



New Jersey Assembly Telecommunications and Utilities Committee

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For Public Use

Who Is PJM?

PJM Interconnection ensures the reliable flow of power to 65 million people in 13 states and the District of Columbia. We are similar to an air traffic controller but for the electric grid. We don't own the high-voltage transmission lines that carry electricity, but we direct and balance the flow of that power throughout our region and to and from neighboring regions. In addition to reliable operations, PJM also plans necessary enhancements to the transmission grid to ensure reliability into the future and operates the electricity markets within its region to competitively procure capacity and to meet electricity demand in real time. The purpose of these electricity markets is to cost-effectively reinforce reliable grid operations. PJM is federally regulated by the Federal Energy Regulatory Commission (FERC). Our core business functions save consumers between \$3.2 billion and \$4 billion in energy costs annually.

The U.S. Grid Is in an Energy Transition

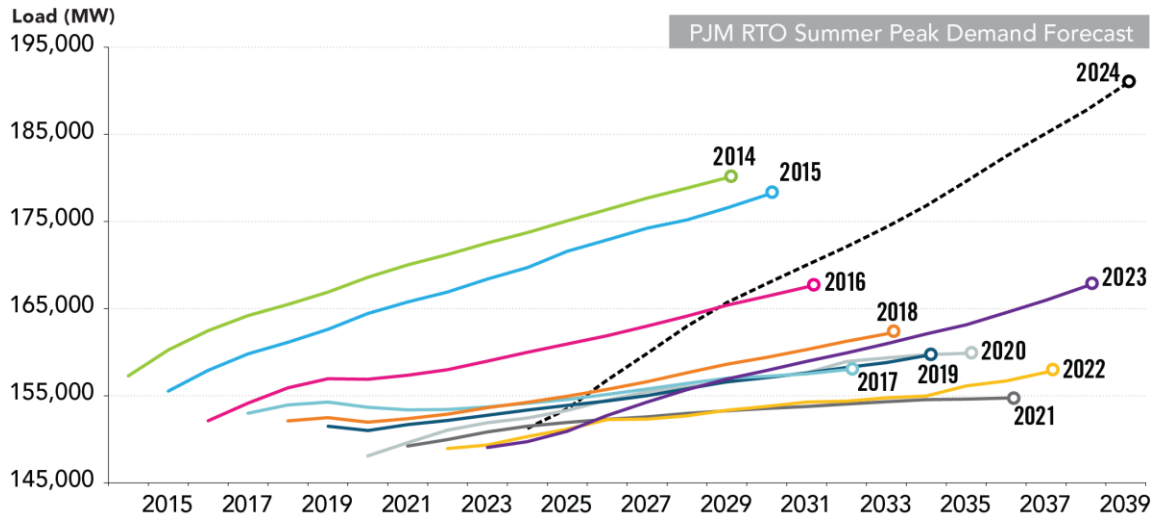
As with the entire U.S. electric grid, PJM is experiencing an accelerating transition toward renewable energy. Policies and consumer choices are shifting the grid away from dispatchable thermal (coal, gas, nuclear) generation resources toward resources with little-to-no carbon emissions. PJM has a generation interconnection queue that mostly comprises (~98%) intermittent generation, such as wind and solar, as well as battery technology. Thus, PJM has affirmatively stated that we are in an energy transition to a changed resource mix and a greener grid.

Market Fundamentals: A Tightening of Supply and Demand

As the energy transition accelerates, trends have developed that warrant additional attention. The grid is now experiencing what PJM forecasted in its 2023 [Resource Retirements, Replacements and Risks](#) (PDF) paper: The loss of generation resources is outpacing the addition of replacement resources amid accelerating growth in consumers' demand for electricity. This is an issue confronting grid operators throughout North America.

To illustrate this point, this past summer, PJM had fewer resources to draw on compared to the previous summer – approximately 182,500 MW of installed capacity was available in 2024, compared to the summer of 2023 when approximately 186,500 MW was on the system. In terms of demand for electricity, the forecasted peak demand for electricity for this past summer was approximately 151,000 MW, compared to 2023 when the summer peak load was 147,000 MW. This reduction in available supply with the projected increase in demand results in a year-over-year net difference of 8,000 MW. While PJM anticipates the addition of new generating resources in the coming years, PJM is also projecting that demand for electricity will continue to grow at a material rate over the next decade, as depicted in the line chart in **Figure 1**, below.

Figure 1. PJM Summer Peak Demand (15-Year Forecast)



Maintaining Resource Adequacy and Reliability

PJM has analytically studied and will continue to study the impacts of the energy transition described above. Based on our analysis, we have observed a few trends that, when taken in the aggregate, will create a reliability concern around resource adequacy later into this decade.

- First, the rate of electricity demand is anticipated to increase significantly in the future due to the electrification of the transportation and heating sectors. There has also been a significant near-term increase in the development of large data centers in the PJM service area, each of which consumes electricity in very high volumes.
- Second, the pace of retirements of existing fossil-based resources, largely due to state and federal policies, is clearly outpacing the construction of new renewable resources. There have been a variety of reasons cited for this lag in construction, including supply chain, state and local siting challenges, and issues related to project financing.
- Finally, the thermal dispatchable generators slated to retire are those that have historically provided the grid balancing services necessary to reliably operate the system. Longer-duration batteries and potentially other technologies could also serve in this role in the future if they can become more cost-effective and are deployed at scale.

Capacity Auction Results Signal Need for Additional Resources

Similar to other grid operators, PJM conducts auctions to procure supply resources in advance of a future delivery year to meet the electric needs of customers in PJM's service area. This auction for capacity resources, known as the Base Residual Auction (BRA), is typically held three years in advance of the delivery year. However, the auction calendar has recently been compressed to accommodate FERC's review of changes to PJM's capacity market rules, and some auctions will be conducted closer to the delivery year.

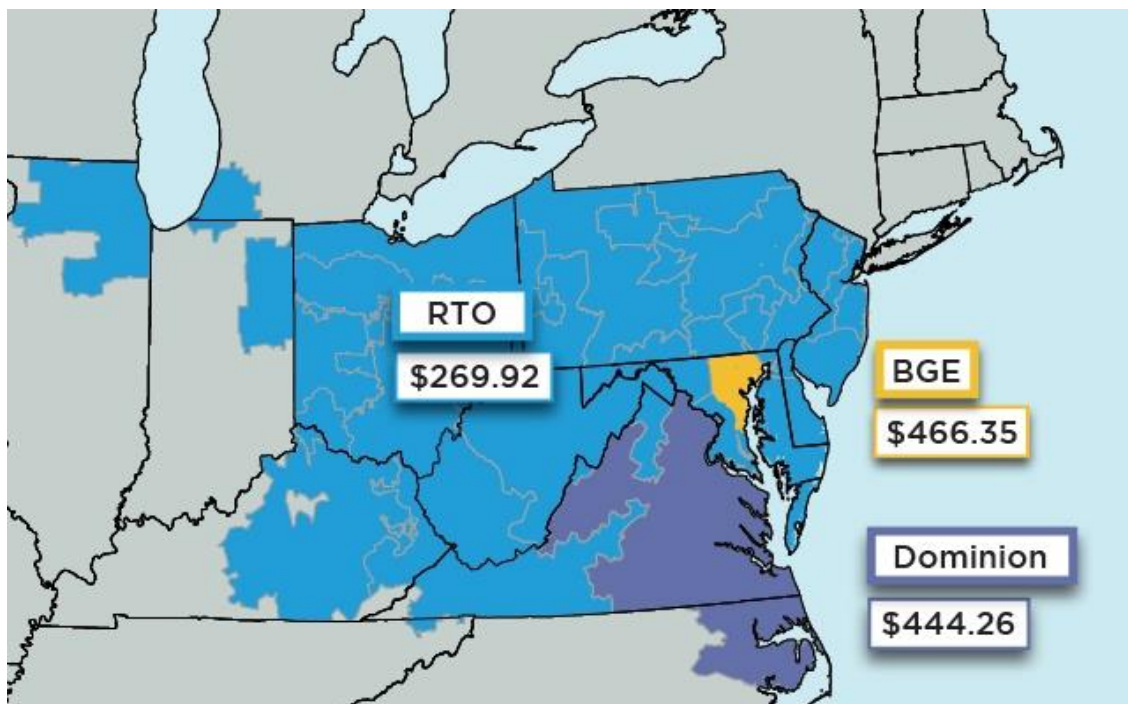
The most recent BRA was conducted in July 2024, and the auction competitively secured resources to meet the reliability requirement for the 2025/2025 Delivery Year, which begins on June 1, 2025. However, auction prices were significantly higher due to decreased electricity supply caused primarily by a large number of generator retirements, combined with increased electricity demand and the implementation of FERC-approved market reforms.

As noted in **Figure 2**, below, the auction produced a price of nearly \$270/MW-day for much of the PJM footprint, including all of New Jersey, compared to almost \$29/MW-day for the prior 2024/2025 auction. Two additional zones (BGE and Dominion) cleared at zonal caps due to insufficient resources inside those zones and constraints on the transmission system that limit the ability to import capacity. Taken together, these higher prices send a clear investment signal across PJM's region that additional generating resources are needed.

It is important to note that these capacity auction results represent wholesale prices, not retail prices. While wholesale capacity prices may ultimately be reflected on a retail customer's utility bill, there are several factors that can mitigate or affect the timing and magnitude of the rate impact (e.g., the filing of a local distribution utility's rate case with the BPU). Notwithstanding, the results of the recent capacity auction have had no effect on the utility bills of New Jersey consumers to date, and any possible rate impacts will not occur until June 1, 2025, at the earliest.

The next BRA, for the 2026/2027 Delivery Year, is currently scheduled for December 2024. As PJM prepares for this next auction, there are early indications that the recent market results should incent additional capacity resources to participate.

Figure 2. PJM Base Residual Auction Results for the 2025/2026 Delivery Year (by Local Deliverability Area)



Replacement Generation in the Interconnection Queue

PJM has made significant strides in reforming the generation interconnection queue so as to speed up the interconnection of projects in the queue that have both financial wherewithal and site control. The following figures illustrate the current state of the queue in terms of its composition of resources (**Figure 3**) as well as the progress that PJM has been making toward implementing FERC-approved reforms to shorten the processing times and increase the overall efficiency of the queue (**Figure 4** through **Figure 6**). It is also important to note that approximately 38,000 MW of generating resources (mostly solar) have already been processed through the interconnection queue but have yet to connect to the grid. See **Figure 5**. Finally, **Figure 7** illustrates the total number of projects (*i.e.*, 488) expected to clear the queue in 2024-2025, including 20 projects located in New Jersey.

Figure 3. PJM Queued Capacity (Nameplate) by Fuel Type (“Active” in the PJM Queue as of April 1, 2024)

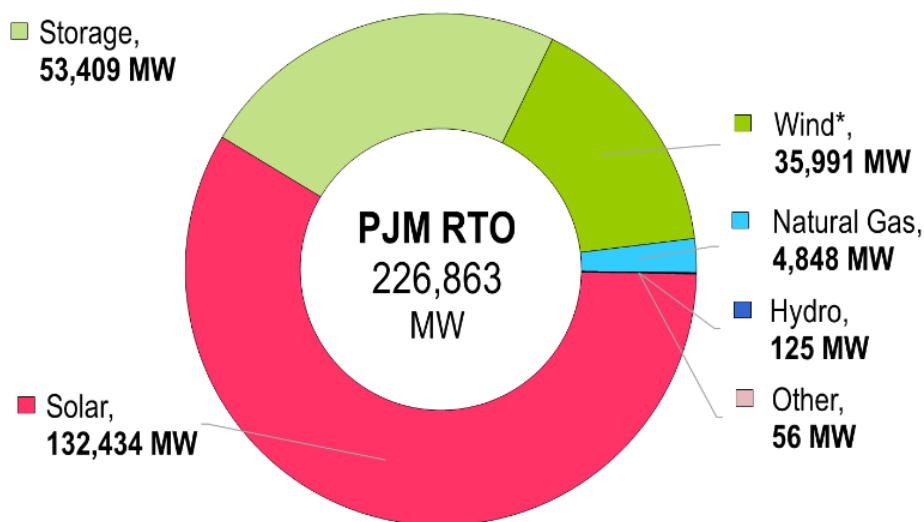


Figure 4. Interconnection Process Reform Timeline



Figure 5. Interconnection Queue Breakdown and Timeline

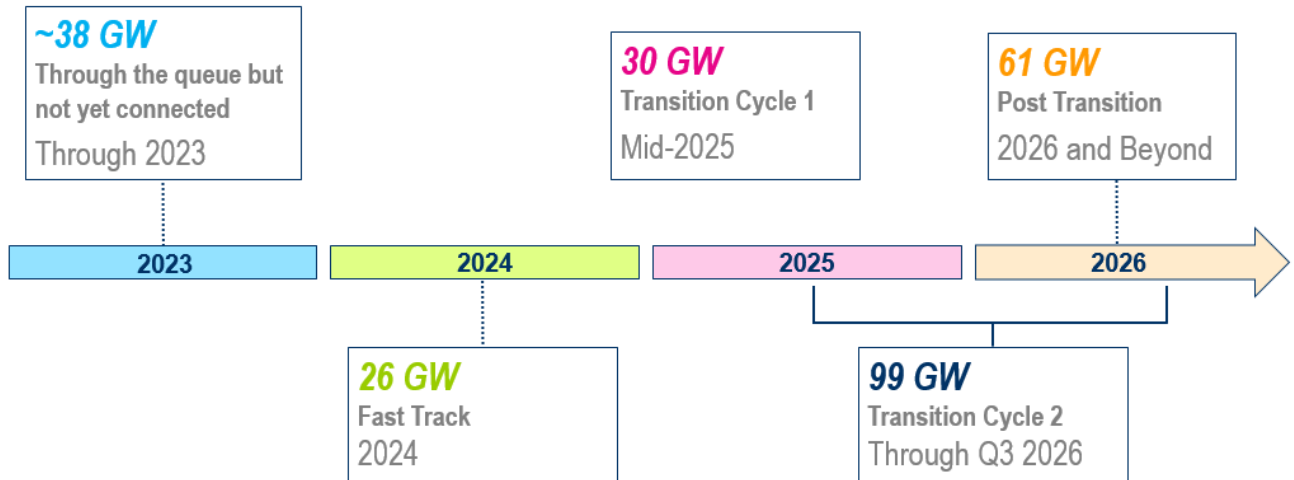
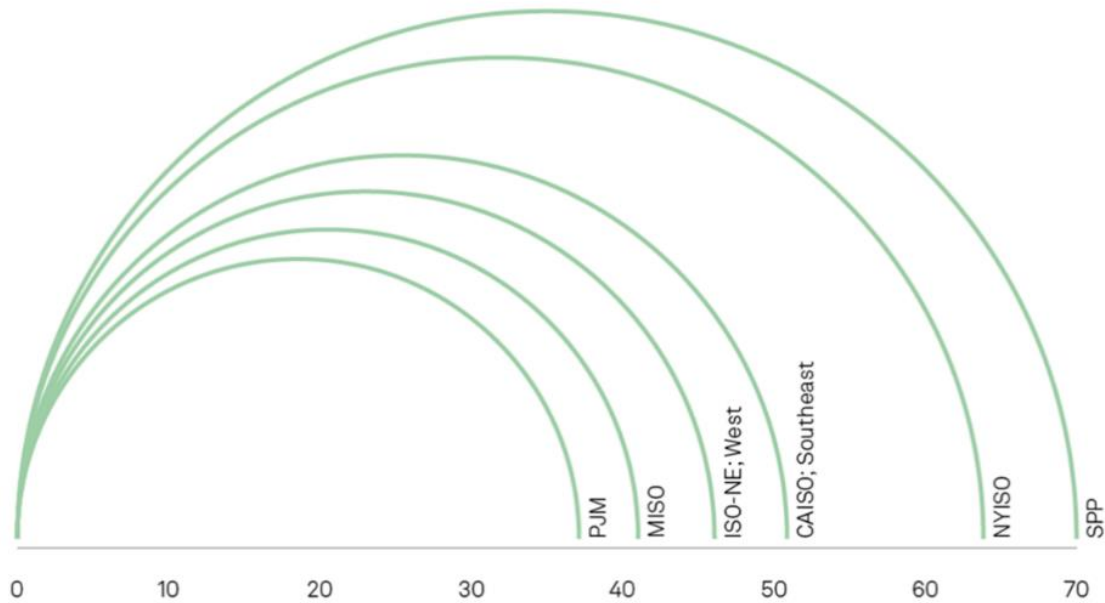


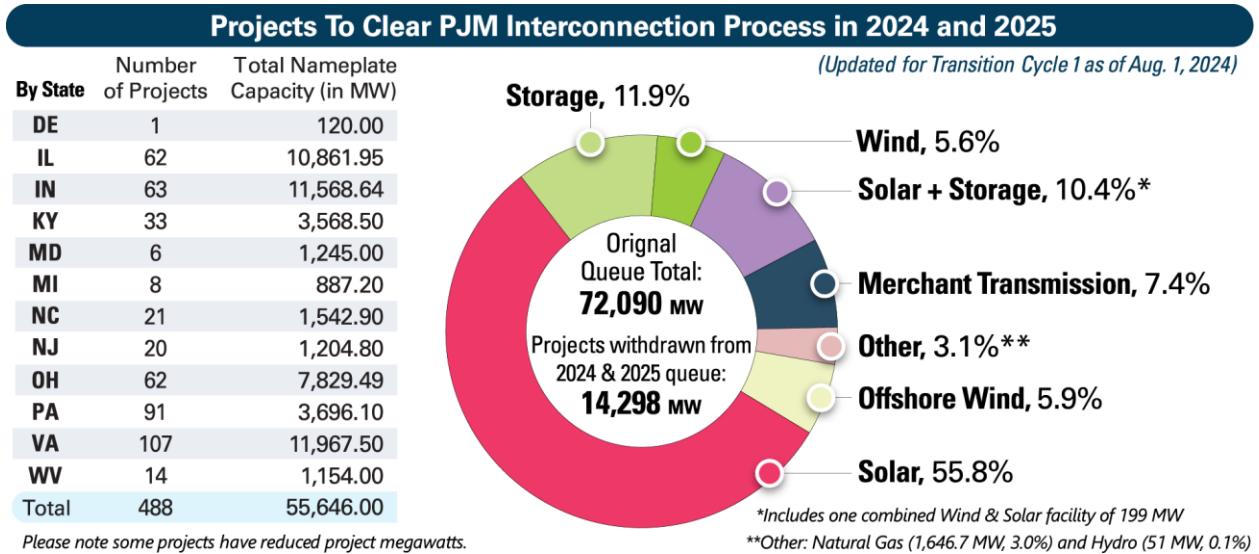
Figure 6. U.S. Interconnection Queues – S&P Global

Average time from queue date to proposed online date (months)



As of June 28, 2023.
 Active queues only.
 Only includes interconnection queues for which sufficient details were available.
 Source: Public company reports (see Excel attachment for details).
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Figure 7. Projects To Clear PJM Interconnection Process in 2024 and 2025



Conclusions

- PJM understands that higher energy costs materially impact all consumers in New Jersey and throughout the region we serve. While a shrinking supply of energy and capacity, combined with increasing demand, will result in upward pressure on wholesale and retail prices, certain actions can be taken to minimize those rate impacts. As noted, any rate impacts associated with PJM’s most recent capacity auction will not occur until June 1, 2025, at the earliest.
- Specifically, while PJM leaves the determination of energy policy to state and federal government, we respectfully urge that policymakers:
 - **Avoid** policies meant to push generation resources off of the system until an adequate quantity of replacement generation is online and has been shown to be operational.
 - **Analyze** your state/local challenges in the deployment of new generation resources and electricity infrastructure, and **enact** policy to facilitate greater/quicker construction.
- PJM is working to advance state energy goals like offshore wind transmission planning with New Jersey, as well as taking a series of steps to try and maintain reliability as we progress through the energy transition. For more information on PJM’s efforts, please visit the [Ensuring a Reliable Energy Transition](#) webpage on PJM.com. It outlines the organization’s reliability concerns, the actions PJM is advancing to help alleviate those concerns, and all of the studies produced in support of these efforts.