

August 10, 2021

Mr. Mark Takahashi
Chair, PJM Board of Managers
PJM Interconnection, L.L.C.
2750 Monroe Boulevard
Valley Forge Corporate Center
Audubon, Pennsylvania 19403

RE: Phase II Capacity Market Reforms

Dear Mr. Takahashi and the PJM Board of Managers,

At the July 26th, 2021 Liaison Committee meeting, the Board invited PJM members to present their perspectives on priorities and timing of the next phase of capacity market reform. Environmental Stakeholders appreciate the Board's continued attention to this vital topic. Although we are not members of the Liaison Committee, Environmental Stakeholders would like to take this opportunity to provide input on future directions for the capacity market and resource adequacy more broadly.

PJM must develop market and planning structures that support reliability both now and as the nation transitions to a very low carbon power grid. Environmental Stakeholders are acutely concerned with how the assumptions underlying the current capacity market create unintentional subsidies for fossil fueled resources or barriers to low carbon supply. The emerging consensus is that a reliable low carbon grid will be based on dynamic combinations of complementary resources.¹ Although future technological developments may change this picture, we believe the most likely and cost-effective scenario is ever-increasing amounts of variable resources balanced across a nationwide transmission system, with short-term variability managed by storage and flexible load. Any remaining fossil resources will run intermittently at low capacity factors, mostly during prolonged periods of low renewable output.

Based on this emerging vision for the future and PJM's current challenges, we offer several suggestions for capacity market reform:

- **Reduce Overprocurement.** PJM's consistent purchases of excess capacity serves as a multi-billion dollar subsidy for the fossil fuel industry. More subtly, in a low-carbon grid the availability of energy varies dramatically from time to time, and capacity oversupply blunts the real-time price signals critical for efficient market response to that reality. PJM should commit to improving the accuracy of load forecasts and address aspects of the VRR curve that lead to overprocurement. However, given the likely rapid pace of electrification in the near future, forecasting uncertainty is unavoidable. PJM should also develop market

¹ Recent summaries include the Goldman School of Public Policy *2035 Report* (2020); Jenkins et. al, *Getting to Zero Carbon Emissions in the Electric Power Sector* (2018); and NREL's *Quantifying the Challenge of Reaching a 100% Renewable Energy Power System for the United States* (2021).

structures to manage forecast error, such as procuring some capacity closer to the delivery year.

- **Avoid 'one size fits all' Market Design.** RPM is currently based on generic resources capable of operating 8760 hours per year. This does not match the reality of a low-carbon power system. With ELCC, PJM has taken an important step to incorporate the resource adequacy value of new technologies. Unlike older metrics, ELCC also captures the benefits of combinations of complementary resources. PJM should continue down this path, aiming for a market that accurately measures the contributions of all supply and demand-side resources, rather than one that inhibits competition based on restrictive definitions of capacity.
- **Embrace Imports.** Geographic diversity smooths renewable energy variability, broadly improves resilience, and increases competition. Imports can augment renewable resources in the PJM region to increase overall supplies of renewable energy and capacity. These factors point towards an expanded role for imports in PJM's reliability picture. Capacity market reform should eliminate barriers to participation from external resources and portfolios of resources.
- **Address Seasonal Differences.** As recent events have painfully shown, supply, demand, and risks are simply different between summer and winter. A single annual product cannot address this with any degree of efficiency. The result is a no-win choice between decreased reliability as the assumptions behind a market designed for summer peaks break down under new cold weather challenges or increased costs from trying to cover all seasons with one product. PJM should take a fresh look at how seasonal needs differ, and implement seasonal products that better fit the needs and risks the system faces.
- **Eliminate Hidden Subsidies.** Beyond overprocurement, many features of RPM deliver unearned windfalls to fossil generation. Most glaringly, systematic failures of the natural gas system have emerged as a major reliability risk, yet RPM continues to value and pay gas-fired plants as if this risk did not exist. At the moment, PJM's high reserve margins compensate for this risk, but consumers continue to pay for capacity that may not be available when needed, and reliability concerns may emerge as the system becomes leaner.

More generally, RPM's performance metrics have proven toothless: since Capacity Performance was instituted, a capacity resource that never performed would have earned essentially the same capacity revenue as one that performed perfectly. In the one significant Capacity Performance event to date, 79% of nonperforming units were excused. Decades-old steam units that take days to start receive the same level of capacity as fast modern units. Plants on outages receive capacity payments for delivering no service. These flaws all serve as subsidies, mostly to the benefit of fossil-fired resources. Capacity market reform should extend ELCC to all resource types to ensure that no resource is given excessive resource adequacy credit. Performance requirements need to do a much better job at ensuring consumers get what they're paying for, while avoiding arbitrary or punitive measures that needlessly increase risk for suppliers.

Beyond the above improvements to RPM, proposals to integrate clean energy and capacity markets show promise. We fully support PJM and stakeholders continuing to explore market structures that better account for environmental attributes while preserving state flexibility and control.

Environmental Stakeholders value this opportunity to provide input on these timely and important topics. We believe PJM has a critical role to play in the transition to a low-carbon economy, and we look forward to continued engagement in what promises to be a spirited stakeholder process. As always, we are available at your convenience should the Board or individual members wish to further discuss these or any other issues.

Sincerely,

Environmental Stakeholders

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