

Challenges Ahead For U.S. Generator Interconnection Process

This article was originally published in Law360's Expert Analysis.

Apr 06, 2022

Categories:

Publications

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PJM Interconnection, Inc. (PJM), is preparing to transition to a new, more streamlined, and more equitable generator interconnection process by October 2023. PJM is the largest of the federally regulated regional transmission organizations (RTOs) and independent service operators (ISOs) that operate the regional electric transmission systems in the United States. It regulates wholesale power markets across thirteen states[1] and the District of Columbia. As of the end of 2021, there were 288,609 MW of potential power generation projects in PJM's interconnection queue, the vast majority of which were solar projects and 95% of which are renewable or hybrid renewable/battery resources. [2] Roughly a third of those projects have been in the queue for more than 500 days, and 166 of them have been waiting for more than three years. Meanwhile, the Federal Energy Regulatory Commission (FERC), which regulates RTOs and ISOs, issued an Advanced Notice of Proposed Rulemaking (ANOPR) in July 2021 to begin the process of overhauling its rules regarding transmission planning, network upgrade cost allocation, and generator interconnection processes. [3] However, FERC Chairman Richard Glick's term ends in June, and he must be confirmed by a deeply partisan Senate to be appointed for a second term and see the rulemaking process through to the finish line. Recent criticism of FERC by Senator Joe Manchin (D-WV) suggests that Glick's confirmation is uncertain. If Democrats lose the Senate in November, these vital FERC reforms may die on the vine.

The Problem: The serial process model, participant funded "first to cause" cost allocation, and PJM understaffing

Utility-scale renewable energy generation projects tend to be developed further away from end-users than traditional fossil fuel generators. As more clean energy projects enter the development pipeline, a serious backlog of generators waiting to interconnect to

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regional electric transmission systems to carry the power they produce to customers in densely populated areas is frustrating developers, utilities, and grid operators alike.

The backlog PJM seeks to address is a result of several factors. The growth of clean, renewable energy generation projects, which tend to generate less power per project than traditional fossil fuel generators, has resulted in a dramatic increase in interconnection requests. Each application to connect to the grid requires PJM to conduct numerous studies to ensure grid reliability before interconnection. Moreover, the influx of interconnection requests requires network upgrades to the grid. PJM currently processes these requests and network upgrade needs in what is known as the serial process model. In the serial process model, each generator's interconnection application is processed independently for its own impacts on the network in the order it enters the interconnection queue. Network upgrade costs are borne by the first energy generation project to trigger the need for an upgrade. That project is then reimbursed for those upgrade costs by the transmission provider in the form of credits against the rates the project pays for the delivery component of transmission service.[4] This is known as the "first to cause" approach to cost allocation.

Foisting the entire cost of network upgrades on a single interconnecting generation project worked reasonably well for a small number of large natural gas generators interconnecting near end-users in the 2000s and early 2010s, but a series of unintended consequences flowed from these policies as a huge influx of more far-flung renewable energy projects entered the queue,

Later-stage projects began withdrawing from the interconnection queue in higher numbers when they were saddled with upgrade costs that overturned project economics. When that happens, earlier stage projects require re-studies of their own interconnection system impacts because previous studies accounted for the now withdrawn projects, slowing the process across the board. As more projects were scuttled by upgrade costs, developers realized they could improve their chances of avoiding upgrade costs by began multiple interconnection applications for a single project to obtain multiple positions in the queue, so that if

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one application ran into a network upgrade cost allocation, the developer could withdraw the application and hope that its project's next queue position would avoid a network upgrade cost allocation. This strategy led to more application withdrawals and more re-studies of later-queued projects, resulting in an enormous backlog of interconnection requests for PJM and other RTOs to process.

Exacerbating the problem is PJM's staffing level, which has not adequately increased to account for the influx of new renewable energy projects seeking interconnection.

PJM's Proposed Solution: Transition to a cluster process model with upgrade costs allocated amongst projects in each cluster

PJM's efforts to ditch the serial process began in earnest early last summer. PJM's Generator Interconnection Process Reform Task Force held stakeholder meetings in the fall of 2021 to propose options for replacing PJM's current serial interconnection process with a cluster process and to seek stakeholder input on how the transition between processes should occur. In the cluster process, groups of generator interconnection applications are studied simultaneously, and network upgrade costs are allocated amongst the group proportionate to project size.

A transition plan approved by PJM's planning committee on February 8, 2022 would impose financial requirements upon applicants and require them to demonstrate site control in an effort to limit speculative projects, thereby reducing projects dropping out of the queue and requiring re-studies of projects remaining in queue. As it transitions to its new interconnection process, PJM expects about 450 projects to be processed in a "fast lane" that would complete review by October 2024. It expects that the remaining projects currently in the queue would go through transition review cycles – one ending in mid-2025 and a second finishing a year later.

Unfortunately for projects not yet in the queue, the plan also calls for a two-year pause on new interconnection applications. This pause will likely scuttle many early-stage projects that have already

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expended substantial time, money, and effort to secure lease options that will now expire before developers can submit interconnection applications again in late-2025.

Problems Remain

PJM's staffing remains insufficient to process applications at the volume required by the influx of renewable projects seeking interconnection in a timely manner. High turnover is exacerbating the problem. Moreover, poor communication and coordination between PJM staff and applicants lead to confusion about required upgrades and appropriate timelines.

As location-limited renewable energy facilities continue to compose a larger amount of grid-scale energy generation, current regional transmission networks are quickly becoming insufficient to support required generator interconnection through participant-funded upgrades alone. New transmission infrastructure is required to provide more points of interconnection to large-scale, location-dependent generators. According to the Department of Energy, the U.S. must expand electricity transmission by 60% by 2020 and must triple it by 2050. The bipartisan infrastructure bill signed into law at the end of 2021 includes a $2.5 billion-dollar revolving loan fund whereby the DOE may offer loans to and enter capacity contracts with transmission developers. It also provides FERC and DOE with backstop transmission siting authority whereby DOE may designate National Interest Electric Transmission Corridors in which FERC may issue permits to developers under its eminent domain authority if a state authority denies an application seeking approval. However, these investments alone are insufficient to meet the transmission infrastructure required to support the energy transition. Increasing high-voltage transmission capacity by 60% by 2030 will require roughly $360 billion in transmission investments.

FERC's Attempt to Address the Problems

FERC appears intent on addressing the need for holistic transmission planning to build a more robust electric grid that will accommodate the transition to new clean energy resources. In July

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2021, FERC issued an ANOPR seeking "comment on the need for reforms or revisions to existing regulations to improve the electric regional transmission planning and cost allocation and generator interconnection processes." The questions raised by FERC in the ANOPR include the following:

- How to plan for future scenarios, including the needs of anticipated future generation, as part of regional transmission planning and cost allocation processes;
- Whether FERC should require transmission providers to establish a process to identify geographic zones that have the potential for the development of large amounts of renewable generation and plan transmission to facilitate the integration of renewable resources in those zones;
- Whether reforms are needed to improve the coordination between the regional transmission planning and cost allocation and generator interconnection processes;
- How to appropriately identify and allocate the costs of new transmission facilities in a manner that satisfies FERC's cost causation principle that costs are allocated to beneficiaries in a manner that is at least roughly commensurate with estimated benefits; and
- Whether participant funding of interconnection-related network upgrades may be unjust and unreasonable and whether FERC should eliminate the independent entity variations that allow RTOs/ISOs to use participant funding for interconnection-related network upgrades.

Hundreds of stakeholders have responded to the ANOPR to date and FERC Chairman Richard Glick is expected to initiate at least one rulemaking flowing from the ANOPR this year. Democrats hold a 3 to 2 majority of FERC seats, and Chairman Glick has stated his intention to issue a proposed rule early this year and publish a final rule by the end of 2022. By the time PJM completes the transition phase of its queue reforms in October 2023 (or later), it may be required to once again reform its interconnection process to conform with the forthcoming FERC rule.

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However, Chairman Glick's term ends in June 2022. To remain in his post, he must obtain approval from the Senate in which Democrats currently hold a single vote majority. One senator's vote he must win is Senate Energy and Natural Resources Chairman Joe Manchin (D-WV), who criticized FERC in February as having a political agenda after it announced it would consider greenhouse gas emissions when determining whether to permit new natural pipelines. This year's midterm elections further imperil the success of FERC's proposed rulemaking on transmission planning. If Senator Manchin refuses to confirm Chairman Glick for another term, FERC will have a vacant seat and a 2 to 2 split among Democrats and Republicans. If Democrats lose the Senate in November without confirming Glick for a second term or confirming a replacement, the new Republican-led Senate is unlikely to confirm any potential FERC appointee President Biden nominates during the remaining two years of his term, threatening the success of desperately needed reforms.

Takeaways

PJM's Interconnection Process Reform is a step in the right direction to alleviate generator interconnection application congestion, but it must increase its staffing and coordination with interconnection applicants to swiftly move through its transition from a serial to cluster process and avoid scuttling renewable energy projects in early-stage development that have yet to apply for interconnection. FERC's anticipated rulemaking aimed at a holistic approach to transmission planning and investments in transmission arising out of the bipartisan infrastructure bill could ultimately help alleviate the generator interconnection problem. However, successful rulemaking at FERC requires that Chairman Glick retain his seat. To do so, he must win the support of every Senate Democrat, including Manchin. Manchin's support is hardly certain. He has recently criticized FERC's reforms to the natural gas pipeline permitting process. If Chairman Glick fails to secure another term and Democrats lose the Senate in this year's mid-term elections, President Biden will struggle to secure confirmation for any FERC appointment. A 2 to 2 split at FERC could leave the body deadlocked, imperiling the desperately needed reforms

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currently in process.

For more information, contact Daniel Craig or any attorney with Frost Brown Todd's Energy industry team.

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[1] PJM's territory includes all or parts of Pennsylvania, New Jersey, Maryland (hence the name "PJM"), Delaware, Illinois, Indiana, Kentucky, Michigan, North Carolina, Ohio, Tennessee, Virginia, West Virginia and the District of Columbia.
[2] Nationwide, as of the end of 2019, there were 743 GW of proposed generation awaiting interconnection, of which 90% was from solar, wind, and storage projects. Caspary, Jay, et al., Disconnected: The Need for a New Generator Interconnection Policy. Americans for a Clean Energy Grid (January 2021).
[3] ANOPR, 176 FERC ¶ 61,024, Docket No. RM21-17-000 (July 15, 2021).
[4] Order No. 845-B, 166 FERC ¶ 61,092 at P 5; *see also* Order No. 2003, 104 FERC ¶ 61,103 at P 679

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