RESOURCE PLANNING FOR ELECTRIC POWER SYSTEMS



KEY INSIGHTS

- **Demand growth.** Electricity demand is increasing with electrification, data center development, and industrial expansion.
- **Equipment availability.** Longer equipment lead times and order backlogs may affect project schedules and technology choices.
- **Workforce availability.** Competition for skilled labor may constrain generation and infrastructure development and construction.
- **Grid access.** Interconnection backlogs and transmission timelines may delay new generation and large loads.
- **Policy, financing, and input markets.** Tax credit rules, financing conditions, fuel markets, and critical mineral price volatility remain sources of project uncertainty.

Market Trends Shaping Resource Planning For Electric Power Systems

By Anand Kumar

Research Overview

A range of market trends is affecting the deliverability of new energy projects. These trends influence the ability to finance, permit, procure, construct, and connect new resources.

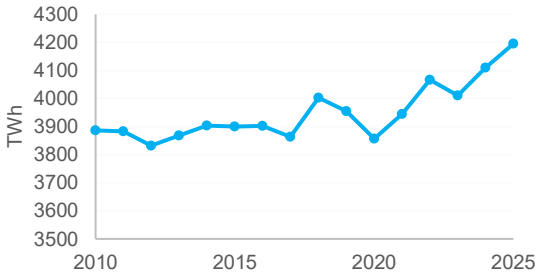
Planners are making long-term investment decisions while demand, policy, and supply conditions are changing at the same time. Tracking these market trends shows why technology costs and project schedules are shifting, and which planning assumptions carry the most risk.

EPRI's recent *2026 Energy System Technology Cost and Performance Summary: Market Trends & Technology Insights* report examines these market trends. Beyond the trends, it gives planners updated cost estimates for generation and storage technologies, along with costs for low-carbon fuels and supporting infrastructure. For electric sector resource planning, the results provide a current basis for comparing options, setting cost assumptions, and weighing deliverability alongside cost when choosing what to build and when. This insight brief highlights key market trends observed in the report.

Market Trends Affecting Resource Development

Growing Demand and Investment

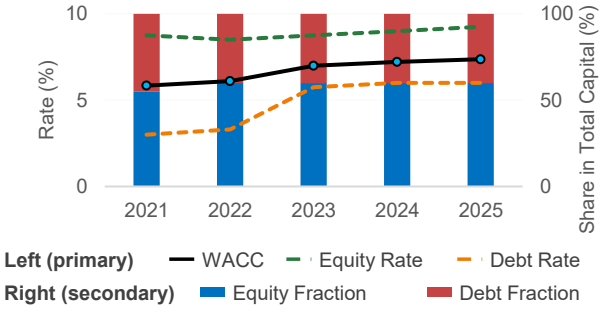
Electricity demand is rising after years of flat consumption, supported by electrification, data centers, and industrial expansion. Investment in clean energy and domestic manufacturing has also increased, although further capacity additions depend on market and policy conditions.



Total electricity consumption in the U.S.
Source: EIA – Annual Energy Outlook (2026)
Note: Vertical axis starts at 3,500 TWh

Policy and Financing Conditions

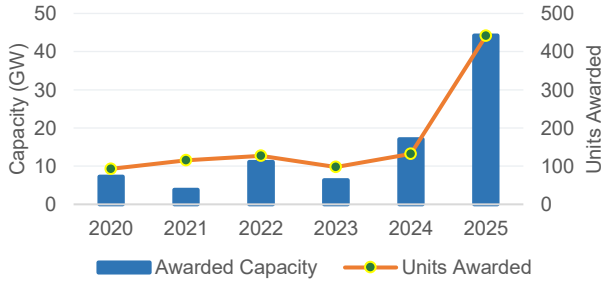
The One Big Beautiful Bill Act (OBBBA) shortened some tax credit eligibility periods and added foreign entity restrictions, with provisions varying by technology. Higher financing costs may raise total project costs, particularly for capital-intensive resources and projects with long construction periods.



Electric industry cost of capital assessment
Source: Washington State Department of Revenue - Cost of Capital Study (2026)

Delivery Constraints

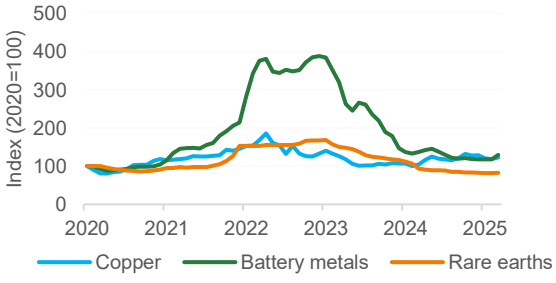
Gas turbine backlogs and longer equipment lead times reduce procurement flexibility, while competition for skilled labor may constrain construction and the pace at which new capacity enters service. Interconnection backlogs and transmission timelines may also delay new resources.



North America gas turbine awards (GW and units)
Source: McCoy - Gas Turbine Report (2025)
Note: Awards include firm orders and slot reservations

Input Market Uncertainty

Critical mineral prices have been volatile, while processing and refining remain geographically concentrated. Natural gas, oil, and uranium prices reflect supply, demand, and geopolitical conditions. These markets remain sources of uncertainty for technology deployment and operating costs.



Selected mineral prices (index, 2020 = 100)
Source: IEA - Global Critical Mineral Outlook (2025)

This brief is based on EPRI Technical Report "2026 Energy System Technology Cost and Performance Summary: Market Trends & Technology Insights," Product ID 3002035931



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