

171 FERC ¶ 61,149  
UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Neil Chatterjee, Chairman;  
Richard Glick, Bernard L. McNamee,  
and James P. Danly.

Old Dominion Electric Cooperative and Direct Energy Business, LLC, on behalf of itself and its affiliate, Direct Energy Business Marketing, LLC, and American Municipal Power, Inc. Docket No. EL17-32-000

v.  
PJM Interconnection, L.L.C.

Advanced Energy Management Alliance Docket No. EL17-36-000

v.  
PJM Interconnection, L.L.C.

ORDER DENYING COMPLAINTS

(Issued May 21, 2020)

1. On December 23, 2016, Old Dominion Electric Cooperative, Direct Energy Business, LLC on behalf of itself and its affiliate, Direct Energy Business Marketing, LLC (Direct Energy), and American Municipal Power, Inc. (AMP) (collectively, ODEC) filed a complaint (ODEC Complaint) under sections 206 and 306 of the Federal Power Act (FPA) against PJM Interconnection, L.L.C. (PJM). On January 5, 2017, Advanced Energy Management Alliance (AEMA) filed a complaint (AEMA Complaint) (together, Complaints) under section 206 and 306 of the FPA against PJM. The Complaints by ODEC and AEMA (Complainants) address the procurement of capacity in PJM’s Reliability Pricing Model (RPM) capacity market and the participation of certain resources in RPM auctions. In an order dated February 23, 2018, the Commission directed Commission staff to convene a technical conference to explore issues raised in the Complaints related to PJM’s transition to procurement of 100% Capacity Performance Resources<sup>1</sup> and the methodology by which load-serving

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<sup>1</sup> All capitalized terms not defined herein have the meanings ascribed to them in the PJM Open Access Transmission Tariff (Tariff) or Reliability Assurance Agreement Among Load Serving Entities in the PJM Region (Reliability Assurance Agreement). See Tariff § 1. Definitions (1.0.0); Reliability Assurance Agreement, Article 1 – Definitions (31.0.2).

entities' peak-shaving actions are reflected in capacity procurement targets.<sup>2</sup> The technical conference was held on April 24, 2018. In this order, we deny the complaints as discussed further below.

## I. Background

2. In 2015, PJM proposed, and the Commission accepted, subject to certain conditions, a number of modifications to the PJM capacity market rules.<sup>3</sup> Among these modifications was a transition from multiple capacity products, including annual and sub-annual products, to a single annual capacity product known as Capacity Performance. The transition process included two Base Residual Auctions (BRA), for delivery years 2018-2019 and 2019-2020, in which PJM would procure no less than 80% of its capacity needs from Capacity Performance Resources but could procure up to 20% from Base Capacity Resources. Unlike Capacity Performance Resources, which are subject to non-performance penalties if they fail to perform during critical periods throughout the delivery year, Base Capacity Resources are only subject to non-performance penalties during the period from June through September.<sup>4</sup>

3. In the Capacity Performance Order, the Commission also accepted PJM's proposal to allow market sellers to combine the Unforced Capacity value of resources of certain technology types and submit an "aggregated offer" to sell capacity in RPM auctions.<sup>5</sup> The Commission stated that it found it reasonable to extend this ability to Capacity Storage Resources, Intermittent Resources, Demand Resources, Energy Efficiency Resources, and Environmentally-Limited Resources because doing so provides "an avenue to Capacity Performance participation by resources that otherwise may be unable or unwilling to participate on a stand-alone basis because no reasonable amount of investment in the resources can mitigate non-performance risk to an acceptable level within the Capacity Performance market design."<sup>6</sup> The Commission

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<sup>2</sup> *Old Dominion Elec. Coop. v. PJM Interconnection, L.L.C.*, 162 FERC ¶ 61,160 (Technical Conference Order), *order on reh'g* 164 FERC ¶ 61,116 (2018) (Technical Conference Rehearing Order).

<sup>3</sup> *PJM Interconnection, L.L.C.*, 151 FERC ¶ 61,208 (2015) (Capacity Performance Order), *order on reh'g*, 155 FERC ¶ 61,157 (2016) (Capacity Performance Rehearing Order).

<sup>4</sup> See Tariff, Attachment DD.5.5A, §§ 5.5A(a)-(b) (4.0.0); Tariff, Attachment DD.10A, § 10A (8.0.0).

<sup>5</sup> Capacity Performance Order, 151 FERC ¶ 61,208 at P 101.

<sup>6</sup> *Id.* P 102.

further stated that “[p]ermitting such resources to submit aggregated offers as Capacity Performance will likely enhance their ability to provide reliability benefits to the PJM region and may increase competition in the capacity market.”<sup>7</sup>

4. In 2018, the Commission accepted a PJM proposal in Docket No. ER17-367 to modify certain aspects of the resource aggregation rules to enhance the ability of Capacity Storage Resources, Intermittent Resources, Demand Resources, Energy Efficiency Resources, and Environmentally-Limited Resources to effectively aggregate their capacity and continue to participate in the RPM market. PJM’s proposal coincided with the elimination of the sub-annual Base Capacity product beginning with the May 2017 Base Residual Auction for delivery year 2020/2021.<sup>8</sup>

## II. Summaries of Complaints

### A. ODEC (EL17-32)

5. ODEC requests that the Commission take action to prevent the loss of participation by certain seasonal resources in the PJM capacity market.<sup>9</sup> ODEC requests that the Commission: (1) take immediate action to prevent an unreasonable and irreparable change that will prevent seasonal resources from participating in the May 2017 Base Residual Auction; (2) determine that the PJM Tariff and the Reliability Assurance Agreement are no longer just, reasonable, and not unduly discriminatory or preferential; and (3) establish a proceeding to allow seasonal resources to participate in capacity auctions.<sup>10</sup> ODEC argues that circumstances have changed since the Commission first approved PJM’s transitional mechanism. These changes include: the impending elimination of the Base Capacity Resource product; the existence of factual evidence that capacity needs in PJM continue to vary by season; and the development of Commission policy to recognize the value of non-conventional generation sources.<sup>11</sup>

6. ODEC requests that the Commission act to extend the Base Capacity Resource product for another year, and to require PJM to submit a comprehensive program to

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<sup>7</sup> *Id.* P 101.

<sup>8</sup> *PJM Interconnection, L.L.C.*, 162 FERC ¶ 61,159 (2018).

<sup>9</sup> ODEC Complaint at 3.

<sup>10</sup> *Id.* at 4.

<sup>11</sup> *Id.* at 6.

allow for the participation of seasonal resources in capacity auctions.<sup>12</sup> ODEC states that it is not seeking to revise the Capacity Performance for all resources, but rather to recognize that the “one size fits all” approach of Capacity Performance does not fit with Commission policy and is detrimental to reliability and economically efficient market outcomes.<sup>13</sup>

7. ODEC argues that PJM has long recognized that the capacity needs of its service territories vary by season, and that PJM has traditionally been a summer-peaking region.<sup>14</sup> ODEC states that this relationship persists in the load forecast for the 2020/2021 delivery year, with summer peak being 13% higher than the projected winter peak.<sup>15</sup> ODEC argues that the PJM system has been developed acknowledging the summer-peaking nature of the system. For instance, complainants note that resources such as natural gas-fired combustion turbine generators were developed with the expectation that they would only be called on in the summer months when there would be less demand for natural gas. However, given the fixed costs of such development, demand response resources were also created that provided many of the same benefits but with lower investment costs. ODEC argues that PJM’s seasonal load profile has not changed, but is largely dismissed by PJM through the requirement that resources are required to deliver throughout the year.<sup>16</sup>

8. ODEC notes that the requirement that resources be capable of “sustained, predictable operation” throughout the year defies reality even for non-Seasonal Capacity Performance Resources, such as fossil fueled resources that take regular planned outages for refurbishment.<sup>17</sup> ODEC argues that such outages are a major factor in PJM’s capacity planning, such as the increased reserve margin going into the winter period to account for higher planned outages. ODEC states that PJM makes accommodations to allow resources with planned outages to avoid penalties, but does

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<sup>12</sup> *Id.* at 7-8.

<sup>13</sup> *Id.* at 8.

<sup>14</sup> *Id.* at 13.

<sup>15</sup> *Id.* at 13.

<sup>16</sup> *Id.* at 15.

<sup>17</sup> *Id.* at 16.

not provide similar accommodations to seasonal resources, which also are unavailable during certain periods of the year.<sup>18</sup>

9. ODEC argues that PJM fails to acknowledge that aggregation alone is insufficient to allow participation by seasonal resources, and also fails to acknowledge that differences in seasonal capacity provide an opportunity to achieve a more efficient procurement outcome.<sup>19</sup> ODEC states that seasonal resources such as wind generators and voluntary demand response were critical during the Polar Vortex of 2014, and are under-appreciated by PJM.

10. ODEC argues that the Base Capacity Resource product has been critical for seasonal resources to participate in capacity auctions, as 41% of the 26,999 MW cleared in the last auction (2019/20 delivery year) as Base Capacity offered in as Base Capacity only.<sup>20</sup> ODEC argues that the results of the last two years of interim auctions (for the 2017/2018 and 2018/2019 delivery years) show that aggregation has not led to meaningful participation by seasonal resources, and that there is no expectation that PJM's proposed revisions will change this outcome.<sup>21</sup> ODEC states that as a result, PJM will not have in place reasonable provisions to allow for continued participation by seasonal resources in the capacity market.<sup>22</sup> ODEC asks the Commission to require PJM to develop rules to better integrate resources such as storage, intermittent resources, demand response, energy efficiency, and environmentally-limited resources in the capacity market.<sup>23</sup>

11. ODEC disagrees with PJM's claim that its capacity needs are identical across the entire year.<sup>24</sup> ODEC notes that PJM's conservative winter planning assumptions and operational practices assume an inefficient deployment of capacity resources and inability to control outages, neither of which are true in practice.<sup>25</sup> ODEC argues that

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<sup>18</sup> *Id.* at 17.

<sup>19</sup> *Id.* at 19.

<sup>20</sup> *Id.* at 20.

<sup>21</sup> *Id.* at 21.

<sup>22</sup> *Id.* at 22.

<sup>23</sup> *Id.* at 23.

<sup>24</sup> *Id.* at 24.

<sup>25</sup> *Id.* at 25.

although PJM cites the 2014 polar vortex as driving identical capacity needs, PJM has substantially improved its operations planning since then, which allowed PJM to operate in 2015 without the benefit of Capacity Performance Resources.<sup>26</sup> ODEC also argues that Commission policy is to encourage accommodation of seasonal resources, pointing to the Storage Notice of Proposed Rulemaking (NOPR), where the Commission proposed to have RTOs modify their rules to allow storage to participate in energy, ancillary services, and capacity markets.<sup>27</sup>

12. ODEC states that the best solution to ensure continued participation of seasonal resources is to require PJM to maintain the Base Capacity Resource product with an enhanced penalty structure for another year, so that it is available for the 2020/2021 delivery year.<sup>28</sup> ODEC notes that PJM recently completed a stakeholder process to address seasonal capacity, but that this discussion was limited.<sup>29</sup> Limits to the discussion included counterparty risks associated with commercial aggregation, mismatch in availability of resources between summer and winter, and partial payment between aggregated resources not reflecting actual capacity contribution.<sup>30</sup> ODEC states that Direct Energy developed a proposal to extend the Base Capacity Resource product for another year during the stakeholder process, but that PJM decided to file the aggregation modification proposal before Direct Energy was able to present its proposal to the PJM Markets and Reliability Committee.<sup>31</sup>

13. ODEC states that it has provided proposed changes to the Tariff. These changes include extending the Base Capacity Resource product for the next auction (2020/2021 delivery year) but revising the penalty structure to make it comparable to the Capacity Performance Resource penalty structure.<sup>32</sup> ODEC also proposes making

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<sup>26</sup> *Id.*

<sup>27</sup> *Id.* at 27.

<sup>28</sup> *Id.* at 28.

<sup>29</sup> *Id.* at 28-29.

<sup>30</sup> *Id.* at 29-30.

<sup>31</sup> *Id.* at 31.

<sup>32</sup> *Id.* at 32.

the stop-loss provisions comparable for the two products as well.<sup>33</sup> ODEC argues that these changes are *de minimis* and should be easy to implement.<sup>34</sup>

**B. AEMA (EL17-36)**

14. AEMA asserts that since the Commission's acceptance of PJM's Capacity Performance proposal in Docket Nos. ER15-623 and EL15-29, new evidence and changed circumstances demonstrate fatal flaws in the case for elimination of Seasonal Resources, and that the result of moving to a 100% annual Capacity Performance requirement will be rates that are unjust, unreasonable, and unduly discriminatory. AEMA requests that the Commission direct PJM to continue to permit Base Capacity Resources to participate in the RPM market until such time as PJM develops—in conjunction with stakeholders—and the Commission approves an RPM market participation model that fully and beneficially accommodates participation by Seasonal Resources.<sup>35</sup>

15. AEMA states that since the Commission accepted Capacity Performance in 2015, PJM has presented to stakeholders the results of multiple studies that better establish the PJM system's summer and winter capacity needs and the actual benefits of additional winter capacity. AEMA asserts that these results support a finding that procurement of 100% Capacity Performance Resources is unnecessarily costly for consumers compared with retaining a sub-annual capacity product. AEMA specifically points to several studies analyzing reserve requirements and winter preparedness for delivery years for which a portion of capacity is comprised of sub-annual resources: Reserve Requirement Studies for 2015 and 2016 that AEMA states concluded that all resource adequacy risk lies in the summer; Winter Operations Assessments for 2015 and 2016 that AEMA states concluded that there was sufficient surplus capacity to allow generators to schedule planned and maintenance outages during the winter peak seasons; and a 2016-2017 Winter Readiness Study that AEMA states concluded that the system had sufficient resources to remain reliable even in the face of worst-case scenarios such as large-scale failures of the natural gas system or 2014 polar vortex levels of generator failure.<sup>36</sup>

16. AEMA states that to calculate how much capacity is needed to meet PJM's 1-day-in-10 years loss of load expectation (LOLE) target, PJM's reliability planning

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<sup>33</sup> *Id.* at 33.

<sup>34</sup> *Id.* at 33.

<sup>35</sup> AEMA Complaint at 7-8.

<sup>36</sup> *Id.* at 13-14.

procedures estimate the probability of a loss of load each week during the delivery year based on weather patterns, amount of capacity procured, characteristics of the generation fleet, and other factors. AEMA explains that the sum of those weekly probabilities of outages over the year is the annual LOLE, and that the target capacity requirement is set such that this model predicts a total 10% chance of outage during the delivery year. AEMA asserts that historically PJM has run this model using a fixed amount of capacity during each of the 52 weeks of the year, and that this has always resulted in a roughly 9.99% chance of loss of load during 10 weeks between June and August, and a 0.01% or less chance of loss of load during the remaining 42 weeks of the year—probabilities that sum to satisfy the 1-in-10 reliability target.<sup>37</sup>

17. AEMA states that during the course of recent stakeholder discussions on this topic, stakeholders became concerned that maintaining close to zero risk during 42 weeks of the year might be an inefficient approach to maintaining reliability on a summer-peaking system. That is, the full Capacity Performance approach of carrying a fixed amount of capacity year-round appears to over-procure capacity in low-risk periods for the sake of maintaining adequate reserve margins in peak periods. AEMA states that, to explore alternatives, stakeholders requested analysis of various seasonal capacity mixes that would still meet the 1-in-10 target. AEMA explains that stakeholders asked whether it would be possible to procure extra capacity during the summer to decrease the total LOLE during peak summer weeks down to, for example, 9% if that would allow capacity requirements for the rest of the year to be relaxed from near 0% LOLE to 1% LOLE. AEMA states that in response PJM produced an analysis showing how much extra summer capacity would be needed to decrease the summer LOLE to various lower levels—i.e., 9%, 8%, etc.—and how much less non-summer capacity could be procured to maintain a non-summer LOLE such that the total LOLE continues to satisfy the 1-in-10 reliability target.<sup>38</sup>

18. AEMA states that these data PJM provided indicate that PJM could increase its summer requirements by roughly 500 MW to allow over 17,000 MW of annual capacity to be replaced by less expensive summer-only resources, and that an additional unit of summer-only capacity has 97% of the reliability value of an additional unit of year-round capacity. AEMA asserts that these data also illustrate the cost of the planned transition to 100% annual resources: once Base Capacity Resources are eliminated, customers will need to pay for tens of thousands of megawatts of unnecessary capacity in non-summer weeks to compensate for the loss of Base Capacity Resources during the peak summer period. AEMA argues that treating summer and winter megawatts as if they have equal value sends an incorrect signal for investment in additional winter capacity even though additional winter capacity has

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<sup>37</sup> *Id.* at 20.

<sup>38</sup> *Id.* at 20-22.



near-zero reliability value. AEMA asserts that knowledge of the relative value of summer and winter capacity was not available when the Commission rendered its decision on the transition process in the Capacity Performance proceeding, and that therefore the Commission should revisit the transition to 100% annual resources to avoid imposing unjust and unreasonable rates on consumers.<sup>39</sup>

19. AEMA's second major argument is that new information provided by PJM suggests that one of the two purported benefits to load of demand response—reduced future capacity charges from peak shaving—is far smaller than previously understood and is not a viable alternative to demand response's participation as supply in the capacity market.<sup>40</sup> AEMA asserts that an analysis performed by PJM shows that load-serving entities who peak shave may reduce their own bills relative to other load-serving entities in their zone, but that such actions have very little effect on the current or future total capacity bill for their zone.<sup>41</sup> According to AEMA, PJM's analysis shows that, when participating only as a means to peak shave, demand response has virtually no impact on PJM's load forecasts and subsequent capacity purchases. AEMA concludes that any demand response that is forced out of the capacity market will therefore produce close to zero net capacity cost savings.<sup>42</sup>

20. AEMA also argues that PJM's resource aggregation rules available to Demand Resources, even as modified by PJM's proposal in Docket No. ER17-367, will, at best, allow only a limited quantity of summer-period demand response to participate—at greatly reduced compensation—because there will be an insufficient quantity of winter-period resources available to pair with them. AEMA asserts that at most roughly 2,000 MW of excess winter wind resources will be available for aggregation, so only 2,000 MW out of a total of nearly 11,000 MW of summer-period resources that previously served as Base Capacity Resources will be able to clear PJM's capacity auction.

### **III. Notice of Filings and Responsive Pleadings**

21. Notice of the ODEC Complaint was published in the *Federal Register*, 82 Fed. Reg. 1332 (Jan. 5, 2017), with interventions and protests due on or before January 18, 2017. Notice of the AWEA Complaint was published in the *Federal Register*, 82 Fed. Reg. 3790 (Jan. 12, 2017), with interventions and protests

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<sup>39</sup> *Id.* at 21-23.

<sup>40</sup> *Id.* at 34-39.

<sup>41</sup> *Id.* at 34-35.

<sup>42</sup> *Id.* at 36.

due on or before January 25, 2017. On January 17, 2017, the Commission granted an extension of time for response to the ODEC Complaint to January 25, 2017.

22. Timely motions to intervene to the Complaints were filed by American Electric Power Service Corporation, the Independent Market Monitor for PJM (Market Monitor), Buckeye Power, Inc., LS Power Associates, L.P., Dayton Power and Light Company, PJM Industrial Customer Coalition, FirstEnergy Service Company, Advanced Energy Management Alliance, East Kentucky Power Cooperative, Inc., Apex Clean Energy Management, LLC, Rockland Electric Company, Calpine Corporation, Enerwise Global Technologies Inc. d/b/a CPower, the PJM Power Providers Group (P3), American Public Power Association, Electric Power Supply Association, Panda Power Funds, Public Power Association of New Jersey (PPANJ), Exelon Corporation, Duke Energy Corporation, NRG Power Marketing LLC and GenOn Energy Management, CPV Power Holdings, LP, the PSEG Companies, Southern Maryland Electric Cooperative, Inc., North Carolina Electric Membership Corporation, E.ON Climate & Renewables North America, LLC, EDF Renewable, Inc., BP Wind Energy North America Inc., Delaware Division of the Public Advocate, Sierra Club, Union of Concerned Scientists, EnerNOC, Inc., Wabash Valley Power Association, Inc., Dominion Resources Services, Inc., Sustainable FERC Project, Nucor and Steel Dynamics (Steel Producers). Notices of Intervention were filed by the Maryland Public Service Commission, Delaware Public Service Commission, Pennsylvania Public Utility Commission (Pennsylvania PUC), and the New Jersey Board of Public Utilities.

23. PJM filed an Answer to the Complaints. Comments and Protests to the Complaints were filed by the PJM Utilities Coalition, Exelon Corporation, the Complainant-Aligned Parties,<sup>43</sup> P3, the NRG Companies, the American Petroleum Institute, the Pennsylvania PUC and the New Jersey Board of Public Utilities. The American Wind Energy Association and Mid-Atlantic Renewable Energy Coalition (together, AWEA) filed a motion to intervene out-of-time and comments. ODEC and AEMA filed replies to the Answer and comments. The Market Monitor filed a response to ODEC and AEMA's replies. PJM and Exelon filed responses to AEMA's reply.

24. On November 20, 2017, AEMA filed a motion for leave to supplement the record. On December 4, 2017, a separate group of intervenors (the Indicated Parties<sup>44</sup>)

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<sup>43</sup> The Complainant-Aligned Parties include the PJM Industrial Customer Coalition, the Public Power Association of New Jersey, the American Public Power Association, the National Rural Electric Cooperative Association, Rockland Electric Company, the Union of Concerned Scientists, the Sierra Club, and the Natural Resources Defense Council.

<sup>44</sup> The Indicated Parties include American Public Power Association, Old Dominion Electric Cooperative, Environmental Law & Policy Center, Union of

also filed a motion for leave to supplement the record. Both motions sought to introduce information into the record on the results of the May 2017 Base Residual Auction and a study by PJM staff evaluating PJM's seasonal reliability needs. Answers to the motions were filed by the PJM Utilities Coalition, PJM, AWEA and the P3.

#### IV. Answer and Comments

##### A. PJM Answer

25. In its answer to the ODEC and AEMA Complaints, PJM argues that the Complaints represent a collateral attack on the Commission's earlier orders on PJM's capacity market.<sup>45</sup> PJM argues that Complainants point to little if any changed circumstances, as seasonal resources have known since at least June 2015 that they would have to perform on an annual basis.<sup>46</sup> PJM states that nothing in the prior auctions warrants reversal; in the prior auction, 72% of the offers for Base Capacity Resources were also offered as Capacity Performance Resources (using coupled offers).<sup>47</sup> Additionally, PJM argues that those resources that were offered only as Base Capacity Resources in the last two auctions will likely be offered as Capacity Performance Resources in the next auction, based on the existence of enhanced aggregation, and the fact that a disincentive to aggregate existed in the prior auctions based on the availability of the Base Capacity product itself.<sup>48</sup> PJM argues that the Commission should allow the Capacity Performance product to become effective so that lessons can be taken from its experience.<sup>49</sup> PJM argues that the citation by Complainants to the Commission's NOPR on electric storage resources is not new, must be read in conjunction with the Commission's strong support of year-round performance by capacity resources in the PJM and ISO-NE capacity markets, and is

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Concerned Scientists, Sierra Club, Rockland Electric Company, PJM Industrial Customer Coalition, and NRDC/Sustainable FERC Project.

<sup>45</sup> PJM Answer to Complaints at 2.

<sup>46</sup> *Id.* at 3, 14.

<sup>47</sup> *Id.* at 16.

<sup>48</sup> *Id.* at 4, 17-18.

<sup>49</sup> *Id.* at 4.

fully compatible with PJM's development of an accommodative participation model for seasonal resources.<sup>50</sup>

26. PJM also notes that the fact that it has a summer-peaking system is also not a new fact, and has been part of PJM's planning process for years.<sup>51</sup> PJM states that it has used the same probabilistic model to determine its Installed Reserve Margin (IRM) for the last 30 years based on reducing its LOLE risk to acceptable levels. PJM states that it uses a "1 in 10" LOLE standard, where virtually all of the annual LOLE risk occurs in the summer study period. However, PJM argues that recent history shows that risk can and does occur in the winter, which should inform reliability determinations.<sup>52</sup> Although AEMA argues that PJM could make a trivial change to its IRM study to shift LOLE risk to the winter, PJM argues that it deserves deference on such an administrative determination.<sup>53</sup>

27. PJM states that AEMA's claims on the reliability benefit of summer-only resources are demonstrably false and look only at the impact of changes at the margins. PJM states that it is unremarkable that summer resources would have a larger marginal benefit than a winter resource in a summer-peaking system, but that this argument ignores the benefit of the vast majority of resources that are needed year-round to maintain reliability.<sup>54</sup> PJM states that shifting 0.01 LOLE risk to the winter would create a market for summer-only resources that does not presently exist, but would exert significant downward pressure on the value of winter capacity, which would have adverse implications for PJM's procurement of year-round capacity.<sup>55</sup> PJM also questions AEMA's argument that summer-only resources have 97% of the reliability benefit of annual resources, arguing that the marginal reliability benefit of an additional summer and winter resource is dependent on the allocation of risk between each season.<sup>56</sup> Generally, PJM argues that AEMA misinterprets the data that it relies on

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<sup>50</sup> *Id.* at 5, 19-20.

<sup>51</sup> *Id.* at 6, 22.

<sup>52</sup> *Id.* at 24.

<sup>53</sup> *Id.* at 25.

<sup>54</sup> *Id.* at 26.

<sup>55</sup> *Id.* at 27.

<sup>56</sup> *Id.* at 28.

from PJM's studies, such as a sensitivity study intended by PJM to be backward-looking that AEMA relies upon to estimate future conditions.<sup>57</sup>

28. PJM argues that Complainants also ignore the many challenges and adverse consequences associated with delaying implementation of Capacity Performance Resources. These include costs for participants from delay including the continuance of an allowance for a higher loss of load expectation for sub-annual resources, a rebuke to the Commission's objective in ensuring that capacity resources deliver when needed, and the potentially severe practical consequences of a shift from a single requirement to different summer and winter-based requirements.<sup>58</sup> These severe consequences include possible premature resource retirement based upon the transition to a fleet of seasonal resources.<sup>59</sup> PJM argues that the Complainants claim that summer-based single annual capacity obligations are *per se* unjust and unreasonable goes beyond any announced Commission policy or precedent and should be rejected.<sup>60</sup> PJM argues that seasonal capacity markets would undermine the price signals needed to incentivize development of capacity resources over the long-term.<sup>61</sup> In addition, PJM argues that seasonal capacity markets could spill over into PJM's energy markets by resulting in reduced energy market participation by conventional resources, perhaps by units that clear in one season shutting down in the other season.<sup>62</sup> For these reasons, PJM argues that the Commission should reject the Complaints.

## **B. Initial Comments**

29. Several protestors argue that the Commission should dismiss the Complaints because Complainants have presented no new evidence or new circumstances that would justify relitigation of the claims.<sup>63</sup> Protestors argue that the complaints are

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<sup>57</sup> *Id.* at 30.

<sup>58</sup> *Id.* at 7-8.

<sup>59</sup> *Id.* at 8.

<sup>60</sup> *Id.* at 9.

<sup>61</sup> *Id.* at 34.

<sup>62</sup> *Id.* at 35-36.

<sup>63</sup> American Petroleum Institute Protest at 3; Exelon Protest at 3; NRG Companies Protest at 2; PJM Power Providers Protest at 10-11; PJM Utilities Coalition Protest at 8-14.

simply collateral attacks on prior Commission orders.<sup>64</sup> Protestors argue that all of the issues and claims raised by Complainants have previously been raised, argued, considered, and decided upon within the context of the Capacity Performance Order and the subsequent orders on rehearing.<sup>65</sup>

30. Protestors argue that new circumstances do not exist to justify the Complaints. Protestors argue that the two years of experience with the implementation of Capacity Performance prior to the filing of the Complaints do not constitute new circumstances justifying relitigation of issues that were previously decided because those two years were contemplated as part of the transition mechanism.<sup>66</sup> P3 argues that even if the PJM stakeholder process were unable to reach consensus, this also does not amount to new circumstances. P3 argues that these issues are already being raised in the docket for PJM's capacity market aggregation filing.<sup>67</sup> P3 also states that PJM's sensitivity results are not new information, but have been well known and understood and public for years.<sup>68</sup>

31. Protestors also argue that Complainants have failed to meet their burden under section 206 to show that the current PJM tariff is unjust and unreasonable.<sup>69</sup> P3 states that PJM has gone to enormous lengths to provide compensation opportunities for Seasonal Resources based on the value they provide to the grid. These include opportunities in the original Capacity Performance filing to aggregate within a single Locational Deliverability Area, or in the subsequent filing to further facilitate participation.<sup>70</sup> P3 also states that arguments that little aggregation has occurred to this point ignore the fact that there is little incentive for a Seasonal Resource to aggregate as long as the Base Capacity Resource product remains.<sup>71</sup> Additionally, protestors argue that the revisions proposed by PJM to its aggregation rules will address many of the

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<sup>64</sup> Exelon Protest at 3.

<sup>65</sup> American Petroleum Institute Protest at 4.

<sup>66</sup> *Id.* at 5; P3 Protest at 16.

<sup>67</sup> P3 Protest at 17.

<sup>68</sup> *Id.* at 18.

<sup>69</sup> NRG Companies Protest at 2; P3 Protest at 20.

<sup>70</sup> P3 Protest at 25.

<sup>71</sup> *Id.*

concerns raised in the Complaints.<sup>72</sup> PJM Utilities Coalition point to evidence provided by PJM which argues that aggregation rules have proven to be an effective mechanism to support substantial demand response participation in other RTOs.<sup>73</sup>

32. By contrast, other commenters support the Complaints and argue that the Commission should require PJM to revise its capacity market rules to ensure greater participation by seasonal resources. The Pennsylvania Public Utility Commission (Pennsylvania PUC) endorses AEMA's concerns that early elimination of PJM's Base Capacity product will decrease reliability, increase customer costs, and threaten summer Seasonal Resources' contributions to reliability.<sup>74</sup> The Pennsylvania PUC argues that PJM's insufficient load forecasting methodologies will lead PJM to over-procure capacity and eliminate market signals for valuable peak shaving programs.<sup>75</sup> The Pennsylvania PUC argues that the Commission should grant AEMA's Complaint and should require PJM to delay Capacity Performance implementation until a model for Seasonal Resource participation can pass through the stakeholder process.<sup>76</sup> The NJBPU states that PJM's argument for the elimination of Base Capacity Resources, that there should only be one capacity product, is unsubstantiated. The NJBPU agrees with the ODEC Complaint that the elimination of Base Capacity Resources will be detrimental to resource diversity, reliability, economically efficient market outcomes, and other benefits.<sup>77</sup>

33. Complainant-Aligned Parties state that the Commission should grant the Complaints and require PJM to retain Base Capacity Resources while it develops a long-term solution that enables the participation of a diverse set of resources.<sup>78</sup> Complainant-Aligned Parties state that the elimination of Base Capacity will increase capacity costs inside PJM by \$1.2 to \$5.2 billion. Complainant-Aligned Parties argue that improvements made subsequent to the 2014 polar vortex have proven that PJM can reliably operate its system while retaining Base Capacity Resources. These improvements include the timing of energy markets to better facilitate electric-gas

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<sup>72</sup> Exelon Protest at 6.

<sup>73</sup> PJM Utilities Coalition Protest at 15.

<sup>74</sup> Pennsylvania PUC Comments at 6.

<sup>75</sup> *Id.* at 6-7.

<sup>76</sup> *Id.* at 10.

<sup>77</sup> NJBPU Comments at 2-3.

<sup>78</sup> Complainant-Aligned Parties Comments at 11.

coordination, communication protocols with gas distribution companies, and a communication tool designed to allow generators to report current operational abilities.<sup>79</sup>

34. AWEA argues that PJM's treatment of wind energy resources is unduly discriminatory and not just and reasonable because wind resources performed well during the 2014 polar vortex and have not been shown to be the cause of PJM's reliability concerns.<sup>80</sup> AWEA argues the Commission should establish proceedings to determine just, reasonable, and not unduly discriminatory or preferential provisions for Seasonal Capacity Performance Resources in PJM's RPM market.<sup>81</sup>

### C. Replies

#### 1. ODEC

35. In its reply, ODEC asserts that the complaint is not an impermissible collateral attack on prior orders because changes in circumstances warrant reopening the issue.<sup>82</sup> ODEC states that at the time the Commission approved PJM's aggregation mechanism for Seasonal Capacity Performance Resources, it had no experience or evidence on whether and to what extent aggregation would achieve Seasonal Capacity Performance Resources meaningfully participating in RPM auctions.<sup>83</sup> ODEC claims that there is evidence from the past two years that PJM has made accommodations for the availability characteristics of certain types of resources, but not Seasonal Capacity Performance Resources; and that the Base Capacity product has been critical in order for Seasonal Capacity Performance Resources to participate in RPM auctions.<sup>84</sup>

36. ODEC claims that several parties have appeared to confuse and conflate the relief requested in its complaint with that requested by AEMA.<sup>85</sup> ODEC clarifies that it does not seek to force seasonal products, as PJM asserts, requiring an open-ended

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<sup>79</sup> *Id.* at 9.

<sup>80</sup> AWEA Comments at 6.

<sup>81</sup> *Id.* at 7.

<sup>82</sup> ODEC Reply at 3-4.

<sup>83</sup> *Id.* at 4.

<sup>84</sup> *Id.* at 4-5.

<sup>85</sup> *Id.* at 6-7.



extension of the Base Capacity Resource product, or preferential treatment for Seasonal Capacity Performance Resources, as claimed by other parties.<sup>86</sup>

37. With regard to PJM's assertion that granting the Complaint could lead to adverse consequences, such as impacts on market participants' RPM expectations and the LOLE, ODEC asserts that the market participants' reliance on the transition mechanism cannot prevent the Commission from fulfilling its statutory obligation to ensure just and reasonable rates.<sup>87</sup> ODEC also states that PJM developed the LOLE, and can resolve its concern by calculating the Base Capacity Resource constraints relative to meeting the 1 day in 10 year LOLE standard.<sup>88</sup>

38. ODEC repeats its assertion that PJM's proposed aggregation mechanism does not render PJM's Tariff and Reliability Assurance Agreement just and reasonable with respect to Seasonal Capacity Performance Resources.<sup>89</sup> ODEC states that PJM mischaracterizes the Complaint as expressing concern that the Commission would not approve PJM's aggregation filing.<sup>90</sup> ODEC clarifies that it believes the modifications proposed cannot substitute or make up for the loss of the Base Capacity Resource product.<sup>91</sup>

## 2. AEMA

39. AEMA argues that its Complaint and the Capacity Performance Order address distinct subject matter because they request different relief and therefore the Complaint does not constitute a collateral attack.<sup>92</sup> Further, AEMA cites a Commission order in 2013 stating that "[t]he issuance of an order in an FPA section 205 proceeding does not bar a future, appropriately supported challenge to the accepted tariff provisions pursuant to FPA section 206."<sup>93</sup> AEMA lists seven distinct developments since the

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<sup>86</sup> *Id.* at 8.

<sup>87</sup> *Id.*

<sup>88</sup> *Id.*

<sup>89</sup> *Id.* at 9.

<sup>90</sup> *Id.* at 9-10.

<sup>91</sup> *Id.* at 10.

<sup>92</sup> AEMA Reply at 4-5.

<sup>93</sup> *Id.* at 5 (quoting *E.ON Climate & Renewables N. Am., LLC v. Midwest Indep. Transmission Sys. Operator, Inc.*, 142 FERC ¶ 61,048, at P 33 (2013)).

conditional approval of Capacity Performance as appropriate support for granting the Complaint and argues that doing so would not contradict the policy established in the Capacity Performance order.<sup>94</sup>

40. AEMA states that there is no inherent link between the need for Capacity Performance resources to meet their obligations and a requirement that PJM acquire capacity that is committed 24 hours per day, 365 days per year.<sup>95</sup> AEMA argues that moving to a 100% Capacity Performance requirement without Seasonal Resources will serve to salvage uneconomic resources by restricting competition.<sup>96</sup> Moreover, AEMA states it is not proposing the discrete seasonal capacity markets that PJM argues against and instead seeks only to temporarily preserve the current market-based valuation of both annual resources and summer resources.<sup>97</sup>

41. AEMA argues that PJM's answer and Exelon's protest are avoiding the central issue of the Complaint, which is that a 100% Capacity Performance requirement is not a reasonable match to the region's actual resource adequacy needs and forces consumers to buy winter capacity that provides little or no reliability benefit.<sup>98</sup> AEMA states that PJM has insisted requiring annual-only resources is necessary to address increased winter operational risks, but has also published IRM studies since the conditional acceptance of Capacity Performance indicating that there is in fact no increased winter reliability risk.<sup>99</sup>

42. Furthermore, AEMA argues that PJM and Exelon have failed to offer evidence supporting the viability of aggregation for Seasonal Resources. AEMA cites Exelon's discussion of how Capacity Performance is affecting BGE's summer-only DR Resources as evidence that Capacity Performance is negatively affecting seasonal DR participation in the RPM market and states that Exelon's protest confirms AEMA's description of how "moving DR to the load side" is an inadequate replacement for supply-side Demand Resources.<sup>100</sup> Given this lack of a viable pathway for Seasonal

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<sup>94</sup> *Id.* at 6-8.

<sup>95</sup> *Id.* at 10.

<sup>96</sup> *Id.* at 9.

<sup>97</sup> *Id.* at 19.

<sup>98</sup> *Id.* at 11.

<sup>99</sup> *Id.* at 21.

<sup>100</sup> *Id.* at 14-17.

Resource participation, AEMA states that Capacity Performance, as currently designed, will likely deliver less reliability at higher cost – an outcome that the Commission should find unjust and unreasonable.

**D. Response to Replies**

43. In response to AEMA's reply, Exelon states that BGE's discussions with PJM regarding load forecast modifications have taken place pursuant to PJM Manual 19 Appendix A and that counsel for PJM has authorized Exelon to state that PJM will engage in similar discussions with any Electric Distribution Company (EDC) that is a Curtailment Service Provider (CSP) seeking such discussion.<sup>101</sup> Exelon encourages the Commission to allow PJM's proposed rule changes to take effect for the upcoming Base Residual Auction.<sup>102</sup>

44. The Market Monitor contends that while no new evidence exists to support granting the Complaint, new evidence does exist that supports PJM's position on why the inclusion of the Base Capacity Product should not be extended and why continued efforts to attenuate the Commission's objectives for RPM reform should be rejected. Specifically, the Market Monitor points to its analysis of the 2019/2020 Base Residual Auction, which included the results of a number of sensitivity analyses which showed the impact of various market design elements on the outcomes of the 2019/2020 Base Residual Auction.<sup>103</sup> The Market Monitor explains that its analysis demonstrates the significant price suppressive effects of the continued inclusion of the Base Capacity Product in the capacity market.<sup>104</sup> The Market Monitor states that these price suppressive effects will force the clearing price to be less than the efficient, competitive level.<sup>105</sup> The Market Monitor notes that requests for unit specific out of market subsidies in PJM are in significant part a result of price suppression in the capacity market.<sup>106</sup>

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<sup>101</sup> Exelon Response at 3-4.

<sup>102</sup> *Id.* at 5.

<sup>103</sup> *Id.*

<sup>104</sup> *Id.* at 6.

<sup>105</sup> *Id.* at 7.

<sup>106</sup> *Id.* (citing Calpine Corp., Amended Complaint, Docket No. EL16-49-000 (filed January 9, 2017); Ohio Public Utilities Commission, Case Nos. 14-1693, 14-1297 and 16-0395).

**E. Motions for Leave to Supplement the Record**

45. In its motion for leave to supplement the record, AEMA states that over 2017, PJM staff and stakeholders have carried out a “Winter Reliability Study” to examine issues related to seasonal resource adequacy. AEMA argues the results of the Winter Reliability Study and the results of the 2020/2021 BRA demonstrate the factual basis of AEMA’s complaint: that Capacity Performance arbitrarily forces an irrational annual reliability requirement on a summer peaking system, resulting in discriminatory treatment of summer capacity resources.<sup>107</sup>

46. In its Complaint, AEMA argued that PJM’s Capacity Performance rules effectively de-rate demand response resources to the benefit of generators taking winter outages. Based on the results of the Winter Reliability Study and the results of the 2020/2021 BRA, AEMA argues this construct is causing concrete harm.<sup>108</sup> Specifically, AEMA argues that comparing excess winter capacity under PJM’s current rules with a rule change that would bar planned generator outages during January (the peak winter period), demonstrates superfluous supply of quantities between 690 MW to 2,231 MW that PJM procures to accommodate winter generator outages.<sup>109</sup>

47. AEMA states that the Winter Reliability Study shows that by increasing summer capacity by 433 MW decreases winter capacity requirements by values ranging from 2,251 MW to 14,057 MW under different scenarios. AEMA asserts this results in ratios of marginal benefit from summer capacity vs. winter capacity ranging from 5.2:1 to 32.5:1.<sup>110</sup> These ratios demonstrate how much less winter capacity would be needed while maintaining PJM’s 1-in-10 LOLE.<sup>111</sup>

48. In their Motion for Leave to Supplement the Record, Indicated Parties claim that the 2020/2021 BRA results support the predictions made by Complainants regarding the decrease in participation of seasonal capacity resources. Specifically, Indicated Parties argue the decreases in participation from demand response resources, energy efficiency resources, and solar resources underscore that their exclusion from the RPM raises concerns about the viability of these resources to effectively contribute to the

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<sup>107</sup> AEMA Motion for Leave to Supplement the Record at 5.

<sup>108</sup> *Id.* at 14.

<sup>109</sup> *Id.* at 15.

<sup>110</sup> *Id.* at 16-17.

<sup>111</sup> *Id.* at 18.

capacity needs in PJM.<sup>112</sup> Because of these decreases in participation from these resources as a result of the implementation of Capacity Performance, Indicated Parties assert that the undervaluing of their reliability benefits conflicts with the Commission's mandate to provide just and reasonable rates.<sup>113</sup> Additionally, Indicated Parties argue that PJM's most recent load forecasts confirm that summer demand is higher than winter demand to the degree of roughly 20 GW, which confirms that the exclusion of summer period resources is not warranted to ensure winter reliability is maintained.<sup>114</sup>

**F. Answers to Motions for Leave to Supplement the Record**

49. AWEA supports the introduction of the information into the record, but disagrees with AEMA's suggestion that wind generation is responsible for demand response resources' inability to fully participate in PJM's capacity markets. AWEA concedes that AEMA's claims that winter-peaking resources—such as wind generation—do not match the level of demand response offers in the summer, but argues this fact alone does not lead to the conclusion that reduced opportunities for demand response resources to participate are tied to the behavior of wind generation.<sup>115</sup>

50. The PJM Utilities Coalition states that there is no good cause to supplement the record in this case, and this supplemental information should have no bearing on the Commission's decision-making process.<sup>116</sup> P3 argues in its answer to the motions for leave to supplement the record that Indicated Parties' motion should be rejected because they seek to do more than simply supplement the record. Specifically, P3 asserts that Indicated Parties seek to use the "supplemental information" as an opportunity to submit additional, out-of-time pleadings and requests in an effort to continue to advocate for their initial positions filed in these dockets.<sup>117</sup>

51. In response to Indicated Parties' arguments regarding winter season outages, PJM states that it is unreasonable to assume zero planned and maintenance outages for future winter peak periods since it is improbable, and therefore that relying on such an

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<sup>112</sup> Indicated Parties Motion for Leave to Supplement the Record at 5-7.

<sup>113</sup> *Id.* at 8-9.

<sup>114</sup> *Id.* at 14.

<sup>115</sup> AWEA Answer to Motions at 2.

<sup>116</sup> PJM Utilities Coalition Answer to Motions at 3-4.

<sup>117</sup> P3 Answer to Motions at 3-5.

assumption would increase reliability risks.<sup>118</sup> PJM further charges that Indicated Parties' reliance on certain scenarios presented in the Winter Reliability Study is inconsistent with historical experience and, therefore, the Commission should not rely on them nor are the scenarios extrapolatable to other regions of the PJM footprint.<sup>119</sup> PJM also notes that, based on historical experience, the amount of demand response resources that clear the BRA fluctuates annually. Therefore, PJM states, the mere fact that there may have been a reduction in in the amount of cleared demand response resources over a prior year does not demonstrate Indicated Parties' claims of a "problematic exclusion."<sup>120</sup>

## V. Technical Conference

### A. Technical Conference Order

52. In the February 23, 2018 Order, the Commission found that the issues presented by the Complainants could not be resolved based on the existing record. Accordingly, the February 23 Order directed Commission staff to convene a technical conference.<sup>121</sup>

53. Specifically, the February 23 Order stated the technical conference should consider the issues raised by the complaints, including, but not limited to: 1) whether the exclusive use of a year-round capacity product raises customer costs unnecessarily compared to retention of a seasonal capacity product; 2) whether stand-alone participation by Seasonal Resources in non-summer months would jeopardize reliability; 3) whether alternative models, such as establishing distinct summer and winter capacity markets could assure reliability at lower costs; 4) whether, if it is true that nearly all loss of load expectation risk currently exists in ten summer weeks of the year, there is an alternative distribution of loss of load expectation risk that could meet the 1-in-10 reliability target at a lower total cost; and 5) whether PJM's load forecast methodology incorporates load-serving entities' peak-shaving actions in an adequate and timely manner to yield just and reasonable rates for consumers.

54. On August 17, 2018, the Commission issued an Order Dismissing Rehearing and Clarification, rejecting arguments from PJM and others that instead of convening a technical conference, the Commission should have dismissed the Complaints as

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<sup>118</sup> PJM Answer to Motions at 3.

<sup>119</sup> *Id.* at 4-5.

<sup>120</sup> *Id.* at 5-6.

<sup>121</sup> Technical Conference Order, 162 FERC ¶ 61,160 at P 56.

collateral attacks upon the Capacity Performance order.<sup>122</sup> The Commission found that the requests for rehearing were premature as the Commission had not yet issued a final order on the Complaints.<sup>123</sup> The Commission also found that Complainants had raised evidence of changed circumstances subsequent to the acceptance of Capacity Performance.<sup>124</sup>

## **B. Pre-Technical Conference Comments**

55. In response to questions about the LOLE risk allocation within PJM, some commenters argue that the LOLE allocation is not a valuable metric because generator outages are highly correlated during periods of high demand and because the LOLE allocation does not provide sufficient information about the value of lost load.<sup>125</sup> Commenters differ on whether LOLE allocation should be revised to be more even between summer and winter, with some commenters arguing that as a summer-peaking system PJM will naturally have a higher LOLE allocation in the summer.<sup>126</sup> Other commenters argue that the current LOLE allocation is not cost-effective and that more risk can be shifted to the winter.<sup>127</sup> Both NRDC and the Pennsylvania PUC propose processes to review and revise PJM's LOLE allocation.<sup>128</sup>

56. With respect to PJM's experience during the 2014 Polar Vortex, some commenters argue that other issues including generator performance and scheduled

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<sup>122</sup> Technical Conference Rehearing Order, 164 FERC ¶ 61,116 at P 13.

<sup>123</sup> *Id.*

<sup>124</sup> *Id.* P 18-19.

<sup>125</sup> Market Monitor Pre-Technical Conference Comments at 2; NRDC Pre-Technical Conference Comments at 2; UCS Pre-Technical Conference Comments at 3-4.

<sup>126</sup> PJM Pre-Technical Conference Comments at 5; Market Monitor Pre-Technical Conference Comments at 2; P3 Pre-Technical Conference Comments at 13-14.

<sup>127</sup> AEMA Pre-Technical Conference Comments at 2-3; ODEC Pre-Technical Conference Comments at 3-4; NRDC Pre-Technical Comments at 3; AWEA Pre-Technical Conference Comments at 5-6.

<sup>128</sup> NRDC Pre-Technical Conference Comments at 3; Pennsylvania PUC Pre-Technical Conference Comments at 3-4.

outages were a greater factor on PJM's experience than the LOLE allocation.<sup>129</sup> However, P3 and NRDC argue that the Polar Vortex showed faults with shifting PJM's LOLE risk allocation to the winter as well as assumptions with forced outages.<sup>130</sup> AEMA notes that while PJM has improved system reliability via Capacity Performance, simply procuring additional winter capacity provides no assurances that risks are being identified and adequately mitigated.<sup>131</sup> PJM argues that a more accurate accounting of the generation outage levels during winter peak conditions in the LOLE model supports the notion of an annual capacity requirement, identical for the summer and winter seasons.<sup>132</sup>

57. Commenters differ as to whether two seasonal auctions are preferable to a single auction. Some commenters argue that a two, separate seasonal auction approach would be far superior to PJM's annual-only construct since it would reflect reliability risks in both seasons and would facilitate the evolution of the resource mix.<sup>133</sup> By contrast, the Market Monitor argues that creating such a two-season construct causes several implementation issues including: modifications to several modeling assumptions, capacity cost allocation, use of demand-side resources, accounting for planned outages, calculation of seasonal forced outage rates, and offer cap specifics.<sup>134</sup> AEMA argues that a single auction with multiple products will produce the most cost-effective capacity mix since a single auction can make trade-offs between products to clear with the most cost-effective solution while sending correct pricing signals on the relative price of summer and annual capacity: a marginal summer-only resource has a reliability value equal to a substantial fraction of a marginal annual resource, if not

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<sup>129</sup> AWEA Pre-Technical Conference Comments at 5-6; UCS Pre-Technical Conference Comments at 9-10; Pennsylvania PUC Pre-Technical Conference Comments at 6; ODEC Pre-Technical Conference Comments at 8-9.

<sup>130</sup> P3 Pre-Technical Conference Comments at 19-21; NRDC Pre-Technical Conference Comments at 5-6.

<sup>131</sup> AEMA Pre-Technical Conference Comments at 9-10.

<sup>132</sup> PJM Pre-Technical Conference Comments at 6.

<sup>133</sup> NRDC Pre-Technical Conference Comments at 7; AWEA Pre-Technical Conference Comments at 8; ODEC Pre-Technical Conference Comments at 11-12.

<sup>134</sup> Market Monitor Pre-Technical Conference Comments at 3-4; P3 Pre-Technical Conference Comments, Shanker Affidavit at PP 22-26.



100%.<sup>135</sup> Wilson Economics states that it supports a Winter Aggregation Tickets proposal, which would auction off tickets that serve as the equivalent of additional winter-period capacity resources and potential partners for RPM auction purposes.<sup>136</sup>

58. With respect to peak shaving, commenters raised concerns with PJM's method for reflecting peak shaving in its load forecasting. Some commenters argue PJM's load forecasting methodology needs improvements to effectively and accurately reflect customers' peak shaving efforts.<sup>137</sup> PJM argues that its load forecasting methodology reasonably reflects peak shaving by end users.<sup>138</sup> P3 agrees that PJM's process is not "incorrect or...unreasonable" in the context of PJM's existing planning process or Capacity Performance market design.<sup>139</sup>

### **C. Conference Summary**

59. The technical conference was held on April 24, 2018, with post-technical conference comments and reply comments due July 13, 2018.<sup>140</sup>

60. The technical conference examined whether PJM's existing practice of placing the majority of LOLE risk in the 10 peak-summer weeks while holding a near-zero LOLE risk in the remaining 42 (non-summer) weeks of the year accurately reflects the relative values of reliability in the two seasons. The technical conference also discussed the value and feasibility of alternatives to PJM's current LOLE practices that may better account for seasonal patterns in PJM's capacity needs. Specifically, the advantages and disadvantages of procuring capacity under alternative LOLE risk allocations (e.g., 2-8 allocation, which allocates a 2% risk in the 42 non-summer weeks and an 8% risk in the 10 peak-summer weeks) while retaining the existing 10% LOLE.

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<sup>135</sup> AEMA Pre-Technical Conference Comments at 12; ODEC Pre-Technical Conference Comments at 14-15.

<sup>136</sup> Wilson Economics Pre-Technical Conference Comments at 3-5.

<sup>137</sup> NRDC Pre-Technical Conference Comments at 11; Pennsylvania PUC Pre-Technical Conference Comments at 10; Joint Public Advocates Pre-Technical Conference Comments at 5.

<sup>138</sup> PJM Pre-Technical Conference Comments at 11.

<sup>139</sup> P3 Pre-Technical Conference Comments at 15.

<sup>140</sup> *Old Dominion Elec. Coop. v. PJM Interconnection, L.L.C.*, Notice Inviting Post-Technical Conference Comments, Docket Nos. EL17-32-000 and EL17-36-000 (June 13, 2018) (Post-Technical Conference Notice).

Additionally, the technical conference also explored alternative ways of procuring different amounts of capacity in different parts of the year, e.g., PJM's past practice of procuring both annual and seasonal resources in the same auction, versus creating two distinct auctions to separately procure capacity in the summer and capacity in the rest of the year.

#### **D. Post-Technical Conference Comments**

61. In the notice inviting post-technical conference comments, the Commission asked questions about seasonal load variation and alternate market design, including about barriers to entry to seasonal resources and implementation challenges to transitioning to a seasonal market design. The Commission also asked about peak shaving in PJM, including whether peak shaving was a viable pathway for demand response resources.

62. Commenters differ on whether the Capacity Performance model creates unreasonable barriers to entry for seasonal resources. The Market Monitor states that the annual capacity market design has worked well to incentivize entry and exit, and that aspects of the market such as a single product and recognition of locational differences in capacity supply and demand are not barriers to entry and should not be altered.<sup>141</sup> PJM agrees that the current rules do not result in a barrier to entry and points to the results of the 2021/2022 BRA. PJM adds that the upward trend in cleared seasonal capacity is promising and confirms the Commission's determination that the enhanced aggregation rules "may allow greater participation in the PJM market by Seasonal Resources."<sup>142</sup>

63. Other Commenters argue that the Capacity Performance rules present an unreasonable barrier to entry for seasonal resources. Regarding PJM's existing resource aggregation rules, both UCS and ODEC argue those rules are barriers to entry and improvements cannot fix the underlying issues with PJM's capacity market.<sup>143</sup> Some commenters reiterate their concerns about the availability of resources during seasonal peaks and PJM's rules that value seasonal resources' reliability at zero.<sup>144</sup>

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<sup>141</sup> Market Monitor Post-Technical Conference Comments at 3.

<sup>142</sup> *Id.* (citing *PJM Interconnection, L.L.C.*, 162 FERC ¶ 61,159 (2018)).

<sup>143</sup> UCS Post-Technical Conference Comments at 4-5; ODEC Post-Technical Conference Comments at 6-7.

<sup>144</sup> AWEA Post-Technical Conference Comments at 7; AEMA Post-Technical Conference Comments at 7; IDEA Post-Technical Conference Comments at 2-3; Wilson Economics Post-Technical Conference Comments at 2.

Enwave states that exclusion of its resource – a thermal storage system operating in the summer – is unreasonably discriminatory and unlawfully anticompetitive.<sup>145</sup>

64. In response to the Commission’s question regarding how the results of the capacity market auction reflect on PJM’s seasonal aggregation mechanism, P3 states that the recent PJM RPM BRA results show that the claims of ODEC and AEMA are incorrect, because 2021/2022 BRA results revealed “dramatic increases” in cleared aggregated capacity offers and annual demand response commitments.<sup>146</sup> P3 states that seasonal capacity resources increased 317.5 MW over the 398 MW of seasonal capacity cleared in an aggregated manner in the 2020/2021 BRA. PJM argues that the fact that uncleared summer-only resources were small, both in terms of MW quantity and a percentage of total cleared resources, demonstrates that the existing aggregation rules are working.<sup>147</sup> By contrast, AWEA argues that the increased participation of seasonal resources is likely a short-term response to PJM’s market signaling that, due to chronic oversupply, a Performance Assessment Hour is unlikely to occur, even during extreme conditions.<sup>148</sup> AEMA agrees, arguing that the increased quantities of non-traditional generation capacity clearing the most recent BRA is almost entirely due to a combination of ordinary new resource development, higher prices, and market flaws caused by over procurement of winter capacity and incorrect seasonal price signals.<sup>149</sup> ODEC states that the increase in cleared seasonal resource participation levels reflects market participants’ adjustments to PJM’s market design. While welcome, ODEC states, this does not show that the concerns raised in this proceeding are resolved.<sup>150</sup>

65. In response to a post-technical conference question inquiring about two-season or three-season capacity market implementation challenges, both the Market Monitor and PJM reiterate their concerns regarding implementation challenges including: how to define performance assessment hours in a seasonal construct, setting the offer caps in a seasonal construct, how a performance assessment hour or interval would work, and

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<sup>145</sup> Enwave Post-Technical Conference Comments at 6.

<sup>146</sup> P3 Post-Technical Conference Comments at 2-3.

<sup>147</sup> PJM Post-Technical Conference Comments at 3.

<sup>148</sup> AWEA Post-Technical Conference Comments at 8-9.

<sup>149</sup> *Id.* at 12.

<sup>150</sup> ODEC Post-Technical Conference Comments at 8.

the need to introduce loss-of-load expectation risk into the non-summer period.<sup>151</sup> PJM claims this would have a “cascading” impact on other elements of the capacity market.<sup>152</sup> PJM states the implementation of changes to its market structure could result in significant market uncertainty that would constitute a major departure from the current construct.

66. AEMA suggests “annual plus summer” and “annual plus summer plus winter” models to optimize capacity procurement across seasons.<sup>153</sup> AWEA argues that summer and winter have different supply and demand curves, and those curves should be reflected in an efficient design that treats summer peak and winter peak as the two distinct products they are.<sup>154</sup> Wilson Economics reiterates its support for its Winter Aggregation Tickets proposal. IPI states that a seasonal market is likely to increase overall economic efficiency, and points to the NYISO’s Capacity Period “Strip” Auction with six-month commitments in conjunction with a Monthly Auction.<sup>155</sup>

67. NJBPU states that there are several major proceedings on-going involving the PJM capacity market that the Commission should keep in mind while evaluating the complaints, including the Commission’s Capacity Repricing Order and PJM’s Valuing Fuel Security initiative and its Quadrennial Review.<sup>156</sup>

68. Commenters also again raised concerns regarding PJM’s treatment of peak shaving. PJM in its post-technical comments noted that it is working with its stakeholders to address proposed revisions.<sup>157</sup> As discussed further below, subsequent to the technical conference, PJM filed revisions to its peak shaving programs that the Commission accepted on May 3, 2019.

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<sup>151</sup> Market Monitor Post-Technical Conference Comments at 6; PJM Post-Technical Conference Comments at 5-6.

<sup>152</sup> PJM Post-Technical Conference Comments at 5-6.

<sup>153</sup> AEMA Post-Technical Conference Comments at 13-15.

<sup>154</sup> *Id.* at 10.

<sup>155</sup> IPI Post-Technical Conference Comments at 3-4.

<sup>156</sup> NJBPU Post-Technical Conference Comments at 3-7.

<sup>157</sup> PJM Post-Technical Conference Comments at 11; Joint Public Advocates Post-Technical Conference Comments at 3-4; Exelon Post-Technical Conference Comments at 2-5.

## **VI. Peak Shaving Tariff Revisions (ER19-511-000)**

69. PJM proposed, under section 205 of the FPA, a new program through which an EDC with a load curtailment program authorized by its Relevant Electric Retail Regulatory Authority (RERRA) can commit to curtail when specified temperature-humidity index triggers are reached. Under PJM's proposal, the EDC is compensated through a reduction in its capacity costs due to a reduction in PJM's forecast of the EDC's peak load contribution. The Commission accepted PJM's proposal on May 3, 2019.<sup>158</sup>

70. The Commission accepted PJM's proposed revisions as a just and reasonable, and not unduly discriminatory or preferential, mechanism for PJM to value the load reductions from Summer Demand Resources that would not otherwise be reflected in PJM's markets. Those resources who submit a Plan will be called on to reduce their load consumption when a daily temperature-humidity index value is met or exceeded for the relevant zone. After accounting for the load reducing contributions in its load forecast, PJM will shift the Variable Resource Requirement Curve used in the capacity market to the left, which would value the resources in the form of avoided capacity costs. The Commission accepted PJM's proposed limitation on the peak shaving revisions to require that resources be part of a RERRA-sponsored program, finding that it provides PJM with greater confidence in the durability of the peak-shaving program.<sup>159</sup> The Commission also accepted a prohibition on participating resources also participating in the capacity market as Price Responsive Demand or as Demand Resources, or in the energy and ancillary service markets, as a valid method of preventing double counting.<sup>160</sup>

## **VII. Commission Determination**

### **A. Procedural Matters**

71. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2019), the timely, unopposed motions to intervene serve to make the entities that filed them parties to this proceeding. Pursuant to Rule 214(d) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214(d) (2019), we grant the late-filed motions to intervene given the parties' interest in the proceeding, the early stage of the proceeding, and the absence of undue prejudice or delay.

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<sup>158</sup> *PJM Interconnection, L.L.C.*, 167 FERC ¶ 61,114 (2019).

<sup>159</sup> *Id.* P 28.

<sup>160</sup> *Id.* P 43.

72. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213(a)(2) (2019), prohibits an answer to an answer unless otherwise ordered by the decisional authority. We accept the replies because they provided information that assisted us in our decision-making process.

73. Pursuant to Rule 716 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.716 (2019), we grant the motions to supplement the record as they have assisted us in our decision-making process.

### **B. Substantive Matters**

74. We deny the Complaints. We find that Complainants have failed to meet their burden under section 206 of the FPA to show that the capacity market design in PJM, as accepted by the Commission in the Capacity Performance Order, is no longer just and reasonable as applied to seasonal resources.

75. Although Complainants raise a variety of arguments in this proceeding, the core of the Complaints is that because PJM is a summer-peaking system, PJM could acquire more summer capacity than winter capacity at an economic savings without sacrificing system reliability. Complainants provide internal data from PJM which, they argue, show that summer requirements can be increased by roughly 500 MW to allow for over 17,000 MW of annual capacity to be replaced by less-expensive summer resources at little cost to reliability.<sup>161</sup> Complainants argue that this new data show that the Capacity Performance model is no longer just and reasonable. We disagree. As we explain more fully below, we find that the arguments presented by Complainants do not justify reversing the Commission's determinations in the Capacity Performance Order.

76. In the Capacity Performance Order, the Commission accepted PJM's revisions to create a single capacity product to provide greater assurance of delivery of energy and reserves during emergency conditions. The Commission found that the combination of deteriorating resource performance and the ongoing change in the resource mix in the PJM region made using the same capacity requirement for winter and summer appropriate.<sup>162</sup> The Commission found that applying PJM's annual capacity product to

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<sup>161</sup> See *supra* P 18.

<sup>162</sup> Capacity Performance Order, 151 FERC ¶ 61,208 at P 41 (“PJM demonstrates that the combination of deteriorating resource performance and the ongoing change in the resource mix in the PJM region makes rule changes appropriate.”); Capacity Performance Rehearing Order, 155 FERC ¶ 61,157 at P 25 (“PJM demonstrated that ongoing changes in the resource mix in the PJM region justify an enhanced capacity product, citing evidence of current and expected generation retirements in PJM and PJM's increased reliance on natural gas as a fuel source.”).

all resources including seasonal resources was appropriate because it creates the same expectations for all Capacity Performance Resources without regard to technology type.<sup>163</sup> The Commission also found that permitting non-year-round resources to continue participating in the capacity market could lead to a loss of reliability in non-summer months where seasonal resources are unavailable.<sup>164</sup> The Commission found that PJM had provided a reasonable accommodation for seasonal resources by allowing aggregation and providing a transition period.<sup>165</sup>

77. On review, the DC Circuit upheld the Commission's findings, stating that:

The year-round capacity commitment is at the core of what PJM expects of capacity resources and the essential attribute of its revised market rules. PJM's experience with winter weather events in 2014, discussed above, confirmed the virtue of capacity that is available to perform at any time, year round . . . . The Commission's statements are supported by record evidence justifying PJM's connection of annual capacity availability with reliability.<sup>166</sup>

78. The D.C. Circuit also rejected the argument that the Commission's acceptance of Capacity Performance constituted undue discrimination against seasonal resources, finding that "[t]he law provides no basis to claim the Commission cannot approve uniform performance requirements simply because those requirements will be easier to satisfy for some generators than others."<sup>167</sup>

79. In response to the findings of the Commission and the D.C. Circuit's approval of the Capacity Performance model, Complainants provide planning studies and other internal evidence from PJM that, they argue, show that capacity needs within PJM continue to vary between seasons and that PJM could potentially procure capacity in a manner that better recognizes these seasonal needs to meet its resource adequacy target

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<sup>163</sup> Capacity Performance Order, 151 FERC ¶ 61,208 at P 99.

<sup>164</sup> Capacity Performance Rehearing Order, 155 FERC ¶ 61,157 at P 59.

<sup>165</sup> *Id.*

<sup>166</sup> *Advanced Energy Mgmt. All. v. FERC*, 860 F.3d 656, 669-70 (D.C. Cir. 2017) (*AEMA*).

<sup>167</sup> *Id.* at 670.

more cost-effectively.<sup>168</sup> Although the Commission agreed that this evidence justified additional investigation through a technical conference,<sup>169</sup> we find ultimately that the data presented by Complainants are insufficient to justify a finding that the Capacity Performance model is no longer just and reasonable.

80. PJM identifies several modeling assumptions underlying the data on which Complainants rely that warrant caution in interpreting the meaning of that data. First, PJM notes that while its annual IRM study indicates only a small amount of LOLE risk occurs in the winter period, recent operating experience suggests that such risk may in fact be higher.<sup>170</sup> Second, PJM states that AEMA's conclusion, that an additional unit of summer-only capacity has 97% of the reliability value of an additional unit of year-round capacity, rests on the false premise that changing to seasonal capacity resources would not also change other modeling assumptions underlying the data they use to reach this conclusion. PJM asserts that the data consider only annual resources with annual performance statistics and assume a maintenance schedule that takes advantage of the flexibility provided by an annual horizon.<sup>171</sup> Third, PJM states that the sensitivity analysis it prepares after each Base Residual Auction—and to which the Complainants point—is designed only to help stakeholders understand the results of that previously conducted auction, and is not meant to estimate future conditions.<sup>172</sup> In light of these identified limitations in the data presented, we are not persuaded that the evidence Complainants present is sufficient to show that the Capacity Performance model is no longer just and reasonable.

81. Furthermore, we agree with PJM that year-to-year fluctuations in the participation rates or quantities of cleared megawatts from seasonal resources do not, in themselves, demonstrate that PJM's annual-only, Capacity Performance construct is no longer just and reasonable. In other words, an increase or reduction in the quantity of cleared resources in the most recent auction compared to the prior delivery year does not indicate a "problematic exclusion of Seasonal Capacity Performance Resources," as Complainants allege.

82. We also reject arguments by the Complainants that the Capacity Performance model unfairly discriminates against seasonal resources. Capacity market design does

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<sup>168</sup> See AEMA Answer at 4-6, 21.

<sup>169</sup> Technical Conference Rehearing Order, 164 FERC ¶ 61,116 at P 20.

<sup>170</sup> PJM Answer to Complaints at 23-25.

<sup>171</sup> *Id.* at 29-30.

<sup>172</sup> *Id.* at 30-31.



not become unjust and unreasonable, or unduly discriminatory, simply because it does not accommodate the business model for certain resources.<sup>173</sup> ODEC argues in its Complaint that other resources have regularly scheduled outages, and that seasonal resources should also be able to participate without having full availability. However, scheduled outages do not present the same issues for PJM's reliability as seasonal availability. PJM does not schedule generation outages; rather, PJM only accepts or rejects a request for an outage and PJM can reject any request when the outage affects system reliability.<sup>174</sup> However, PJM would not be capable of rejecting seasonally available resources, which are not available for months at a time, and Complainants' proposed remedy has the potential to disrupt system reliability. The Commission addressed the argument on undue discrimination in the Capacity Performance Order and was upheld on review by the D.C. Circuit.<sup>175</sup> We are not convinced to reconsider these findings here.

83. PJM has already acted to improve the ability of its capacity market to integrate seasonal resources in a way that continues to ensure that PJM has sufficient winter reliability. On February 23, 2018, the Commission accepted a PJM proposal to enhance the ability of seasonal resources to participate in the capacity market through aggregation, along with proposals to improve Capacity Interconnection Rights and demand response measurement and verification.<sup>176</sup> As PJM and others pointed out in their technical conference comments, PJM has seen an upward trend in aggregation participation since implementing these revisions.<sup>177</sup> As noted above, on May 3, 2019 the Commission also accepted tariff revisions proposed by PJM to improve its peak shaving program.<sup>178</sup>

84. Ultimately, we are not convinced that it is necessary for PJM to abandon its single product Capacity Performance model based upon the limited experience since the Commission's approval. As PJM argues, it deserves the opportunity to gain more

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<sup>173</sup> See *AEMA*, 860 F.3d at 670 (“The law provides no basis to claim the Commission cannot approve uniform performance requirements simply because those requirements will be easier to satisfy for some generators than others.”).

<sup>174</sup> See AWEA Answer to Motions at 3.

<sup>175</sup> Capacity Performance Order, 151 FERC ¶ 61,208 at P 102; *AEMA*, 860 F.3d at 670.

<sup>176</sup> *PJM Interconnection, L.L.C.*, 162 FERC ¶ 61,159 (2018).

<sup>177</sup> See PJM Post-Technical Conference Comments at 3.

<sup>178</sup> *PJM Interconnection, L.L.C.*, 167 FERC ¶ 61,114 (2019).

experience with implementation of Capacity Performance and its rules over time to determine whether it provides performance and reliability during all seasons of the year.

The Commission orders:

The Complaints are hereby denied, as discussed further above.

By the Commission. Commissioner Glick is concurring with a separate statement attached.

( S E A L )

Nathaniel J. Davis, Sr.,  
Deputy Secretary.

UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Old Dominion Electric Cooperative and Direct Energy Business, LLC, on behalf of itself and its affiliate, Direct Energy Business Marketing, LLC, and American Municipal Power, Inc.      Docket Nos.      EL17-32-000

v.  
PJM Interconnection, L.L.C.

Advanced Energy Management Alliance      EL17-36-000

v.  
PJM Interconnection, L.L.C.

(Issued May 21, 2020)

GLICK, Commissioner, *concurring*:

1. A seasonal capacity construct appears to be a more just and reasonable approach than PJM’s current one-size-fits-all answer to ensuring resource adequacy. Nevertheless, I concur in today’s order because I agree that the record in this case does not demonstrate that PJM’s existing tariff is unjust and unreasonable and, therefore, we cannot impose that more just and reasonable result.<sup>1</sup> The record does, however, hint at a number of more fundamental problems with PJM’s capacity construct. Those problems merit a comprehensive review in PJM’s stakeholder process and, if necessary, by this Commission.

2. This proceeding boils down to whether PJM’s annual capacity market, with its single undifferentiated capacity product, is unjust and unreasonable or unduly discriminatory or preferential. Frankly, I am skeptical that PJM’s current approach is a sustainable way of ensuring resource adequacy. And a seasonal capacity market along the lines contemplated in these complaints would certainly seem to be a better approach to resource adequacy than the current one. Nevertheless, I recognize that section 206 of the Federal Power Act (FPA) contemplates a range of just and reasonable approaches and that, to revise an existing tariff, the Commission must do more than show that there

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<sup>1</sup> *Emera Maine v. FERC*, 854 F.3d 9, 25 (D.C. Cir. 2017) (“[A] finding that an existing rate is unjust and unreasonable is the ‘condition precedent’ to FERC’s exercise of its section 206 authority to change that rate. Section 206 therefore imposes a “dual burden” on FERC. Without a showing that the existing rate is unlawful, FERC has no authority to impose a new rate.” (internal citations omitted)).

is a better way.<sup>2</sup> Although it is a close call, I do not believe that the record is sufficient to allow us to conclude that showing has been made.

3. I note, however, that the complainants' failure to meet their burden under section 206 of the FPA is not entirely their fault. These complaints have sat before the Commission for more than three years<sup>3</sup> and, in that time, PJM's tariff has evolved, including, for example, through the addition of new mechanisms to allow seasonal resources to pair up with other seasonal resources in order to provide what is effectively an annual product.<sup>4</sup> While that matching is hardly a panacea, it at least partially addresses many of the issues identified in this record, making it difficult to conclude that the tariff as it exists today is unjust and unreasonable or unduly discriminatory or preferential for the reasons stated in the complaints. In the event that the matching scheme fails to sufficiently accommodate seasonal resources, the Commission will have to revisit these issues and take a hard look at whether a seasonal capacity market is necessary for PJM's capacity construct to ensure resource adequacy at rates that are just and reasonable and not unduly discriminatory or preferential.

4. In addition, while this record does not provide a basis for Commission action, it does highlight a number of more fundamental challenges facing PJM's approach to resource adequacy. First and foremost, it underscores the difference between the reliability challenges in the summer and winter and it suggests that moving away from a uniform annual product could allow more resources to provide capacity, thereby increasing competition and promoting more efficient pricing. A seasonal approach could also allow PJM to address the unique seasonal needs more directly. Historically, PJM's principal reliability concern was ensuring that peak summer demand does not exceed supply and the resource adequacy paradigm evolved accordingly. This record, however, illustrates that winter-time challenges are demanding more attention within the region and that those challenges have more to do with managing planned outages and the complications associated with cold weather—*e.g.*, frozen coal piles or interrupted gas supplies<sup>5</sup>—than with ensuring that installed capacity exceeds demand.

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<sup>2</sup> *See id.*

<sup>3</sup> Old Dominion Electric Cooperative's complaint was filed on December 26, 2016. Advanced Energy Management Alliance's complaint followed a couple weeks later.

<sup>4</sup> *See PJM Interconnection*, 162 FERC P 61,159 (2018).

<sup>5</sup> *See* N. Am. Elec. Reliability Corp., *Polar Vortex Review* 3 & fig. 5 (2014), available at [https://www.nerc.com/pa/rrm/January%202014%20Polar%20Vortex%20Review/Polar\\_Vortex\\_Review\\_29\\_Sept\\_2014\\_Final.pdf](https://www.nerc.com/pa/rrm/January%202014%20Polar%20Vortex%20Review/Polar_Vortex_Review_29_Sept_2014_Final.pdf); *see also* PJM Interconnection L.L.C., *PJM Cold Snap Performance: Dec. 28, 2017 to Jan. 7, 2018*, at

5. Although the high reserve margins that help manage the summer-time peaks may also address winter concerns, they are not the most direct way to do so. High winter reserve margins do not necessarily mean that PJM has the services needed to manage those winter reliability needs.<sup>6</sup> That means that the resource adequacy paradigm that emerged to handle the summer peak—*i.e.*, procuring more and more year-round blocks of undifferentiated capacity—is unlikely to prove a sustainable or efficient approach to addressing the region’s diversifying reliability needs. In other words, the fact that having extra resources on the system *may* help manage non-peak reliability challenges does not necessarily justify PJM’s current approach or excuse it from pursuing means of addressing those challenges more directly and cost-effectively.

6. In addition, we cannot ignore the unintended consequences of flooding PJM’s system with excess capacity. PJM, its stakeholders, and this Commission have devoted considerable time and resources to promoting proper price formation in PJM’s energy and ancillary service markets. Over-procuring capacity tends to dull those price signals, reducing, or altogether eliminating, many of the benefits of those price formation efforts. Those impacts are, in my view, very relevant to whether PJM’s resource adequacy construct remains just and reasonable.

7. I hope that PJM will get ahead of these issues by taking advantage of the Commission’s denial of these complaints to consider how it might design its markets to more directly procure the specific services that its system needs throughout the year. If PJM requires far more capacity to handle the summer-time peak than it does the rest of the year, it should consider procuring capacity to address that specific issue, perhaps through something like the seasonal capacity market contemplated in these complaints. By the same token, PJM could also consider different approaches to meeting winter challenges by defining requirements in a winter capacity market to address concerns, such as planned outages or winter preparedness.

8. With that perspective in mind, I cannot help but note some of PJM’s more troubling responses to the complaints, many of which are picked up in today’s order. In particular, I am concerned by the implication of PJM’s statement that adopting a seasonal market could cause “premature resource retirement,” which PJM contends

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16-17 (2018), *available at* <https://www.pjm.com/-/media/library/reports-notice/weather-related/20180226-january-2018-cold-weather-event-report.ashx?la=en> (discussing “fuel supply issues” associated with the cold weather).

<sup>6</sup> See Federal Energy Regulatory Commission, *2019-2020 Winter Energy Market Assessment* 11 (Oct 17, 2019), *available at* <https://www.ferc.gov/market-assessments/reports-analyses/mkt-views/2019/10-17-19-A-3.pdf> (“Although all regions are expected to maintain healthy reserve margins through the winter, reserve margins are not always guarantors of reliable operations during the winter.”).

could result in “reduced energy market participation by conventional resources, perhaps by units that clear in one season shutting down in the other season.”<sup>7</sup> PJM’s goal cannot be the protection of “conventional” resources nor should it spend its time fretting over the effects that a more efficient market design may have on the resource mix. Instead, PJM should be focused on identifying the services the grid needs to remain reliable and structuring its markets to procure those services in the most efficient, technology-neutral manner possible. In any case, it is hardly “premature” for a resource to retire because some other resource can more efficiently meet the needs of the market. That type of competition should be the goal of the capacity market, not a problem to be avoided.

9. I recognize that designing a system to procure the services needed to directly address the region’s reliability needs will prove more complicated than an approach of buying more and more undifferentiated capacity.<sup>8</sup> But the simplest approach is not always just and reasonable. After all, our responsibility is to ensure that PJM’s capacity construct ensures resource adequacy at just and reasonable rates. We cannot neglect the latter just because we have found a simple way to carry out the former. In any case, the complexity associated with a more nuanced approach to resource adequacy is a reason for PJM to start thinking through details of such an approach *now*, before the continuing evolution of the electricity sector renders its current approach unjust and unreasonable.

10. In addition, this record also suggests that the time has come for PJM to take a hard look at its Capacity Performance regime. PJM proposed, and the Commission approved, the general Capacity Performance construct in response to the 2014 “Polar Vortex,” when a large portion of the region’s resources struggled to meet their capacity obligations.<sup>9</sup> The basic premise of Capacity Performance was that a more stringent set of criteria for qualifying for a capacity supply obligation coupled with penalties for non-performance would, together, ensure resources take the steps needed to perform

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<sup>7</sup> *Old Dominion Elec. Coop. v. PJM Interconnection, L.L.C.*, 171 FERC ¶ 61,149, at P 28 (2020) (citing PJM Answer at 8 & 35-36).

<sup>8</sup> *Cf.* Independent Market Monitor Pre-Technical Conference Comments at 3-4 (cataloging implementation challenges he sees for a seasonal capacity market, including the need to modify PJM’s modeling assumptions, its cost allocation parameters, its use of demand-side resources, and how it accounts for both planned and unplanned outages).

<sup>9</sup> *PJM Interconnection, L.L.C.*, 151 FERC ¶ 61,208, at P 27 (2015), *order on reh’g*, 155 FERC ¶ 61,157 (2016) (“PJM notes that resource performance fell well below expected levels during the extreme weather events of January 2014 (i.e., during the polar vortex), when PJM’s forced outage rate (22 percent) far exceeded its 7 percent historical average.”).

reliably in adverse conditions.<sup>10</sup> The goal was to ensure that resources procured to meet a summer peak would be equally available to manage the winter challenges as well.

11. Whatever theoretical appeal that approach may have had, it has not been born out in practice. Although PJM has declared minor Capacity Performance events over the last few years, the anticipated penalties have never materialized. That is a stark contrast to the underpinnings of PJM's Capacity Performance proposal, which envisioned many penalty hours per year. The lack of Capacity Performance events appears to be due, in large part, to the region's persistent oversupply of capacity. That surplus has minimized the likelihood of any capacity shortfall, causing resources to doubt, or disregard entirely, the threat of Capacity Performance penalties.<sup>11</sup> The Commission's recent decisions regarding PJM's Variable Resource Requirement Curve<sup>12</sup> and Minimum Offer Price Rule (MOPR),<sup>13</sup> will only exacerbate that capacity glut, further reducing the chances of a Capacity Performance penalty. Similarly, Capacity Performance events will be even less likely after the issuance of today's order on the Operating Reserve Demand Curve, which will result in PJM carrying reserves far in excess of its reserve requirement, further reducing the likelihood of a Capacity Performance event.<sup>14</sup>

12. The current capacity glut, and the prospects for it to grow in the future, call into question the basic premise of Capacity Performance. In particular, if there is little-to-no

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<sup>10</sup> *Id.* P 6.

<sup>11</sup> *See, e.g.,* American Wind Energy Association & Solar RTO Coalition Post-Technical Conference Comments at 8-9 (noting that it would be “economically rational” for resources to doubt that penalties will be imposed over the next few years given that “the [then-]most recent BRA procured a 21.5% reserve margin—5.7% higher than the target reserve margin—which does not even include over 22,800 MW of resources that offered into the most recent BRA but did not clear” (footnotes omitted)).

<sup>12</sup> *PJM Interconnection, L.L.C.*, 171 FERC ¶ 61,040 (2020); *id.* (Glick, Comm'r, dissenting at P 1) (“[T]oday's order will only perpetuate PJM's over-procurement of capacity resources, raising customers' rates and dulling the price signals established in PJM's other markets.”).

<sup>13</sup> *PJM Interconnection, L.L.C.*, 171 FERC ¶ 61,035 (2020); *id.* (Glick, Comm'r, dissenting at P 64) (explaining that “the PJM capacity market will increasingly operate in an alternate reality, ignoring more and more resources just because they receive some form of state support”).

<sup>14</sup> *See PJM Interconnection L.L.C.*, 171 FERC ¶ 61,153 (2020); *id.* (Glick, Comm'r, dissenting at PP 20-21).

prospect of a capacity shortfall, then it would seem correspondingly harder to justify the qualification restrictions, including the limitations on seasonal resources.<sup>15</sup> I recognize that some of the capacity glut is the result of the Commission's actions, not PJM's, and that this share may continue to grow as the consequences of the Commission's MOPR ruling play out. But that should not stop PJM from taking a hard look at whether Capacity Performance remains appropriate under current market conditions and, in particular, whether the barriers it created for seasonal resources should be removed. Although that is a question that I believe is best handled by PJM in the first instance, I recognize that the Commission may ultimately need to act if a future record demonstrates that the trade-offs associated with Capacity Performance have become unjust and unreasonable or unduly discriminatory or preferential.

For these reasons, I respectfully concur.

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Richard Glick  
Commissioner

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<sup>15</sup> PJM's capacity glut is not the only reason Capacity Performance merits a review by PJM and, if necessary, this Commission. The Capacity Performance reforms accepted by the Commission imposed a market-seller offer cap—i.e., a figure below which capacity market offers would not be reviewed for exercises of seller-side market power—that assumed a significant number of non-performance penalties. PJM's Independent Market Monitor has alleged that, in the absence of those penalties, that cap is so excessively high as to be unjust and unreasonable. That complaint has pending before the Commission, without action, for nearly a year and a half. *See* Complaint, Docket No. EL19-47-000.