Long-term planning for the reliable delivery of wholesale power is one of PJM's main jobs. The Regional Transmission Expansion Plan identifies the needs of the grid to deliver this power up to 15 years into the future.

Annual Benchmark Report

PJM planners continually analyze the transmission system to forecast what will be needed to keep the lights on for more than 67 million people in 13 states and Washington, D.C. Published annually, the Regional Transmission Expansion Plan (RTEP) report summarizes studies that help ensure the system meets requirements for reliability, market efficiency, resilience, public policy and the needs of transmission system owners.

At a Glance

- Long-term planning of the high-voltage transmission system is one of PJM's main jobs.
- The Regional Transmission Expansion Plan looks ahead up to 15 years into the future.
- The planning process is conducted through open, transparent engagement with members, stakeholders, regulatory agencies and other parties.

Transparent Stakeholder Engagement

Throughout the year, the RTEP process facilitates planning updates and seeks to resolve issues through open, transparent engagement with members, stakeholders, regulatory agencies and other parties.

Several committees support the process. PJM's Planning Committee reviews recommended planning strategies and policies, as well as planning and engineering designs. The Transmission Expansion Advisory Committee (TEAC) provides a forum for stakeholders and PJM staff to exchange ideas, discuss study assumptions and review results. Subregional RTEP committees address local planning concerns.

After review in the stakeholder process, recommended projects proceed to the PJM Board of Managers for consideration, approval and inclusion in the RTEP.

The RTEP process does not review or approve the siting of transmission lines. Individual transmission developers must seek those approvals in the states where new facilities will be built.

Comprehensive and Efficient Transmission Planning

PJM's RTEP planning process encompasses two 18-month study cycles for reliability that overlap by six months, and one 24-month cycle for market efficiency studies. Market efficiency projects are designed to reduce congestion on the transmission system to help ensure that the lowest-priced power can be delivered across the grid. The 15-year planning horizon allows PJM to evaluate the need for larger transmission projects long before construction.

Transmission projects that emerge from PJM's RTEP process fall into several categories.

Baseline Projects

Baseline projects ensure compliance with national and regional reliability standards. These projects address issues such as overloads, bus voltage drops, excessive short-circuit current, generator stability and congestion. After PJM identifies a baseline transmission need – including for market efficiency – PJM may open a competitive proposal window, depending on a project's required in-service date, voltage level and scope.

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Network Upgrades

These are equipment enhancements needed for new customers seeking long-term transmission service and connection to the grid.

Immediate-Need Reliability Projects

These projects solve more urgent reliability violations or system conditions that need to be addressed in three years or less. For baseline, immediate-need reliability projects, time constraints may not allow for a competitive proposal window without risking the reliability of the transmission system. As a result, these projects are subject to a competitive exemption and are performed by incumbent transmission owners.

Supplemental Projects

Supplemental projects, according to FERC rules, are exempt from the competitive bidding process. They are transmission expansions or enhancements by transmission owners to address local reliability needs, such as customer service and load growth, equipment condition, operational performance and risk, and infrastructure resilience. PJM evaluates these projects to ensure they do not cause reliability problems on the regional grid.

RTEP System Modeling

Credible, consistent power flow studies ensure that PJM develops robust transmission solutions to identified reliability criteria violations. To accomplish this, each study cycle begins with development of a power flow case each fall that includes the latest information and assumptions with respect to zonal load forecasts, generating resources, transmission topology, demand resources and power transfer levels with adjoining systems. PJM evaluates those assumptions with stakeholders at TEAC and subregional RTEP committee meetings.

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