



Managing the future growth of the electric system is an integral part of PJM Interconnection's role as a regional transmission organization (RTO). PJM conducts a long-range Regional Transmission Expansion Planning (RTEP) process that identifies what changes and additions to the grid are needed to ensure reliability and the successful operation of the wholesale markets.

Using an open process, PJM plans for the growth of the electric grid in its region to ensure that future needs are met for both the reliability and the economic performance of the grid. PJM's RTEP process employs a 15-year planning horizon to better address major transmission investments and upgrades that will maintain grid reliability and improve economic efficiency.

The regional plan is the end result of a continuing, systematic process to make necessary transmission improvements. Transmission upgrades keep the system in compliance with reliability standards. These standards ensure that the system continues to deliver electricity throughout the region, which covers 13 states and the District of Columbia. The improvements also accommodate the interconnection of new generating projects.

The decision to build a new electric generating plant or a transmission line is significant, since these construction projects are costly, time-consuming and subject to numerous regulatory approvals. At the same time, decisions to add generation or transmission resources cannot be made in a vacuum because these projects affect the overall operation of the grid and its ability to deliver power to customers reliably.

The RTEP process systematically and objectively evaluates proposed transmission upgrades and generation interconnections to make sure that compliance with reliability criteria is maintained. The process also includes a mechanism to mandate necessary grid improvements. PJM's planning process began in 1997; its first regional plan was approved in August 2000.

The process accommodates not only expansion projects proposed by transmission owners, typically electric utilities, but also merchant generation and transmission projects that are financed by private investors instead of utilities.

PJM's open and extensive review process ensures that all interested parties, including state regulatory agencies, have an active role in planning for future electricity supply and reliability needs. As part of the RTEP process, projects are reviewed by the PJM Board. Once a project is approved by the board, it is incorporated into the plan.

PJM also has expanded the analysis in its planning process beyond reliability and market-efficiency criteria to include scenario studies that consider public policy factors like the impact of state renewable portfolio standards, demand side response/energy efficiency efforts and at-risk generation.

The RTEP process determines the need for and benefits of a transmission project; it does not review or approve a transmission line's siting. That is the responsibility of the affected states.

Under PJM agreements, transmission owners are obligated to build transmission projects that are needed to maintain reliability standards and that are approved by the board.

Since 2006, the board has authorized several backbone transmission projects that are included in the regional plan.



Two of those projects, both 500 kilovolts (kV), entered service in 2011. The 502 Junction to Loudoun line, also known as the Trans-Allegheny Interstate Line, runs from southwestern Pennsylvania to Loudoun, Virginia. The Carson-Suffolk line is located in southeastern Virginia.

Another authorized facility, currently in the construction stage, is the Susquehanna-Roseland Project, a 500-kV line running from the Susquehanna Substation in Pennsylvania to the Roseland Substation in New Jersey.

Two other planned backbone projects were put in abeyance in 2011, then removed from the RTEP by the PJM Board in August 2012. The decision to end the projects was based on analyses showing that they were no longer needed to maintain grid reliability because of lower load growth, recent generation additions and increased demand response.

They are the Potomac-Appalachian Transmission Highline, a 765-kV line running from the Amos Substation in West Virginia to the Kemptown Substation in Maryland, and the Mid-Atlantic Power Pathway, a 500-kV line running from the Possum Point Station in Virginia to the Indian River Substation on the Delmarva Peninsula.

To date, transmission investments authorized under PJM's RTEP since 2000 total more than \$24 billion, including upgrades to enable the interconnection of more than 70,000 megawatts of new generating resources and merchant transmission projects to the PJM grid.

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