# Challenges in Meeting Surging US Power Demand

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# **US Electricity Load Growth Forecast: JPMorgan**



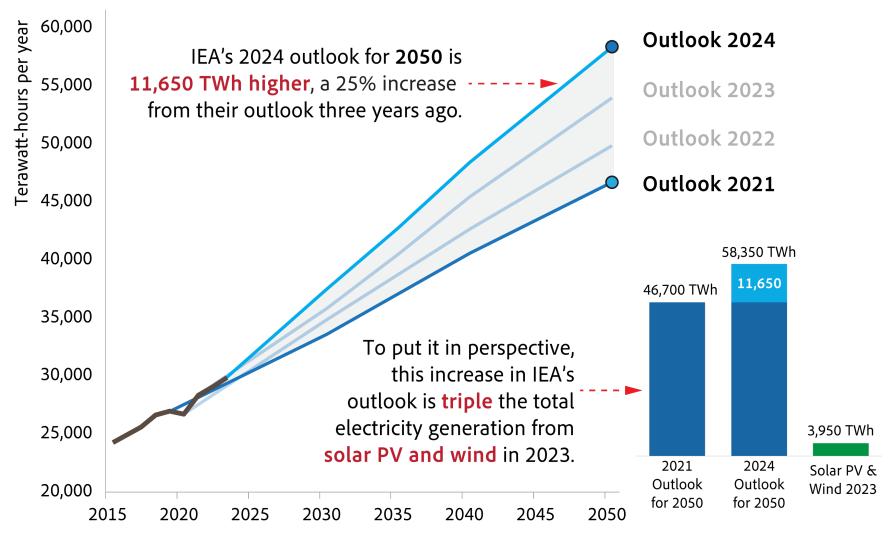
#### U.S. ELECTRICITY LOAD FORECAST (TWh) --- McKinsey --- Broker 3 Historical Broker 1 Broker 2 6,000 Two decades of near zero load growth 1960-80: 5-6% CAGR 1980-2000: 2-3% CAGR Transmission build-out **CCGT** build-out 5,500 3.0-3.5% 5,000 CAGR +1.000TWh in 7 yrs 4,500 +400TWh in 23 yrs 4.000 +1,500TWh in 20 yrs 3,500 3,000 "I think next year, you'll see they just can't find enough electricity to run all the chips... Al and EVs are expanding at such a rapacious rate that the world will face supply crunches in electricity and transformers next 2,500 year" - Elon Musk +1,400TWh in 20 yrs 2,000 "[Chips] Are just insatiable in terms of their thirst for electricity... the more 1,500 information they gather, the smarter they are, but the more information they gather to get smarter, the more power it takes" - Rene Haas, CEO of ARM Holdings 1,000 500 1965A 1970A 1975A 1980A 1985A 2000A 2005A 2025E 1960A 1990A 1995A 2010A 2015A 2020A 2030E

Source: JPMorgan

# **Understanding the Scale Challenge**



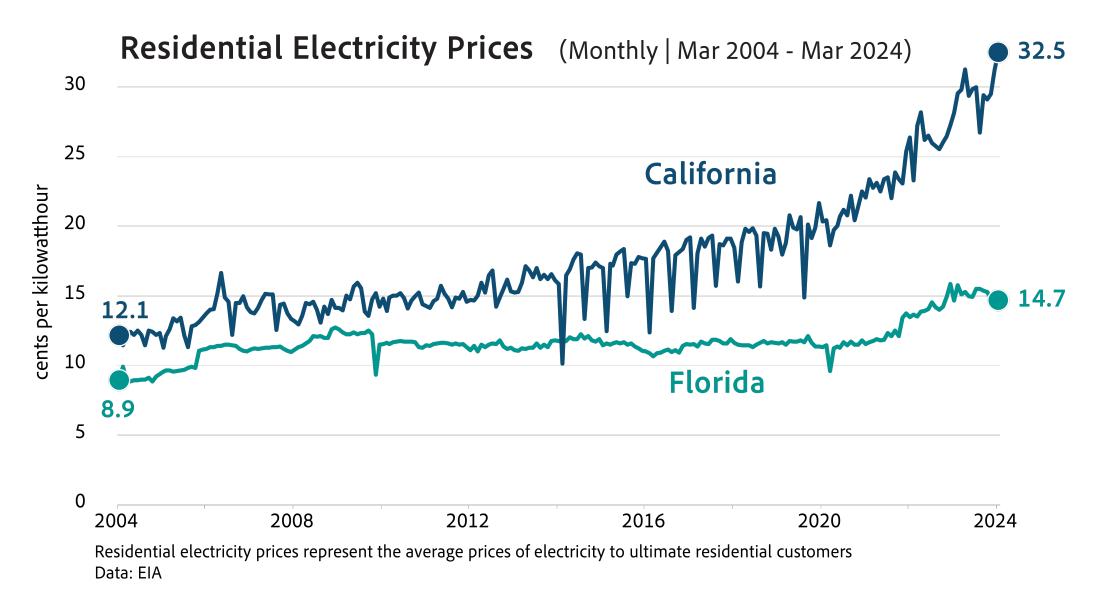
### IEA's long-term world electricity generation outlooks to 2050



Note: Projection lines represent IEA's Stated Policies Scenario. Source: Energy Policy Research based on IEA's World Energy Outlook data

## **Rapid Deployment of Intermittent Power Can Increase Power Prices and Lower Resilience**







#### Annual net generation of electricity by fuel type (2003-2023)

