THREE ON THURSDAY

First Trust

FIRST TRUST ECONOMICS

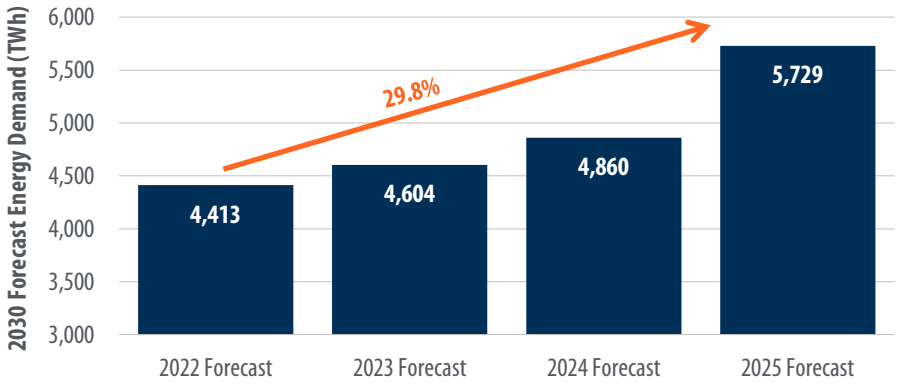
August 20, 2026

Grid Locked: Can Energy Supply Catch Up to Demand?

One of the most urgent challenges facing the U.S. economy is not whether we can produce enough energy, but whether our infrastructure can transmit that power to those who want and need it. Over the next decade plus, demand will rise sharply as the nation electrifies its transportation fleet, builds out AI-driven data centers, and reshapes its industrial base through reshoring. These shifts will require far more reliable, flexible, and resilient energy systems than what we have in place today. The problem is that America's grid and pipelines are already strained. The American Society of Civil Engineers' 2025 Report Card gave U.S. energy infrastructure a D+, citing aging transmission lines, congestion in interconnection queues, and underinvestment in high-voltage projects. While the U.S. is rich in energy resources, from natural gas and oil to renewables, the bottleneck lies in moving that power where it's needed, when it's needed. In this week's "Three on Thursday," we look at the supply-and-demand dynamics that will define the next phase of America's energy story which looks like it's just getting started. To find out more, view the three charts below.

Growing Demand for Electrical Power

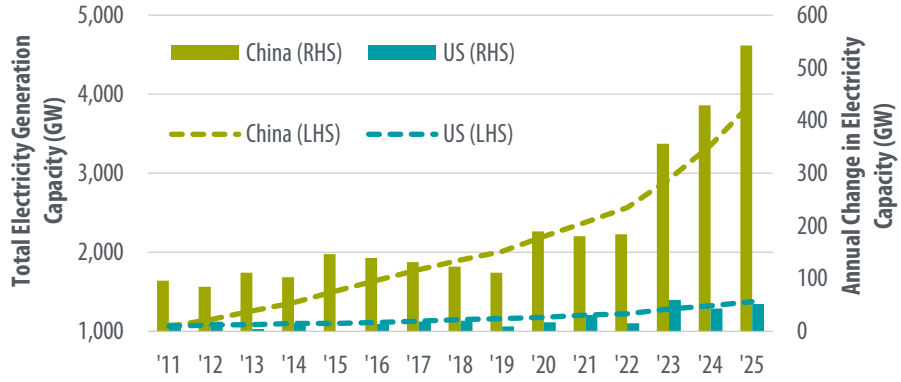
2030 Nationwide Energy Demand Forecast by Year of Estimate



Source: GridStrategies, First Trust Advisors. Report Published November 2025.

U.S. electricity use was flat for 15 years, from 2005 to 2020, as efficiency gains offset population and economic growth. That equilibrium broke in 2021, and the reacceleration has only gathered speed since. In 2022, forecasters expected demand to reach 4,413 TWh by 2030, driven largely by the commercial sector (especially data centers) and industrial load. Three years later, that same 2030 target has been revised up to 5,729 TWh — a 1,316 TWh, or 29.8%, upward revision to the forecast itself. The growth isn't just baked into the past, either: from a 2025 base of 4,335 TWh, the current forecast still implies another 32.2% increase in electricity demand over just the next five years.

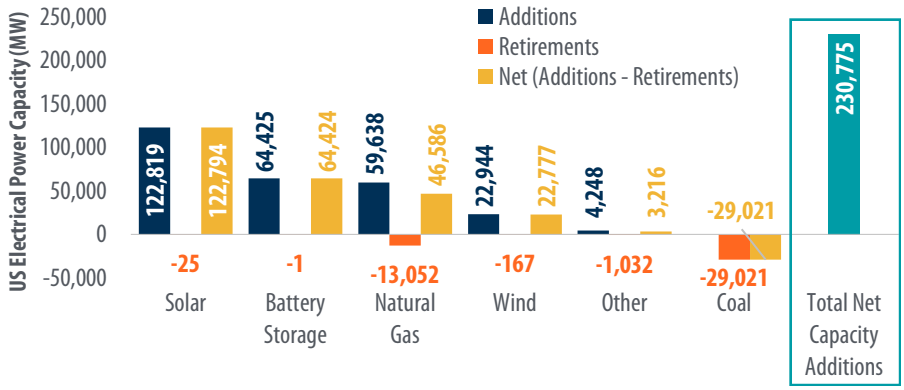
The Race for Power Capacity



Source: Ember, National Energy Administration (China), First Trust Advisors. U.S. Estimates published Feb 2025. Chinese estimates published Jan 2026.

A key concern, in our view, is how slowly the U.S. has expanded its power capacity over the past decade. In 2011, total generation capacity in the U.S. and China was roughly the same. Since then, the paths have diverged sharply: from 2011 to 2025, China boosted its capacity by 266%, while the U.S. managed only a 30% increase. The gap widened further in 2025 alone, when China added 543 gigawatts of new capacity—ten times the 52 gigawatts added in the U.S. As electricity becomes ever more critical to economic competitiveness and security, the U.S. faces some serious catching up.

Planned U.S. Electrical Power Capacity Changes Through 2030



Source: U.S. Energy Information Administration, First Trust Advisors. Estimates as of 5/2026.

One of the biggest challenges with surging electricity demand is whether new supply can keep up. Between 2025 and 2030, nearly 231 gigawatts of new capacity is slated to come online, with solar alone accounting for over 122,000 megawatts, more than half the total, and battery storage next at roughly 64,000 megawatts — now rivaling natural gas as the second-largest source of new capacity. Natural gas will add nearly 47 gigawatts net over the same period, but coal will lose 29 GW, leaving the grid more reliant on intermittent and storage resources even as fossil fuels still provided about 58% of U.S. electricity in 2025. That reliance is complicated by the fact that storage isn't generation: a battery doesn't create electricity, it just holds power produced elsewhere for two to four hours before depleting, making it useful for smoothing solar and wind swings but no substitute for the dispatchable output of a retiring coal or gas plant. With storage now roughly 28% of planned additions, headline capacity figures increasingly overstate how much reliable new supply is actually coming online.