

**UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION**

Calpine Corporation, et al.	)	Docket Nos. EL16-49-000
v.	)	
PJM Interconnection, L.L.C.	)	
	)	
PJM Interconnection, L.L.C.	)	EL18-178-000 (Consolidated)

**COMMENTS OF THE INSTITUTE FOR POLICY INTEGRITY AT NEW YORK  
UNIVERSITY SCHOOL OF LAW**

Pursuant to the Federal Energy Regulatory Commission’s (“Commission” or “FERC”) June 29, 2018 Order Rejecting Proposed Tariff Revisions, Granting in Part and Denying in Part Complaint, and Instituting Proceeding Under Section 206 of the Federal Power Act (“June 29 Order” or “Order”),<sup>1</sup> and August 22, 2018 Notice of Extension of Time,<sup>2</sup> the Institute for Policy Integrity at New York University School of Law (“Policy Integrity”) hereby files these initial comments on potential revisions to the PJM Interconnection, L.L.C. (“PJM”) capacity market, the Reliability Pricing Model (“RPM”).<sup>3</sup> Policy Integrity is a non-partisan think tank dedicated to improving the quality of government decisionmaking through advocacy and scholarship in the fields of administrative law, economics, and public policy.

In the June 29 Order, the Commission determined that the design of the RPM makes PJM’s Open Access Transmission Tariff (“Tariff”) unjust and unreasonable because it fails to

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<sup>1</sup> *Calpine Corporation et al. v. PJM Interconnection L.L.C.*, 163 FERC ¶ 61,236, at P 172 (2018) (“June 29 Order”).

<sup>2</sup> Notice of Extension of Time, Docket Nos. EL16-49-000, ER18-1314-000, ER18-1314-001, EL18-178 (Aug. 22, 2018).

<sup>3</sup> On July 6, 2018, Policy Integrity filed a timely motion to intervene in this proceeding by doc-less intervention. This document does not purport to present the views of New York University School of Law, if any.

counteract what the Commission characterizes as the price suppressive effects of “out-of-market payments” for certain resources.<sup>4</sup> While it was not able to finalize a just and reasonable replacement rate, the Commission preliminarily identified two high-level components of a proposed replacement rate: (1) an expansion of the Minimum Offer Price Rule (“MOPR”) to new and existing resources that receive certain out-of-market payments, and, (2) potentially, the development of a new mechanism, modeled on the current Fixed Resource Requirement (“FRR”).<sup>5</sup> With the new mechanism, resources subject to the expanded MOPR would be permitted to opt-out from the RPM in conjunction with a comparable amount of load (“resource-specific FRR”).

In order to act under Section 206 of the Federal Power Act,<sup>6</sup> the Commission has a “dual burden”: it must find both that PJM’s existing Tariff is unjust, unreasonable, or unduly discriminatory, and it must put forward a replacement that is just and reasonable and not unduly discriminatory and preferential.<sup>7</sup> And these findings must be supported with substantial evidence.<sup>8</sup> These comments focus not on the first part of the Commission’s dual burden under Section 206,<sup>9</sup> but on the second: to what extent the high-level components of the Commission’s

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<sup>4</sup> In the June 29 Order, the Commission interchangeably uses the terms “out-of-market payments” and “out-of-market support.” For consistency, in these comments we use the term “out-of-market payments.”

<sup>5</sup> See June 29 Order at P 157.

<sup>6</sup> 16 U.S.C. § 824e.

<sup>7</sup> *Emera Maine v. FERC*, 854 F.3d 9, 24-25 (D.C. Cir. 2017).

<sup>8</sup> *Ameren Servs. Co. v. Midwest Indep. Transmission Sys. Operator, Inc.*, 121 FERC ¶ 61,205 at P 32 (2007) (“In a section 206 matter, the party seeking to change the rate, charge or classification has a dual burden—it must first provide substantial evidence that the existing rate is unjust, unreasonable or unduly discriminatory, and then demonstrate through substantial evidence that the new rate is just, reasonable and not unduly discriminatory.”); see also *Florida Gas Transmission Co. v. FERC*, 604 F.3d 636, 641 (D.C. Cir. 2010) (prohibiting Commission action based solely on “speculation, conjecture, divination, or anything short of factual findings based on substantial evidence”).

<sup>9</sup> In prior comments, Policy Integrity explained why the kinds of out-of-market payments the Commission has determined render the Tariff unjust and unreasonable—state policies that compensate resources for addressing environmental externalities such as climate change—do not, in fact, result in unjust and unreasonable rates. Comments of the Institute for Policy Integrity at New York University School of Law at 28-31, Docket No. ER18-1314-000 (May 7, 2018) (“Policy Integrity Capacity Repricing Comments”). Policy Integrity also explained that a

proposed replacement rate and related alternative proposals would be just and reasonable and not unduly discriminatory or preferential.

We offer the following three comments:

- The expansion of the MOPR to cover out-of-market payments—and in particular to cover payments that resources receive for the economic value of the air pollution emissions that they avoid (“externality payments”)—would not be just and reasonable because it would detract from, rather than enhance, market efficiency;
- Pairing an expanded MOPR with a provision that allows resources subject to the MOPR to exit the capacity market with a commensurate amount of load could address some of the market distortions, but to do so it must align the incentives of capacity and load to participate and it must be designed to address the inefficiencies exacerbated by the MOPR; and,
- Applying the MOPR to only those resources whose out-of-market revenue is the result of state-directed compensation for the environmental value they provide would be unduly discriminatory because such resources are not meaningfully distinguishable from those that receive other out-of-market revenue; whereas applying the MOPR broadly to all resources that receive any out-of-market revenue could lead to heightened issues of market power and capacity overbuilding.

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reduction in capacity prices is not necessarily a sign of market inefficiency, *id.* at 31-32; that capacity price declines would not harm resource adequacy due to the way RPM is designed, *id.* at 32-34; and that capacity markets have been functioning well despite the fact that many participating resources have long benefited from a wide variety of state subsidies. *Id.* at 34-35. Because the Commission’s Order does not address these points and so has not sufficiently shown the current Tariff to be unjust and unreasonable, it should not now move forward with a replacement rate. *Emera Maine*, 854 F.3d at 25 (“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.”).

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## I. BACKGROUND

On March 21, 2016, Calpine Corporation and other generation entities submitted a complaint pursuant to Section 206 of the Federal Power Act,<sup>10</sup> requesting that PJM be required to revise its RPM rules in order to prevent claimed price suppression caused by “below-cost offers” by resources “whose continued operation is being subsidized by State approved out-of-market payments.”<sup>11</sup> On April 9, 2018, PJM filed, under Federal Power Act Section 205,<sup>12</sup> two alternative proposed revisions to the RPM premised on similar concerns about state public policies.<sup>13</sup> In its June 29 Order, the Commission rejected both of PJM’s proposed revisions to the RPM as unjust and unreasonable and unduly discriminatory.<sup>14</sup> However, based on the record in the Calpine complaint and PJM’s Section 205 filing, the Commission found that PJM’s existing Tariff is unjust and unreasonable because it fails to limit what the Commission characterizes as price suppression caused by out-of-market payments to certain resources that benefit from state public policies.<sup>15</sup> The Commission, therefore, granted Calpine’s complaint, in part, initiated its own Section 206 proceeding, and instituted a paper hearing to determine a just and reasonable replacement rate.<sup>16</sup>

In its Order, the Commission determined that it did not have a sufficient record to adopt a just and reasonable replacement rate, but it outlined two components of a replacement rate that it

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<sup>10</sup> 16 U.S.C. § 824e.

<sup>11</sup> Complaint of Calpine Corp. et al., Docket No. EL16-49-000 at 2 (2016); *see also* Amended Complaint of Calpine Corp. et al., Docket No. EL16-49-000 at 10-11 (2017) (amending complaint to include Illinois’ zero emission credit program as an example of purportedly price suppressive state policies).

<sup>12</sup> 16 U.S.C. § 824d.

<sup>13</sup> Capacity Repricing or in the Alternative MOPR-Ex Proposal: Tariff Revisions to Address Impacts of State Public Policies on the PJM Capacity Market, Docket No. ER18-1314-000 (filed Jan. 8, 2018) (“PJM Filing”).

<sup>14</sup> June 29 Order at PP 63, 105.

<sup>15</sup> *Id.* at P 150.

<sup>16</sup> *Id.* at P 149.

preliminarily believes may be just and reasonable and not unduly discriminatory.<sup>17</sup> The first component would be an extension of the MOPR to resources that receive certain out of market payments.<sup>18</sup> While the Commission does not define “out of market payment,” it references zero emission credit (“ZEC”) programs in Illinois and New Jersey that support existing nuclear generators, state renewable portfolio standard (“RPS”) programs that provide renewable resources with revenue through the sale of renewable energy credits (“RECs”), and offshore wind procurement programs in Maryland and New Jersey.<sup>19</sup> The Commission also described a potential second component of the proposed replacement rate that “may be just and reasonable”: a resource-specific FRR mechanism by which generation subject to the MOPR and a corresponding amount of load would exit the RPM.<sup>20</sup> The Commission requested comment on the design of both the expanded MOPR and the resource-specific FRR as part of the paper hearing.<sup>21</sup>

## **II. AN EXPANDED MOPR WITHOUT AN EFFECTIVE RESOURCE-SPECIFIC FRR WOULD UNDERMINE EFFICIENCY-ENHANCING POLICIES, CAUSE CAPACITY OVERPROCUREMENT, AND RISK EXACERBATING SUPPLIER-SIDE MARKET POWER, AND SO WOULD BE AN UNJUST AND UNREASONABLE REPLACEMENT RATE**

In its June 29 Order, the Commission identified a proposed replacement rate that would significantly expand the scope of resources covered by the MOPR. And while the second component of the proposed replacement rate discussed in the June 29 Order is devoted to accommodating state policies, the Commission has suggested that it may approve a replacement

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<sup>17</sup> *Id.* at P 157 (“we are not able, based on the existing record . . . to make a final determination regarding the just and reasonable replacement rate . . . . However, we preliminarily find that modifying two aspects of the PJM Tariff may produce a just and reasonable rate.”).

<sup>18</sup> *Id.* at P 158.

<sup>19</sup> *Id.* at P 1, n. 1; *id.* at P 151.

<sup>20</sup> *Id.* at P 160.

<sup>21</sup> *Id.* at PP 164-169.

rate without a resource-specific FRR.<sup>22</sup> As we argue below, expanding the MOPR as envisioned by the Commission would bring inefficiencies and, especially when not accompanied by an effective resource-specific FRR, would risk undermining the efficiency of the RPM and so would not be just and reasonable. First, by specifically targeting resources that benefit from state ZEC and RPS policies, an expanded MOPR would undermine state policies that aim to correct market failures and so ultimately detract from market efficiency. Second, expansion of the MOPR to additional resources would result in overprocurement of capacity beyond what is needed for resource adequacy or valued under the current RPM construct. Third, while the MOPR was originally constructed as a tool to mitigate buyer-side market power, its significant expansion would risk exacerbating problems of supplier-side market power. Each of the problems is discussed in turn.<sup>23</sup>

These inefficiencies will be more pronounced if the price floor that resources must bid above is higher than necessary to counteract the bidding incentives imposed by out-of-market payments (accepting *arguendo* the Commission’s characterization of those payments as distortionary). To the extent the Commission moves forward with application of the MOPR to resources that receive out-of-market payments, it should, therefore, carefully design any replacement rate so that it does not impose a price floor higher than necessary.

**A. Well-Designed State Externality Payment Policies Enhance Market Efficiency; Mitigating Them Will Detract from Market Efficiency**

Competitive, unregulated markets maximize social welfare under only specific conditions and when one of those conditions is not met, a market fails to achieve economically efficient

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<sup>22</sup> Compare *id.* at P 158 (“We propose that the replacement rate include an expanded MOPR) with *id.* at P 160 (“it *may be* just and reasonable to accommodate resources that receive out-of-market support”) (emphasis added).

<sup>23</sup> We discuss the merits of an expanded MOPR combined with the resource-specific FRR mechanism in section III.

outcomes.<sup>24</sup> In particular, if market transactions inflict damage on third parties (that is, when they impose an “externality”), then markets are not efficient. And, as the noted economist Arthur Pigou recognized in 1920 and many economic textbooks emphasize, an intervention is necessary to restore efficiency.<sup>25</sup>

Electricity markets suffer from this externality problem because, as a by-product of electric generation, fossil-fuel-fired power plants emit many pollutants that are harmful to human health such as nitrous oxides, sulfur dioxide, and particulate matter.<sup>26</sup> Additionally, the electricity sector is one of the main sources of greenhouse gas emissions,<sup>27</sup> which cause significant economic, public health, and environmental damages across the globe.<sup>28</sup> Absent government intervention that can fully internalize these externalities, electricity market outcomes will not be efficient.

When external damages are not fully internalized, as in the case of wholesale energy markets, polluting resources receive an implicit subsidy, causing them to enter and generate more than the economically efficient level. The typically prescribed, “first-best” solution is a

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<sup>24</sup> See SYLWIA BIALEK & BURCIN UNEL, CAPACITY MARKETS AND EXTERNALITIES 6 (2018), [http://policyintegrity.org/files/publications/Capacity\\_Markets\\_and\\_Externalities\\_Report.pdf](http://policyintegrity.org/files/publications/Capacity_Markets_and_Externalities_Report.pdf) [hereafter “CAPACITY MARKETS AND EXTERNALITIES”].

<sup>25</sup> See A. C. PIGOU, THE ECONOMICS OF WELFARE (1920); see also PAUL KRUGMAN & ROBIN WELLS, MICROECONOMICS 437-438 (2d ed. 2009); JONATHAN GRUBER, PUBLIC FINANCE AND PUBLIC POLICY 136 (5th ed. 2016).

<sup>26</sup> CAPACITY MARKETS AND EXTERNALITIES at 6. Those pollutants harm the health of the population, including individuals who were not a part of the electricity market transaction and might be a long distance from the contracting parties. The potential geographical scale on which electricity transactions might affect third parties can be best understood in context of interstate air pollution transport. See, e.g., Kuo-Jen Liao, Xiangting Hou & Debra Ratterman Baker, *Impacts of Interstate Transport of Pollutants on High Ozone Events Over the Mid-Atlantic United States*, 84 ATMOSPHERIC ENVIRONMENT 100 (2014).

<sup>27</sup> U.S. EPA, EPA 430-R-18-003, INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS: 1990-2016 at ES-24 (2018), [https://www.epa.gov/sites/production/files/2018-01/documents/2018\\_complete\\_report.pdf](https://www.epa.gov/sites/production/files/2018-01/documents/2018_complete_report.pdf) (the electricity sector accounted for 28% of total U.S. greenhouse gas emissions in 2016).

<sup>28</sup> For example, the annual external damages associated with the climate change damages from CO<sub>2</sub> emissions of a typical 1,000 MW coal plant, not taking into account damages from other pollutants, is approximately \$234.3 million based on the Interagency Working Group’s Social Cost Carbon. See CAPACITY MARKETS AND EXTERNALITIES at 11.

corrective tax (also called a “Pigouvian tax”). But when taxation is not feasible, policymakers can also address negative externalities by subsidizing resources that do not produce the externality.<sup>29</sup> By compensating resources in an amount that is related to the value of avoided emissions, such “externality payment” policies attempt to ensure that the difference in revenues between clean and polluting generators account for the external costs to a degree similar to what would result under taxation.<sup>30</sup> As a result, even if they cannot fully reach the first-best outcome, well-designed externality payments change the generation mix in a way similar to changes induced by emissions taxes: clean resources clear the auctions more often and receive higher net revenue compared to a no-regulation alternative.<sup>31</sup> By accounting for external costs, well-designed externality payments to non-emitting generators complement private costs and revenue, such that the market recognizes which generators are socially more economic. Consequently, externality payments give those units that are socially economic an incentive to stay in the market; while socially uneconomic units receive efficient signals to exit. State policies that pay for avoided emissions should thus be seen as instruments that help fix a market failure and “level the playing field.”

For many of the policies that the Commission has labeled as “distortionary,” the level of the payments introduces a difference in revenues between clean and emitting generators that aims to bring the revenue the resources receive closer to what they would have gotten if the external costs of pollution were taken into account by a first-best corrective tax.<sup>32</sup> Properly

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<sup>29</sup> *Id.* at 7.

<sup>30</sup> *Id.* at 7-8. For example, under the Illinois ZEC program, nuclear resources receive payments based directly on the emission rate of displaced generation and the best estimate of the monetary value of the climate damages avoided by displacing that generation, which is the Social Cost of Carbon. *See* 20 ILL. COMP. STAT. 3855 / 1-75(d-5)(1)(B).

<sup>31</sup> CAPACITY MARKETS AND EXTERNALITIES at 11.

<sup>32</sup> Policy Integrity Capacity Repricing Comments at 15.

designed externality payment policies do not reduce the efficiency of market outcomes compared to the status quo, but rather move the market towards more economically efficient outcomes from a societal perspective. They can, therefore, be clearly distinguished from parochial and distortive subsidies that PJM and the Commission have previously taken steps to mitigate.<sup>33</sup>

Imposing the MOPR on resources that benefit from externality payments risks undoing the efficiency-enhancing signals sent by those payments. When a resource is subject to the MOPR, it is forced to submit a capacity market bid that is greater or equal to the MOPR Floor Offer Price (“MOPR Price Floor”).<sup>34</sup> By design, this minimum bid aims to increase the bid the resource would have submitted and reduces the chances that the resource will clear the capacity auction. For resources that would have cleared without application of the MOPR, this will reduce their expected revenues. This expected revenue reduction might send signals that an existing resource should exit the market (or that a new resource should not enter) even if the value that the resource provides society—including energy, capacity, ancillary services, and environmental benefits—exceeds the resource’s costs. As such, expanding the MOPR to directly apply to resources with state externality policies will limit the effectiveness of those policies. To the extent that the state policies internalize externalities, a MOPR that prevents socially economic resources from clearing will reduce market efficiency.

In fact, as we explain in section II.D, the MOPR Price Floor that has been applied to resources subject to the MOPR has tended to be higher than even the competitive bid that the resource would have submitted absent any externality payment. If the bid resulting from the application of the MOPR exceeds even the bid that the resource would have submitted absent states policies, the MOPR will do more than just frustrate the attempts of states to internalize

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<sup>33</sup> *See id.* at 19.

<sup>34</sup> PJM Tariff Attachment DD at section 5.14(h)(3).

environmental externalities. It will reduce the expected capacity market income of resources subject to the MOPR compared to the counterfactual situation of no state externality policy.<sup>35</sup> Consequently, a resource subject to the MOPR that receives an externality payment and no capacity payment can receive less total revenue than it would receive in capacity payments had it received no externality payment and was not subject to the MOPR. With lower profits, an emission-free resource subject to the MOPR would enter less frequently and exit earlier than if it had not received an externality payment. If these emission-free resources are replaced by emitting generators, expanding the MOPR can, therefore, perversely *exacerbate* the externality problem that states are trying to address compared to a world without state policy.

In addition, the energy and capacity markets are intertwined. To the extent that an expanded MOPR achieves its goal of increasing prices in the capacity market to counteract alleged price suppression, it will provide price signals to install additional capacity. As more supply becomes available to meet electricity demand, energy prices would fall.<sup>36</sup> This will further reduce the relative profitability of clean resources, which often depend more on energy market revenues than capacity market revenues.<sup>37</sup>

Consequently, an expanded MOPR would frustrate the internalization of the external damages associated with electricity generation and thus fail to achieve optimal market outcomes.<sup>38</sup> Moreover, it would possibly also exacerbate the externality concerns that externality payments are intended to correct beyond what would be expected even without state externality

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<sup>35</sup> See CAPACITY MARKETS AND EXTERNALITIES at 20.

<sup>36</sup> *Id.* at 25. If the resources subject to the MOPR are also the resources with the lowest marginal cost of energy generation, the long-term energy prices could be higher than under the scenario without the MOPR. This would occur if the MOPR suppresses entry of those cheap resources on a large scale. In that case, the long-term inefficiencies would include excess costs of energy generation and accentuated externality problems.

<sup>37</sup> See Jennifer Chen, *Is Capacity Oversupply Too Much of a Good Thing?*, 34 NAT. GAS & ELEC. 15, 17 (2017).

<sup>38</sup> June 29 Order at P 153 (faulting a market design where resources do not submit bids that reflect their “actual costs”).

payments. Both of these effects would detract from market efficiency and so would render a replacement rate unjust and unreasonable.<sup>39</sup>

### **B. An Expanded MOPR Would Result in Capacity Overprocurement and so Would Be an Unjust and Unreasonable Replacement Rate**

Expansion of the MOPR—at least an expansion without a corresponding mechanism such as a resource-specific FRR to withdraw resources and load from the RPM<sup>40</sup>—can distort market efficiency by encouraging overprocurement of capacity.

As PJM has acknowledged, expansion of the MOPR could “lead to a punitive duplication of resources, which should be understood as over-procurement.”<sup>41</sup> That effect will occur to the extent that resources subject to the MOPR continue operating even after failing to clear the RPM. Because of the MOPR, the RPM will disregard capacity from resources that do not clear the auction but that are nonetheless available to supply energy at times of peak demand, and will procure additional capacity that is not needed to meet the capacity requirements. Consequently, an expanded MOPR would result in inefficiently high levels of capacity.<sup>42</sup> As the Commission has previously recognized, excess capacity is a “significant undesirable effect[]” that can render

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<sup>39</sup> *FERC v. Elec. Power Supply Ass’n*, 136 S. Ct. 760, 779 (2016) (describing FERC’s “regulatory mission” as “improv[ing] the competitiveness, efficiency, and reliability of the wholesale market” (emphasis added)); Bethany Davis Noll & Burcin Unel, *Markets, Externalities, and the Federal Power Act: The Federal Energy Regulatory Commission’s Authority to Price Carbon Dioxide Emissions*, N.Y.U. ENVTL. L.REV. (forthcoming) (describing precedent that FERC considers economic efficiency when evaluating whether rates are just and reasonable).

<sup>40</sup> The June 29 Order suggests that the Commission could adopt a replacement rate that includes an expanded MOPR without a resource-specific opt-out provision. Compare June 29 Order at P 158 (“We propose that the replacement rate include an expanded MOPR) with *id.* at P 160 (“it *may be* just and reasonable to accommodate resources that receive out-of-market support”) (emphasis added).

<sup>41</sup> PJM Filing at 56 n. 138.

<sup>42</sup> This conclusion was recently supported by the United States Court of Appeals for the District of Columbia Circuit when it upheld a renewable energy exemption from the MOPR in ISO-NE. See *NextEra Energy Resources v. FERC*, 898 F.3d 14, 20 (D.C. Cir. 2018) (“If those resources ‘are not reflected in the Forward Capacity Market, then the Forward Capacity Market may send an incorrect signal to construct new capacity that is not needed.’ This would lead the market to procure redundant capacity.”) (citing *ISO-NE*, 158 FERC ¶ 61,138, at PP 9, 48 (Feb. 3, 2017)).

a tariff unjust and unreasonable.<sup>43</sup>

Excess capacity would have two major consequences in connection to states' policies. As the Commission acknowledges, it would lead to consumers paying twice for available capacity: once through higher prices in the capacity markets paid to units that are not required to ensure system reliability and a second time through externality payments made pursuant to state programs.<sup>44</sup> Additionally, the excess capacity could lower prices in the energy market.<sup>45</sup> As lower energy prices lead to lower energy revenues for all existing resources, including those resources that are not subject to the MOPR, all resources will need to bid higher in capacity markets to recover their net expected costs of going forward.<sup>46</sup> The "counterfactual" prices—capacity prices that would occur if states had not engaged in the purportedly suppressive externality payments—will thus not be restored. Instead, the capacity price will be higher than that counterfactual price. The Commission has previously found tariff revisions to be unjust and unreasonable to the extent that they would "result in higher clearing prices than if [otherwise competitive] resources had participated" in a capacity auction.<sup>47</sup> The Commission should do the same here, and not adopt a replacement rate that risks capacity overprocurement or prices higher than what would occur with, what the Commission claims would be, competitive participation of resources (that is, participation without state externality payments).

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<sup>43</sup> *PJM Interconnection, L.L.C.*, 147 FERC ¶ 61,108, at P 68 (2014) ("PJM's proposed OATT and RAA revisions have *significant undesirable effects* such as increasing the risk for capacity market sellers, creating undue barriers to entry, limiting opportunity for beneficial trade, and unnecessarily raising the cost of capacity through the *acquisition of excess capacity.*") (emphasis added).

<sup>44</sup> June 29 Order at P 159.

<sup>45</sup> See also note 36.

<sup>46</sup> CAPACITY MARKETS AND EXTERNALITIES at 26.

<sup>47</sup> *PJM Interconnection, L.L.C.*, 161 FERC ¶ 61,252, at P 43 (2017).

### **C. An Expanded MOPR Would Exacerbate Market Power Issues and so Would Be an Unjust and Unreasonable Replacement Rate**

Capacity markets are plagued by problems of supplier-side market power that can raise prices above competitive levels. As Monitoring Analytics, PJM’s Independent Market Monitor (IMM), has stated, “the market design for capacity leads, almost unavoidably, to structural market power in the capacity market. The capacity market is unlikely ever to approach a competitive market structure in the absence of a substantial and unlikely structural change that results in much greater diversity of ownership.”<sup>48</sup> Consequently, PJM and the IMM try to ensure the competitiveness of market outcomes through complex and broad-ranging market power mitigation rules. One of these rules is the Market Seller Offer Cap (“offer cap”) applied to resources that have the potential to wield market power.<sup>49</sup>

However, even despite numerous updates to the market power mitigation rules,<sup>50</sup> the competitiveness of the auction results is not guaranteed. For instance, in its analysis of the 2021/2022 RPM Base Residual Auction, the IMM claims, based on its definition of “competitive offer,” that the results of the auction were not competitive as a result of economic withholding of capacity.<sup>51</sup> According to the IMM, noncompetitive offers resulted in a 15.3 percent increase in RPM revenues for the 2021/2022 RPM Base Residual Auction.<sup>52</sup>

The IMM’s conclusions reinforce the fact that the purportedly inefficient price suppression by state externality payment policies has not been supported by rigorous analysis

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<sup>48</sup> MONITORING ANALYTICS, ANALYSIS OF THE 2021/2022 RPM BASE RESIDUAL AUCTION 2(Aug. 24, 2018), [http://www.monitoringanalytics.com/reports/Reports/2018/IMM\\_Analysis\\_of\\_the\\_20212022\\_RPM\\_BRA\\_Revise\\_d\\_20180824.pdf](http://www.monitoringanalytics.com/reports/Reports/2018/IMM_Analysis_of_the_20212022_RPM_BRA_Revise_d_20180824.pdf) [hereinafter “2021/2022 RPM ANALYSIS”].

<sup>49</sup> See PJM Tariff, Attachment DD at section 6.4; *PJM Interconnect L.L.C.*, 154 FERC ¶ 61,151, at PP 2-5 (2016) (describing PJM’s market power screen and offer cap rules).

<sup>50</sup> See, e.g., *id.* at PP 58-59; *PJM Interconnection, L.L.C. Essential Power Rock Springs LLC, Essential Power OPP, LLC, and Lakewood Cogeneration, L.P. v PJM Interconnection, L.L.C.*, 151 FERC ¶ 61,208, at PP 234-58 (2015).

<sup>51</sup> 2021/2022 RPM ANALYSIS at 3.

<sup>52</sup> *Id.* at 20.

and may be completely unfounded. That prices have been higher than what the IMM regards as the competitive level (disregarding externality questions), suggests that while externality payments might reduce capacity prices compared to the no-externality-payments scenario as the Commission claims,<sup>53</sup> this effect could actually have been increasing social welfare even when externalities are not considered. The effect operated whenever price decreases counteracted the uncompetitive price increases caused by supplier-side market power (without, as the IMM's recent analysis shows, nullifying them completely). Expanding the MOPR to additional resources will further decrease competitiveness of the capacity market, especially if the MOPR Price Floor is set above the bid that resources subject to the MOPR would submit had they not been the recipient of state externality payments. That decrease in competitiveness will occur for two reasons: the drop in the number of bidders in price ranges below the MOPR Price Floor, and the change in opportunity cost of withholding capacity.

First, the number of competitors will go down if there are some resources subject to the MOPR that do not have the same owner as resources not subject to the MOPR.<sup>54</sup> While market participants with resources subject to the MOPR are not barred from submitting bids, the remaining resources will be aware that the number of competitors that can bid below the publicly-known threshold defined by the MOPR Price Floor has decreased. In other words, the market participants with resources not subject to the MOPR will know that they can submit bids up to that threshold without facing competition from resources subject to the MOPR. Economic research clearly shows that the decline in the number of competitors increases clearing prices

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<sup>53</sup> June 29 Order at P 156. *See also* CAPACITY MARKETS AND EXTERNALITIES at 15 (describing when externality payments are expected to put downward pressure on capacity prices and when they are not expected to do so).

<sup>54</sup> The argument would also hold for the case when the owner of a resource subject to the MOPR also operates resources unaffected by the MOPR, but those two types of resources are in two Local Delivery Areas (LDA) such that the effects of clearing in one LDA does not affect auction results in the other LDA.

above efficient levels as resources increasingly exert market power.<sup>55</sup> Unless the market power mitigation rules work perfectly (and they have not to-date), the expanded MOPR will exacerbate seller-side market power and thus inefficient prices, even when disregarding the externalities.<sup>56</sup>

Second, even if the number of market participants is not affected by the MOPR, the obligatory increase in the bids of the resources subject to the MOPR will change the opportunity cost of withholding capacity for the resources that are not subject to the MOPR, increasing the ability for remaining resources to exert market power. Such an environment facilitates tacit coordination among resource owners.<sup>57</sup> As a result of the change in bidding strategies, expanding the MOPR at too high of a level is bound to increase capacity prices above the competitive level had there been no state externality payments.

**D. The Commission Should Ensure That, at Minimum, Minimum Offer Requirements Are No Higher Than What the Commission Deems a Competitive Bid**

The effect of the MOPR will depend on the specific design of the MOPR, and in particular, the design of the MOPR Price Floor.<sup>58</sup> As we explain above, the imposition of the MOPR on resources that receive state externality payments would exacerbate rather than correct market distortions. But even under the Commission's incorrect view of capacity market distortions, the inefficiencies of an expanded MOPR would be exacerbated by a replacement rate

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<sup>55</sup> See Lance Brannman, J. Douglass Klein, & Leonard W. Weiss, *The Price Effect of Increased Competition in Auction Markets*, REV. OF ECON. & STAT., Feb., 1987, at 24-32 (for empirical evidence for the effect of increased number of bidders on the auction clearing price).

<sup>56</sup> The resources exerting market power are, to some extent, also disciplined by the possibility of new entry. However, given that the new entry happens mainly from the owners of existing resources, that disciplining effect will tend to be weak.

<sup>57</sup> Tacit coordination (or tacit collusion) refers to the situation when firms in an oligopoly recognize their mutual interdependence in the market and, without explicit communication, behave in a way that resembles collusion. See Edward J. Green, Robert C. Marshall, & Leslie M. Marx, *Tacit Collusion in Oligopoly*, in 2 THE OXFORD HANDBOOK OF INTERNATIONAL ANTITRUST ECONOMICS § 19.1 (Roger D. Blair & D. Daniel Sokol eds., 2014).

<sup>58</sup> PJM could implement a resource-specific MOPR Price Floor. However, for clarity, we refer here to a single price floor for all resources.

that sets a price floor higher than would be needed to counteract the bidding incentives that resources receive through receipt of out-of-market payments. As described in Section II.A, a MOPR expanded to apply to state externality payments with MOPR Price Floor that is set higher than needed can do more than undermine state efforts to internalize externalities; it can exacerbate the externality problem that states are trying to address compared to a world without state policy. As described in Section II.B, imposing the MOPR with a price floor that is higher than necessary would exacerbate concerns about overprocurement of capacity and would result in capacity prices that are higher than would occur even had states not provided out-of-market payments to resources. As described in Section II.C, a MOPR Price Floor set at a level higher than needed would further reduce the competitiveness of the capacity market auctions.

The June 29 Order does not provide any details regarding how the Commission intends to revise the current MOPR Price Floor to apply to existing resources. To the extent that the MOPR is aimed at achieving market outcomes similar to what would be expected without state policies, the MOPR Price Floor should be set at a level equal to a resource's competitive bid had it not been the recipient of state externality payments. Such a competitive bid would tend to be a resource's net-going forward costs adjusted by the penalties it might receive when failing to deliver energy when called upon.

However, there is evidence that the MOPR Price Floor under the current RPM construct has been set too high when compared to the bid a resource subject to MOPR would have made had it not been the recipient of state externality payments. To-date, PJM has set the MOPR Price Floor—set at the Net Asset Class Cost of New Entry (“Net CONE”).<sup>59</sup> PJM has implicitly recognized its current Net CONE approach has resulted in too high a level of MOPR Price Floor.

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<sup>59</sup> PJM Tariff Attachment DD at section 5.14(h)(3).

In its Section 205 filing, PJM proposed that under its expanded MOPR alternative rate design proposal (“MOPR-Ex”), the default MOPR Price Floor for both new and existing resources would be set at Net CONE times “B,” where B is a parameter reflecting the balancing ratio.<sup>60</sup> Because B has been significantly smaller than one,<sup>61</sup> this new methodology would produce a MOPR Price Floor lower than the current approach. PJM has argued that Net CONE \*B represents a “reasonable estimate of a low-end competitive offer . . . associated with assuming a Capacity Performance commitment,” suggesting that the current approach to setting the MOPR Price Floor is too high.

If the Commission insists on expanding the MOPR, it should be very careful that the MOPR Price Floor reflects an actually competitive offer. The fact that the current MOPR Price Floor value was set excessively high suggests that a similar mistake could be repeated. The Commission should carefully design any replacement rate so that it does not impose a price floor higher than necessary. Designs that do not result in competitive bidding by existing resources (under even the Commission’s interpretation of “competitive”)—that is, designs that do not consider the bids resources would have submitted without any out-of-market payments—would not be just and reasonable.

### **III. A MECHANISM LIKE A RESOURCE SPECIFIC FRR WILL HELP CIRCUMVENT SOME OF THE PROBLEMS WITH AN EXPANDED MOPR BUT TO DO SO IT MUST BE WELL DESIGNED**

The second component of the Commission’s proposed replacement rate includes a mechanism to “accommodate” resources that benefit from state policy.<sup>62</sup> The Commission

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<sup>60</sup> PJM Filing at 104.

<sup>61</sup> See 2021/2022 RPM ANALYSIS.

<sup>62</sup> June 29 Order at 160.

describes a resource-specific FRR that allows for resources subject to the MOPR to withdraw from the RPM along with a commensurate amount of load.<sup>63</sup> This component can diminish the market inefficiencies caused by an expanded application of the MOPR that we outline above. Therefore, if the Commission moves forward with the MOPR component of a replacement rate it should also adopt a mechanism such as a resource-specific FRR. However, in order to successfully address the problems with an expanded MOPR, the resource-specific FRR must be designed such that it is useable by resources subject to the MOPR and aligns incentives between capacity and load. For these reasons, the Commission should adopt a more deliberative and comprehensive process before requiring substantial changes to the RPM.

**A. A Resource-Specific FRR Can Address Some of the Inefficiencies Introduced by an Expanded MOPR**

A resource-specific FRR can reduce the extent to which the MOPR counteracts the effect of state externality payments on emissions. Adding this mechanism to the MOPR can leave resources that receive state externality payments better off than if they were simply subject to the MOPR, so long as they are able to negotiate or be assigned compensation for the capacity they provide the system. For example, compensation could come from the load serving entities (“LSEs”)<sup>64</sup> whose commensurate load is subtracted from the market. Consequently, a resource-specific FRR would increase the profitability of emission-free resources compared to a MOPR-only alternative and thus diminish, to some extent, the effect that the MOPR would have on negative externalities.

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<sup>63</sup> *Id.*

<sup>64</sup> For simplicity, we refer to all demand-side participants of the capacity market here as LSEs, recognizing that this is an oversimplification.

Additionally, a well-designed resource-specific FRR would decrease the amount of capacity procured through RPM in an amount equal to the amount of capacity that decided to leave RPM. With a well-designed resource-specific FRR approach, this would roughly correspond to the amount of capacity that would fail to clear the capacity market because of the MOPR. Therefore, PJM would not procure capacity through the RPM auction that is duplicative of capacity that is available to generate but left out of the RPM accounting. The resource-specific FRR, therefore would, at least partly, limit the extent to which the MOPR causes overprocurement.

A well-designed resource-specific FRR would also affect the market power issues caused by an expanded MOPR by reducing the incentives to withhold capacity and thus impacting the bids submitted by resources.

**B. The Specific Design of a Resource-Specific FRR Will Strongly Influence Whether It Would Effectively Counteract the Problems of Expanding the MOPR**

The details of the resource-specific FRR construct will strongly affect market outcomes. These details—in particular, the process for matching resources that would exit the RPM with commensurate load—are critical for whether a resource-specific FRR will successfully or effectively circumvent the inefficiencies associated with capacity overbuilding, market power, and the increase in externalities caused by an expanded MOPR.

For instance, a resource-specific FRR can introduce additional inefficiencies, such as transaction costs associated with matching FRR-eligible resources with load. If the mechanism is poorly designed, these inefficiencies, combined with the remaining inefficiencies of an expanded MOPR, could outweigh even the purported benefits achieved by mitigating the effect of state policies on capacity prices. Similarly, the rules that dictate the level of capacity compensation

that FRR-eligible resources receive will significantly influence their profitability and, consequently, the extent to which externality payments address negative externalities. And a resource-specific FRR that exists only on paper—such as because of overly onerous participation rules or failure to align participation incentives between eligible resources and load—would provide little benefit as compared to a MOPR-only approach.

For example, PJM’s Resource-specific Carve Out (“ReCO”) proposal, as presented to stakeholders, risks becoming a theoretically-available construct that is not actually used in practice because of the way PJM has proposed to implement the capacity market settlement process. Unlike the Commission’s outline of a resource-specific FRR option in its June 29 Order,<sup>65</sup> PJM intends to include resources that would be subject to the MOPR and that instead elect to provide capacity in exchange for side capacity payments (“ReCO resources”) as price takers in the RPM auction.<sup>66</sup> Consequently, ReCO resources will be among the units that clear the auction. However, according to the proposal, they will not be paid the RPM clearing price.<sup>67</sup> Instead, the capacity revenue “not paid to [the ReCO] resources will be allocated as a pro-rata credit to all PJM load in the state subsidizing the specific resources.”<sup>68</sup>

Even resources that would be subject to the MOPR do not have an incentive to become ReCO resources unless they receive some revenue for doing so. Under PJM’s proposal, ReCO resources will have similar obligations and face similar penalties as a Capacity Performance

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<sup>65</sup> See June 29 Order at P 160 (describing the resource-specific FRR alternative as “allow[ing], on a resource-specific basis, resources receiving out-of-market support to choose to be removed from the PJM capacity market, along with a commensurate amount of load”).

<sup>66</sup> PJM, PJM Proposal Including Stakeholder Input at Column C, Row 22 (Sept. 11, 2018), <https://www.pjm.com/-/media/committees-groups/committees/mrc/20180911-special/20180911-pjm-proposal-including-stakeholder-input.ashx> [hereinafter “PJM Proposal Spreadsheet”].

<sup>67</sup> *Id.* at Column C, Row 23.

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

resource that cleared the RPM.<sup>69</sup> Consequently, a resource subject to the MOPR that elects to become a ReCO resource but fails to deliver during emergency periods will face significant non-performance charges. ReCo resources will also have to cover any costs of going forward not otherwise covered by the revenue they receive from other markets. Had they not taken the ReCO option, these resources would look to the capacity market to provide additional revenue and would potentially succeed in clearing the market despite application of the MOPR. Consequently, they will require some financial compensation to be willing to act as a ReCO resource. Under PJM's proposal, the RPM will not provide that revenue because ReCO resources receive no revenue through the capacity auction despite being treated as price-takers.<sup>70</sup> So in order to bear the risk of performance charges and ensure revenue to cover going forward costs, resources will need compensation outside of the RPM auction. The most conceivable option is that ReCO resources would obtain side capacity-payments from LSEs.

Yet, given how PJM seemingly plans to allocate revenue from the capacity auction,<sup>71</sup> in some states, LSEs may not (individually) have an incentive to make side capacity payments. Namely, an LSE that chooses to make a side capacity payment outside of the RPM construct would need to fully compensate the counterparty for becoming a ReCO resource. At the same time, PJM's proposal would not remove load from the RPM and thus would not fully reduce an LSE's capacity obligation, even if it made side capacity payments. Instead, proposes to PJM split the capacity market revenue that would have gone to ReCo resources had they received the market clearing price, pro-rata, among all LSEs in the state that provided out-of-market

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<sup>69</sup> *Id.* at Column C, Row 26 (FRR resources would be “[s]ubject to same capacity performance requirements as all capacity resources including non-performance charges and the ability to earn bonus payments”).

<sup>70</sup> *Id.* at Column C, Row 21.

<sup>71</sup> It is not entirely clear from the proposal whether the LSEs would receive some additional credits from procuring the FRR resources. *See id.* at Column C, Rows 21 and 22.

payments to the ReCO resource. An LSE would receive part of this “pot of money” regardless of whether it agreed to (or was required to) make side capacity payments to a ReCO resource. Consequently, an LSE that provided side capacity payments to a ReCO resource will bear the full cost of the procurement, but only enjoy a fraction of the associated revenue credit. So, under this construct, each LSE will have an incentive to free ride and not individually make side capacity payments to ReCO resources. In other words, because an LSE will have already paid for its full capacity obligation through RPM, but will receive back only a pro-rata share of the capacity revenue that is not being distributed to ReCO resources through RPM, each individual LSE will have limited incentive to enter into an agreement to pay for a ReCO resource’s capacity outside of the capacity market. The problem will be more pronounced the more LSEs are active in a given state.<sup>72</sup>

LSEs could, in theory, coordinate to collectively sign agreements with potential ReCO resources; however, doing so might impose prohibitive transaction costs. Therefore, unless the state steps in to coordinate out-of-market capacity contracts between potential ReCO resources and all LSEs in the state,<sup>73</sup> in states with multiple LSEs, the ReCO option will likely go

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<sup>72</sup> More precisely, as the pro-rata split should be based on the share of peak load forecast, the more LSEs provide energy at the peak time and the more equally the market in a given state is split between them, the less incentive they will have to individually compensate a resource for becoming a ReCO resource.

<sup>73</sup> Note that state-directed coordination would not be necessary under a resource-specific FRR market design that removed capacity and load from the capacity market. *See*, June 29 Order at P 160 (proposing that “resources receiving out-of-market support [could] choose to be *removed from the PJM capacity market, along with a commensurate amount of load*”) (emphasis added); Shared Principles for a Resource-Specific Fixed Resource Requirement at 2-3 (Sept. 17, 2018), <https://www.nrdc.org/sites/default/files/ferc-fr-principles-signatories-20180917.pdf> (proposing a process whereby capacity resources will “assign their capacity forward outside of RPM through a state-sponsored procurement process or directly to LSEs without state facilitation”). In that circumstance, the LSE that enters into a side capacity agreement with the FRR-eligible resource would not be obligated to make a capacity payment through the RPM for the associated load, and LSEs that choose not to enter agreements would see no profit from the FRR-eligible resource. Under this design, incentives would be aligned between the FRR-eligible resource and load to enter into a mutually beneficial agreement regarding capacity and no coordination would be needed among LSEs.

unused.<sup>74</sup> And even that solution would become more complicated were a resource to receive out-of-market payments from multiple states, such as by selling unbundled RECs to LSEs in more than one state.

With no incentives for load to provide payment to ReCO resources and no incentive for resources to opt to become ReCO resources without payment, PJM's construct would not likely result in many resources using the ReCO opt out. The approach that PJM has developed to implement a resource-specific FRR, therefore, risks becoming little better than a replacement rate that includes only an expanded MOPR.

### **C. The Commission Should Adopt a More Deliberate Process Before Requiring Substantial Changes to the RPM**

In its Motion for Extension of Filing Deadline, the Organization of PJM States acknowledges that development of a resource-specific FRR is a “significant undertaking.”<sup>75</sup> Commissioner LaFleur, in her dissent from the June 29 Order, explained that implementing a resource-specific opt-out provision has the potential to be “the most sweeping change[] to the PJM capacity construct since the market’s inception more than a decade ago.”<sup>76</sup> Historically, changes to the design of an RTO market that are expected to significantly alter the functioning of

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<sup>74</sup> Another option, in theory, would be for states to directly provide resources subject to the MOPR with a sufficient financial incentive to become ReCO resources, such as through higher levels of externality payments for those that do so. However, there is at least some legal uncertainty regarding whether states could condition a higher level of state externality payment (to compensate for the forgone potential capacity payment and risk of a performance charge) on participation or non-participation in some form of jurisdictional capacity construct (RPM or resource-specific FRR). See *Hughes v. Talen Energy Marketing, LLC*, 136 S. Ct. 1288, 1297 (2016) (holding that state policy conditioned on participation in PJM capacity market is preempted); *Elec. Power Supply Assoc. v. Star*, 2018 WL 4356683, Docket Nos. 17-2433 & 17-445 at \*5 (7th Cir. Sept. 13, 2018) (“*Hughes*, the most recent of these decisions, draws a line between state laws whose effect depends on a utility’s participation in an interstate auction (forbidden) and state laws that do not so depend but that may affect auctions (allowed).clarifying that the FPA preempts state policies only insofar as they are conditioned on participation in FERC-jurisdictional markets”).

<sup>75</sup> Organization of PJM States, Inc. Motion for Extension of Filing Deadline, Docket Nos. EL16-49-000, ER18-1314, and EL18-178-000 (filed July 27, 2018).

<sup>76</sup> June 29 Order at 3 (LaFleur, Comm’r *dissenting*)

the market have been preceded by careful analysis, substantial stakeholder engagement, and a technical conference with Commission staff.

For example, before submitting its proposal to establish the RPM, PJM had five years of stakeholder engagement and a Commission-sponsored technical conference.<sup>77</sup> PJM submitted its proposal for RPM in August 2005, after which the Commission held two additional technical conferences over three days to explore a number of complex issues raised by PJM's filing,<sup>78</sup> before finally approving a stakeholder settlement, with conditions, one and a half years later.<sup>79</sup> PJM's capacity repricing proposal took two years to develop,<sup>80</sup> including issuance of a white paper, countless PJM stakeholder meetings, a PJM-organized day-long conference, and a Commission technical conference.<sup>81</sup>

No such process has been provided for development of a resource-specific FRR. Given the potential magnitude of its effects, the mechanism should be studied carefully so that the implementation can most efficiently limit the inefficiencies that would be caused by expansion of the MOPR, while limiting, to the greatest extent possible, any possible negative side-effects.

#### **IV. BY FAILING TO DISTINGUISH BETWEEN EXTERNALITY PAYMENTS AND OTHER OUT-OF-MARKET PAYMENTS, THE COMMISSION'S REPLACEMENT RATE WOULD EITHER BE UNDULY DISRIMINATORY OR WOULD BE UNJUST AND UNREASONABLE**

The June 29 Order does not identify the scope of out-of-market payments that the Commission considers distortionary and that would make a resource subject to the MOPR and

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<sup>77</sup> *PJM Interconnection L.L.C.*, 115 FERC ¶ 61,079 at P 12 (2006).

<sup>78</sup> *Id.* at P 17.

<sup>79</sup> *Id.* (describing a post-submission technical conference); *PJM Interconnect, L.L.C.*, 119 FERC ¶ 61,318 at PP 19-22 (2007) (describing two additional days of technical conference after the Commission rejected PJM's filing and the Commission's conditional approval of a stakeholder settlement).

<sup>80</sup> PJM Proposal at 37.

<sup>81</sup> *Id.* at 38-39.

eligible for the resource-specific FRR.<sup>82</sup> The only specific out-of-market payments identified are ZECs, RECs that result from state RPS programs, and offshore wind procurement programs.<sup>83</sup> However, the Commission’s Order also contains a number of statements suggesting that the scope of out-of-market payments subject to the MOPR could be larger. For example, when describing the proposed replacement rate, the Commission states that “an expanded MOPR, *with few or no exceptions*, should protect PJM’s capacity market from the price suppressive effects of resources receiving out-of-market support.”<sup>84</sup>

The Commission has not identified a set of clear criteria that would distinguish between out-of-market payments that are distortionary and those that are not. Yet, a substantial portion of resources that participate in the RPM receive some sort of out-of-market payments. These payments are similar in relevant respects to those that the Commission believes are undermining just and reasonable capacity prices. Therefore, a replacement rate that applies the MOPR to externality payments will necessarily suffer from one of two problems: it will cover so many resources that it risks undermining the functioning of the RPM and therefore will be unjust and unreasonable, or it will cover certain resources and not others without a principled distinction and therefore will be unduly discriminatory. In either instance, the replacement rate would be inconsistent with the Commission’s obligations under Section 206 of the Federal Power Act.

In this section we first identify out-of-market payments with similar relevant characteristics to RPS and ZEC programs. We then describe why expanding the MOPR to all resources that receive such payments would result in an unjust and unreasonable capacity

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<sup>82</sup> June 29 Order at P 165.

<sup>83</sup> *Id.* at 131; *id.* at P 1 n. 1 (“Out-of-market payments include, for example, the [ZEC] programs and [RPS] programs on which we base our determination”).

<sup>84</sup> *Id.* at P 158.

market. Finally, we discuss why applying an expanded MOPR to only RECs and ZECs and not other equivalent out-of-market payments would render a replacement rate unduly discriminatory.

**A. Revenue That Resources Receive from Externality Payments Is Not Distinguishable from Other Revenue Received Outside of Energy, Capacity, and Ancillary Services Markets**

State externality payments, including RPS and ZEC programs, are aimed at providing resources with revenue for environmental services separate from FERC-jurisdictional energy, capacity, and ancillary service markets. Similarly, revenue outside of FERC’s jurisdiction shapes a resource’s profitability, if that resource is able to sell products and services that are valued outside of the FERC-jurisdictional markets. In addition, the revenues that resources receive for these products and services have the same potential effect on capacity market bidding behavior as do the RPS and ZEC programs that the Commission has singled out as “price suppressive.” Oftentimes, those revenues are shaped by state and federal policies. Below we list some such out-of-market revenue sources (or, sources of costs reductions) that are, in these relevant ways, similar to revenue resources receive through state RPS, ZEC, and renewable procurement programs.<sup>85</sup>

*Coal ash sales.* The combustion of coal produces by-products, called coal combustion residuals (“CCR” or “coal ash”), that are often sold for beneficial use.<sup>86</sup> Approximately 50 percent of CCR are sold as either fly ash, which is used as a substitute for Portland cement in the production of concrete, or as FGD gypsum, which is used as a substitute for gypsum in

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<sup>85</sup> Some out-of-market payments come not in the form of direct monetary payment (i.e., revenue), but instead in the form of reduced costs, such as lower tax obligations or lower fuel costs. These cost reductions are economically equivalent to direct revenue. For simplicity, we refer to both revenue and cost reductions as “revenue.”

<sup>86</sup> See Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities, 74 Fed. Reg. 21,302, 21,327 (April 17, 2015).

wallboard.<sup>87</sup> CCR sales are not merely a function of pure market demand; the value of CCR to the market is influenced by state and federal policies related to coal ash disposal.<sup>88</sup>

**Steam heat sales.** Combined heat and power (“CHP”) facilities regularly sell electricity and capacity into wholesale markets while separately selling steam heat to customers for use in industrial and other processes. A number of federal and state policies encourage the production and sale of steam heat.<sup>89</sup>

**Voluntary Market RECs.** Renewable energy resources generate RECs that are used not only for compliance with state RPS programs but also as a mechanism by which private consumers can purchase the environmental attributes of power generation.<sup>90</sup> Approximately 28% of all non-hydro renewable energy sales were associated with voluntary renewable energy purchases in 2016.<sup>91</sup> The predominant form of voluntary renewable energy procurement has been through the purchase of RECs that are unbundled from electricity or other FERC-jurisdictional products.<sup>92</sup> Unbundled RECs that are ultimately used in the voluntary market, like RECs used for RPS compliance, provide an added stream of revenue for renewable resources. In fact, because both the voluntary market and state RPS programs use a common accounting system and tracking infrastructure, and because a secondary market allows purchasers to trade

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

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

<sup>89</sup> See U.S. Env'tl. Protect. Agency, Combined Heat and Power Partnership, dCHPP (CHP Policies and Incentives Database), <https://www.epa.gov/chp/dchpp-chp-policies-and-incentives-database/>

<sup>90</sup> For a summary of voluntary market RECs and the interaction with state RPS programs, see TODD JONES, TWO MARKETS, OVERLAPPING GOALS: EXPLORING THE INTERSECTION OF RPS AND VOLUNTARY MARKETS FOR RENEWABLE ENERGY (2017), <https://resource-solutions.org/wp-content/uploads/2017/08/RPS-and-Voluntary-Markets.pdf> [hereinafter “TWO MARKETS OVERLAPPING GOALS”].

<sup>91</sup> ERIC O'SHAUGHNESSY ET AL., NAT'L RENEWABLE ENERGY LAB., STATUS AND TRENDS IN U.S. VOLUNTARY GREEN POWER MARKET (2016 DATA) 7 (2017), <https://www.nrel.gov/docs/fy18osti/70174.pdf>.

<sup>92</sup> *Id.*

RECs freely, renewable resources may not know whether their RECs will ultimately be used in the voluntary market or for state policy compliance.<sup>93</sup>

**Emission allowances.** Some generators receive out-of-market payments in the form of emission allowances that states or the federal government allocate to them as part of a cap-and-trade program. These allowances can be used to off-set compliance obligations or can be sold. For example, Virginia is currently in the process of developing regulations that would allow it to join the Regional Greenhouse Gas Initiative (“RGGI”).<sup>94</sup> Under Virginia’s proposed regulations, power plants subject to compliance obligations would receive a free allocation of allowances that would then be consigned for auction.<sup>95</sup> The revenue received through the auction would flow back to the power plants.<sup>96</sup> While the Virginia Corporation Commission has indicated it intends to require rate-regulated generators to return this revenue to state electricity customers,<sup>97</sup> independent power producers with the lowest CO<sub>2</sub> emissions per MWh have the potential to benefit from this allowance allocation. Similarly, under EPA’s Acid Rain trading program, renewable and energy efficiency resources are eligible to receive and can resell allowances from a Conservation and Renewable Energy Reserve.<sup>98</sup>

**Fossil fuel subsidies.** Fossil-fuel generators benefit from numerous federal and state out-of-market payments.<sup>99</sup> Oil and natural gas-fired generators benefit from reduced fuel costs that

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<sup>93</sup> See TWO MARKETS OVERLAPPING GOALS at 12 (discussing RPS and voluntary market REC arbitrage by corporate renewable energy purchasers).

<sup>94</sup> See Virginia Executive Directive 11 and Proposed Virginia Carbon Dioxide Trading Rule Programs (adding 9VAC5-140-6010 through 9VAC5-140-6430), 34 Va. Reg. Regs. 924 (Jan. 8, 2018).

<sup>95</sup> *Id.* at 947-48, 959.

<sup>96</sup> *Id.* at 926.

<sup>97</sup> *Id.* at 928.

<sup>98</sup> See 40 C.F.R. § 73.80.

<sup>99</sup> See generally DOUG KOPLOW, EARTH TRACK, INC., ENERGY SUBSIDIES WITHIN PJM: A REVIEW OF KEY ISSUES IN LIGHT OF CAPACITY REPRICING AND MOPR-EX PROPOSALS (May 7, 2018), [https://www.earthtrack.net/sites/default/files/uploaded\\_files/Earth%20Track%20review%20of%20PJM%20subsidy%20proposal.pdf](https://www.earthtrack.net/sites/default/files/uploaded_files/Earth%20Track%20review%20of%20PJM%20subsidy%20proposal.pdf) (Prepared for the Sierra Club).

result from federal tax benefits for intangible drilling costs and for investment depletion related to oil and natural gas wells. In 2015, the U.S. government estimated that these subsidies amounted \$4.7 billion annually.<sup>100</sup> A number of states operate subsidy programs that benefit coal-fired generators either directly or by reducing fuel costs. For instance, Kentucky offers tax credits to electric-power entities operating coal-fired electric generation plants, alternative fuel facilities, or gasification facilities.<sup>101</sup> West Virginia has adopted favorable tax policy for certain coal resources.<sup>102</sup> In Pennsylvania, the purchase or use of coal is exempt from the sales and use tax normally levied on sales of most goods and services in that state.<sup>103</sup> Some states also provide property tax exemptions for resources that locate within certain geographic areas such as within the state) in order to encourage local development.<sup>104</sup> Independent reports quantifying federal and state fossil fuel subsidies also find significant sums.<sup>105</sup> By lowering the costs of fuel or by providing preferential tax treatment for certain generators based on location, fossil fuel subsidies reduce the costs of operating a coal, oil, or gas resource and, therefore, allow that resource to offer lower bids into the capacity markets than they would be able to offer in the absence of subsidies. Unlike with RECs and ZECs, it is not clear whether, in general, the value of the

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<sup>100</sup> See U.S. OFFICE OF MGMT. & BUDGET, PROGRESS REPORT ON FOSSIL FUEL SUBSIDIES 1, available at <https://www.treasury.gov/open/Documents/USA%20FFSR%20progress%20report%20to%20G20%202014%20Final.pdf> (last visited Sept. 12, 2018) (identifying the nominal annual average value of lost revenue based on the 10-year revenue estimate).

<sup>101</sup> See *Coal Incentive Tax Credit*, KY. DEP'T OF REVENUE, <https://revenue.ky.gov/Business/Pages/Coal-Incentive-Credit.aspx> (last visited Sept. 12, 2018).

<sup>102</sup> June 29 Order at 8 (Glick, Comm'r *dissenting*).

<sup>103</sup> PJM, Database, *Subsidies to Participants in PJM States, Based on Good Jobs First Subsidy Database*, [https://earthtrack.net/sites/default/files/uploaded\\_files/20170605-item-02-subsidy-short-list-20170531.xls](https://earthtrack.net/sites/default/files/uploaded_files/20170605-item-02-subsidy-short-list-20170531.xls) (last downloaded May 3, 2017); see also Doug Koplow, *Subsidies to Suppliers in the PJM Interconnection Go to Fossil and Nuclear, Not Just Renewables*, EARTHTRACK (Jul. 20, 2017), <https://earthtrack.net/blog/subsidies-suppliers-pjm-interconnection-go-fossil-and-nuclear-not-just-renewables> (discussing these subsidies).

<sup>104</sup> *Id.* at Rows 54 (PA), 78 (WV).

<sup>105</sup> For example, Oil Change International reports that United States federal and state governments gave away \$20.5 billion a year on average in 2015 and 2016 in production subsidies to the oil, gas, and coal industries, including \$14.7 billion in federal subsidies and \$5.8 billion through state-level incentives. JANET REDMAN, OIL CHANGE INTL., *DIRTY ENERGY DOMINANCE: DEPENDENT ON DENIAL 5* (2017), [http://priceofoil.org/content/uploads/2017/10/OCI\\_US-Fossil-Fuel-Subs-2015-16\\_Final\\_Oct2017.pdf](http://priceofoil.org/content/uploads/2017/10/OCI_US-Fossil-Fuel-Subs-2015-16_Final_Oct2017.pdf).

benefits received by fossil fuel producers or generators in the form of subsidies and tax credits reflects the economic value those resources provide.

The above listed sources of revenue or cost reduction are all “out-of-market payments.” They also share many common characteristics with the revenue resources receive from RPS and ZEC programs. Most significantly, the revenue received by resources participating in RPS or ZEC programs affects capacity market bidding behavior in the same way that any other out-of-market revenue does. These payments alter the outcomes of the wholesale markets by lowering the revenue resources need from the capacity markets. As a result, these resources can make lower capacity market bids than they would have without the payments and, consequently, can lower the overall market-clearing price of capacity auctions. Yet, the existence of these non-market-payments has never been raised as an existential threat to capacity markets. On the contrary, over the years, capacity markets have co-existed with many different market payments and subsidies, both corrective and distortive, without leading to concern or action regarding market distortion.

Like the revenues received as part of state RPS and ZEC programs, most of the out-of-market payments outlined above reflect sales of products or services connected to the economic value of those products and services.<sup>106</sup> By selling coal ash, steam heat, voluntary RECs, or allowances to other market actors, resources receive revenue in an amount commensurate with the value that those private market actors place on the products, while state and federal policies have some influence on the value of these products. Similarly, as we explain in Section II above,

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<sup>106</sup> Fossil fuel subsidies described above do not necessary compensate fuel producers or generators for positive externalities or market products. For that reason, these subsidies are more likely to be rent-seeking and distortionary than RPS and ZEC programs. Therefore, not applying MOPR to those resources while mitigating states’ policies related to externalities would be inconsistent with the Commission’s goal of preventing price distortions.

the value of the revenue received by renewable and nuclear resources from RPS and ZEC programs is not merely the result of parochial preferences by a state or rent-seeking by the resource, but reflects the environmental value that these resources provide to society.

In addition, like RPS and ZEC programs, the products and services these payments are intended to compensate resources for are separate from FERC-jurisdictional products and services. As the Commission and courts have determined, unbundled RECs are products that renewable resources generate separate from FERC-regulated energy, capacity, and ancillary services.<sup>107</sup> The Commission has recently suggested a similar approach would apply to ZECs.<sup>108</sup> Analogous conclusions were reached for the sale of products such as coal ash or steam. The Commission has recognized that those products are produced as a consequence of electricity generation but sold apart from wholesale markets and can be treated separately from FERC-jurisdictional products.<sup>109</sup> Similarly, pollution allowances that are unbundled from electricity sales are not FERC-jurisdictional.<sup>110</sup> Importantly, the Commission has recognized that revenues a resource received outside of jurisdictional markets are not necessarily distortionary. In its Order accepting, in part, PJM's compliance filing establishing a unit-specific review process for determining competitive offers of units subject to the MOPR, the Commission recognized that

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<sup>107</sup> *WSPP Inc.*, 139 FERC ¶ 61,061, at PP 18-21 (2012); *Am. Ref-Fuel Co., Covanta Energy Grp., Montanay Power Corp., & Wheelabrator Techs. Inc.*, 105 FERC ¶ 61,004 at P 24 (2003); see also *Wheelabrator Lisbon, Inc. v. Conn. Dep't of Pub. Util. Control*, 531 F.3d 183, 186 (2d Cir. 2008) ("RECs are inventions of state property law").

<sup>108</sup> Brief for the United States and the Federal Energy Regulatory Commission as Amici Curiae in Support of Defendants-Respondents and Affirmance at 10, *Vill. of Old Mill Creek v. Star*, Nos. 17-2433 and 17-2445 (consolidated) (7th Cir. May 29, 2018) ("ZECs are separate commodities that represent the environmental attributes of a particular form of power generation").

<sup>109</sup> *Richmond Power Enter., L.P. Entergy Richmond Power Corp. Entergy Power Dev. Corp.*, 62 FERC ¶ 61157, 62098 (Feb. 18, 1993) ("it is clear that a person otherwise meeting the requirements for [exempt wholesale generator] status may engage in the sale of by-products of electric generation such as steam and fly ash, incidental to the sale of electric energy at wholesale, without violating the [Public Utility Holding Company Act] exclusivity requirement").

<sup>110</sup> *Edison Elec. Inst.*, 69 FERC ¶ 61,344 at 62,289 (1994).

resources can receive revenue, in the normal course of business, other than through jurisdictional markets, and that such revenue should not be considered anti-competitive.<sup>111</sup>

As the above listed out-of-market payments have similar relevant characteristics as the payments resources receive from RPS and ZEC policies, the Commission should treat those revenues and cost reductions in the same way as state programs that provide revenue for the environmental attributes of emission-free generation.

**B. Mitigating All Resources That Benefit from Out-of-Market Payments or Allowing Them to Withdraw from the Market Would Exacerbate Problems of Market Power, Leading the Tariff to Be Unjust and Unreasonable**

The Commission has stated that it intends to apply the MOPR to resources receiving out-of-market-payments “with few or no exceptions.”<sup>112</sup> As outlined above, many generating resources benefit from some form of out-of-market payments that influence their capacity market bidding behavior. Many of these payments, like ZECs, RECs, and procurement programs, are for purchases of valuable products and services separate from FERC-jurisdictional energy, capacity, and ancillary services. And many of these payments are significantly influenced by state and federal policy. Therefore, if the Commission were to define “out-of-market” payments in a technology neutral, non-discriminatory way, a large share of resources currently participating in the RPM would become subject to the MOPR. And subjecting a significant portion of capacity to the MOPR would exacerbate supply-side market power problems. The more that resources are subject to an inefficiently high MOPR Price Floor, the more pronounced the market power issues

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<sup>111</sup> *PJM Interconnection, L.L.C., PJM Power Providers Group v. PJM Interconnection, L.L.C.*, 137 FERC ¶ 61,145, at P 242-244 (2011) (rejecting claims that “revenues that occur in the ordinary course of a market participant's business—but which are not available to the benchmark unit”—should be ignored when considering whether a resource’s bid is “consistent with the competitive cost-based cost of new entry”).

<sup>112</sup> June 29 Order at P 158.

would be.<sup>113</sup> By increasing the possibility that resources exert market power, the replacement rate would tend to facilitate uncompetitive prices and so render the Tariff unjust and unreasonable.<sup>114</sup>

Market power will increase if the Commission adopts a broadly applied MOPR, with or without a resource-specific FRR. Resources subject to the MOPR would leave the RPM, taking the corresponding load with them. This would also imply a shrinkage in the number of participants in RPM and provide the resources that remain in RPM with an increased opportunity to affect equilibrium prices. However, market power concerns will be greater with an expanded MOPR and no resource-specific FRR (or an ineffective resource-specific FRR) than they would be if the amount of load whose capacity obligations were met through the RPM is also reduced.<sup>115</sup>

**C. Adopting a Replacement Rate That Mitigates Only Resources That Receive Externality Payments Without Regard to Those That Receive Other Similar Out-of-Market Payments Would Be Unduly Discriminatory and Arbitrary**

To the extent the Commission adopts a policy that would mitigate the capacity bids of a narrow set of state-supported resources but exclude other similarly situated resources, the replacement rate would be unduly discriminatory in contravention of Section 206 of the Federal Power Act.<sup>116</sup> As explained above, from an economic and legal perspective, resources that receive revenue from state externality programs are not distinguishable, in relevant respects, from other resources that receive revenue from sources other than the Commission-regulated energy, capacity, and ancillary services markets such as payment for coal ash, steam heat,

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<sup>113</sup> See Section II.C.

<sup>114</sup> *W. Sys. Power Pool W. Sys. Power Pool Agreement*, 122 FERC ¶ 61139, at P 21 (2008) (holding an agreement unjust and unreasonable because it enabled the seller to exercise market power).

<sup>115</sup> See Section III.

<sup>116</sup> *New England Power Generators Ass'n, v. FERC*, 881 F.3d 202, 209 (D.C. Cir. 2018) (“Section 206(a) of the FPA prohibits undue discrimination.”).

voluntary RECs, and pollution allowances. Revenue that resources receive from RPS or ZEC programs change the resource’s capacity bidding incentives in similar ways to other out-of-market payments. In all cases, this revenue is from the sale of a product that is separate from FERC-jurisdictional energy, capacity, and ancillary services, and is rationally connected to the economic value that the product provides. In all instances, the revenue is influenced, to some extent, by state and federal policy.

Therefore, to the extent that the Commission’s replacement rate applies the MOPR to resources that receive out-of-market payments from state RPS and ZEC programs, but not to resources that receive similar out-of-market payments from other policies or products, the replacement rate treats similarly situated resources differently. The Commission is proposing a replacement rate to address the potential for a resource to reduce capacity prices due to the receipt of out-of-market revenue. But there are “no differences that are material to the inquiry at hand” between resources that receive externality payments and those that receive other out-of-market payments.<sup>117</sup> The different treatment of similarly situated resources is the essence of undue discrimination.<sup>118</sup>

A replacement rate that pairs the MOPR with a resource-specific RPM opt-out would not cure the undue discrimination. Rather than selling capacity in a liquid market on the same terms as other resources that receive out-of-market payments, resources that receive payments from state RPS and ZEC policies would, depending on the design of the resource-specific FRR, be

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<sup>117</sup> June 29 Order at P 101 (quoting *N.Y. Indep. Sys. Operator, Inc.*, 162 FERC ¶ 61,124, at P10 & n.30 (2018)).

<sup>118</sup> *Dynegy Midwest Generation, Inc. v. FERC*, 633 F.3d 1122, 1127 (D.C. Cir. 2011) (finding undue discrimination when similarly situated generation resources were arbitrarily treated differently); *PJM Interconnect, L.L.C.*, 161 FERC ¶ 61,252, at P 43 (2017) (rejecting PJM Tariff changes as unduly discriminatory because they would “exempt some [but not all] resources from the MOPR that lack the ability or incentive to exercise buyer-side market power”); *New York Indep. Sys. Operator, Inc.*, 153 FERC ¶ 61,340, at PP 12-13 (2015) (rejecting proposed tariff revision because it would “result [in] two interconnection processes that are not comparable” as between otherwise similar incumbent and nonincumbent transmission owners).

forced to negotiate side payments for capacity outside of the RPM or give up capacity revenues altogether. Even the first option would likely entail substantially higher transaction costs and would limit the ability of disfavored resources to reap the benefits that caused the Commission to establish RPM in the first place.<sup>119</sup>

The point here is not that the Commission should define “out-of-market payments” expansively so that it can impose the MOPR on a large portion of resources currently participating in the RPM. Doing so might avoid an undue discrimination problem but, as described above, would make the RPM unjust and unreasonable. Rather, the point is that the Commission has not proposed logical, principled criteria for what out-of-market payments create capacity market distortions and which merely fulfill legitimate non-discriminatory objectives.

To that end, the Commission needs to provide clear criteria rooted in economics, for when an out-of-market payment “distorts” the capacity market. Relevant criteria should not merely consist of whether a payment affects capacity market bidding behavior or changes capacity market results; whether the payment is merely in addition to energy, capacity, or ancillary service revenue; or whether the value of the payment is, in some way, influenced by state policy. One such criterion could be that out-of-market payments are distortionary when their value is not rationally connected to the external value of the products or services that the resource provides outside of FERC-jurisdictional markets. Under this criterion, distortionary out-of-market payments could include certain rent-seeking or parochial subsidies, such as many of the fossil fuel subsidies discussed above and those merely intended to pay resources for locating in certain geographical areas,<sup>120</sup> but would not include externality payments.

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<sup>119</sup> *PJM Interconnect, L.L.C.*, 115 FERC ¶ 61079, at P 104 (2006) (explaining the efficiency benefits of the RPM including forward procurement and a downward sloping demand curve).

<sup>120</sup> See Policy Integrity Capacity Repricing Comments at 41-42 (discussing the distortionary nature and the capacity market price effects of local development subsidies).

## V. CONCLUSION

In its June 29 Order, the Commission found that state externality policies have rendered the RPM unjust and unreasonable by causing price suppression and proposed sweeping changes to PJM’s capacity market design. In that Order, the Commission relied on a faulty premise that externality payments are forestalling the retirement of and encouraging the development of “uneconomic” resources. These policies, however, do the opposite: they provide the market with more efficient entry and exit signals for socially economic and socially uneconomic units. This error is not limited to the Commission’s finding that the RPM is unjust and unreasonable. Rather, it permeates the Commissions proposed replacement rate by expanding the MOPR in a way that might decrease market efficiency and by relying on unduly discriminatory criteria for identifying resources that it deems necessary to mitigate. While a resource-specific FRR could alleviate some of the negative effects of expanding the MOPR, an optimal design is critical and, to-date, understudied. For example, PJM’s proposed policy design would not align incentives of load and eligible resources and so would not likely achieve the Commission’s goal of “accommodating” state externality policies. For these reasons, the Commission should not move forward with its proposed replacement rate. If it does move forward, it must ensure that the resource-specific FRR is usable and addresses the inefficiencies introduced by an expanded MOPR.

Respectfully submitted,

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Dated: October 2, 2018

**CERTIFICATE OF SERVICE**

In accordance with Rule 2010 of the Commission's Rules of Practice and Procedure, I hereby certify that I have this day serviced by electronic mail a copy of the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated at New York, New York this 2nd day of October 2018.

Respectfully Submitted,

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