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UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Calpine Corporation, Dynegy Inc., Eastern Generation, LLC, Homer City Generation, L.P., NRG Power Marketing LLC, GenOn Energy Management, LLC, Carroll County Energy LLC, C.P. Crane LLC, Essential Power, LLC, Essential Power OPP, LLC, Essential Power Rock Springs, LLC, Lakewood Cogeneration, L.P., GDF SUEZ Energy Marketing NA, Inc., Oregon Clean Energy, LLC and Panda Power Generation Infrastructure Fund, LLC	)	**Docket No. EL16-49-000**
v.	)	
PJM Interconnection, L.L.C.	)	
PJM Interconnection, L.L.C.	)	**Docket Nos. ER18-1314-000, -001**
PJM Interconnection, L.L.C.	)	**Docket No. EL18-178-000**
	)	**(Consolidated)**

REPLY SUBMISSION OF PJM INTERCONNECTION, L.L.C.

November 6, 2018

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PJM Interconnection, L.L.C. ("PJM"), pursuant to the Federal Energy Regulatory Commission's ("FERC" or "Commission") June 29, 2018 order[1] and the August 22, 2018 Notice of Extension of Time, hereby provides its reply submission in this proceeding.

[1] *Calpine Corp. v. PJM Interconnection, L.L.C.*, 163 FERC ¶ 61,236 (2018) ("June 29 Order").

I. SUMMARY

A. The Range of Conflicting Comments in the Initial Round Only Highlights that PJM Has Presented a Detailed "Middle Course" that Best Meets *Both* Key Objectives—Preserving Competitive Auctions and Accommodating State Policies—of the June 29 Order.

The June 29 Order made clear the Commission's two key objectives for this proceeding: (i) ensuring that uneconomic Capacity Resources that cannot offer competitively without subsidies do not degrade competitive clearing prices in the capacity auctions; and (ii) accommodating state resource policies. The initial submissions in the paper hearing embody a wide range of conflicting views on those two objectives, with most parties placing emphasis on one of those objectives, to the detriment of the other.

Notably, state commissions and state consumer advocates are split on the issue of the need for Commission action, clarifying that this issue is as much about the impacts of one state's actions on another state as it is about the impact on the competitive wholesale markets.[2] Recognizing this impact of one state's action on other states, the Ohio Consumers' Counsel concludes that the Commission's suggested approach embodied in

[2] For example, the Public Utilities Commission of Ohio ("PUCO") "agrees that out-of-market subsidies create a price suppression effect in the market that discourages the entry of non-subsidized and efficient new generation resources, impacts the financial certainty of existing efficient generation resources, and delays the retirement of inefficient and otherwise uneconomic generation resources." Argument Submitted on Behalf of the Public Utilities Commission of Ohio, Docket Nos. EL18-178-000, et al., at 5 (Oct. 2, 2018) ("PUCO"). By contrast, both the New Jersey Board of Public Utilities ("NJBPU") and the Illinois Attorney General sought rehearing of the Commission's institution of this section 206 proceeding.

its June 29 Order will "eliminate the cross-state borders effects of any subsidies imposed by any regulatory authority."[3]

Similarly, as PJM anticipated in its initial submission,[4] some parties, mostly from the merchant generator community,[5] argue that an individual subsidized resource carve-out from the capacity market (which PJM terms the Resource Carve-Out or "RCO") will fail because it cannot guarantee that clearing prices for the resources remaining in the capacity market will be just and reasonable. These parties vigorously advance this position, with supporting expert witness affidavits.

On the other side, as also anticipated, some parties, mostly representing load interests,[6] dismiss or ignore price suppression concerns and suggest that avoiding double-

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3 Comments to Protect Electric Consumers from Paying Subsidies in PJM Markets by the Office of the Ohio Consumers' Counsel, Docket Nos. EL18-178-000, et al., at 22-23 (Oct. 2, 2018) ("OCC").

4 Initial Submission of PJM Interconnection, L.L.C., Docket Nos. EL16-49-000, et al., (Oct. 2, 2018) ("October 2 Submittal").

5 *See, e.g.*, Initial Brief of the Electric Power Supply Association, Docket Nos. EL16-49-000, et al., at 2 (Oct. 2, 2018) ("[T]he Commission should . . . abandon the unnecessary, unjust, and unreasonable FRR alternative."); Initial Brief of LS Power Associates, L.P., Docket Nos. EL16-49-000, et al., at 13 (Oct. 2, 2018) ("LS Power") ("[A]ny 'accommodation' of subsidy programs is likely to come at the expense of unsubsidized resources and the long-term health of the market . . . ."); Initial Brief of NRG Power Marketing LLC, Docket Nos. EL16-49-000, et al., at 13 (Oct. 2, 2018) ("NRG") ("[B]ecause subsidized resources would continue to suppress capacity market prices, any FRR-A variant seems to invite large buyers to exercise buyer-side market power with the express intent of lowering capacity prices"); Comments of Vistra Energy Corp. and Dynegy Marketing and Trade, LLC, Docket Nos. EL16-49-000, et al., at 7 (Oct. 2, 2018) ("The Resource-Specific FRR alternative outlined by the Commission is not a just and reasonable replacement rate.").

6 *See, e.g.*, Joint Brief of Consumer Advocates, NGOs, and Industry Stakeholders, Docket Nos. EL18-178-000, et al., at 2 (Oct. 2, 2018) ("Joint Stakeholders"); Initial Brief of Exelon Corporation, Docket Nos. EL18-178-000, et al., at 9-10 (Oct. 2, 2018) ("Exelon"); Initial Argument of the New Jersey Board of Public Utilities, Docket Nos. EL18-178-000, et al., at 4-11 (Oct. 2, 2018) ("NJBPU"); Comments of the PSEG Companies, Docket Nos. EL18-178-000, et al., at 2 (Oct.

payment for capacity (i.e., for both state-selected subsidized resources and market-selected competitive resources) must be the overriding objective. On this side of the comment divide, these parties urge the Commission to allow subsidized generators to oscillate a Capacity Resource (or even just a portion of a Capacity Resource), along with associated load, in and out of the capacity market without restriction.[7] Some parties (e.g., Exelon and Joint Stakeholders) proposing this ability of units (or even portions of units) to freely come in and out of the market also propose little Commission review of the wholesale capacity rates (determined outside the competitive auctions) needed to implement a carve-out, with blanket waiver of the Commission's affiliate rules that are designed to prevent exercise of market power.[8]

As PJM explained in its initial submission, neither of these positions, i.e., (i) fearing a carve-out inherently leads to unacceptable adverse effects on the market, versus (ii) an unrestrained carve-out with little concern for adverse effects on the market, is fully correct. The Federal Power Act ("FPA") does afford the Commission sufficient flexibility to accommodate commitment of subsidized resources as wholesale capacity, but the Commission must reasonably, and with substantial evidence, show how that accommodation is consistent with the Commission's well-established policy to rely on competitive capacity markets to meet resource adequacy needs at just and reasonable rates.[9] Thus, a "carve out" can work only if prices in the capacity auctions continue to

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2, 2018) ("PSEG"); Comments of the Joint Consumer Advocates, Docket Nos. EL18-178-000, et al., at 1-6 (Oct. 2, 2018) ("Joint Consumer Advocates").

7 *See, e.g.*, Exelon at 23, 29; Joint Stakeholders at 11.

8 *See, e.g.*, Exelon at 25-28, Joint Stakeholders at 11-12; Joint Consumer Advocates at 23.

9 *See NextEra Energy Res., LLC v. FERC*, 898 F.3d 14 (D.C. Cir. 2018).

meet just and reasonable standards. To ensure this outcome, the Commission should accept either terms and conditions that acknowledge, but limit, price suppression (such as PJM's Resource Carve-Out option) or rules that explicitly correct the price suppressive impact (such as PJM's Extended RCO proposal). What clearly will not work are measures that allow units to:

- artificially sub-divide themselves between the markets and subsidies;
- come in and out of the market at will; or
- extend market-based rate authority to inter-affiliate transactions with the burden shifted to other parties to object to potential misuses of that authority.

B. Only PJM's Comprehensive Proposal Fully Addresses the Commission's June 29 Order.

PJM's initial submission included a comprehensive proposal, informed by stakeholder input, detailed in pro forma tariff revisions, and supported with market expert affidavits.[10] The main elements of PJM's full proposal (including PJM's Extended RCO proposal) meet the need for reasonable bounds on the RCO and also provide a reasonable approach to explicitly correct price suppressive impacts.[11] PJM's initial submission is

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[10] October 2 Submittal, Attachment A, pro forma Tariff.

[11] As the Commission has held in the past, it will defer in a section 206 proceeding to the replacement rules proposed by the responsible public utility, if the utility's proposal is just and reasonable, recognizing that the utility has the right to file such proposal under section 205. *See Midwest Indep. Transmission Sys. Operator, Inc.*, 122 FERC ¶ 61,084, at P 21 n.18 (2008) ("In considering competing proposals [in a section 206 remedy proceeding], the Commission ordinarily will choose the proposal of the regulated utility if it is just and reasonable even if other just and reasonable proposals are made by others.") (citing *ANR Pipeline Co.*, 110 FERC ¶ 61,069, at P 49, *order on reh'g & compliance*, 111 FERC ¶ 61,290 (2005)); *see also GenOn Power Midwest, LP*, 149 FERC ¶ 61,218, at P 31 n.60 (2014) (citing *PJM Interconnection, L.L.C.*, 117 FERC ¶ 61,331, at P 85 (2006)); *Kern River Gas Transmission Co.*, Opinion No. 486-F, 142 FERC ¶ 61,132, at P 37 & n.50 (2013) (same holding under

unique in this respect. Despite the hundreds of pages of initial comments, barely a handful provided the Commission with detailed proposals supported by pro forma tariff changes. Of those that did, only PJM's proposal meets *both* key objectives, i.e., preserving competitive markets while accommodating state policies.

First, PJM proposes, as contemplated by the June 29 Order, a Minimum Offer Price Rule ("MOPR") with only limited exceptions, and reasonable, non-discriminatory rules for defining the subsidies that will subject a resource offer to the MOPR. In key respects, PJM proposes:

- An exception from Capacity Resource with Actionable Subsidy for resources of Self-Supply Load Serving Entities ("LSEs"), generally tracking terms the Commission previously found just and reasonable;[12]
- Non-discriminatory terms to determine whether resources and subsidies are material, and thus warrant MOPR application;
- Reasonable default values for resource-class avoidable costs (supported by affidavit) and expected revenues which, among other things, recognize that existing renewable resources and demand resources will not be affected by application of the MOPR given their minimal going forward costs and substantial PJM energy market revenues; and
- Recognition, in accord with the June 29 Order,[13] that payments to renewable resources by LSEs to meet state renewable portfolio standard ("RPS") requirements are a subsidy.

Second, PJM proposes a Resource Carve-Out that satisfies the guidance provided in the June 29 Order. The RCO closely tracks the basic outline of the resource-specific

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analogous provision of Natural Gas Act); *ANR Pipeline Co.*, 109 FERC ¶ 61,138, at P 28 (2004), *order on reh'g*, 111 FERC ¶ 61,113, at P 19 (2005) (same).

12 *PJM Interconnection, L.L.C.*, 143 FERC ¶ 61,090, at P 25 (2013), *reh'g denied*, 153 FERC ¶ 61,066 (2015), *vacated & remanded sub nom. NRG Power Mktg., LLC v. FERC*, 862 F.3d 108 (D.C. Cir. 2017), *reh'g denied*, 2017 U.S. App. LEXIS 18218 (D.C. Cir. Sept. 20, 2017) (per curiam).

13 *See* June 29 Order at PP 151-52 (quoting and relying upon PJM showings of subsidy levels from renewable energy credit program ("REC") payments under RPS programs).

Fixed Resource Requirement ("FRR") alternative provided in the June 29 Order, accommodating states' policy choices to subsidize select generation resources. At the same time, PJM's proposed RCO reasonably supports continued just and reasonable price outcomes in the capacity auctions by:

- Tying the resource's market exit and reentry to reasonable rules around subsidy duration, whether the resource has previously cleared at an unsubsidized price, and whether the resource's relevant costs have changed while it was carved out;
- Setting reasonable default rules on such key matters as identifying associated load;
- Allowing RCO proponents that prefer not to rely on PJM's default option to propose their own load identification (subject to necessary Commission approval); and
- Emphasizing the Commission's responsibility under the FPA to approve the wholesale capacity rate applicable to the Carved Out Resource, in lieu of PJM's auction clearing prices.

In presenting its RCO proposal, PJM also noted that, because a carve-out inevitably has some price-suppressive impact, there likely will be some point at which that suppressive effect becomes so pronounced as to be unjust and unreasonable.[14] Accordingly, as discussed further in section II.D below, PJM agrees with LS Power's suggestion for a MW cap on the sum of Carved Out Resources,[15] but only to the extent the Commission declines to adopt PJM's Extended RCO proposal to correct such price suppression directly.

Third, PJM proposes a reasonable set of rules ("Extended RCO") for use if there are concerns that RCO-induced price suppression will be unjust and unreasonable. Once a policy decision is made to allow uneconomic resources to commit as capacity even

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[14] October 2 Submittal at 7.

[15] LS Power at 14-19.

though that commitment admittedly causes price suppression, any method proposed to correct or mitigate that suppression inherently faces a challenge. Extended RCO reasonably meets that challenge in a way that addresses concerns raised by the June 29 Order by *not* rewarding the subsidized resource with the competitive auction price, and by preserving the incentive of infra-marginal resources, whose offers are needed to set the competitive clearing price, to offer at competitive levels. Extended RCO also reasonably recognizes that competitive resources bear the immediate costs from PJM of committing subsidized, uneconomic resources (via infra-competitive auction prices or "crowding-out" competitive resources), and it is the subsidized resource's free election of the RCO option (rather than adopting the MOPR competitive offer price) that causes the incurrence of such costs. Extended RCO also proposes to derive the competitive price by retaining loads while removing the Carved Out Resources. There is no legitimate basis for concern that this could drive prices to the 1.5 times Net CONE price cap (as some have publicly suggested), because even removing all Carved Out Resources leaves ample surplus capacity to set a competitive price, as PJM discusses in more detail in section II.E below.

PJM notes that a few parties responded to the Commission's invitation to propose additional means of accommodating state policies while ensuring just and reasonable auction clearing prices. For the most part, the more wide-ranging ideas presented are not sufficiently developed to provide a just and reasonable replacement in this proceeding for the existing MOPR rules that the Commission has found unjust and unreasonable. Indeed, the region-wide renewable resource auction proposed by the Maryland Public Service Commission ("MDPSC"), and the carbon-pricing market urged by Eastern Generation, include, to varying degrees, promising elements that might warrant future

consideration. Notably neither of these proposals are antithetical to the PJM proposal set forth herein—they merely provide additional market-based options for states to consider in lieu of continuing to promulgate unit-specific subsidies. But, both of these proposals also raise implementation questions, at both conceptual and detailed levels, that effectively take them beyond the scope of the present proceeding.[16] Nevertheless, PJM is committed to working with the states and stakeholders on these proposals which we believe, once further developed, would be fully compatible with the revisions that PJM recommends the Commission adopt in this proceeding in response to its section 206 finding.

II. PJM RESPONSE TO SPECIFIC PROTESTS

A. Criticisms of PJM's Approach to Defining Which Subsidies Trigger the Rules Fail.

In its June 29 Order, the Commission recognized PJM's approach to determining when a resource was receiving a subsidy that could impact the market and thus needed to be addressed through modified rules.[17] PJM's October 2 Submittal, therefore, utilized that approach, refining it based on stakeholder feedback. In short, a material resource with a material subsidy where the seller is not a self-supply entity would be considered a Capacity Resource with Actionable Subsidy.[18]

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16 The Independent Market Monitor for the PJM Region ("IMM") advances an alternative that would seem to subject virtually every resource to MOPR, with no mechanism for accommodating state policy objectives. As such, that proposal is not compatible with the findings of the June 29 Order that the wholesale market should endeavor to accommodate the state policies at issue.

17 June 29 Order at P 150.

18 October 2 Submittal at 14.

1. Arguments to Embroil the Commission in Choosing Which Subsidies Have Merit Should be Turned Aside.

Various commenters suggest PJM's definition is overbroad and, in essence, should not apply to renewable resources under RPS programs receiving RECs. A variety of reasons are presented for this argument starting with requests that the Commission opine that of the various kinds of subsidies, those subsidies focused on carbon free resources should be preferred over all others. Others argue that the definition should require that the subsidy be funded directly by consumers thereby excluding REC programs;[19] others say the Commission should focus on the purpose of the subsidy and the rules should only apply if the subsidy is to support the entry or continued operation of uncompetitive resources in the market,[20] or that RECs purchased through competitive programs should be excluded.[21] Still, others believe that RECs are not a material subsidy because they are not predictable or do not allow resources to recover full costs and thus cannot suppress prices.[22]

All of these arguments only underscore the challenges and subjectivity were the Commission to depart from its role as an economic regulator and instead choose among subsidies in its determination of just and reasonable rates. The Commission correctly

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19 *See, e.g.*, Comments of the PJM Consumer Representatives, Docket Nos. EL16-49-000, et al., at 9-10 (Oct. 2, 2018) ("PJM Consumer Reps"); Comments of the Electricity Consumers Resource Council ("ELCON"), Docket Nos. EL18-178-000, et al., at 5-7 (Oct. 2, 2018); Comments of Advance Energy Economy, Docket Nos. EL16-49-000, et al., at 10-17 (Oct. 2, 2018) ("Advanced Energy Economy").

20 *See, e.g.*, Initial Brief of Brookfield Energy Marketing LP, Docket Nos. EL16-49-000, et al., at 8-10 (Oct. 2, 2018).

21 Comments of Clean Energy Advocates Separately Addressing the Scope of the Expanded Minimum Offer Pricing Rule, Docket Nos. ER18-1314-000, et al., at 3 (Oct. 2, 2018) ("Clean Energy Advocates MOPR").

22 Advanced Energy Economy at 3-4, 10-16; Clean Energy Advocates MOPR at 24-29.

found the intent of the subsidy does not matter when determining whether a resource should be subject to MOPR; rather it is the impact of the subsidy.[23] Even if intent were relevant, it would be impossible to prove intent; an implementation issue not previously lost on the Commission. The Commission also flatly rejected PJM's MOPR-Ex proposal that would exempt subsidies to renewables procured by competitive programs.[24] With those rulings in mind, PJM's October 2 Submittal purposefully applies broadly in the first instance in that it is agnostic to resource type or source, but then focuses the review by imposing materiality thresholds—as fully described in PJM's October 2 Submittal—to ensure it applies the rules only to those subsidized[25] resources which would significantly impact the market.[26]

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[23] June 29 Order at PP 155-56.

[24] June 29 Order at P 105.

[25] Inherent in whether a resource is "subsidized" for consideration of the proposed rules is that the subsidy is received by or through the state or federal governmental entity. PJM properly proposed excluding compensation received for RECs that are sold to and retired by voluntary purchasers for example, corporations seeking to boost their environmental good will within the community. October 2 Submittal at 22-23. This approach was supported by commenters such as Advanced Energy Economy at 14-16 and Clean Energy Advocates MOPR at 34-35. But extending the rules to exempt REC transactions among brokers, as some may propose in reply comments, departs from the fundamental purpose of the PJM-proposed rule—namely to determine, in the first instance, whether the state has created a subsidy program which allows a certain type of unit a preferential edge when competing in the market against other similarly-situated resources. The existence or non-existence of brokers in subsequent transactions involving the REC does not change this relevant threshold inquiry.

[26] PJM notes that upon review of the pro forma Tariff sheets it submitted on October 2, it incorrectly stated one of its decision-points to determine if a resource is a Capacity Resource with Actionable Subsidy. That is, in pro forma Tariff, Attachment DD, section 5.14(h)(ii)(C) regarding electricity production being the resource's primary function, PJM should have stated this in the affirmative "For a Generation Capacity Resource, electricity production is the primary purpose of the facility and not merely a byproduct" instead of how it was drafted in the negative.

2. Broadening the Definition of Actionable Subsidy Is Not Necessary and Would Be Counterproductive.

For this same reason, arguments that PJM excluded too many resources by exempting resources under 20 MW or only looking at subsidies which are greater than 1% of the resources expected PJM market revenues should be rejected.[27] As PJM pointed out in its October 2 Submittal, the Commission and the PJM Tariff have long recognized different rules based on the 20 MW materiality threshold and it should continue to do so here, as various commenters agree.[28] And, while some suggest PJM did not properly support its 1% threshold, the rationale behind that threshold was to ensure de minimis subsidies would not trigger the rules. While the NJBPU posits that a resource which has a subsidy that represents 1.1% of its PJM market revenues would get swept up in the rule even though that could be said to be de minimis as well,[29] but that misconstrues the purpose of such a threshold. Given the June 29 Order's findings on the adverse impact of such subsidies on setting just and reasonable capacity rates, the subsidy screening rules should not exclude any subsidy that could have a measurable, and therefore likely meaningful, impact on a resource's decision to remain in service. As with any cut-off, one can always argue about the increment just beyond that cut-off as the NJBPU is doing in this instance. But if it receives less than 1% of its revenue via subsidy, that characterization as uneconomic becomes much more debatable. One percent is therefore a reasonable cut-off and no party has shown that an alternative level is just and reasonable.

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27 *See* Exelon at 20-21 (regarding the 20 MW threshold); NJBPU at 16 (regarding the 1% threshold).

28 Joint Consumer Advocates at 14; Advanced Energy Economy at 18-19; Clean Energy Advocates MOPR at 15.

29 NJBPU at 16.

Another commenter suggests the percentage threshold should be linked to Net CONE times the balancing ratio.[30] PJM does not agree; as explained above, the purpose of the threshold is to exclude only subsidies that comprise such a negligible share of the resource's revenues that they are not likely to affect the decision to continue offering as capacity. Tying it to a generic value that is not resource specific would fail to meet that objective and is not supported.

3. Treating Resources as Having Received a Material Subsidy as a Result of Procurement Through State-Supported Contracts Should Not Be Boundless.

Finally, PJM takes this opportunity to offer clarification as to the element of the definition of material subsidy that would treat the subsidy "received as a result of the procurement of electricity or other attribute from an existing Capacity Resource" as a material subsidy. PJM is concerned that, based on initial comments,[31] this provision could be interpreted far more broadly than PJM intended so as to include any state directed capacity procurement (which would then entitle those resources to elect the Resource Carve-Out). Such boundless exit from the Reliability Pricing Model ("RPM") could exacerbate the very price suppression issues PJM has raised in this proceeding. PJM intended this to be *narrowly applied* so that if a resource is supported by the state through a procurement contract that is tendered to meet public policy goals such as to encourage clean energy production *and* accompanied by financial support in the form of actionable subsidies (as that term is defined in PJM's Tariff), that would be treated in the same light as a compensation under a REC or a zero emission credit ("ZEC") that is treated as a subsidy under the proposed definition. Unfortunately, the language proposed

30 PJM Consumer Reps at 10-13.

31 *See* Exelon at 16-21.

by Exelon is so broad and undefined that there may be unintended consequences were it to be adopted as written with no further clarification. To be clear, PJM does not believe that resources should be eligible to elect the RCO *unless they are otherwise subject to the MOPR*. So, to the extent that such a procurement mechanism results in a resource being subject to the MOPR, it could then elect the RCO as an alternative. However, resources should not be eligible to simply remove themselves from RPM on the basis of some other state mechanism that does not, in and of itself, represent an 'actionable subsidy" and therefore would not trigger application of the MOPR.

B. Contrary to Claims, PJM's Expanded Minimum Offer Price Rule Strikes the Appropriate Balance and Is Just and Reasonable.

PJM's October 2 Submission detailed an expanded MOPR for new and existing Generation Resources and Demand Resources, and proposed to allow sellers to opt for either a default MOPR Floor Offer Price or a resource-specific floor price.[32] PJM's approach is just and reasonable. As PUCO points out, an expanded MOPR "provides a flexible, rule based approach to prevent price suppression" and "appropriately constrain[s] the cost of the public policy decision[s] to the state that mandated the subsidy."[33] PJM's expanded MOPR satisfies these basic criteria. Further, by allowing

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[32] October 2 Submittal at 37-47, pro forma Tariff, Attachment DD, section 5.14(h)(iv)(A). PJM developed the default values for new resources using the publicly available database of the National Renewable Energy Laboratory ("NREL"). *See* October 2 Submittal, Attachment B, Affidavit of Adam J. Keech at ¶¶ 17-23 ("Keech Aff."). (Mr. Keech's affidavit (at footnote 3) provided an incorrect web address for NREL. The correct address is https://atb.nrel.gov.) Resource sellers with costs below the default values may use the resource-specific option to determine a MOPR floor price based on capital costs, financial assumptions, and an energy revenue offset more accurate to the resource.

[33] PUCO at 9-10; *see also* OCC at 3 ("[A] properly-designed MOPR is needed so that power plants receiving Material Subsidies do not distort wholesale market prices in PJM, to the detriment of customers who rely on the competitive market to produce reasonably priced electric service.").

MOPR floor prices to be based on the resource's actual costs and expected revenues, not only will offers for such resources be inherently competitive,[34] the rules "will protect against over-mitigation."[35]

Resources owned or controlled by a Self-Supply LSE (i.e., public power, single customer, or vertically integrated entities) do not meet the definition of a Capacity Resource with Actionable Subsidy and would not be subject to the proposed MOPR. That is because such sellers' traditional business models for capacity procurement do not give rise to concerns related to artificial price suppression.[36] The proposed Self-Supply Exemption is automatic for all resources owned or controlled by a Self-Supply LSE.[37] That is, a Self-Supply LSE does not have to submit an exemption request for each of its resources. Rather, if a seller is a Self-Supply LSE, then its portfolio of existing resources is exempt. Any Self-Supply LSE new resources that fall within the net short and net long thresholds will similarly be exempt. Such resources categorically are not Capacity Resources with Actionable Subsidies, and will not be subject to the MOPR or eligible for

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34 *See PJM Interconnection, L.L.C.*, 143 FERC ¶ 61,090, at P 26 ("There may be resources ineligible for any MOPR exemptions that have lower competitive costs than the default offer floor, and these resources should have the opportunity to demonstrate their competitive entry costs.").

35 *PJM Interconnection, L.L.C.*, 137 FERC ¶ 61,145, at P 49 (2011), *aff'd sub nom. N.J. Bd. of Pub. Utils. v. FERC*, 744 F.3d 74 (3d Cir. 2014).

36 *See PJM Interconnection, L.L.C.*, 143 FERC ¶ 61,090, at P 111 ("An uneconomic new entry strategy by a vertically-integrated utility, for example, poses a substantial risk of increasing its net costs," and, therefore, "these entities are unlikely to depend on costly strategies to address the non-self-supply portion of their portfolio.").

37 *See* October 2 Submittal at pro forma Tariff, Attachment DD, section 5.14(h)(ii)(D) ("A Capacity Market Seller that is a Self-Supply LSE will not be considered as having a Capacity Resource with Actionable Subsidy in any RPM Auction for any Delivery Year, and thus will be treated as having a Self-Supply Exemption.").

the Resource Carve-Out option. Thus, a Self-Supply LSE does not have the option of electing the Resource Carve-Out option for any of its exempt resources.

1. MDPSC's Requests for Additional MOPR Exemptions Should Be Rejected.

The MDPSC proposed two exemptions: one for seasonal resources and one for innovative technologies.[38] With regard to seasonal resources, the MDPSC appears concerned that subjecting winter resources to the MOPR would prevent an aggregated resource from clearing a Base Residual Auction ("BRA").[39] This concern is misplaced as PJM has proposed a zero dollar MOPR Floor Offer Price for existing wind resources (which currently comprise 100% of winter resources).[40] Further, MDPSC's argument about the need for recognition of seasonal resources as Capacity Resources without aggregating with other such resources to form an annual product is already being addressed in Docket Nos. EL17-32 and EL17-36, and the Commission should address that specific issue in those dockets rather than further blurring the record of that proceeding with this one.

With regard to an innovative technology exemption, MDPSC advances only the policy argument that states must subsidize these "first-of-a-kind developments" and so they should get a pass for up to 375 MW per technology per RPM Auction.[41] As an initial matter, it is unclear whether such an exemption is needed and to which resources it

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38 Initial Comments of the Maryland Public Service Commission, Docket Nos. EL16-49-000, et al., at 11-13 (Oct. 2, 2018) ("MDPSC").

39 MDPSC at 12 ("Applying MOPR to winter resources that are eligible to aggregate with summer-only capacity, or even the prospect of removing certain amounts of winter capacity from the BRA, would only serve to further strand these important summer resources.").

40 *See* October 2 Submittal at 46, Keech Aff. ¶ 27.

41 MDPSC at 12-13.

would apply. Indeed, before such an exemption can be considered there are series of issues that must be examined, including and most importantly, objective criteria defining an innovative technology. Defining criteria would need to be developed to ensure that those technologies are sufficiently distinct from existing resource types. Without more defined standards, it would be difficult to craft tariff language that would withstand legal challenges as to discrimination among resources.

2. The IMM's New, Unjustified Approach for Determining MOPR Floor Prices Departs from Long-Established Practice and Precedent.

The IMM is proposing, for the first time, a new approach for determining MOPR floor price levels for new resources that does not account for construction, development, or generally any capital cost.[42] While PJM has yet to review this approach in any detail, PJM strongly disagrees with adopting any approach that ignores such project costs. The IMM's approach, as PJM currently understands it, would be a significant departure from the way MOPR has been applied since the inception of RPM. Default MOPR floor prices have long been based on the net cost of new entry, which includes construction and development costs, and, likewise, the Tariff-defined Avoidable Cost Rates (which were previously used as unit-specific offer caps) include project investment costs.[43] Indeed, the Commission has recognized that PJM's forward capacity market "operates as an *ex ante* consideration of a [new] resource's economic viability, able to test in advance of construction whether that resource is economic," and that "a developer of a gas-fired

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42 *See* Brief of the Independent Market Monitor for PJM, Docket Nos. EL16-49-000, et al., (Oct. 2, 2018) ("IMM"); Summary of the Sustainable Market Rule Proposal of the Independent Market Monitor for PJM (served on the parties to this proceeding on October 31, 2018) ("IMM Summary").

43 *See* PJM Tariff, Attachment DD, section 6.8.

generator can avoid incurring most construction costs until after the auction is concluded and the auction results are known."[44] In short, all of a new resource's costs are avoidable until it clears the market. The IMM's proposed departure from these principles is unjustified, and expanding the MOPR to cover both new and existing resources provides no basis for abandoning such longstanding approach.

Further, the IMM's approach of considering only going-forward costs falsely equates new and existing resources. In its October 31 "summary," the IMM states:

> A competitive offer is a competitive offer, regardless of whether the resource is new or existing. . . . Use of higher offers for new resources based on the full cost of entry, as proposed by PJM, would constitute a noncompetitive barrier to entry and would create a noneconomic bias in favor of existing resources and against new resources of all types, including new renewable resources and new gas fired combined cycles.[45]

The IMM is improperly comparing two fundamentally asymmetrical concerns: new resources (i.e., whether a resource should enter the market) and existing resources (i.e., whether existing resources should exit the market). The asymmetry between entry and exit is uniformly accepted and, to PJM's knowledge, has never been seriously challenged since 1989.[46] The IMM provides no justification for equating new and existing here.

In any event, the IMM's proposal is far afield of addressing the specific issue of the impact of subsidies that formed the basis for the Commission's section 206 finding.

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44 *PJM Interconnection, L.L.C.*, 153 FERC ¶ 61,066, at P 81 (2015).

45 IMM Summary at 2. PJM takes issue with the IMM's intimation that PJM is proposing use of cost of new entry for the first time here. As noted above, competitive offers from new resources have long been considered to be the cost of new entry. Indeed, the IMM seems to have advocated this very approach in this proceeding. Comments of the Independent Market Monitor for PJM, Docket Nos. ER18-1314-000, et al. (May 7, 2018).

46 *See* A.K. Dixit, *Entry and Exit Decisions Under Uncertainty*, 97, 620-38, Journal of Political Economy (1989); A.K. Dixit & R.S. Pindyck, *Investment Under Uncertainty*, Princeton University Press (1994).

The Commission should avoid letting this proceeding become a 'catch-all' for other design changes not related to the specific grounds that drove the Commission's section 206 finding.

C. Proposed Variations to PJM's Resource Carve-Out Option Are Unwarranted.

To accommodate granting state-subsidized resource capacity commitments, while maintaining a workably competitive market, PJM submitted the Resource Carve-Out option. The terms and conditions of the Resource Carve-Out option ensure that the price suppressive impact of removing resources from the market is limited, does not reach the point at which price outcomes are no longer just and reasonable, and does not undermine the ability of the capacity market to meet resource adequacy needs over the long-term.

A number of commenters proposed variations to aspects of PJM's proposal. As discussed below, the Commission should accept the Resource Carve-Out option, as PJM has proposed it.

1. The Commission Should Reject Pleas to Allow Owners to Partially Carve Out Their Subsidized Resources.

Exelon and the Joint Stakeholders assert that resources should be allowed "to participate partially in [a Resource Carve-Out] and partially in the Base Residual Auction,"[47] but fail to provide any reasoning or justification for removing only part of a

[47] Joint Stakeholders at 11; *see* Exelon at 23. Joint Stakeholders condition their request on compliance with the market rules permitting sellers to segment their Sell Offer with varying price-offer pairs for varying output levels. Joint Stakeholders at 11 (citing Tariff, Attachment DD, section 5.6.1). This comparison is inapposite, as such segmenting generally is based the physical characteristics of the resource and not the policy decisions of the seller.

resource. Indeed, it is unclear what bounds the Joint Stakeholders have in mind for their proposal.[48] The Commission should reject this variation.

Implementation would be extremely difficult and subjective. Because this approach would essentially result in two sell offers for the same Capacity Resource—one at zero dollars and one at a non-zero offer price, allowing sellers to partially carve out a resource while submitting the rest into the market could lead to wholly arbitrary outcomes that mask, but do not eliminate, the adverse impact of the subsidies. Moreover, state subsidies usually would go to either addressing capital additions (through accelerated depreciation for example) or operating costs (through targeted payments like "zero emissions credits" and other such vehicles). Given that PJM knows of no instance where a state has earmarked a subsidy as between different portions of plant hardware, it is not possible to determine which portion of a single integrated generation unit may properly be considered "subsidized" or "unsubsidized." To allow such split offering, rules would need to be developed to determine the proper allocation of costs between the portion remaining in the market to prevent cross-subsidization between the two sides of the resource and to establish a MOPR Floor Offer Price. This would be an extremely complex exercise to undertake with little concomitant benefit. The proponents of this approach have certainly not justified adding this further degree of complexity and arbitrariness to the MOPR resource-specific review process.

[48] For example, could a seller claim only the part of the resource carved out is subsidized and the remainder in the BRA is not receiving a subsidy and should not be subject to the MOPR?

2. Subsidized Resources Should Not Be Allowed to Toggle in and out of the Capacity Market.

Exelon and Joint Stakeholders "do not believe that resources should be obligated to elect [the Resource Carve-Out option] for any minimum period of time."[49] In other words, these commenters assert that subsidized resources should be allowed to jump in and out of the market and, as discussed above, be allowed to change how much of each subsidized resource is carved out before each BRA. Such a market design would not achieve the Commission's objective that the state subsidizing the resource should pay the costs from such subsidy.[50] If subsidized resources are permitted to toggle in and out of the market on the basis of whether they think they will clear, then all load in PJM is paying for them when they clear. As long as the actionable subsidy is in effect, once the resource is carved out it should be carved out for the duration of the subsidy to ensure that the cost of the subsidy is contained within the state providing the subsidy.[51]

To protect the market from the impacts of subsidies received by a resource while carved out, PJM proposed special MOPR Floor Offer Price rules for when such resources re-enter the capacity market. Under these rules, project investment incurred while the resource was out of the market is considered in setting that resource's offer floor price.[52]

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49 Joint Stakeholders at 11; Exelon at 29.

50 *See* June 29 Order at PP 66, 159-60.

51 While the existing FRR rules are fundamentally different from RCO (*see* October 2 Submittal at 51-52), the FRR rule requiring a five-year minimum stay-out for any load choosing to leave the market under FRR is instructive. Under RCO, a generator is seeking to leave the market and should similarly be subject to a minimum stay-out. Exelon and Joint Stakeholders have presented no argument why Carved Out Resources should be free to pursue strategic opportunities to come in and out of the market in pursuit of profit, while FRR loads are not free to chase lower capacity costs.

52 *See* October 2 Submittal at 48-50, pro forma Tariff, Attachment DD, section 5.14(h)(iv)(A)(3).

Otherwise, sellers could substantially invest in their resource while it is out of the market, then re-enter the market at their lower (as the result of subsidized investment) going-forward costs, and thereby displacing economic resources. While PJM explained such rules are necessary, the need for these special protections would be compounded if the Commission permits sellers to annually determine whether to carve out their resource.

3. The Commission Has Jurisdiction over Rates Paid to Carved Out Resources.

All parties appear to agree with the Commission that Carved Out Resources will provide a jurisdictional product—capacity[53]—and the rate for such product is subject to the Commission's jurisdiction under the FPA.[54] However, commenters suggest two proposals that warrant discussion.

One, FirstEnergy Solutions suggests that there should be a default capacity rate paid to resources that elect the Resource Carve-Out option, and it should be set at the

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53 It is well settled, and the June 29 Order (at P 158) expressly recognized, that the Commission has "exclusive jurisdiction over the wholesale rates of both subsidized and unsubsidized resources, and a statutory obligation to ensure they are just and reasonable." *See also New Eng. Power Generators Ass'n v. FERC*, 757 F.3d 283, 291 (D.C. Cir. 2014) ("FERC has jurisdiction to regulate the parameters comprising the Forward Capacity Market, and that applying offer-floor mitigation fits within the Commission's statutory rate-making power."); *Miss. Indus. v. FERC*, 808 F.2d 1525, 1541 (D.C. Cir. 1987) ("Capacity costs are a large component of wholesale rates."); *Devon Power LLC*, 115 FERC ¶ 61,340, at P 201 (2006) ("Courts have confirmed that the Commission has jurisdiction under the FPA to regulate the charges for capacity in wholesale markets."). Moreover, courts have rejected arguments that capacity markets involve "direct regulation of generation facilities in violation of [the FPA]." *Conn. Dep't of Pub. Util. Control v. FERC*, 569 F.3d 477, 481-82 (D.C. Cir. 2009). Indeed, when the Commission rules on capacity costs and charges, "FERC has not regulated a facility, but rather the wholesale rates of interstate sales." *Miss. Indus.*, 808 F.2d at 1544.

54 *See, e.g.*, October 2 Submittal at 59-60; Initial Brief of the People of the State of Illinois, Docket Nos. EL16-49-000, et al., at 14 (Oct. 2, 2018); Exelon at 24; Joint Stakeholders at 10.

BRA clearing price for the unconstrained RTO region.[55] The Commission should reject this proposal. As an initial matter, the Commission has already determined that subsidized resources should not be paid the same as non-subsidized Capacity Resources.[56] Further, it is the responsibility of the subsidizing state, seller of the subsidized resource, or load (if bilaterally contracting for such capacity) to seek Commission approval for a Carved Out Resource's capacity rate.[57] Given that this rate is the result of a decision to leave the PJM capacity market, there should be no default rates stated in PJM's Tariff. Rather, each such rate should be filed with the Commission for individual review and approval. PJM is willing to facilitate settlements between load and the Carved Out Resource via PJMSettlement.

Two, Exelon, Joint Consumer Advocates, and Joint Stakeholders seek to immunize Carved Out Resource's capacity rates from the Commission's affiliate transaction rules and shift the burden from rate proponents to complainants.[58] PJM disagrees with this approach and urges the Commission to ensure consistency in application of its market-based rate rules. Clarity from the Commission on this issue is appropriate to ensure market confidence in fair outcomes.

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55 Initial Comments of FirstEnergy Solutions Corp., Docket Nos. EL16-49-000, et al., at 9-12 (Oct. 2, 2018) ("FirstEnergy").

56 June 29 Order at PP 67-68.

57 *See* October 2 Submittal at 60-61.

58 *See* Exelon at 25-28; Joint Stakeholders at 11-12; Joint Consumer Advocates at 24-25.

4. No Party Has Demonstrated that PJM's Proposed Process for Allocating Resource Carve-Out Offset to Load Is Not Just and Reasonable.

To reflect that Carved Out Resources will not be paid any capacity payments, PJM proposed to reduce certain loads' capacity charge (known as the Locational Reliability Charge) by a Resource Carve-Out offset.[59] PJM proposed a default rule under which all load located in the state providing the subsidy to a Carved Out Resource would be allocated a Resource Carve-Out offset on a pro rata basis. Recognizing that other, state-specific or resource-specific offset allocation approaches may be appropriate, PJM also proposed that parties may submit such approaches for Commission review and approval under the FPA, and PJM will implement whatever the Commission approves.[60]

Direct Energy and NRG support an approach like PJM's that allocates the credit on a pro rata basis to ensure that all affected load pays the same capacity rate.[61] On the other hand, Exelon and Clean Energy and Consumer Advocates argue that the Carved Out Resource should be the one to identify the load when it makes the election to carve out, and this may be accomplished through bilateral contracts.[62] While PJM is not opposed to the state or its LSEs seeking an alternative method for allocating the credit back to load from PJM's default proposal, such alternative must be submitted to the

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59 *See* October 2 Submittal at 61-63, pro forma Tariff, Attachment DD, section 5.14(e).

60 *Id.*

61 *See* NRG at 3; Comments of Direct Energy Business Marketing, LLC and Direct Energy Business, LLC, Docket Nos. RM18-9-000, et al., at 3, 5-7 (Oct. 2, 2018). FirstEnergy Solutions also argued that "the selected load should belong to the same modeled LDA as the [Carved Out Resource]." FirstEnergy at 11.

62 Exelon at 22; Comments of Clean Energy and Consumer Advocates, Docket Nos. ER18-1314-000, et al., at 9 (Oct. 2, 2018) ("Clean Energy and Consumer Advocates").

Commission for acceptance before PJM will effectuate it through the billing process. PJM opposes the *requirement* that the resource identify the load in the absence of that load's Commission-accepted agreement.[63]

5. No Party Has Shown that PJM's Approach of Considering All Load and Carved Out Resources in Determining Capacity Commitments Is Not Just and Reasonable.

To account for capacity commitments to be borne by Carved Out Resources, PJM proposes to include such resources in each BRA, with a zero dollar offer price, and determine which load is associated with such resource through capacity charge settlement in the Delivery Year.[64] As Mr. Keech explained, this approach "is consistent with the physical reality of system operations"[65] and "guarantees that carved out load, and load within the PJM footprint that has purchased capacity through the BRA, are required to purchase the same reserve margin."[66] Further, PJM's approach of addressing load via settlement and not through the auction provides maximum flexibility, as such load does not need to be co-located with the resource, or even identified until the Delivery Year.[67]

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63 American Municipal Power, Inc. and the Public Power Association of New Jersey argue that the Relevant Electric Retail Regulatory Authority ("RERRA"), "rather than the state, [should be] the regulatory authority responsible for determining who, within its jurisdiction should be responsible" for paying for the Carved Out Resource and thus who should receive the offset. Evidence and Arguments of American Municipal Power, Inc. and the Public Power Association of New Jersey, Docket Nos. EL16-49-000, et al., at 30 (Oct. 2, 2018). PJM agrees that the RERRA is best suited for such delegation.

64 October 2 Submittal at 57-58, Attachment B, Keech Aff. ¶¶ 5-10, pro forma Tariff, Attachment DD, section 5.14(h)(vi)(E).

65 Keech Aff. ¶ 7.

66 Keech Aff. ¶ 8.

67 Keech Aff. ¶¶ 9-10.

A number of commenters addressed how Carved Out Resources and associated load should be accounted for in clearing BRAs.[68] None of the alternative approaches undermine the just and reasonableness of PJM's approach, but rather they seek to add unnecessary complexity to the process.[69] Mr. Keech detailed the problems with other approaches,[70] and none of the proposals overcome these issues.

D. A Cap on the Amount of Carved Out Resources May Be Warranted.

Given that a carve-out inevitably has some price-suppressive impact, there likely will be some point at which that suppressive effect becomes so pronounced as to be unjust and unreasonable. To forestall such outcome, LS Power's proposal to place a megawatt cap on the amount of Carved Out Resources has merit. While not proposing a specific cap, LS Power provides the Commission a useful analytical framework for evaluating such price suppressive impact by reference to the Variable Resource Requirement Curve.[71]

However, PJM's support of such a cap is limited only to the circumstance in which the Commission does not adopt the Extended RCO proposal to correct the price-suppressive effects of subsidies on capacity prices. The Extended RCO is a better approach to addressing such price suppression than simply applying a cap. Extended

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68 NRG at 20-22; Clean Energy and Consumer Advocates at 16-23; Exelon at 21-23; PJM Consumer Reps at 14-17; PSEG at 10-12.

69 For example, the PJM Consumer Reps advance a complicated approach for removing Carved Out Resources based on "a ratio between . . . the total revenue derived from the subsidy to the total revenue the resource would have earned in the BRA." PJM Consumer Reps at 14. PJM Consumer Reps acknowledge this approach is based on "speculation" and advance it nonetheless. *Id.* at 15.

70 Keech Aff. ¶¶ 11-16.

71 LS Power at 14-19.

RCO does not place a quantity limit on accommodation of state policies, yet still helps ensure just and reasonable competitive price outcomes.

Nonetheless, should the Commission find that the market should be protected by a cap on Carved Out Resources, PJM will submit one through a compliance filing.

E. Extended RCO Provides an Avenue for Combatting Price Suppression Inherent in Allowing Resources to Carve Out.

In the event the Commission finds that the expanded MOPR plus Resource Carve-Out fails to provide the market sufficient protection from the impact of subsidies, PJM offers the Extended RCO proposal. As PJM and Dr. Hung-po Chao explained, the Extended RCO would employ a two-stage auction approach, under which capacity commitments are assigned in stage one, and the auction clearing price is determined in stage two.[72] The clearing price, which is paid only to resources that do not elect the RCO, would be determined solely by submitted competitive offers.

1. Concerns About Unreasonably High Clearing Prices Under Extended RCO Are Unfounded.

Extended RCO proposes to derive the competitive price by retaining loads while removing the Carved Out Resources. Some may contend that, in theory, this treats the retained load as indifferent to the price level, which could unreasonably raise the clearing price. However, this concern would only arise if the quantity of Carved Out Resources was so great as to encompass virtually all marginal and surplus capacity in the PJM Region. The subsidized uneconomic capacity that can only be committed as PJM capacity if it is carved out appears currently to be far below that level.

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[72] *See* October 2 Submittal at 64-68, Attachment C, Chao Aff. ¶¶ 8-11 ("Chao Aff.").

To illustrate this, PJM attaches simulations of the clearing price effects if the three nuclear plants likely to receive ZEC payments were removed from the supply stack. As shown in Attachment A, PJM Region clearing prices would be only about $11/MW-day higher if a corresponding quantity of load was retained, compared to the price if the load was removed.[73] That price increase is not supra-competitive. To the contrary, it corrects for the price suppression that results from taking both the resource and load out, which is equivalent to allowing an uneconomic resource to offer at zero price with no mitigation applied.

The likely effects are thus nothing like that depicted in graphs presented in a recent public forum to argue that Extended RCO would force prices to the RPM clearing price cap of 1.5 times Net CONE. That argument unrealistically assumes *no* competitive surplus capacity. It instead assumes that all marginal and surplus capacity is carved-out, and that *all* load corresponding to all surplus capacity is therefore treated under Extended RCO as indifferent to price. If the carve-out were so massive as to remove all surplus capacity, PJM agrees that removing all that capacity, but none of the corresponding load, would produce price anomalies. Since there is no evidence to support that extreme assumption, and it is contradicted by recently observed capacity surplus levels, any assertion of price spikes under Extended RCO can be set aside.

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[73] Specifically, under "Simulation 3," supply from the Quad Cities, Hope Creek, and Salem nuclear plants is removed, along with an equivalent quantity of demand. The resulting PJM Region price is $135.30/MW-day. This is the same clearing price observed in "Simulation 1," in which all three of those plants offer at a subsidized zero price, with no load removed. "Simulation 2" shows the results of removing those plants from the supply stack, but retaining the load. In that simulation, the PJM Region clearing price is $146.40/MW-day. Simulation 2 also results in an EMAAC LDA clearing price of $287.93/MW-day, but that price still is far below the applicable VRR Curve price cap of $470.66/MW-day.

But even if this were a concern, it does not warrant rejection of Extended RCO. The source of any such price concern is only the proposed convention of setting price with the Carved Out Resource removed, but its associated load retained. That convention is reasonable under the current circumstances (comparing the likely level of carve-outs to the current level of surplus capacity), but it is not the only possible means of deriving a competitive price. If the Commission shared this pricing concern, it could, for example, direct PJM to assign a competitive offer price to the Carved Out Resources for purposes of calculating the competitive clearing price.[74] That would be entirely separate from the price *paid* to Carved Out Resources, which would still be determined outside the auction. Using competitive offer prices for the Carved Out Resources would directly eliminate the alleged basis for the theoretical pricing concern. However, since this concern is only theoretical, the Commission could consider, if it chooses to direct the insertion of competitive offer prices, limiting that practice to Delivery Years or LDAs where Carved Out Resources are likely to represent most or all of the surplus capacity.

2. Contrary to Comments, PJM's Extended RCO Proposal Would Appropriately Compensate Infra-Marginal Resources.

Under Extended RCO, PJM also proposes to compensate resources that failed to obtain a capacity commitment in stage one, but submitted offers below the clearing price established in stage two.[75] Such "infra-marginal" resources would be compensated at the difference between their submitted offer price and the stage two clearing price (in

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74 NRG's affiant Mr. Stoddard offers a similar suggestion. *See* NRG, Affidavit of Robert B. Stoddard ¶ 55 ("[I]nstead of being fully excluded from the price redetermination stage, ReCO resources should be included in the price redetermination step at their MOPR-mitigated offer prices.").

75 *See* October 2 Submittal at 71-74, Chao Aff. ¶¶ 12-17.

economic parlance, this payment represents infra-marginal rent).[76] In other words, infra-marginal resources would not be paid for the amount of its offer, which presumably reflects its net avoidable costs of committing to provide capacity.

Southern Maryland Electric Cooperative, Inc. complains that infra-marginal rent payments would compensate resources that did not receive capacity commitments.[77] However, those resources are the parties that suffer the most immediate harm from the price suppressive effect of state subsidies. As Dr. Chao explains, "[t]he simplest and most direct way to counteract these adverse effects of resource substitution" is to pay these resources their infra-marginal rents.[78] Dr. Chao also explains that such payments "preserve[] the correct price signals," as it "would solidify the incentive for resources to make truthful offers that reflect actual costs in a way that is consistent with the principles of efficient price formation and risk allocation."[79] Accordingly, Extended RCO would preserve the integrity of the clearing price and allow it to facilitate entry and exit decisions.

Such payments are not new in electricity markets PJM routinely pays Lost Opportunity Cost ("LOC") to resources in the energy market that reduce their output at PJM's direction or are committed in the Day-ahead energy market, but do not run in the Real-time Energy Market, and for which locational marginal pricing exceeds their offer. So, they are paid for not producing energy in those situations where they otherwise would be the economic resource. The compensation proposed here is analogous to paying LOC

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76 Chao Aff. ¶ 16.

77 Initial Submission of Southern Maryland Electric Cooperative, Inc., Docket Nos. EL16-49-000, et al., at 8 (Oct. 2, 2018).

78 Chao Aff. ¶ 16.

79 Chao Aff. ¶ 17.

payments in the energy market to resources that offered competitively but did not provide energy.

The infra-marginal rent payments would be funded by the Carved Out Resources.[80] As Dr. Chao explains, subsidized offers into an auction creates the inefficiency that causes such resources to not clear the auction.[81] This fact is not new. PJM explained in its Capacity Repricing filing that "a state's subsidies to wholesale market participants impose costs on market participants and customers outside such state's purview . . . . In effect, the state is exporting the impact of its subsidy."[82] PJM illustrated, via an example and graphics, how one state's decision to subsidize a resource within its borders places the immediate costs of subsidizing a plant in service fall on the other sellers in the PJM market. Further, the longer-term impacts of state subsidies would thwart the market's competitive mechanism for meeting the region's long-term reliability needs at an efficient cost. Thus, other wholesale market participants also would be effectively required to help pay the costs imposed by the subsidy.

It is therefore appropriate, and consistent with the Commission's well-established cost causation principles,[83] to assign cost responsibility to those that caused the problem.

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80 October 2 Submittal at 74-75, Chao Aff. ¶¶ 18-19.

81 Chao Aff. ¶ 18 ("Commitment of that uneconomic resource displaces economic infra-marginal resources, and would (absent a corrective rule) deny that resource its infra-marginal rents, thus bringing about the [market inefficiency].").

82 Capacity Repricing or in the Alternative MOPR-Ex Proposal of PJM Interconnection, L.L.C., Docket No. ER18-1314-000, at 29 (Apr. 9, 2018) (as amended April 16, 2018).

83 *See, e.g.*, *Old Dominion Elec. Coop. v. Va. Elec. & Power Co.*,, 164 FERC ¶ 61,006, at P 28 (2018) ("The Commission's well-established principle of cost-causation states that costs should be allocated to those who cause or benefit from them." (citing *Black Oak Energy, LLC v. FERC*, 725 F.3d 230, 237 (D.C. Cir. 2013) (stating that the cost causation principle requires that "all approved rates reflect to some degree the costs actually caused by the customer who must pay

Courts have described the cost causation principle as "requiring that all approved rates reflect to some degree the costs actually caused by the customer who must pay them. Not surprisingly, [courts] evaluate compliance with this unremarkable principle by comparing the costs assessed against a party to the burdens imposed or benefits drawn by that party."[84] In this case, the "cost causer" will be the Carved Out Resource that decides to remove itself from the market, imposing costs on other market participants. Other cost allocation approaches would not be tethered to longstanding cost allocation principles.

F. Given the Timing and Implementation of PJM's Proposal, No Special Transition Mechanism Is Needed as Ample Time Exists for Adjustments at the State Level Prior to the Advent of the Delivery Year.

PJM disagrees with commenters that urge the Commission to adopt an additional across-the-board transition period to allow time for states to arrange compensation for resources that elect the RCO option. All that is needed prior to the upcoming BRA is for a resource owner to know whether the resource is entitled to a subsidy and if so, the ability to elect the RCO option. No across-the-board transition period is necessary because PJM's refined definition of Material Subsidy, which uses the term "entitled to," ensures that only those resources which have or will have a subsidy by the time of the Delivery Year, are considered as having a Material Subsidy and subject to the MOPR.

Moreover, states will have three years to make any arrangements for the capacity payment to resources that elect to carve out. Likewise, states can determine what associated load should be credited for the Carved Out Resource well after the BRA,

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them") (quoting *E. Ky. Power Coop., Inc. v. FERC*, 489 F.3d 1299, 1310 (D.C. Cir. 2007))).

84 *Midwest ISO Transmission Owners v. FERC*, 373 F.3d 1361, 1368 (D.C. Cir. 2004) (internal quotations and citations omitted).

which is conducted three years prior to the actual Delivery Year. While Carved Out Resources may not immediately receive a capacity payment, this is no different from any resource that clears PJM's BRA, as those resources do not receive any capacity payments until the actual Delivery Year. Finally, should a resource owner deem the risk of a state failing to act within three years to be too high, the resource owner may stay in the capacity market subject to the MOPR or it is free to forgo accepting the Material Subsidy and not be subject to the MOPR. This option to forego accepting a Material Subsidy effectively already provides resource owners with a transition mechanism as the resource owner could simply decline to accept the Material Subsidy and not be subject to the MOPR in the interim. Subsequent to the implementation of any applicable requisite legislation or Relevant Electric Retail Regulatory Authority order, the resource owner could then elect to accept the Material Subsidy, at which time the resource would be subject to the MOPR.

III. CONCLUSION

For the foregoing reasons, the Commission should adopt the PJM proposal along with the accompanying pro forma tariff sheets for implementation through a compliance filing in time for the August 2019 Base Residual Auction.

Respectfully submitted,

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Attachment A

Sim 1 as Status Quo w/ subsidized units at $0 - 21/22 BRA Results (Min MW = 0; Quads, Salems, and Hope Creek @ $0)

LDA	PRD Cleared MW	Resource Cleared MW	Total Annual Cleared MW	Total Summer Cleared MW	Total Winter Cleared MW	Imported MW	VRR Cleared MW	System MCP	LDA Price Adder	CP Clearing Price	Immediate LDA Price Adder	Total Resource Credits ($/day)
RTO	555.8	163,779.3	163,063.8	715.5	715.5	0.0	164,335.0	$ 135.30	$ -	$ 135.30		$ 22,159,339.29
MAAC	555.8	67,603.3	67,512.3	206.6	91.0	996.6	69,155.6	$ 135.30	$ -	$ 135.30	$ -	$ -
EMAAC	81.7	29,506.4	29,505.4	159.9	1.0	9,000.0	38,588.1	$ 135.30	$ 2.47	$ 137.77	$ 2.47	$ 72,880.81
SWMAAC	474.1	10,130.3	10,130.3	29.1	0.0	6,294.9	16,899.3	$ 135.30	$ -	$ 135.30	$ -	$ -
PSEG	0	5,367.6	5,366.6	16.9	1.0	6,902.0	12,269.6	$ 135.30	$ 68.99	$ 204.29	$ 66.52	$ 357,052.75
PS-NORTH	0	3,133.3	3,132.3	4.7	1.0	2,958.1	6,091.4	$ 135.30	$ 68.99	$ 204.29	$ -	$ -
DPL-SOUTH	38.9	1,629.6	1,629.6	0.0	0.0	1,386.0	3,054.5	$ 135.30	$ 2.47	$ 137.77	$ -	$ -
PEPCO	212.5	5,948.8	5,948.8	28.6	0.0	2,384.3	8,545.6	$ 135.30	$ -	$ 135.30	$ -	$ -
ATSI	0	8,007.2	8,007.2	11.4	0.0	8,439.0	16,446.2	$ 135.30	$ 36.06	$ 171.36	$ 36.06	$ 288,739.63
ATSI-CLEVELAND	0	1,248.0	1,248.0	0.1	0.0	4,260.0	5,508.0	$ 135.30	$ 36.06	$ 171.36	$ -	$ -
BGE	261.6	1,961.3	1,961.3	0.5	0.0	6,005.0	8,227.9	$ 135.30	$ 44.47	$ 179.77	$ 44.47	$ 87,219.01
COMED	0	22,417.4	22,142.9	285.0	274.5	5,574.0	27,991.4	$ 135.30	$ 48.73	$ 184.03	$ 48.73	$ 1,092,399.90
DAY	0	1,636.7	1,636.7	2.3	0.0	2,638.3	4,275.0	$ 135.30	$ -	$ 135.30	$ -	$ -
DEOK	0	2,726.3	2,726.3	45.9	0.0	4,858.4	7,584.7	$ 135.30	$ -	$ 135.30	$ -	$ -
PPL	0	11,237.6	11,220.0	17.6	51.5	-688.9	10,531.1	$ 135.30	$ -	$ 135.30	$ -	$ -

Annual Resource Credits	$ 8,781,035,459.18
RTO Resource Cleared MW	163,779.3

Sim 2 as "Demand In-Supply Out" w/ subsidized units removed but load retained (Min MW = 0; Quads, Salems, and Hope Creek removed from supply stack, total of 4,667.7 MW UCAP)

LDA	PRD Cleared MW	Resource Cleared MW	Total Annual Cleared MW	Total Summer Cleared MW	Total Winter Cleared MW	Imported MW	VRR Cleared MW	System MCP	LDA Price Adder	CP Clearing Price	Immediate LDA Price Adder	Total Resource Credits ($/day)
RTO	555.8	163,420.3	162,704.8	715.5	715.5	0.0	163,976.0	$ 146.40	$ -	$ 146.40		$ 23,924,731.92
MAAC	555.8	66,709.4	66,618.4	206.6	91.0	1,723.2	68,988.4	$ 146.40	$ -	$ 146.40	$ -	$ -
EMAAC	81.7	28,530.7	28,529.7	147.7	1.0	9,000.0	37,612.4	$ 146.40	$ 141.53	$ 287.93	$ 141.53	$ 4,037,949.97
SWMAAC	474.1	10,206.4	10,206.4	41.3	0.0	6,175.4	16,855.8	$ 146.40	$ -	$ 146.40	$ -	$ -
PSEG	0	5,951.6	5,950.6	4.7	1.0	6,165.2	12,116.8	$ 146.40	$ 141.53	$ 287.93	$ -	$ -
PS-NORTH	0	3,489.9	3,488.9	4.7	1.0	2,524.3	6,014.2	$ 146.40	$ 141.53	$ 287.93	$ -	$ -
DPL-SOUTH	38.9	1,785.5	1,785.5	0.0	0.0	1,150.9	2,975.3	$ 146.40	$ 141.53	$ 287.93	$ -	$ -
PEPCO	212.5	5,948.8	5,948.8	40.8	0.0	2,363.0	8,524.3	$ 146.40	$ -	$ 146.40	$ -	$ -
ATSI	0	8,007.2	8,007.2	11.4	0.0	8,439.0	16,446.2	$ 146.40	$ 24.96	$ 171.36	$ 24.96	$ 199,859.71
ATSI-CLEVELAND	0	1,248.0	1,248.0	0.1	0.0	4,260.0	5,508.0	$ 146.40	$ 24.96	$ 171.36	$ -	$ -
BGE	261.6	1,961.3	1,961.3	0.5	0.0	6,005.0	8,227.9	$ 146.40	$ 33.37	$ 179.77	$ 33.37	$ 65,448.58
COMED	0	22,391.6	22,117.1	285.0	274.5	5,574.0	27,965.6	$ 146.40	$ 42.65	$ 189.05	$ 42.65	$ 955,001.74
DAY	0	1,636.7	1,636.7	2.3	0.0	2,628.7	4,265.4	$ 146.40	$ -	$ 146.40	$ -	$ -
DEOK	0	2,800.3	2,800.3	45.9	0.0	4,767.2	7,567.5	$ 146.40	$ -	$ 146.40	$ -	$ -
PPL	0	11,242.0	11,224.4	17.6	51.5	-718.3	10,506.1	$ 146.40	$ -	$ 146.40	$ -	$ -

Annual Resource Credits	$ 10,651,792,052.26
RTO Resource Cleared MW	163,420.3
Delta Cleared from Sim 1	$ (359.0)

Sim 3 as "Unit-Specific FRR" w/ equivalent supply and demand removed (Min MW = 0; Quads, Salems, and Hope Creek removed from supply & 100% left shift of VRR)

LDA	PRD Cleared MW	Resource Cleared MW	Total Annual Cleared MW	Total Summer Cleared MW	Total Winter Cleared MW	Imported MW	VRR Cleared MW	System MCP	LDA Price Adder	CP Clearing Price	Immediate LDA Price Adder	Total Resource Credits ($/day)
RTO	555.8	159,111.6	158,396.1	715.5	715.5	0.0	159,667.3	$ 135.30	$ -	$ 135.30		$ 21,527,799.48
MAAC	555.8	64,290.1	64,199.1	206.6	91.0	996.6	65,842.4	$ 135.30	$ -	$ 135.30	$ -	$ -
EMAAC	81.7	26,193.2	26,192.2	147.7	1.0	9,000.0	35,274.9	$ 135.30	$ 2.47	$ 137.77	$ 2.47	$ 64,697.20
SWMAAC	474.1	10,130.3	10,130.3	41.3	0.0	6,294.9	16,899.3	$ 135.30	$ -	$ 135.30	$ -	$ -
PSEG	0	5,367.6	5,366.6	4.7	1.0	6,902.0	12,269.6	$ 135.30	$ 68.99	$ 204.29	$ 66.52	$ 357,052.75
PS-NORTH	0	3,133.3	3,132.3	4.7	1.0	2,958.1	6,091.4	$ 135.30	$ 68.99	$ 204.29	$ -	$ -
DPL-SOUTH	38.9	1,629.6	1,629.6	0.0	0.0	1,386.0	3,054.5	$ 135.30	$ 2.47	$ 137.77	$ -	$ -
PEPCO	212.5	5,948.8	5,948.8	40.8	0.0	2,384.3	8,545.6	$ 135.30	$ -	$ 135.30	$ -	$ -
ATSI	0	8,007.2	8,007.2	11.4	0.0	8,439.0	16,446.2	$ 135.30	$ 36.06	$ 171.36	$ 36.06	$ 288,739.63
ATSI-CLEVELAND	0	1,248.0	1,248.0	0.1	0.0	4,260.0	5,508.0	$ 135.30	$ 36.06	$ 171.36	$ -	$ -
BGE	261.6	1,961.3	1,961.3	0.5	0.0	6,005.0	8,227.9	$ 135.30	$ 44.47	$ 179.77	$ 44.47	$ 87,219.01
COMED	0	21,062.9	20,788.4	285.0	274.5	5,574.0	26,636.9	$ 135.30	$ 48.73	$ 184.03	$ 48.73	$ 1,026,395.12
DAY	0	1,636.7	1,636.7	2.3	0.0	2,638.3	4,275.0	$ 135.30	$ -	$ 135.30	$ -	$ -
DEOK	0	2,726.3	2,726.3	45.9	0.0	4,858.4	7,584.7	$ 135.30	$ -	$ 135.30	$ -	$ -
PPL	0	11,237.6	11,220.0	17.6	51.5	-688.9	10,531.1	$ 135.30	$ -	$ 135.30	$ -	$ -

Annual Resource Credits	$ 8,523,444,666.54
RTO Resource Cleared MW	159,111.6
Delta Cleared from Sim 1	$ (4,667.7)

CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated at Washington, DC, this 6th day of November 2018.

/s/ Ryan J. Collins
Ryan J. Collins

Attorney for
PJM Interconnection, L.L.C.

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