and thermal management. Microsoft describes its Fairwater AI data centers as using two-story designs, NVIDIA Blackwell systems, high-throughput networking and closed-loop liquid cooling. The company also says its AI network connects facilities in different states with dedicated fiber infrastructure.

For the fastener industry, liquid cooling can expand demand for pipe clamps, brackets, supports, equipment-mounting hardware and corrosion-resistant connections. Dense electrical and fiber installations increase the need for cable-tray hardware, rack connections, grounding hardware and containment systems.

This is also where specialized products can outperform commodity products. Vibration resistance, material compatibility, corrosion protection, installation access and documentation may matter more than a small difference in purchase price. Suppliers that understand data-center mechanical, electrical and plumbing specifications will be better positioned than those treating the market as a generic commercial-building opportunity.

Opportunities for Semiconductor Expansion

AI demand is also encouraging investment in the semiconductor supply chain. In March 2025, Taiwan Semiconductor Manufacturing Company said it intended to expand its U.S. investment to US\$165 billion, including three additional fabrication plants, two advanced packaging facilities and a research and development center. TSMC said the expansion was intended to support AI and other advanced applications and could support 40,000 construction jobs over four years.

Semiconductor fabrication plants are not ordinary industrial buildings. They require cleanrooms, ultra-pure water, chemical distribution, process gases, exhaust systems, vibration control

and engineered mechanical infrastructure. That can create demand for stainless and specialty fasteners, cleanroom-compatible hardware, anchors, supports and products with rigorous material and lot documentation.

An Opportunity for Prepared Suppliers

The AI boom is therefore likely to benefit the U.S. fastener industry, but the gains will be uneven. Standard screws, anchors, threaded rod and strut hardware may see volume growth from data-center construction. Larger structural and corrosion-resistant products may benefit from power and industrial projects. Specialty stainless, high-strength, vibration-resistant and highly documented products may find opportunities in cooling systems, semiconductor facilities and critical electrical equipment.

There are constraints. Data-center projects can be delayed by power availability, permitting, financing, community opposition or changing technology. More efficient chips could reduce the amount of infrastructure required for a given level of computing, while a small number of hyperscale operators may concentrate purchasing power. Domestic content rules, tariffs, certification requirements and long lead times can also raise the cost of entering the market.

For manufacturers and distributors, the best response is to follow the project before the fastener order is released. Identify the owner, general contractor, steel fabricator, MEP contractor, equipment OEM and utility connection. Determine the project phase, then align inventory, approvals, packaging, origin documentation and delivery capability with it. Foreign manufacturers can participate where they bring scale, specialized technology or capacity that is not readily available domestically. The strongest route may involve U.S. production or processing, qualified distributors, local inventory and partnerships with compliant contractors. Domestic-content requirements do not eliminate overseas suppliers, but they make origin and supply-chain structure commercially important.

America's AI buildout is not simply a request for more bolts. It is a request for reliable connections across a new industrial ecosystem. Fastener companies that can provide the right product, the right documentation and the right delivery model may find that AI creates a durable source of demand well beyond the walls of the data center. ■

