



August 18, 2023

PJM Critical Issue Fast Path (“CIFP”) Comments
c/o Jaclynn Lukach - Secretary
PJM Interconnection, L.L.C.
2750 Monroe Blvd
Audubon, PA 19403-2497

Dear Ms. Lukach,

Advanced Energy United (“United”), the American Clean Power Association (“ACP”), Solar Energy Industries Association (“SEIA”), and MAREC Action (collectively, the “Clean Energy Trades”) ¹ submit this letter for your consideration in the PJM Critical Issue Task Force (“CIFP”) process underway. The Clean Energy Trades are aligned and represent utility scale renewable energy and energy storage resources, as well as distributed energy resources—including energy efficiency and demand response. We collectively agree that the combination of these resources in a well-functioning PJM capacity market will collectively provide cost-effective, reliable, and resilient services for a 100% clean energy transition. Our goal is to offer constructive input such that all the resources we represent are able to most effectively, efficiently, and reliably participate in the PJM market and serve the load and needs of the greater grid today and for decades to come. We ask that this be posted by PJM as part of the materials in the CIFP process.

Overview

The Clean Energy Trades support PJM’s efforts to evolve its capacity market toward a more effective, efficient, and resilient design to support a reliable power system. Through the Resource Adequacy Senior Task Force (RASTF), and now in the Resource Adequacy Critical Issue Fast Path process (CIFP-RA), PJM and stakeholders have developed a number of solutions to improve the capacity market. PJM has now put forward proposals that incorporate many of these improvements, including most notably:

1. Reliability risk modeling that better captures the outage risk of the thermal fleet
2. Accreditation methods that better allocate outage risk to suppliers instead of load

¹ The comments herein reflect the opinion of the Clean Energy Trades as a whole rather than those of any individual member of the respective Clean Energy Trade signatories.

3. A seasonal market construct that allows for more efficient supply and demand distinctions and is resilient to forecast error

These comments discuss key components of PJM’s proposal that we support, components that we support conditionally, and components that we oppose.

Reliability Risks and Drivers (KWA2) - Support

We support nearly all components of PJM’s proposal in this KWA. Most importantly, we support PJM’s proposal to properly reflect correlated generator outage risk in reliability modeling. Empirical data and enhanced reliability modeling both show that PJM currently substantially understates the risk that thermal outages pose to the power system. To remedy this issue, PJM correctly proposes to model outages as correlated with weather and across the fleet, and to include extreme weather data in its reliability risk modeling, including generator performance during extreme events like the 2013-14 polar vortex and Winter Storm Elliott.

PJM’s reliability modeling updates now show material reliability risk in winter. This introduces an issue wherein the studied deliverability of capacity resources in winter may be overly constraining, resulting in understated accreditation values for some resources. We explain the issue further under Qualification and Accreditation.

Procurement Level and Metric (KWA3) - Support

The Clean Energy Trades support PJM’s proposal to base seasonal demand curves off the marginal reliability impact measured in EUE terms. The Clean Energy Trades also support PJM’s proposal to continue to track and report out on all metrics.

Performance Assessment (KWA4) – Support Conditionally

The capacity performance (CP) framework plays an important role in PJM’s current capacity market design. It sends a price signal for suppliers to make necessary investments in their assets so that they can perform when they are needed the most. As the second settlement of a two-settlement market, CP serves as a check on accreditation and can appropriately divert revenue away from underperforming resources toward those that do perform. The Clean Energy Trades support the CP in concept as it ensures generators meet their commitments and bolsters faith in a reliable capacity market.

However, the current CP framework is both costly and ineffective for many clean energy resources because it imposes obligations that cannot be met due to physical limitations that are already accounted for in accreditation, introducing additional risk and cost without any opportunity to make commensurate improvements in operations. PJM has implicitly recognized these limitations of CP by allowing many Effective Load Carrying Capability (ELCC) resources an exemption from the capacity market must-offer requirement. This must-offer requirement exemption allows clean energy suppliers to manage their CP risk and should be retained until a more robust and granular market design is implemented.

Several design options have been proposed in the RASTF and CIFP-RA that, if correctly implemented, would alleviate the concern related to lack of granularity and render an appropriately structured must-offer requirement acceptable. One option that we encourage the Board to direct PJM to pursue in full is the development of a time-of-day capacity market (see below for more detail).

If a time-of-day market is not immediately feasible, the CP performance metric should recognize the normal variations in the output of wind and solar resources that are already accounted for in accreditation and avoid

imposing inefficient penalties and bonuses on resources providing the energy that prevailing weather conditions allow.

We oppose PJM's proposal to limit PAI bonus eligibility to committed capacity resources because this currently acts as a valuable check on accreditation. We also oppose PJM's proposal to limit PAI bonus eligibility for actual performance by DR and EE resources to their committed ICAP. The potential to receive bonuses from overperformance is an important aspect of the business model for these resources and without it we risk applying yet another pressure point to an industry that PJM is looking to strengthen participation of, not reduce it. The Clean Energy Trades believe that the status quo, which allows any resource to earn bonuses for performance during PAI, is a more appropriate market design that leads to better grid reliability.

Qualification and Accreditation (KWA5) – Support Conditionally

Current accreditation for thermal resources assumes that forced outages are random. Observed history and updated, best-practice modeling tells us that outages, across the fleet, are highly correlated with temperature. PJM's proposal for accreditation for thermals correctly moves correlated outage risk off load onto suppliers and sends better price signals for generator entry and exit. We support PJM's proposal to reflect correlated outage risk in thermal accreditation. Further, the Clean Energy Trades support PJM's proposal to consider historically observed performance since 2012, which includes performance data from the 2013-14 Polar Vortex and Winter Storm Elliott. These events should not be treated as outliers and the performance during these events should be factored into resource accreditation.

Additionally, by adopting unit-specific modeling for hybrid resources, PJM corrects a mistake from the ELCC-CIR filing that understated the capacity value of hybrid resources.

PJM's accreditation methodology may be understating the capacity value of certain winter resources. PJM's accreditation model limits a capacity resource's output to its studied deliverability.² A misalignment between the hours of risk assumed in winter deliverability studies, which are based around winter peak, and the winter reliability periods that matter for accreditation, which are not necessarily coincident with winter peak, means that many resources may be under-accredited now that PJM has updated its reliability risk modeling. One particularly salient example is solar. In PJM's accreditation model, solar resources have their winter output capped at 5% of their maximum facility output.³ PJM's updated modeling shows that winter reliability events are driven primarily by energy, not capacity, shortages. Solar resources that can add energy to the system on energy-limited days contribute reliability value that is likely not recognized by the current accreditation models. Ultimately, customers bear the cost of understated capacity value by having to procure more capacity. PJM should address this issue as quickly as possible by aligning the winter deliverability study hours with the hours that matter for reliability and updating resource accreditation accordingly.

Seasonal Capacity Market Construct (KWA8) – Support Conditionally

We support PJM's aim of moving to a seasonal capacity market construct and believe that it will (1) send better price signals for capacity resources to address differentiated summer and winter risk, (2) enable suppliers to better manage CP risk, and (3) lead to more optimal clearing that will save costs for consumers. That said, we believe more analysis, including market simulations to test against a number of plausible scenarios and

² RAA, Schedule 9.1, Page 6, <https://www.pjm.com/directory/merged-tariffs/raa.pdf>

³ Slide 10, https://www.pjm.com/-/media/committees-groups/subcommittees/ips/2023/20230731/20230731-item-10---ips_7_31_23_cir-transfer-process_updated.ashx

demonstrations to help stakeholders build intuition, needs to be done before moving forward with implementation.

The Clean Energy Trades strongly encourage PJM to continue developing more granular time-of-day capacity products to be implemented in the near future as slice-of-day products may yield additional efficiency gains beyond just a two-season capacity market. A market that transacts capacity products differentiated by season and time of the day (e.g., summer day, winter night, hourly) will (1) enable suppliers with seasonal or diurnal variation to avoid taking on capacity obligations when they are physically incapable of performing, (2) enable these resources to more efficiently manage their capacity performance risk, and (3) send clearer price signals for the value of capacity throughout the day. Examples of these gains include the option for solar resources to avoid selling capacity at night and the option for duration-limited resources like batteries and demand response to limit their availability to certain hours. A time-of-day market will make the capacity market more efficient and it will increase reliability in PJM.

Supply-Side Market Power Mitigation Rules (KWA9) - Support

Resources must be able to reflect the net cost of taking on a capacity commitment in their offers. This means that offers should be capped at the greater of Net ACR and the incremental costs of taking on a capacity commitment. We support PJM's proposal to allow resources to allow resources to bid at least these incremental costs, including exposure to financial risk.

Conclusion

In conclusion, the Clean Energy Trades respectfully ask that PJM address the important issues identified above which are critically important to establishing an equitable and functioning wholesale market in PJM. We therefore ask that the Board direct PJM to file a proposal that fully addresses the concerns identified by the Clean Energy Trades in this letter.

Sincerely,



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