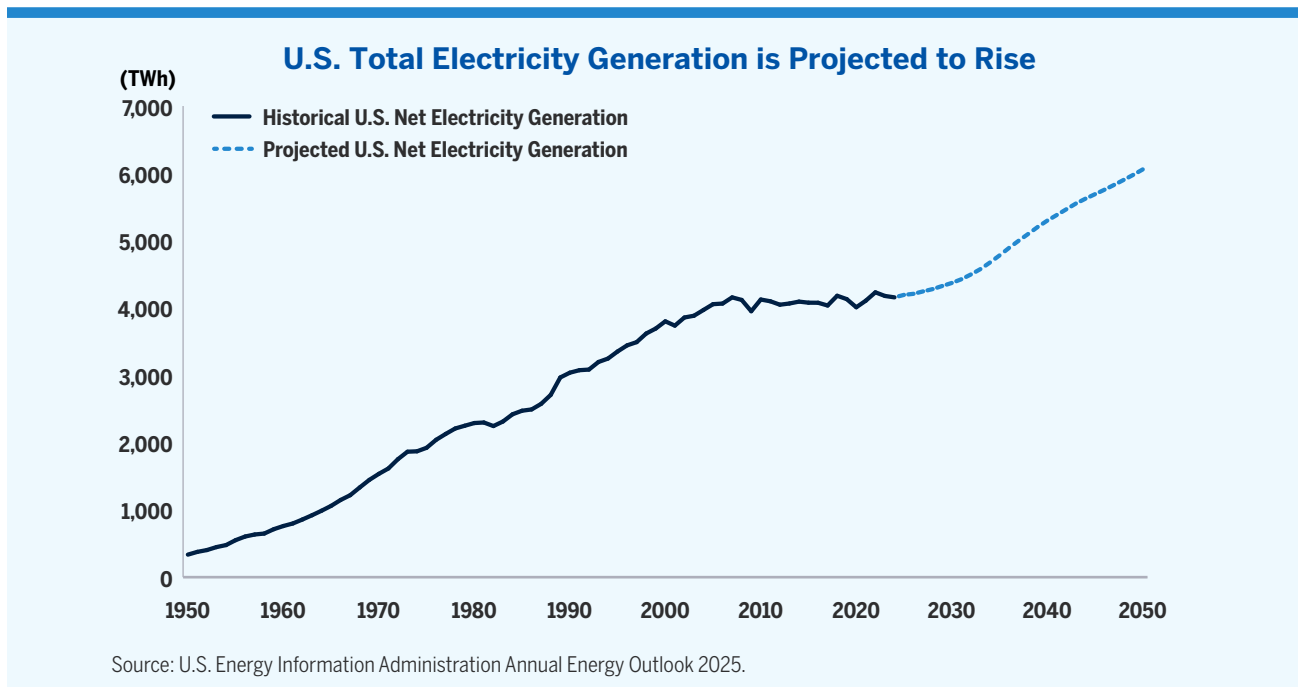


## High Voltage Ahead

U.S. utilities are confronting their first sustained increase in electricity demand in more than two decades. Major cloud service providers (hyperscalers) building data centers for artificial intelligence (AI) workloads, and widespread electrification—such as electric vehicle (EVs), industrial automation and robotics—are all hitting the grid at once. After years of flat electricity demand, could the projected surge in power consumption outstrip current grid capacity, prompting the largest build-out in decades?



- In the chart above, from 1950 to 2005, U.S. electricity generation soared due to industrialization, suburban development, and widespread adoption of electric appliances. Demand then flattened between 2005 and 2024 when the U.S. shifted to a more service-based economy that outsourced heavy industrial production overseas. However, electricity demand is projected to rise sharply again, spurred by a combination of electrification and data centers running power-intensive AI workloads.<sup>1</sup> In fact, over the next five years, U.S. electricity demand is projected to rise at a pace six times faster than it did during the previous five years, requiring additional generation capacity and placing further strain on the nation's [aging power grid](#).<sup>2</sup>
- Data centers are a major contributor to this demand acceleration. Electricity consumption from U.S. data centers alone is projected to climb 133% by 2030—an incremental 243 TWh, enough to power more than 23 million U.S. homes for a year.<sup>3</sup> However, meeting surging data center demand hinges on electricity that is [reliable](#), and quick to bring online. AI hyperscalers are therefore signing long-term power-purchase agreements (PPAs) with independent power producers to secure uninterrupted electricity, predominantly from nuclear and natural gas generation (see also [A Nuclear Energy Renaissance](#)).<sup>4</sup>
- While data centers may be the most visible growth catalyst in the near-term, we believe the broader U.S. electricity demand wave—industrial automation, EVs and heat pumps—underscores the need for both quick-to-deploy natural-gas turbines and reliably clean baseload power from nuclear facilities over the long term. In our view, companies tied to power generation, transmission, and distribution may be well positioned to benefit from the projected rise in U.S. electricity demand.

<sup>1,2</sup> U.S. Energy Information Administration, Annual Energy Outlook 2025. The annual growth rate of U.S. electricity generation from 2019 through 2024 was approximately 0.12%, while the projected annual growth rate from 2025 through 2029 is 0.80%.

<sup>3,4</sup> International Energy Agency, World Energy Outlook Special Report 2025

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