UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

PJM Interconnection, L.L.C.	)	Docket No. ER18-1314-000, -001

COMMENTS OF THE INDEPENDENT MARKET MONITOR FOR PJM

Pursuant to Rule 211 of the Commission's Rules and Regulations,[1] Monitoring Analytics, LLC, acting in its capacity as the Independent Market Monitor for PJM[2] ("Market Monitor"), submits these comments supporting the proposal of PJM Interconnection, L.L.C. ("PJM") for an extended Minimum Offer Price Rule ("MOPR-Ex") on April 9, 2018 ("April 9th Filing").[3] The MOPR-Ex extends and improves PJM's existing long standing mitigation framework to include consideration of subsidies to existing generation capacity resources that may allow such resources to avoid competitive market signals to retire. MOPR-Ex preserves PJM's competitive markets and PJM's reliance on market based investments that place the risk of investment on plant owners rather than customers. MOPR-Ex does not attempt to prevent states from exercising their regulatory authority, but limits the impact of individual state actions on wholesale power markets and on other PJM states that make

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1 18 CFR § 385.211 (2017).

2 Capitalized terms used herein and not otherwise defined have the meaning used in the PJM Open Access Transmission Tariff ("OATT") and the PJM Operating Agreement ("OA").

3 PJM filed tariff revisions for MOPR-Ex that deviate from tariff language supported by a majority of PJM stakeholders in ways likely to create confusion and unnecessarily complicate their implementation. The Market Monitor has attached the version approved by stakeholders here (Attachment A) for the Commission's consideration.

different regulatory choices. PJM stakeholders considered a number of proposals to address the impact of subsidized units on competitive markets. MOPR-Ex received majority support, although just below the two-thirds threshold required to authorize a Section 205 filing.[4] [5]

The Commission has determined: "Absent a showing that a different method would appropriately address particular state policies, we intend to use the MOPR to address the impacts of state policies on the wholesale capacity markets."[6]

The PJM Board authorized the filing, explaining:

> The Board has directed PJM to file both the Capacity Repricing and MOPR-Ex proposals with the Federal Energy Regulatory Commission under Section 205 of the Federal Power Act. Each approach represents a distinct, just and reasonable policy alternative to address the consequences of state intervention. Deciding between these policy options requires a balancing of federal and state interests, raising questions of federalism and comity that have already presented themselves before the courts,

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[4] April 9th Filing at 41 ("The IMM-proposed MOPR-Ex Tariff revisions failed in a sector-weighted vote with 3.19 in favor.[footnote omitted] The PJM proposal failed in a sector-weighted vote with 1.07 in favor. [footnote omitted]"). A sector-weighted vote above 3.335 (2/3) in favor is needed to pass. OA § 8.4(c). MOPR-Ex received strong support from three sectors: Electric Distributor (.75), End-Use Customer (.83), and Generation Owners (.83). MOPR-Ex received a majority of support from Other Suppliers (.55). The only sector opposed is the Transmission Owners (.22). The support for PJM's proposal was: Electric Distributor (.04), End-Use Customer (0.00), Generation Owner (0.15), Other Supplier (.13) and Transmission Owners (.75). The Transmission Owners sector is composed of the following companies: American Transmission Systems, Inc. (FirstEnergy), Appalachian Power Company (AEP), Dayton Power & Light Company, Duke Energy Business Services LLC, Duquesne Light Company, East Kentucky Power Cooperative, Inc., Essential Power Rock Springs, LLC, Exelon Business Services Company, LLC, ITC Interconnection LLC, Neptune Regional Transmission System, LLC, PPL Electric Utilities Corporation, Public Service Electric & Gas Company, Rockland Electric Company, Virginia Electric & Power Company (Dominion Energy).

[5] *See* "MRC Summarized Voting Report", Markets & Reliability Committee Meeting Materials, January 25, 2018, which can be accessed at: <*http://www.pjm.com/committees-and-groups/committees/mrc.aspx*>.

[6] *ISO New England, Inc.*, 162 FERC ¶ 61,205 at P 22 (2018).

> including the U.S. Supreme Court. Accordingly, the Board concluded that this question should fall to the Commission as the federal policymaker not to the PJM Board. [7]

PJM staff includes with the April 9th Filing an alternative proposal ("Capacity Repricing") that was developed by PJM staff. PJM staff indicates that Capacity Repricing is PJM staff's preference, but explains that both proposals are filed under Section 205 of the Federal Power Act.[8] Consistent with Board direction when authorizing the filing, PJM leaves the policy choice for the Commission to decide.[9]

The Commission is free to accept the better of the two approaches filed under Section 205 in this proceeding. MOPR-Ex is the better approach. MOPR-Ex protects PJM's competitive markets, has majority stakeholder support and is consistent with long-standing Commission policy. PJM's Capacity Repricing proposal undermines competitive markets, does not have majority support and is not consistent with Commission policy.

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7 Letter from Andrew L. Ott to Members and Stakeholders of PJM, PJM Interconnection, L.L.C. (Feb. 16, 2018), which can be accessed at: <*http://www.pjm.com/~/media/about-pjm/who-we-are/public-disclosures/20180216-letter-from-pjm-president-and-ceo-on-behalf-of-the-board-of-managers-regarding-capacity-market-reforms.ashx*>.

8 PJM also explains, per the Commission's eTariff rules applicable to alternative tariff sheets, that *if the Commission fails to take timely action in the matter*, the tariff sheets implementing its Alternative Proposal will be automatically accepted. *See* FERC eTariff Implementation Guide at 8 ("Option Code: This data element permits a Tariff Submitter to propose alternate sets of Tariff Records (Option Sets) in a single Tariff Filing, with a request that FERC determine which Option Set to accept (i.e., place into effect). For each set of Tariff Records, the Tariff Submitter proposed options must start with 'A' and increment sequentially through the alphabet, i.e., the Tariff Record can not have an option designated as 'A' and another option designated as 'C' without having an option of 'B'. If no alternative Options Sets are being proposed, the value for this data element would be an 'A'. Each Option Set must contain all Tariff Records for the relevant Tariff Filing even if some of the Tariff Records are identical across the Option Sets. For Tariff Filings with multiple Option Sets, the Tariff Submitter should make Option 'A' its primary proposal. If the Type of Filing Code provides for a statutory period and the Commission does not formally act, Option 'A' will be deemed Accepted and all other Options deemed Rejected. If FERC accepts tariff text from various Option Sets, it will require a compliance filing. [Emphasis added.]").

9 April 9th Filing at 41–42.

Capacity Repricing does not meet and address the threat to markets created by subsidies for uneconomic units. Capacity Repricing instead institutionalizes the problem created by subsidies. The Capacity Repricing approach would fundamentally shift the design of PJM's markets away from competition and towards the cost of service model. Capacity Repricing is inconsistent with the principles of PJM's competitive market design and would undermine PJM's competitive markets if implemented.

The choice in this proceeding is between taking the next steps in the continuing evolution of competitive markets and abandoning competitive markets.

MOPR-Ex is not perfect. MOPR-Ex is not a panacea. But MOPR-Ex is the only choice consistent with markets in this proceeding.

The Market Monitor supports the MOPR-Ex proposal. The Market Monitor opposes the Capacity Repricing proposal.

I. BACKGROUND

A. The Spread of Subsidies to Allow Uneconomic Resources Poses a Threat to Competitive Markets.

The goal of competition is to provide customers wholesale power at the lowest possible price, but no lower. The PJM markets work. The results of the energy market and the results of the capacity market were competitive in 2017.[10] The PJM markets bring customers the benefits of competition. But the PJM markets, and wholesale power markets in the U.S., face new challenges that potentially threaten the viability of competitive markets.

Particularly in times of stress on markets and when some flaws in markets are revealed, nonmarket solutions may appear attractive. Top down, integrated resource planning approaches are tempting because it is easy to think that experts know exactly the

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[10] *See* 2017 State of the Market Report for PJM, Vol. 2 (March 10, 2018).

right mix and location of generation resources and the appropriate definition of resource diversity, reliability and resilience, and therefore which technologies should be favored through exceptions to market rules. The provision of subsidies to favored technologies, whether solar, wind, coal, batteries, demand side or nuclear, is tempting for those who would benefit, but subsidies are a form of integrated resource planning that is not consistent with markets. Subsidies to existing units are no different in concept than subsidies to planned units and are equally inconsistent with markets. Proposals for fuel diversity are generally proposals to subsidize an existing, uneconomic technology. Subsidies are tempting because they maintain existing resources and provide increased revenues to asset owners in uncertain markets. Cost of service regulation is tempting because cost of service regulation incorporates integrated resource planning and because guaranteed rates of return and fixed prices may look attractive to asset owners in uncertain markets. Changing LMP to increase revenues to preferred technologies is also tempting and no more consistent with markets than cost of service regulation.

It is essential that any approach to the PJM markets incorporate a consistent view of how the preferred market design is expected to provide competitive results in a sustainable market design over the long run. A sustainable market design means a market design that results in appropriate incentives to retire units and to invest in new units over time such that reliability is ensured as a result of the functioning of the market. There are at least two broad paradigms that could result in such an outcome. The market paradigm includes a full set of markets, most importantly the energy market and capacity market, which together ensure that there are adequate revenues to incent new generation when it is needed and to incent retirement of units when appropriate. This approach will result in long term reliability at the lowest possible cost.

The quasi-market paradigm includes an energy market based on LMP but addresses the need for investment incentives via the long term contract model or the cost of service model. In the quasi-market paradigm, competition to build capacity is limited and does not include the entire market. In the quasi-market paradigm, customers absorb the risks

associated with investment in and ownership of generation assets through guaranteed payments under either guaranteed long term contracts or the cost of service approach. In the quasi-market paradigm there is no market clearing pricing to incent investment in existing units or new units. In the quasi-market paradigm there is no incentive for entities without cost of service treatment to enter and thus competition is effectively eliminated.

The market paradigm and the quasi-market paradigm are mutually exclusive. Once the decision is made that market outcomes must be fundamentally modified, it will be virtually impossible to return to markets. While there are entities in the PJM markets that continue to operate under the quasi-market paradigm, those entities have made a long term decision on a regulatory model and the PJM rules generally limit any associated, potential negative impacts on markets. That consistent approach to the regulatory model is very different from current attempts to subsidize specific market assets that are uneconomic as a result of competition. Subsidies are an effort to reverse market outcomes with no commitment to a regulatory model and no attempt to mitigate negative impacts on competition. The subsidy model is inconsistent with the PJM market design and inconsistent with the market paradigm and constitutes a significant threat to both.

The issue of external subsidies continued to evolve in 2017 and the first quarter of 2018. These subsidies are not directly part of the PJM market design but nonetheless threaten the foundations of the PJM capacity market and the PJM energy market, as well as the competitiveness of PJM markets overall. The Ohio subsidy proceedings, the Illinois ZEC subsidy legislation, the request in Pennsylvania to subsidize the Three Mile Island nuclear power plant, the legislation in New Jersey to subsidize the Salem and Hope Creek nuclear power plants, and the request by FirstEnergy to the U.S. DOE for subsidies consistent with the DOE Grid Resilience Proposal (NOPR), all originate from the fact that competitive markets result in the exit of uneconomic and uncompetitive generating units. Regardless of the specific rationales offered by unit owners, the proposed solution for all such generating units has been to provide out of market subsidies in order to retain such units. The proposed solution in all cases ignores the opportunity cost of subsidizing uneconomic units,

which is the displacement of new resources and technologies that would otherwise be economic. These subsidies are not accurately characterized as state subsidies. These subsidies were all requested by the owners of specific uneconomic generating units in order to improve the profitability of those specific units. These subsidies were not requested to accomplish broader social goals. Broader social goals can all be met with market-based mechanisms available to all market participants on a competitive basis and without discrimination.

The proponents of subsidies and of the concomitant significant alterations to the PJM capacity market and energy market designs have not demonstrated that there is a systematic problem rather than an uneconomic unit specific problem. Proponents have not demonstrated that the technologies in question actually need subsidies or higher revenues from market design changes.

An evaluation of the economics of the PJM nuclear fleet (19 plants) based on public data shows that some nuclear plants are at risk of retirement.[11] The exact number depends on the evaluation criteria. Using historical data, between six nuclear plants with a total capacity of 7,673 MW and nine plants with a total capacity of 14,027 MW did not recover their avoidable costs in two of the last three years. Based on forward prices for energy and the known forward prices for capacity, four nuclear plants would not cover their annual avoidable costs on average over the next three years (2018 through 2020) when 100 percent of NEI's incremental capital expenditures are included. The four plants are Oyster Creek, Three Mile Island, Davis Besse, and Perry. Oyster Creek and Three Mile Island are scheduled to retire in 2019. In March 2018, Davis Besse and Perry requested deactivation in 2021. All four plants are single nuclear unit sites which have higher operating costs per MWh than multiple unit sites. The four plants together are 3,554 MW, of which 615 MW

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11 *See 2018 Quarterly State of the Market Report for PJM: January through March*, Section 7: Net Revenue (May 10, 2018)

(Oyster Creek) have a definitive retirement plan and 2,939 MW (Three Mile Island, Davis Besse and Perry) have requested deactivation.

An evaluation of the economics of the PJM coal fleet shows that a significant number of coal units are at risk of retirement based on historical data.[12] If the coal units at risk are defined to be units receiving less than 90 percent of their avoidable costs, the total coal MW at risk would be 17,302 MW.

Based on these criteria, 22,929 MW, primarily of coal and nuclear capacity in PJM, are at risk of retirement, in addition to the units that are currently planning to retire, primarily coal and nuclear units. Based on more conservative criteria, 30,785 MW are at risk of retirement.

There are some nuclear power plants in PJM that are not economic at expected levels of energy and capacity market clearing prices. There are coal plants that are not economic at recent levels of energy and capacity market clearing prices. The decisions on how to proceed belong to the owners of those plants. The fact that some plants are uneconomic does not call into question the fundamentals of PJM markets. Many generating plants have retired in PJM since the introduction of markets and many generating plants have been built since the introduction of markets.

The proposed subsidy solutions in all cases ignore the opportunity cost of subsidizing uneconomic units, which is the displacement of resources and technologies that would otherwise be economic. A decision to subsidize uneconomic units that are a significant source of energy and capacity has direct and significant impacts on other sources of energy; the opportunity costs of subsidies are substantial. Such subsidies suppress energy and capacity market prices and therefore suppress incentives for investments in new, higher efficiency thermal plants but also suppress investment incentives for the next

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12 *See 2017 State of the Market Report for PJM,* Vol. 2, Section 7: Net Revenue (March 10, 2018)

generation of energy supply technologies and energy efficiency technologies. These impacts are long lasting but difficult to quantify precisely.

In addition, artificially retaining uneconomic units in the market through the use of subsidies suppresses energy and capacity market prices and puts other units with relatively weak economics at risk. That is what makes subsidies contagious. Subsidies to uneconomic units will make additional units uneconomic which will create the request for additional subsidies and the process will continue, eventually implicating even highly efficient units and new entry. Competition in the markets could be replaced by competition to receive subsidies. PJM markets have no protection against this emergent threat.

The PJM markets have worked to provide incentives to entry and to retaining capacity. PJM has excess reserves of more than 10,000 MW on June 1, 2017, and will have excess reserves of more than 15,000 MW on June 1, 2018, based on current positions. Capacity investments in PJM were generally financed by market sources. Of the 24,889.8 MW of additional capacity that cleared in Reliability Pricing Model (RPM) auctions for the 2007/2008 through 2016/2017 delivery years, 18,140.5 MW (72.9 percent) were based on market funding. Of the 18,176.9 MW of additional capacity that cleared in RPM auctions for the 2017/2018 through 2020/2021 delivery years, 15,467.7 MW (85.1 percent) are based on market funding. Those investments were made based on the assumption that markets would be allowed to work and that inefficient units would exit.

A comparison of the total units at risk and the current excess capacity in PJM suggests that, ignoring local reliability issues which would be addressed through transmission upgrades or RMR, the current and expected excess capacity is of the same order of magnitude as the units at risk. There are currently 100,179.4 MW in the PJM generator interconnection queues, including suspended units. Of that, 34,494.8 MW have a Construction Services Agreement (CSA), the last agreement required in the interconnection process. For generators with a CSA, 72.5 percent have gone into service. Based on that history, 25,008.7 MW of new generation with a CSA are expected to go into service.

Accurate signals for entry and exit are necessary for well functioning and competitive markets. Competitive investors rely on accurate signals to make decisions. Similar threats to competitive markets are being discussed by unit owners in other states and the potentially precedential nature of these actions enhances the urgency of creating an effective rule to maintain competitive markets by modifying market rules to address these subsidies. Fortunately, this can be accomplished quickly by expanding the coverage of an existing rule (the Minimum Offer Price Rule or MOPR) that already reflects stakeholder compromises.

Much of the reason that overall market outcomes are subject to legitimate criticism is that the capacity market has not been permitted to reveal the underlying supply and demand fundamentals in prices. Before market outcomes are rejected in favor of nonmarket choices, the capacity market should be permitted to work. It is more critical than ever to get capacity market prices correct. A number of capacity market design elements resulted in a substantial suppression of capacity market prices for multiple years.

These market design choices have and have had substantial impacts. Capacity prices that were suppressed substantially below the level consistent with supply and demand fundamentals affected some participants' long term decisions and led some market participants to seek subsidies. PJM has addressed the fundamental issues of the capacity market design in its Capacity Performance design, including price formation, product definition and performance incentives. But there are significant ongoing efforts to undo some of the key elements of the Capacity Performance design including performance incentives and product definition.

To the extent that there are shared broader goals related to PJM markets, they should also be addressed. If society determines that carbon is a pollutant with a negative value, a market approach to carbon is preferred to a technology or unit specific subsidy approach. Implementation of a carbon price is a market approach which would let market participants respond in efficient and innovative ways to the price signal rather than relying on planners to identify specific technologies or resources to be subsidized. If a shared goal is increased

renewables in addition to their carbon attributes, a common approach to RECs would be a market based solution.

B. MOPR Is the Commission's Preferred Policy Approach.

The decision in *ISO New England* approving that RTO's Competitive Auctions with Sponsored Policy Resources proposal ("CASPR") explains the principles behind capacity markets and the best means to protect their ability to fulfill those principles.[13] ISO New England relies on a mitigation rule similar to the current PJM MOPR. CASPR is an additional feature in the ISO New England market design that allows the owners of units receiving subsidies to buy out owners of units having a capacity obligation that was obtained through competitive auctions. Participation in CASPR is not mandatory, but it provides an opportunity for owners of subsidized units to supply capacity on a competitive basis.[14] With only one dissent, the Commission supported or concurred with a result that kept ISO New England's MOPR in place while approving a new construct that allowed owners of subsidized units a market opportunity to supply capacity.

The Commission stated:

> "[W]e are guided by the first principles of capacity markets. A capacity market should facilitate robust competition for capacity supply obligations, provide price signals that guide the orderly entry and exit of capacity resources, result in the selection of the least-cost set of resources that possess the attributes sought by the markets, provide price transparency, shift risk as appropriate from customers to private capital, and mitigate market power. Ultimately, the purpose of basing capacity market constructs on these principles is to produce a level of investor confidence that is sufficient to ensure resource adequacy at just and reasonable rates.

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[13] 162 FERC ¶ 61,205.

[14] *Id*. at P 7 ("In the second stage, the substitution auction, existing resources that have acquired capacity supply obligations through the primary auction will be permitted to offer a demand bid in the substitution auction, indicating a willingness to permanently retire from all ISO-NE markets at a certain price. ").

> Where participation of resources receiving out-of-market state revenues undermines those principles, it is our duty under the FPA to take actions necessary to assure just and reasonable rates.[15]

The Commission's first principles of capacity markets should also apply in this proceeding.

The Commission confirmed its intention to continue its long standing reliance on minimum offer price rules used in ISOs/RTOs (at PP 21–22):

> In previous settings of that nature, to address the impact of out-of-market state support on wholesale capacity markets, the Commission has accepted market rules that impose a MOPR on resources receiving such out-of-market support.
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> Absent a showing that a different method would appropriately address particular state policies, we intend to use the MOPR to address the impacts of state policies on the wholesale capacity markets. However, we acknowledge that there can be more than one valid method of managing such impacts, and that methods may be tailored to the specific challenges posed by the state policies in a given region. Accordingly, while we will use the MOPR as our standard solution, we will consider supplemental or alternative proposals to manage the impact of state policies, provided that those proposals are sufficiently consistent with the above-mentioned principles of capacity markets."

The Commission's approach to MOPR as the standard solution should continue to apply in this proceeding. The original MOPR rules were not perfect, but the modified MOPR rules improved the scope, efficiency of administration and effectiveness of the rules. MOPR-Ex constitutes the next logical step in the development of MOPR.

The Commission states (at P 44):

> ISO-NE's proposed definition of Sponsored Policy Resource is narrowly tailored to meet ISO-NE's objective of limiting the impact of out-of-market state procurements on the FCM."

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[15] *Id*. at P 21.

The Commission states (at P 45):

> We find that the definition of Sponsored Policy Resource proposed by ISO-NE does not unduly discriminate against resources that do not fit within that definition because those two classes of resources are not similarly situated. ISO-NE contends that the development of Sponsored Policy Resources will result in the presence of more capacity in the New England region than ISO-NE has deemed necessary to satisfy its capacity requirements, and thus ISO-NE seeks to accommodate the entry of new Sponsored Policy Resources into the FCM over time. ISO-NE has provided record evidence of specific projects and megawatts of capacity that will be developed by the operation of state environmental and clean energy mandates, whether that capacity clears the FCM or not. [footnote omitted] At this time, these projects involve renewable, clean, or alternative energy resources. By contrast, there is no similar record evidence that there are currently resources that do not meet the definition of Sponsored Policy Resource, such as other self-supply resources, that will be built or procured even if those resources do not receive capacity supply obligations.

In *ISO New England*, the Commission approved a definition of a Sponsored Policy Resource that was "narrowly tailored to meet ISO-NE's objective to limiting the impact of out-of-market state procurements."

II. COMMENTS

A. An Extended MOPR (MOPR-Ex) Would Protect Competitive Markets.

MOPR-Ex appropriately builds on PJM's long standing reliance on the minimum offer price rule to protect competitive investment in capacity resources. The MOPR-Ex is necessary to protect matters that fall exclusively and squarely within this Commission's jurisdiction. MOPR does not prevent any state action, including all aspects of siting generation or even integrated resource planning. MOPR prevents states from spreading the costs of their regulatory decisions to the federally regulated interstate wholesale markets. MOPR-Ex accommodates state decisions, but it appropriately incents states to

accommodate the federal decision to rely on competitive markets to regulate wholesale power.

The current proposals for subsidies demonstrate that the markets need protection against subsidized, noncompetitive offers from existing as well as new resources. The current Minimum Offer Price Rule (MOPR) only addresses subsidies for new entry from specific gas fired technologies. The MOPR should be extended to address subsidies for existing units. MOPR-Ex does that.

The states retain jurisdiction over generation and may choose to return generation to cost of service regulation rather than continuing to rely on markets. States may choose to subsidize whatever form of generation they decide. But while generation continues to participate in wholesale power markets, the Commission has exclusive jurisdiction over the rules governing wholesale power markets which the Commission relies on to produce just and reasonable rates for customers.

The purpose of MOPR has evolved from a focus on preventing intentional monopsonistic behavior to preventing interventions in competitive markets that are inconsistent with Commission jurisdiction. The goal of MOPR rules is to ensure that markets establish a competitive, efficient outcome with prices to customers as low as possible. The goal is to provide a disincentive for rather than to encourage subsidies that create price suppression that discourages competitive investment. If unchecked, subsidies, especially as facilitated by Capacity Repricing, can block competitive investment and create a market in name only. The outcome would be a cost of service regime rather than a market, comprised primarily or solely of subsidized resources. The cost of service regime is likely to be significantly more expensive for customers than competitive market outcomes. MOPR-Ex would avoid this result.

MOPR-Ex is a straightforward approach to ensuring that the impact of state subsidies on markets is limited, that the impact of state subsidies is largely confined to the states that choose to implement subsidies, that the impact on other states is limited and that there is a disincentive for such subsidies. MOPR-Ex explicitly builds on the existing market

design with which the Commission, PJM, stakeholders and the Market Monitor have years of experience and, in the interest of consistency and continuity, retains all the basic exemptions and the exception from the existing MOPR and adds an RPS Exemption. MOPR-Ex, with exemptions for competitive entry, for self supply by cost of service utilities, for self supply by public power entities and for competitive renewable portfolio standard ("RPS") programs is a practical and narrowly targeted approach to protecting competitive wholesale power markets.

MOPR-Ex proposes to extend MOPR to existing generators, including all fuel types and technologies.[16] MOPR-Ex includes exemptions for public power and RPS programs. MOPR-Ex restores the Self-Supply Exemption and the Competitive Entry Exemption that existed in the tariff prior to the NRG remand order.[17] The competitive entry exemption was revised to include existing generators and the exemption was renamed the Competitive Exemption to reflect this change. MOPR-Ex operates transparently and simply, requiring subsidized resources to offer into the RPM market at competitive levels. The RPM auction will proceed as usual, with units clearing the market based on their competitive offers.

The Public Entity Exemption would be available for a public power entity with a business model designed to match its generation capacity and load obligation while recognizing that temporary imbalances may be created by lumpy investments or the unexpected departure of load. The Public Entity Exemption includes a net long threshold

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[16] The exclusion that existed prior to the NRG remand order (United States Court of Appeals, D.C. Circuit, No. 15-1452, July 7, 2017) for a cogeneration units certified as a Qualifying Facility is retained under MOPR-Ex.

[17] On July 7, 2017, the U.S. Court of Appeals issued an opinion (Case No. 15-1452) that vacated, in part, two FERC orders, 143 FERC ¶61,090 and 153 FERC ¶61,066, that had conditionally accepted a PJM filing that revised the MOPR to include a Self-Supply Exemption and a Competitive Entry Exemption. As a result, the current RPM rules do not include a Self-Supply Exemption or a Competitive Entry Exemption

similar to the Self-Supply Exemption and specifies that generation capacity in excess of the net long threshold is subject to the MOPR floor.

MOPR-Ex includes an RPS Exemption that accommodates state renewable portfolio standards (RPS).[18] MOPR-Ex is narrowly tailored to do what is necessary to protect PJM's competitive markets.[19] The RPS Exemption from MOPR would apply if the resource was procured in a program in compliance with a state mandated RPS program prior to December 31, 2018, or was based on a request for proposals (RFP) issued under a state mandated RPS program prior to December 31, 2018. Resources in compliance with the requirements of a state mandated renewable portfolio standard or voluntary renewable portfolio standard on or after December 31, 2018, would be eligible for the RPS Exemption if the terms of the program are competitive and non-discriminatory, as prescribed in the proposed tariff language. Under the prior MOPR, there were no requirements related to RPS resources.

MOPR-Ex retains the Unit-Specific Exception. The tariff language for the Unit-Specific Exception has been updated to include requirements for existing resources and additional details, consistent with the Market Monitor's current MOPR review process, for Unit-Specific Exception requests by new generators.

B. Certain Elements of the Filed MOPR-Ex Should Be Replaced with the MOPR-Ex Provisions Supported by Stakeholders.

The PJM version of MOPR-Ex, submitted as the Option B tariff language, differs in several respects from the MOPR-Ex tariff language that received a majority vote at the PJM

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[18] *See* 162 FERC ¶ 61,205 (Glick, dissenting) ("I do not believe that it is—or should be—the Commission's mission to create an electricity market free from governmental programs aimed at legitimate policy considerations, such as clean air and combatting climate change.").

[19] *See id*. (LaFleur, concurring) ("I believe that there are different MOPR constructs that could be developed to protect market pricing in those instances where out-of-market subsidies undermine the goals of the wholesale capacity markets").

Markets and Reliability Committee (MRC) meeting on January 25, 2018 ("MRC MOPR-Ex tariff language"). The Market Monitor has attached the MRC MOPR-Ex tariff language as Attachment A to this comment. The Market Monitor proposes that the MRC MOPR-Ex tariff language in Attachments A be used in place of the tariff provisions that PJM submits in Attachments C and D to the April 9th Filing.

The primary difference between PJM's version of MOPR-Ex and the stakeholder MOPR-Ex tariff language is PJM's incorporation of a new term, Capacity Resource with Actionable Subsidy. PJM presumably made this change so that the PJM version of MOPR-Ex would be consistent with the Capacity Repricing tariff language, but in doing so PJM introduced a new and confusing concept. PJM includes as a condition for qualifying as a Capacity Resource with Actionable Subsidy, a requirement that the "Capacity Market Seller has not obtained a Self-Supply Exemption, a Competitive Exemption, a Public Entity Exemption, or an RPS Exemption for such Capacity Resource…"[20] Then in subsequent sections PJM describes the eligibility for each of the exemptions for a Capacity Resource with Actionable Subsidy. For example, eligibility for the Self-Supply Exemption states that a "Capacity Market Seller that is a Self-Supply LSE may qualify a Capacity Resource with Actionable Subsidy … for a Self-Supply Exemption."[21] This is confusing in that a subsidized resource is considered to be a Capacity Resource with Actionable Subsidy until the point in time the Capacity Market Seller is granted an exemption, at which point the subsidized resource ceases to be a Capacity Resource with Actionable Subsidy. The MOPR-Ex tariff language supported by the MRC builds on the existing MOPR language by extending the definition of MOPR Screened Resource to include existing resources and all technologies.[22] [23]

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[20] Option B tariff language, Attachment DD, Section 5.14h)(2)(d).

[21] *See* April 9th Filing , Attachments A & B, Attachment DD, Section 5.14h)(7)

[22] MOPR language as it existed prior to the NRG remand order. *See* Attachment A to this filing.

The April 9th Filing introduces a section describing the process for establishing a Capacity Resource with Actionable Subsidy.[24] The details in this section were not discussed during the PJM stakeholder process. The Market Monitor recognizes that a large number of resources are not subsidized and depend fully on PJM revenues, and would therefore be eligible for a Competitive Exemption to the MOPR-Ex, while other resources will need to submit data to the Market Monitor to verify eligibility for an exemption or verification of a Unit-Specific Exception. The Market Monitor has proposed in stakeholder discussions that the Market Monitor's Member Information Reporting Application (MIRA) be expanded to efficiently accommodate the data submissions necessary for subsidized resources to be granted exemptions or exceptions, as well as a streamlined certification process for nonsubsidized resources that would lead to a Competitive Exemption.

The April 9th Filing also includes procedures and remedies for PJM to apply in cases where PJM suspects fraud.[25] The Market Monitor does not require such provisions as it would independently rely on the existing provisions in the Market Monitoring Plan to address cases of suspected fraud.[26] The MOPR-Ex tariff revisions proposed in the April 9th Filing restore certain language making such reliance explicit and require the Market Monitor to notify PJM where it independently identifies fraudulent behavior.[27] The proposed Capacity Repricing revisions include similar language.[28] The revisions proposed in the April 9th Filing include provisions directing PJM to obtain the Market Monitor's advice when PJM is making certain

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23 The MRC MOPR-Ex tariff language does retain in the definition of MOPR Screened Resource, language that excluded certain cogeneration units. *See* OATT Attachment DD § 5.14(h)(2) in Attachment A to this filing.

24 *See* April 9th Filing, Attachment C & D, proposed revised OATT Attachment DD § 5.14(h)(3).

25 *See* April 9th Filing, Attachments A, B, C & D, proposed revised OATT Attachment DD § 5.14(h)(12).

26 *See* OATT Attachment M § IV.

27 *See* April 9th Filing, Attachments C & D, OATT Attachment M-Appendix § II.D.3.

28 *See* April 9th Filing, Attachments A & B, OATT Attachment M-Appendix § II.D.1 and D-1.1.

determinations.[29] The Market Monitor would provide any assistance that PJM may request in cases of suspected fraud. Including language specifying that the Market Monitor may provide advice creates more confusion than it resolves. The process proposed here is PJM's process. The Market Monitor is always available to advise PJM on any tariff implementation matter that PJM raises with it, but most tariff provisions (appropriately) do not attempt to address this possibility. Accordingly, the Market Monitor requests that, if PJM language were to be used, removal of the clauses in subsection (c) in PJM's proposed MOPR-Ex revisions and in (a) and (c) of the proposed Capacity Repricing revisions stating "with advice and input of the Market Monitoring Unit."

The Market Monitor requests that two changes be made to the Attachment M, Appendix updates submitted by PJM. The term "Public Entity Exemption" should be used rather than "Public Power Entity Exemption," and the term "MOPR Screened Resource" should continue to be used rather the new term "Capacity Resource with Actionable Subsidy."[30]

C. The Alternative Capacity Repricing Proposal Would Harm the Competitiveness and Efficiency of the PJM Capacity Market and Should Not Be Approved.

Capacity Repricing is inconsistent with the principles of PJM's competitive market design and would undermine PJM's competitive markets if implemented. Capacity Repricing would permit subsidized units to displace competitive units and would result in the capacity market becoming a residual market. The PJM capacity market and PJM markets overall cannot function as markets if the capacity market is a residual market. The current design requires all capacity resources to offer and all load to buy capacity, except for FRR entities.

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[29] *See id.*, proposed revised OATT Attachment DD § 5.14(h)(12)(a)(c) (Capacity Repricing) and § 5.14(h)(12)(c) (MOPR-Ex).

[30] *See* April 9th Filing, Attachments C & D, OATT Attachment M-Appendix § II.D.3.

One of the lessons of the history of PJM capacity market design is that design changes based on short term, nonmarket considerations can have long term, significant, negative unintended consequences. The capacity market design should not be modified in order to introduce elements of integrated resource planning to favor specific technologies.

Capacity Repricing is not just and reasonable. Capacity Repricing is not a market solution. Capacity Repricing is similar in many respects to central resource planning, or IRP. The implementation of Capacity Repricing relies upon PJM's discretion to determine the level at which subsidies become a significant concern.[31] PJM's discretion is also used to determine the size of the units that will be subject to Capacity Repricing, and the size of the subsidy relative to the expected PJM market revenue that will qualify a generator for Capacity Repricing.[32]

PJM's threshold levels are inconsistent with their own analysis. PJM estimates that the PJM RPM currently has 3,079 MW of subsidized capacity and PJM comments that this amount "is not sufficiently material to require action."[33] PJM analysis shows that if 3,000 MW of subsidized capacity had offered at $0 per MW-day in the 2020/2021 Base Residual Auction (BRA), capacity clearing prices would have been 10 percent lower.[34] If 6,000 MW of subsidized capacity had offered at $0 per MW-day, capacity clearing prices would have been 21 percent lower. Why does 3,000 MW of subsidized capacity not cause a significant concern? Arbitrary thresholds ignore the fact that even very low levels of subsidized resources can have an impact on local capacity markets. There is no acceptable level of

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31 April 9th Filing, Affidavit of Adam J. Keech on behalf of PJM Interconnection, L.L.C. at Paragraph 16.

32 *Id*. at Paragraph 17.

33 April 9th Filing at 92.

34 April 9th Filing, Affidavit of Adam J. Keech on behalf of PJM Interconnection, L.L.C. at Paragraph 7.

subsidized resources. How does PJM propose to distinguish between subsidized resources above and below the threshold?

PJM asserts that the resources that are pushed out of the PJM capacity market by the subsidized generators will be "legacy units (with a limited future economic life), as opposed to the new entry units classically assumed to be at the margin."[35] But this is wishful thinking. PJM offers no support for this conclusion. The 2020/2021 Base Residual Auction solution data do not support this assertion. The last 5,000 MW to clear in the 2020/2021 RPM Base Residual Auction include a diverse fleet of capacity resources, including demand resources and generation resources with a full range of fuel types and a range of vintages. The last 5,000 MW also includes planned generation. Planned generation, even with offers less than the market clearing price, will be forced out of the market by subsidized resources.

Given the incentives created by Capacity Repricing, competitive generators will modify their behavior in order to clear in the market. But PJM simply assumes that competitive resources will continue to offer competitively. In response to stakeholder concerns regarding distorted offer behavior, PJM states that the notion "that *un*subsidized sellers would offer *below their own net co*sts, so as to commit to provide PJM capacity for a full Delivery Year *at a loss*, such concerns are speculative, to say the least."[36] This is not speculative. It is expected rational behavior given the incentives created by Capacity Repricing. It is also consistent with observed behavior.

Consider the example provided by PJM in Figures 3 and 4 of the April 9th Filing.[37] In the example, resource H is the marginal resource, ultimately setting the clearing price at its offer of $40 per MW-day. However, due to the inclusion of subsidized resources A and B at

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35 April 9th Filing at P 58.

36 April 9th Filing at 58.

37 April 9th Filing at 63–64.

their subsidized offers, competitive resource H does not receive a capacity award. Recognizing the expected outcome, the owners of resource H choose to lower their offer. If resource H were to offer below the offer of resource G, resource H would clear stage 1 of Capacity Repricing and resource G would fail to clear. Figure 1 shows the Capacity Repricing results assuming resource H offers into the market at $30 per MW-day. Stage 1 clears 1,077.3 MW of capacity and resource G does not clear.[38]

Figure 1 Capacity Repricing Stage 1

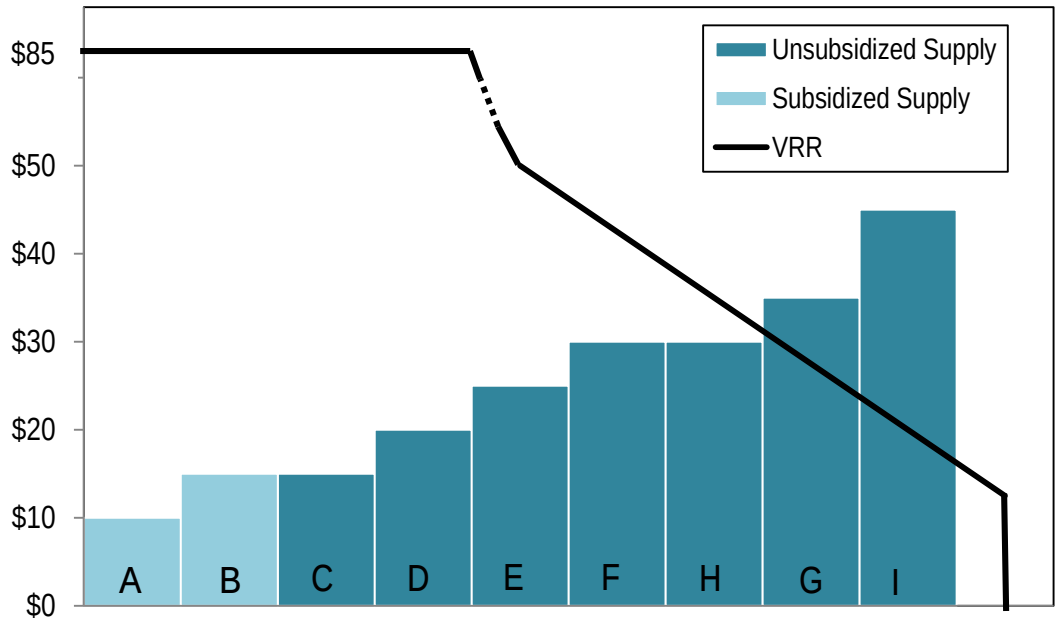


Figure 2 shows the Capacity Repricing stage 2 result assuming resource H offers at $30 per MW-day, and subsidized resources A and B are shown offering at their

[38] For this analysis, based on the Figure 3 (at 62) of the April 9th Filing, it is assumed that each of the nine resources is offering 153.9 MW. This assumption follows from PJM's Figure 3 by noting that the VRR curve intersects the supply stack at the point (1,000 MW, $35 per MW-day). At the point of intersection, six of the resources fully clear the market, and the seventh resource in the supply stack, resource G, clears half of its capacity. The lower portion of the VRR curve is assumed to be the line passing through the points (692.6 MW, $50 per MW-day) and (1,000 MW, $35 MW-day). The value 692.6 MW is obtained by noting the $50 per MW-day point on the VRR curve in PJM's Figure 3 appears to be directly above MW value including supply from resources, A, B, C, and D, and half of the capacity offered by resource E.

nonsubsidized levels. The resulting clearing price is $38.75 per MW-day which is below the actual cost of $40 per MW-day for resource H.

Concerns about this type of offer distortion were voiced by PJM stakeholders during the Capacity Construct/Public Policy Senior Task Force meetings. Would resource G, a resource that would clear under competitive pricing, also distort its offer to protect against being pushed out of the market?

Figure 2 Capacity Repricing Stage 2

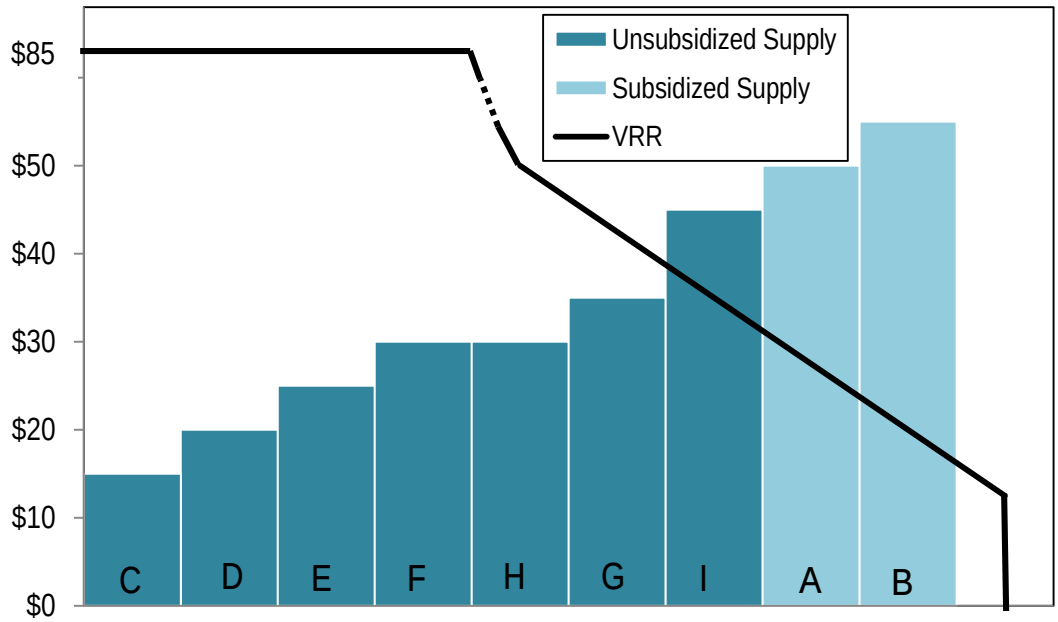


Figure 3 and Figure 4 show a scenario in which resources F, G, and H offer in at $1 per MW-day. Stage 1, shown in Figure 3, clears 1,169.2 MW and Stage 2, shown in Figure 4, sets the clearing price at $38.75 per MW-day. The market outcome is severely distorted from competitive levels. A competitive auction with the original offers, without subsidies, would clear 858.0 MW at an auction clearing price of $40 per MW-day, as compared to this last scenario where 1,169.2 MW cleared at a price of $38.75 per MW-day.

Figure 3 Capacity Repricing Stage 1 strategic offers from resources F, G, and H

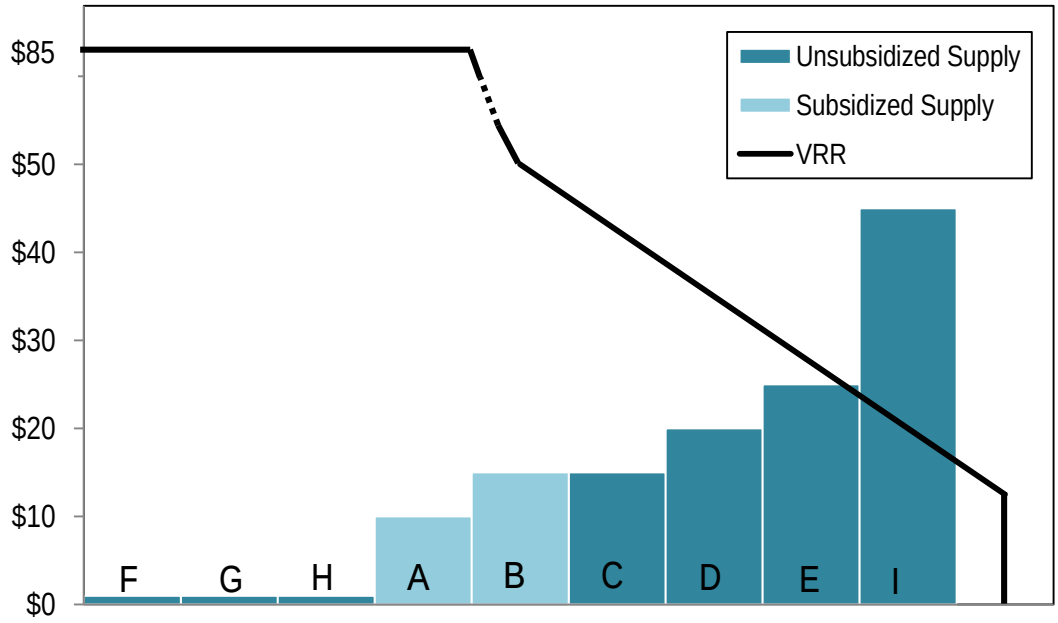
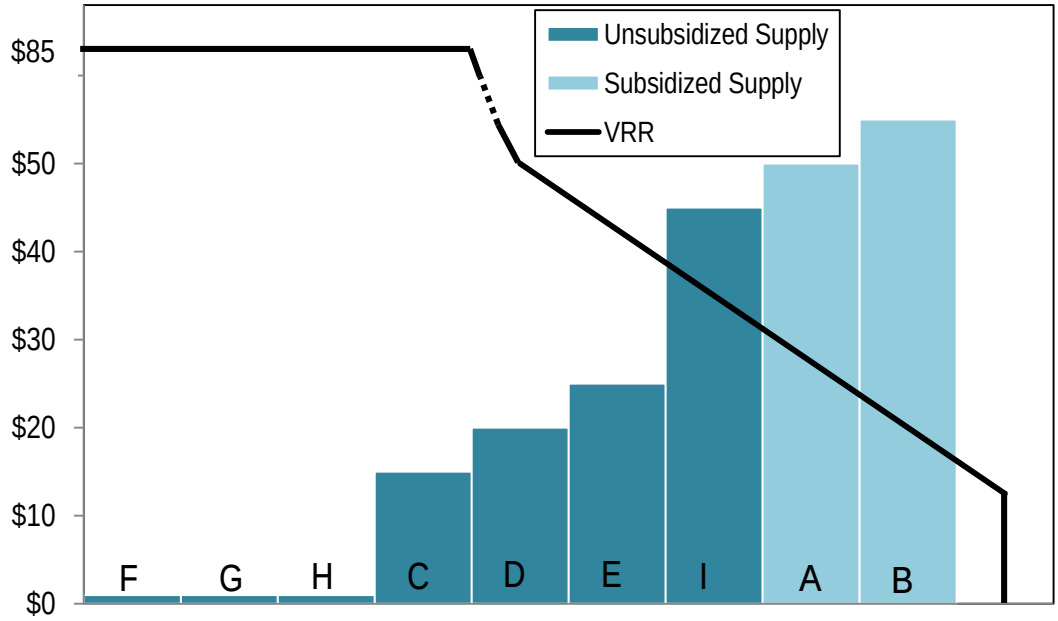


Figure 4 Capacity Repricing Stage 2 strategic offers from resources F, G, and H



These examples show an important deficiency of the Capacity Repricing proposal. Even at a simple level as depicted in these examples, it is not clear where the market will settle. There are no competitive dynamics to discipline the market participants. The market participants cannot reasonably expect a competitive outcome under the Capacity Repricing

auction clearing rules. As a result, the competitive forces that both guide and discipline the behavior of participants cannot be relied upon to produce competitive market outcomes and prevent inefficient market outcomes.

With Capacity Repricing, the clearing price and clearing quantity would no longer be simultaneously determined. Capacity Repricing would first determine the MW quantity and the specific resources that clear the auction. Then in a separate run, with sell offers set by PJM for subsidized resources, PJM would determine the auction clearing price.

There is no basis for concluding that the ultimate clearing price will be at a competitive level. There is no basis for concluding that the amount of cleared capacity will be at a competitive level. Clearing prices will no longer provide the necessary entry and exit signals. Capacity Repricing will replace market prices with PJM's administratively determined prices.

D. PJM Defined Offers

PJM's Capacity Repricing proposal would allow the option of using defined default avoidable cost rates (ACRs) in place of unit specific values in determining a resource's Actionable Subsidy Reference Price. PJM states (at 83), "Historically, most existing resource types in PJM were offer capped at default Maximum Avoidable Cost Rates as stated in the PJM Tariff or posted on PJM's website." This was true prior to the implementation of the Capacity Performance rules. Under CP, the default offer cap is net CONE times B. Allowing the default ACR option under the MOPR is not consistent or symmetrical with the CP offer cap rules. The default ACR values were developed prior to CP.

III. CONCLUSION

The Market Monitor respectfully requests that the Commission afford due consideration to these comments as the Commission resolves the issues raised in this proceeding.

Respectfully submitted,

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Dated: May 7, 2018

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 Eagleville, Pennsylvania,
this 7th day of May, 2018.

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Attachment A

MOPR-Ex Redline

PJM OPEN ACCESS TRANSMISSION TARIFF, ATTACHMENT DD

5.14 Clearing Prices and Charges

a) Capacity Resource Clearing Prices

For each Base Residual Auction and Incremental Auction, the Office of the Interconnection shall calculate a clearing price to be paid for each megawatt-day of Unforced Capacity that clears in such auction. The Capacity Resource Clearing Price for each LDA will be the marginal value of system capacity for the PJM Region, without considering locational constraints, adjusted as necessary by any applicable Locational Price Adders, Annual Resource Price Adders, Extended Summer Resource Price Adders, Limited Resource Price Decrements, Sub-Annual Resource Price Decrements, Base Capacity Demand Resource Price Decrements, and Base Capacity Resource Price Decrements, all as determined by the Office of the Interconnection based on the optimization algorithm. If a Capacity Resource is located in more than one Locational Deliverability Area, it shall be paid the highest Locational Price Adder in any applicable LDA in which the Sell Offer for such Capacity Resource cleared. The Annual Resource Price Adder is applicable for Annual Resources only. The Extended Summer Resource Price Adder is applicable for Annual Resources and Extended Summer Demand Resources.

The Locational Price Adder applicable to each cleared Seasonal Capacity Performance Resource is determined during the post-processing of the RPM Auction results consistent with the manner in which the auction clearing algorithm recognizes the contribution of Seasonal Capacity Performance Resource Sell Offers in satisfying an LDA's reliability requirement. For each LDA with a positive Locational Price Adder with respect to the immediate higher level LDA, starting with the lowest level constrained LDAs and moving up, PJM determines the quantity of equally matched Summer-Period Capacity Performance Resources and Winter-Period Capacity Performance Resources located and cleared within that LDA. Up to this quantity, the cleared Summer-Period Capacity Performance Resources and Winter-Period Capacity Performance Resources with the lowest Sell Offer prices will be compensated using the highest Locational Price Adder applicable to such LDA; and any remaining Seasonal Capacity Performance Resources cleared within the LDA are effectively moved to the next higher level constrained LDA, where they are considered in a similar manner for compensation.

b) Resource Make-Whole Payments

If a Sell Offer specifies a minimum block, and only a portion of such block is needed to clear the market in a Base Residual or Incremental Auction, the MW portion of such Sell Offer needed to clear the market shall clear, and such Sell Offer shall set the marginal value of system capacity. In addition, the Capacity Market Seller shall receive a Resource Make-Whole Payment equal to the Capacity Resource Clearing Price in such auction times the difference between the Sell Offer's minimum block MW quantity and the Sell Offer's cleared MW quantity. If the Sell Offer price of a cleared Seasonal Capacity Performance Resource exceeds the applicable Capacity Resource Clearing Price, the Capacity Market Seller shall receive a Resource Make-Whole Payment equal to the difference between the Sell Offer price and Capacity Resource Clearing Price in such RPM Auction. The cost for any such Resource Make-Whole Payments required in a Base Residual Auction or Incremental Auction for adjustment of prior capacity commitments

shall be collected pro rata from all LSEs in the LDA in which such payments were made, based on their Daily Unforced Capacity Obligations. The cost for any such Resource Make-Whole Payments required in an Incremental Auction for capacity replacement shall be collected from all Capacity Market Buyers in the LDA in which such payments were made, on a pro-rata basis based on the MWs purchased in such auction.

c) New Entry Price Adjustment

A Capacity Market Seller that submits a Sell Offer based on a Planned Generation Capacity Resource that clears in the BRA for a Delivery Year may, at its election, submit Sell Offers with a New Entry Price Adjustment in the BRAs for the two immediately succeeding Delivery Years if:

1. Such Capacity Market Seller provides notice of such election at the time it submits its Sell Offer for such resource in the BRA for the first Delivery Year for which such resource is eligible to be considered a Planned Generation Capacity Resource. When the Capacity Market Seller provides notice of such election, it must specify whether its Sell Offer is contingent upon qualifying for the New Entry Price Adjustment. The Office of the Interconnection shall not clear such contingent Sell Offer if it does not qualify for the New Entry Price Adjustment.

2. All or any part of a Sell Offer from the Planned Generation Capacity Resource submitted in accordance with section 5.14(c)(1) is the marginal Sell Offer that sets the Capacity Resource Clearing Price for the LDA.

3. Acceptance of all or any part of a Sell Offer that meets the conditions in section 5.14(c)(1)-(2) in the BRA increases the total Unforced Capacity committed in the BRA (including any minimum block quantity) for the LDA in which such Resource will be located from a megawatt quantity below the LDA Reliability Requirement, minus the Short Term Resource Procurement Target, to a megawatt quantity at or above a megawatt quantity at the price-quantity point on the VRR Curve at which the price is 0.40 times the applicable Net CONE divided by (one minus the pool-wide average EFORd).

4. Such Capacity Market Seller submits Sell Offers in the BRA for the two immediately succeeding Delivery Years for the entire Unforced Capacity of such Generation Capacity Resource committed in the first BRA under section 5.14(c)(1)-(2) equal to the lesser of: A) the price in such seller's Sell Offer for the BRA in which such resource qualified as a Planned Generation Capacity Resource that satisfies the conditions in section 5.14(c)(1)-(3); or B) 0.90 times the Net CONE applicable in the first BRA in which such Planned Generation Capacity Resource meeting the conditions in section 5.14(c)(1)-(3) cleared, on an Unforced Capacity basis, for such LDA.

5. If the Sell Offer is submitted consistent with section 5.14(c)(1)-(4) the foregoing conditions, then:

(i) in the first Delivery Year, the Resource sets the Capacity Resource Clearing Price for the LDA and all cleared resources in the LDA receive

the Capacity Resource Clearing Price set by the Sell Offer as the marginal offer, in accordance with sections 5.12(a) and 5.14(a).

(ii) in either of the subsequent two BRAs, if any part of the Sell Offer from the Resource clears, it shall receive the Capacity Resource Clearing Price for such LDA for its cleared capacity and for any additional minimum block quantity pursuant to section 5.14(b); or

(iii) if the Resource does not clear, it shall be deemed resubmitted at the highest price per MW-day at which the megawatt quantity of Unforced Capacity of such Resource that cleared the first-year BRA will clear the subsequent-year BRA pursuant to the optimization algorithm described in section 5.12(a) of this Attachment, and

(iv) the resource with its Sell Offer submitted shall clear and shall be committed to the PJM Region in the amount cleared, plus any additional minimum-block quantity from its Sell Offer for such Delivery Year, but such additional amount shall be no greater than the portion of a minimum-block quantity, if any, from its first-year Sell Offer satisfying section 5.14(c)(1)-(3) that is entitled to compensation pursuant to section 5.14(b) of this Attachment; and

(v) the Capacity Resource Clearing Price, and the resources cleared, shall be re-determined to reflect the resubmitted Sell Offer. In such case, the Resource for which the Sell Offer is submitted pursuant to section 5.14(c)(1)-(4) shall be paid for the entire committed quantity at the Sell Offer price that it initially submitted in such subsequent BRA. The difference between such Sell Offer price and the Capacity Resource Clearing Price (as well as any difference between the cleared quantity and the committed quantity), will be treated as a Resource Make-Whole Payment in accordance with Section 5.14(b). Other capacity resources that clear the BRA in such LDA receive the Capacity Resource Clearing Price as determined in Section 5.14(a).

6. The failure to submit a Sell Offer consistent with Section 5.14(c)(i)-(iii) in the BRA for Delivery Year 3 shall not retroactively revoke the New Entry Price Adjustment for Delivery Year 2. However, the failure to submit a Sell Offer consistent with section 5.14(c)(4) in the BRA for Delivery Year 2 shall make the resource ineligible for the New Entry Pricing Adjustment for Delivery Years 2 and 3.

7. For each Delivery Year that the foregoing conditions are satisfied, the Office of the Interconnection shall maintain and employ in the auction clearing for such LDA a separate VRR Curve, notwithstanding the outcome of the test referenced in Section 5.10(a)(ii) of this Attachment.

8. On or before August 1, 2012, PJM shall file with FERC under FPA section 205, as determined necessary by PJM following a stakeholder process, tariff changes to

establish a long-term auction process as a not unduly discriminatory means to provide adequate long-term revenue assurances to support new entry, as a supplement to or replacement of this New Entry Price Adjustment.

d) Qualifying Transmission Upgrade Payments

A Capacity Market Seller that submitted a Sell Offer based on a Qualifying Transmission Upgrade that clears in the Base Residual Auction shall receive a payment equal to the Capacity Resource Clearing Price, including any Locational Price Adder, of the LDA into which the Qualifying Transmission Upgrade is to increase Capacity Emergency Transfer Limit, less the Capacity Resource Clearing Price, including any Locational Price Adder, of the LDA from which the upgrade was to provide such increased CETL, multiplied by the megawatt quantity of increased CETL cleared from such Sell Offer. Such payments shall be reflected in the Locational Price Adder determined as part of the Final Zonal Capacity Price for the Zone associated with such LDAs, and shall be funded through a reduction in the Capacity Transfer Rights allocated to Load-Serving Entities under section 5.15, as set forth in that section. PJMSettlement shall be the Counterparty to any cleared capacity transaction resulting from a Sell Offer based on a Qualifying Transmission Upgrade.

e) Locational Reliability Charge

In accordance with the Reliability Assurance Agreement, each LSE shall incur a Locational Reliability Charge (subject to certain offsets and other adjustments as described in sections 5.14B, 5.14C, 5.14D, 5.14E and 5.15) equal to such LSE's Daily Unforced Capacity Obligation in a Zone during such Delivery Year multiplied by the applicable Final Zonal Capacity Price in such Zone. PJMSettlement shall be the Counterparty to the LSEs' obligations to pay, and payments of, Locational Reliability Charges.

f) The Office of the Interconnection shall determine Zonal Capacity Prices in accordance with the following, based on the optimization algorithm:

i) The Office of the Interconnection shall calculate and post the Preliminary Zonal Capacity Prices for each Delivery Year following the Base Residual Auction for such Delivery Year. The Preliminary Zonal Capacity Price for each Zone shall be the sum of: 1) the marginal value of system capacity for the PJM Region, without considering locational constraints; 2) the Locational Price Adder, if any, for the LDA in which such Zone is located; provided however, that if the Zone contains multiple LDAs with different Capacity Resource Clearing Prices, the Zonal Capacity Price shall be a weighted average of the Capacity Resource Clearing Prices for such LDAs, weighted by the Unforced Capacity of Capacity Resources cleared in each such LDA; 3) an adjustment, if required, to account for adders paid to Annual Resources and Extended Summer Demand Resources in the LDA for which the zone is located; 4) an adjustment, if required, to account for Resource Make-Whole Payments; and (5) an adjustment, if required to provide sufficient revenue for payment of any PRD Credits, all as determined in accordance with the optimization algorithm.

ii) The Office of the Interconnection shall calculate and post the Adjusted Zonal Capacity Price following each Incremental Auction. The Adjusted Zonal Capacity Price

for each Zone shall equal the sum of: (1) the average marginal value of system capacity weighted by the Unforced Capacity cleared in all auctions previously conducted for such Delivery Year (excluding any Unforced Capacity cleared as replacement capacity); (2) the average Locational Price Adder weighted by the Unforced Capacity cleared in all auctions previously conducted for such Delivery Year (excluding any Unforced Capacity cleared as replacement capacity); (3) an adjustment, if required, to account for adders paid to Annual Resources and Extended Summer Demand Resources for all auctions previously conducted for such Delivery Year (excluding any Unforced Capacity cleared as replacement capacity); (4) an adjustment, if required, to account for Resource Make-Whole Payments for all actions previously conducted (excluding any Resource Make-Whole Payments to be charged to the buyers of replacement capacity); and (5) an adjustment, if required to provide sufficient revenue for payment of any PRD Credits. The Adjusted Zonal Capacity Price may decrease if Unforced Capacity is decommitted or the Resource Clearing Price decreases in an Incremental Auction.

iii) The Office of the Interconnection shall calculate and post the Final Zonal Capacity Price for each Delivery Year after the final auction is held for such Delivery Year, as set forth above. The Final Zonal Capacity Price for each Zone shall equal the Adjusted Zonal Capacity Price, as further adjusted to reflect any decreases in the Nominated Demand Resource Value of any existing Demand Resource cleared in the Base Residual Auction and Second Incremental Auction.

g) Resource Substitution Charge

Each Capacity Market Buyer in an Incremental Auction securing replacement capacity shall pay a Resource Substitution Charge equal to the Capacity Resource Clearing Price resulting from such auction multiplied by the megawatt quantity of Unforced Capacity purchased by such Market Buyer in such auction.

h) Minimum Offer Price Rule for ~~Certain~~ Generation Capacity Resources

(1) General Rule. Any Sell Offer submitted in any RPM Auction for any Delivery Year based on a MOPR Screened Generation Resource shall have an offer price no lower than the MOPR Floor Offer Price for the period specified in this subsection (h), unless the Capacity Market Seller has obtained a Self-Supply Exemption, a Competitive Exemption, a Public Power Exemption, a Renewable Portfolio Standard (RPS) Exemption, or a Unit-Specific Exception with respect to such MOPR Screened Generation Resource in such auction prior to the submission of such offer, in accordance with the provisions of this subsection. Nothing in subsection (c) of this section 5.14 shall be read to excuse compliance of any Sell Offer with the requirements of this subsection (h).

(2) Applicability. A MOPR Screened Generation Resource shall be any Generation Capacity Resource, and any uprate or planned uprate to a Generation Capacity Resource that provides or will provide megawatts of available installed capacity at a single point of interconnection; provided, however, that a MOPR Screened Generation Resource shall not include: any cogeneration unit that is certified or self-certified as a Qualifying Facility (as defined in Part 292 of FERC's regulations), where the Capacity Market Seller is the owner of the Qualifying Facility or has contracted for the Unforced Capacity of such facility and the Unforced

Capacity of the unit is no larger than approximately all of the Unforced Capacity Obligation of the host load, and all Unforced Capacity of the unit is used to meet the Unforced Capacity Obligation of the host load.A MOPR Screened Generation Resource shall include all Generation Capacity Resources located in the PJM Region that meet the foregoing criteria, and all Generation Capacity Resources located outside the PJM Region.

~~(1) For purposes of this section, the Net Asset Class Costs of New Entry shall be asset-class estimates of competitive, cost-based nominal levelized Cost of New Entry, net of energy and ancillary service revenues. Determination of the gross Cost of New Entry component of the Net Asset Class Cost of New Entry shall be consistent with the methodology used to determine the Cost of New Entry set forth in Section 5.10(a)(iv)(A) of this Attachment.~~

~~The gross Cost of New Entry component of Net Asset Class Cost of New Entry shall be, for purposes of the 2018/2019 Delivery Year and subsequent Delivery Years, the values indicated in the table below for each CONE Area for a combustion turbine generator ("CT"), and a combined cycle generator ("CC") respectively, and shall be adjusted for subsequent Delivery Years in accordance with subsection (h)(2) below. For purposes of Incremental Auctions for the 2015/2016, 2016/2017 and 2017/2018 Delivery Years, the MOPR Floor Offer Price shall be the same as that used in the Base Residual Auction for such Delivery Year. The estimated energy and ancillary service revenues for each type of plant shall be determined as described in subsection (h)(3) below. Notwithstanding the foregoing, the Net Asset Class Cost of New Entry shall be zero for: (i) Sell Offers based on nuclear, coal or Integrated Gasification Combined Cycle facilities; or (ii) Sell Offers based on hydroelectric, wind, or solar facilities.~~

	~~CONE Area 1~~	~~CONE Area 2~~	~~CONE Area 3~~	~~CONE Area 4~~
~~CT $/MW-yr~~	~~132,200~~	~~130,300~~	~~128,900~~	~~130,300~~
~~CC $/MW-yr~~	~~185,700~~	~~176,000~~	~~172,600~~	~~179,400~~

~~(2) Beginning with the Delivery Year that begins on June 1, 2019, the gross Cost of New Entry component of the Net Asset Class Cost of New Entry shall be adjusted to reflect changes in generating plant construction costs in the same manner as set forth for the cost of new entry in section 5.10(a)(iv)(B), provided, however, that the Applicable BLS Composite Index used for CC plants shall be calculated from the three indices referenced in that section but weighted 25% for the wages index, 60% for the construction materials index, and 15% for the turbines index, and provided further that nothing herein shall preclude the Office of the Interconnection from filing to change the Net Asset Class Cost of New Entry for any Delivery Year pursuant to appropriate filings with FERC under the Federal Power Act.~~

~~(3) For purposes of this provision, the net energy and ancillary services revenue estimate for a combustion turbine generator shall be that determined by section 5.10(a)(v)(A) of this Attachment DD, provided that the energy revenue estimate for each CONE Area shall be based on the Zone within such CONE Area that has the highest energy revenue estimate calculated under the methodology in that subsection. The net energy and ancillary services revenue estimate for a combined cycle generator shall be determined in the same manner as that prescribed for a combustion turbine generator in the previous sentence, except that the heat rate assumed for the combined cycle resource shall be 6.722 MMbtu/Mwh, the variable operations and maintenance expenses for such resource shall be $3.23 per MWh, the~~

~~Peak-Hour Dispatch scenario for both the Day-Ahead and Real-Time Energy Markets shall be modified to dispatch the CC resource continuously during the full peak-hour period, as described in section 2.46, for each such period that the resource is economic (using the test set forth in such section), rather than only during the four-hour blocks within such period that such resource is economic, and the ancillary service revenues shall be $3198 per MW-year.~~

(3) MOPR Floor Offer Price. The default MOPR Floor Offer Price for a Capacity Performance resource shall be the product of the Net Cost of New Entry (applicable for the Delivery Year and Locational Deliverability Area for which such Capacity Performance Resource is offered) times the average of the Balancing Ratios during the Performance Assessment Hours in the three consecutive calendar years that precede the Base Residual Auction for such Delivery Year.

(4) [Reserve for future use.]

(5) Effect of Exemption or Exception. To the extent a Sell Offer in any RPM Auction for any Delivery Year is based on a MOPR Screened Generation Resource for which the Capacity Market Seller obtains, prior to the submission of such offer, any of the Exemptions defined in subsections (6), (7), (7A) or (7B), such offer (to the extent of such exemption) may include an offer price below the MOPR Floor Offer Price (including, without limitation, an offer price of zero or other indication of intent to clear regardless of price). To the extent a Sell Offer in any RPM Auction for any Delivery Year is based on a MOPR Screened Generation Resource for which the Capacity Market Seller obtains, prior to the submission of such offer, a Unit-Specific Exception, such offer (to the extent of such exception) may include an offer price below the MOPR Floor Offer Price but no lower than the minimum offer price determined in such exception process.

(6) Self-Supply Exemption**.** A Capacity Market Seller that is a Self-Supply LSE may qualify its MOPR Screened Generation Resource in any RPM Auction for any Delivery Year for a Self-Supply Exemption if the MOPR Screened Generation Resource satisfies the criteria specified below:

i) Cost and revenue criteria. The costs and revenues associated with a MOPR Screened Generation Resource for which a Self-Supply LSE seeks a Self-Supply Exemption may permissibly reflect: (A) payments, concessions, rebates, subsidies, or incentives designed to incent or promote, or participation in a program, contract, or other arrangement that utilizes criteria designed to incent or promote, general industrial development in an area; (B) payments, concessions, rebates, subsidies or incentives from a county or other local government authority designed to incent, or participation in a program, contract or other arrangement established by a county or other local governmental authority utilizing eligibility or selection criteria designed to incent, siting facilities in that county or locality rather than another county or locality; (C) revenues received by the Self-Supply LSE attributable to the inclusion of costs of the MOPR Screened Generation Resource in such LSE's regulated retail rates where such LSE is a Vertically Integrated Utility and the MOPR Screened Generation Resource is planned consistent with such LSE's most recent integrated resource plan found reasonable by the RERRA to meet the needs of its customers; and (D) cost or revenue advantages related to a longstanding business model employed by the Self-Supply LSE, such as its financial condition, tax status, access to capital, or other similar conditions affecting the Self-Supply LSE's costs and

revenues. A Self-Supply Exemption shall not be permitted to the extent that the Self-Supply LSE, acting either as the Capacity Market Seller or on behalf of the Capacity Market Seller, has any formal or informal agreements or arrangements to seek, recover, accept or receive: (E) any material payments, concessions, rebates, or subsidies, connected to the construction, or clearing in any RPM Auction, of the MOPR Screened Generation Resource, not described by (A) through (D) of this section; or (F) other support through contracts having a term of one year or more obtained in any procurement process sponsored or mandated by any state legislature or agency connected with the construction, or clearing in any RPM Auction, of the MOPR Screened Generation Resource. Any cost and revenue advantages described by (A) through (D) of this subsection that are material to the cost of the MOPR Screened Generation Resource and that are irregular or anomalous, that do not reflect arms-length transactions, or that are not in the ordinary course of the Self-Supply LSE's business, shall disqualify application of the Self-Supply Exemption unless the Self-Supply LSE demonstrates in the exemption process provided hereunder that such costs and revenues are consistent with the overall objectives of the Self-Supply Exemption.

ii) Owned and Contracted Capacity. To qualify for the Self-Supply Exemption, the Self-Supply LSE, acting either as the Capacity Market Seller or on behalf of the Capacity Market Seller, must demonstrate that the MOPR Screened Generation Resource is included in such LSE's Owned and Contracted Capacity and that its Owned and Contracted Capacity meets the criteria outlined below after the addition of such MOPR Screened Generation Resource.

iii) Maximum Net Short Position. If the excess, if any, of the Self-Supply LSE's Estimated Capacity Obligation above its Owned and Contracted Capacity ("Net Short") is less than the amount of Unforced Capacity specified in or calculated under the table below for all relevant areas based on the specified type of LSE, then this exemption criterion is satisfied. For this purpose, the Net Short position shall be calculated for any Self-Supply LSE requesting this exemption for the PJM Region and for each LDA specified in the table below in which the MOPR Screened Generation Resource is located (including through nesting of LDAs) to the extent the Self-Supply LSE has an Estimated Capacity Obligation in such LDA. If the Self-Supply LSE does not have an Estimated Capacity Obligation in an evaluated LDA, then the Self-Supply LSE is deemed to satisfy the test for that LDA.

Type of Self-Supply LSE	Maximum Net Short Position (UCAP MW, measured at RTO, MAAC, SWMAAC and EMAAC unless otherwise specified)
Single Customer Entity	150 MW
Vertically Integrated Utility	20% of LSE's Reliability Requirement

iv) Maximum Net Long Position. If the excess, if any, of the Self-Supply LSE's Owned and Contracted Capacity for the PJM Region above its Estimated Capacity Obligation for the PJM Region ("Net Long"), is less than the amount of Unforced Capacity specified in or calculated under the table below, then this exemption criterion is satisfied:

Self-Supply LSE Total Estimated Capacity Obligation in the PJM Region (UCAP MW)	Maximum Net Long Position (UCAP MW)
Less than 500	75 MW
Greater than or equal to 500 and less than 5,000	15% of LSE's Estimated Capacity Obligation
Greater than or equal to 5,000 and less than 15,000	750 MW
Greater than or equal to 15,000 and less than 25,000	1,000 MW
Greater than or equal to 25,000	4% of LSE's Estimated Capacity Obligation capped at 1300 MWs

If the MOPR Screened Generation Resource causes the Self-Supply LSE's Net Long Position to exceed the applicable threshold stated above, the MOPR Floor Offer Price shall apply, for the Delivery Year in which such threshold is exceeded, only to the quantity of Unforced Capacity of such resource that exceeds such threshold. In such event, such Unforced Capacity of such resource shall be subject to the MOPR Floor Offer Price for the period specified in subsection (h)(4) hereof; provided however, that any such Unforced Capacity that did not qualify for such exemption for such Delivery Year may qualify for such exemption in any RPM Auction for a future Delivery Year to the extent the Self-Supply LSE's future load growth accommodates the resource under the Net Long Position criteria.

v) Beginning with the Delivery Year that commences June 1, 2020, and continuing no later than for every fourth Delivery Year thereafter, the Office of the Interconnection shall review the Maximum Net Short and Net Long positions, as required by the foregoing subsection. Such review may include, without limitation, analyses under various appropriate scenarios of the minimum net short quantities at which the benefit to an LSE of a clearing price reduction for its capacity purchases from the RPM Auction outweighs the cost to the LSE of a new or existing generating unit that is offered at an uneconomic price, and may, to the extent appropriate, reasonably balance the need to protect the market with the need to accommodate the normal business operations of Self-Supply LSEs. Based on the results of such review, PJM shall propose either to modify or retain the existing Maximum Net Short and Net Long positions. The Office of the Interconnection shall post publicly and solicit stakeholder comment regarding the proposal. If, as a result of this process, changes to the Maximum Net Short and/or Net Long positions are proposed, the Office of the Interconnection shall file such modified Maximum Net Short and/or Net Long positions with the FERC by October 1, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new values would be applied.

vi) Officer Certification. The Self-Supply LSE, acting either as the Capacity Market Seller or on behalf of the Capacity Market Seller, shall submit a sworn, notarized certification of a duly authorized officer, certifying that the officer has personal knowledge of, or has engaged in a diligent inquiry to determine, the facts and circumstances supporting the Capacity Market Seller's decision to submit a Sell Offer into the RPM Auction for the MOPR Screened Generation Resource and seek an exemption from the MOPR Floor Offer Price for

such resource, and to the best of his/her knowledge and belief: (A) the information supplied to the Market Monitoring Unit and the Office of Interconnection in support of its exemption request is true and correct and the MOPR Screened Generation Resource will be Owned and Contracted Capacity for the purpose of self-supply for the benefit of the Self-Supply LSE; (B) the Self-Supply LSE has disclosed all material facts relevant to the exemption request; and (C) the Capacity Market Seller satisfies the criteria for the exemption.

vii) For purposes of the Self-Supply Exemption:

(A) "Self-Supply LSE" means the following types of Load Serving Entity, which operate under long-standing business models: Municipal/Cooperative Entity, Single Customer Entity, or Vertically Integrated Utility.

"Vertically Integrated Utility" means a utility that owns generation, includes such generation in its regulated rates, and earns a regulated return on its investment in such generation.

"Single Customer Entity" means an LSE that serves at retail only customers that are under common control with such LSE, where such control means holding 51% or more of the voting securities or voting interests of the LSE and all its retail customers.

(B) All capacity calculations shall be on an Unforced Capacity basis.

(C) Estimated Capacity Obligations and Owned and Contracted Capacity shall be measured on a three-year average basis for the three years starting with the first day of the Delivery Year associated with the RPM Auction for which the exemption is being sought ("MOPR Exemption Measurement Period"). Such measurements shall be verified by PJM using the latest available data that PJM uses to determine capacity obligations.

(D) The Self-Supply LSE's Estimated Capacity Obligation shall be the average, for the three Delivery Years of the MOPR Exemption Measurement Period, of the Self-Supply LSE's estimated share of the most recent available Zonal Peak Load Forecast for each such Delivery Year for each Zone in which the Self-Supply LSE will serve load during such Delivery Year, times the Forecast Pool Requirement established for the first such Delivery Year, shall be stated on an Unforced Capacity basis. The Self-Supply LSE's share of such load shall be determined by the ratio of: (1) the peak load contributions, from the most recent summer peak for which data is available at the time of the exemption request, of the customers or areas within each Zone for which such LSE will have load-serving responsibility during the first Delivery Year of the MOPR Exemption Measurement Period to (2) the weather-normalized summer peak load of such Zone for the same summer peak period addressed in the previous clause. Notwithstanding the foregoing, solely in the case of any Self-Supply LSE that demonstrates to the Office of the Interconnection that its annual peak load occurs in the winter, such LSE's

Estimated Capacity Obligation determined solely for the purposes of this subsection 5.14(h) shall be based on its winter peak. Once submitted, an exemption request shall not be subject to change due to later revisions to the PJM load forecasts for such Delivery Years. The Self-Supply LSE's Estimated Capacity Obligation shall be limited to the LSE's firm obligations to serve specific identifiable customers or groups of customers including native load obligations and specific load obligations in effective contracts for which the term of the contract includes at least a portion of the Delivery Year associated with the RPM Auction for which the exemption is requested (and shall not include load that is speculative or load obligations that are not native load or customer specific); as well as retail loads of entities that directly (as through charges on a retail electric bill) or indirectly, contribute to the cost recovery of the MOPR Screened Generation Resource; provided, however, nothing herein shall require a Self-Supply LSE that is a joint owner of a MOPR Screened Generation Resource to aggregate its expected loads with the loads of any other joint owner for purposes of such Self-Supply LSE's exemption request.

(E) "Owned and Contracted Capacity" includes all of the Self-Supply LSE's qualified Capacity Resources, whether internal or external to PJM. For purposes of the Self-Supply Exemption, Owned and Contracted Capacity includes Generation Capacity Resources without regard to whether such resource has failed or could fail the Competitive and Non-Discriminatory procurement standard of the Competitive Exemption. To qualify for a Self-Supply Entry exemption, the MOPR Screened Generation must be used by the Self-Supply LSE, meaning such Self-Supply LSE is the beneficial off-taker of such generation such that the owned or contracted for MOPR Screened Generation is for the Self-Supply LSE's use to supply its customer(s).

(F) If multiple entities will have an ownership or contractual share in, or are otherwise sponsoring, the MOPR Screened Generation Resource, the positions of each such entity will be measured and considered for a Self-Supply Exemption with respect to the individual Self-Supply LSE's ownership or contractual share of such resource.

(7) Competitive Exemption. A Capacity Market Seller may qualify a MOPR Screened Generation Resource for a Competitive Exemption in any RPM Auction for any Delivery Year if the Capacity Market Seller demonstrates that the MOPR Screened Generation Resource satisfies all of the following criteria:

i) No costs of the MOPR Screened Generation Resource are recovered from customers either directly or indirectly through a non-bypassable charge, except in the event that Sections 5.14(h)(7)(ii) and (iii), to the extent either or both are applicable to such resource, are satisfied.

ii) No costs of the MOPR Screened Generation Resource are supported through any contracts having a term of one year or more obtained in any state-sponsored or state-mandated procurement processes that are not Competitive and Non-Discriminatory. The Office of the Interconnection and the Market Monitoring Unit may deem a procurement process to be "Competitive and Non-Discriminatory" only if: (A) both new and existing resources may satisfy the requirements of the procurement; (B) the requirements of the

procurement are fully objective and transparent; (C) the procurement terms do not restrict the type of capacity resources that may participate in and satisfy the requirements of the procurement; (D) the procurement terms do not include selection criteria that could give preference to new resources; and (E) the procurement terms do not use indirect means to discriminate against existing capacity, such as geographic constraints inconsistent with LDA import capabilities, unit technology or unit fuel requirements or unit heat-rate requirements, identity or nature of seller requirements, or requirements for new construction.

iii) The Capacity Market Seller does not have any formal or informal agreements or arrangements to seek, recover, accept or receive any (A) material payments, concessions, rebates, or subsidies directly or indirectly from any governmental entity connected with the construction, or clearing in any RPM Auction, of the MOPR Screened Generation Resource, or (B) other material support through contracts having a term of one year or more obtained in any state-sponsored or state-mandated procurement processes, connected to the construction, or clearing in any RPM Auction, of the MOPR Screened Generation Resource. These restrictions shall not include (C) payments (including payments in lieu of taxes), concessions, rebates, subsidies, or incentives designed to incent, or participation in a program, contract or other arrangement that utilizes criteria designed to incent or promote, general industrial development in an area; (D) payments, concessions, rebates, subsidies or incentives designed to incent, or participation in a program, contract or other arrangements from a county or other local governmental authority using eligibility or selection criteria designed to incent, siting facilities in that county or locality rather than another county or locality; or (E) federal government production tax credits, investment tax credits, and similar tax advantages or incentives that are available to generators without regard to the geographic location of the generation.

iv) The Capacity Market Seller shall submit a sworn, notarized certification of a duly authorized officer, certifying that the officer has personal knowledge of, or has engaged in a diligent inquiry to determine, the facts and circumstances supporting the Capacity Market Seller's decision to submit a Sell Offer into the RPM Auction for the MOPR Screened Generation Resource and seek an exemption from the MOPR Floor Offer Price for such resource, and, to the best of his/her knowledge and belief: (A) the information supplied to the Market Monitoring Unit and the Office of Interconnection to support its exemption is true and correct and the resource is being constructed or contracted for purposes of competitive entry by the Capacity Market Seller; (B) the Capacity Market Seller has disclosed all material facts relevant to the request for the exemption; and (C) the exemption request satisfies the criteria for the exemption.

(7A) Public Entity Exemption. A Capacity Market Seller that is a Public Power Entity (as defined in Sections 1.17 and 1.72 of the Reliability Assurance Agreement) may qualify MOPR Screened Generation Resources for a Public Entity Exemption in any RPM Auction for any Delivery Year if the Capacity Market Seller demonstrates that the MOPR Screened Generation Resources satisfy all of the following criteria:

i) The long-term resource plans for a pulic entity's Owned and Contracted Capacity, as defined in subsection (6), are consistent with its business model and such resource plans are intended to be balanced with its load obligations (i.e. over such long-

term planning horizon, the entity's resources are planned to be less than or equal to its LSE Total Estimated Capacity Obligation)(The public entity shall notify PJM and the IMM when it expects its Owned and Contracted Capacity to be greater than its LSE Total Estimated Capacity Obligation in the next RPM commitment period and describe the consistency of the investment decision with its business model);

ii) Owned and Contracted Capacity is less than or equal to 600 MW greater than LSE Total Estimated Capacity Obligation in any Delivery Year;

iii)

a sworn, notarized certification of a duly authorized officer of the Electric Cooperative or Public Power Entity owner/contractor is submitted certifying that the officer has personal knowledge of, or has engaged in a diligent inquiry to determine, the facts and circumstances supporting the Electric Cooperative's or Public Power Entity's decision to submit a Sell Offer into the RPM Auction for the MOPR Screened Generation Resource and seek an exemption from the MOPR Floor Offer Price for such resource, and to the best of his/her knowledge and belief: (A) the information supplied to the Market Monitoring Unit and the Office of Interconnection in support of its exemption request is true and correct and the MOPR Screened Generation Resource will be Owned and Contracted Capacity for the purpose of self-supply for the benefit of the Electric Cooperative or Public Power Entity; (B) the Electric Cooperative or Public Power Entity has disclosed all material facts relevant to the exemption request; and (C) the Capacity Market Seller satisfies the criteria for the exemption; and

iv) the criteria concerning cost and revenue set forth in subsection 5.14(h)(6)(i) are satisfied.

Any excess supply, starting with the resource(s) most recently added to the portfolio, will be subject to the MOPR floor unless it qualifies for a unit specific exception, where excess supply is the MW amount of Owned and Contracted Capacity in excess of the sum of LSE Total Estimated Capacity Obligation and 600 MW. The MOPR floor or unit specific exception shall apply to the last unit(s) added to Owned and Contracted Capacity.

(7B) RPS Exemption. A Capacity Market Seller may qualify a MOPR Screened Generation Resource for an RPS Exemption in any RPM Auction for any Delivery Year if the Capacity Market Seller demonstrates that the MOPR Screened Generation Resource satisfies the following criterion:

i) the resource was procured in a program in compliance with a state mandated renewable portfolio standard prior to December 31, 2018, or based on a request for proposals (RFP) issued under such a program prior to December 31, 2018.

or satisfies all of the following criteria:

i) the resource complies with the requirements of a state mandated renewable portfolio standard or voluntary renewable portfolio standard;

ii) the terms of such program are competitive and non-discriminatory, meaning that (1) the program requires LSEs to procure a defined amount of renewable resources, (2) both new and existing resources may participate, (3) all suppliers of renewable resources may participate, (4) the requirements of the program are fully objective and transparent, (5) the program terms do not include selection criteria that could give preference to new or existing resources(6) the program terms do not use indirect means to discriminate against new or existing capacity, (7) the program terms do not use any locational requirement, e.g. offshore wind, other than restricting imports from other states, and (8) the renewable characteristic is the only screen for participation in the program where renewable does not include coal, natural gas or nuclear thermal resources;

iii) if the program does not use an auction, the terms of such program: (1) are consistent with fair market value and standard industry practice and (2) provide that the price paid for renewable energy credits is determined by the contract terms between the seller and the buyer.

iv) if the program uses an auction either as a means of procuring renewable attributes to meet state requirements, or as a means to facilitate the procurement of renewable attributes by responsible LSEs, such auction must be competitive and non-discriminatory, meaning (1) winner(s) of auction based on lowest offer prices, (2) payments to winners based on auction clearing price, and (3) at least three nonaffiliated sellers participate.

a sworn, notarized certification of a duly authorized officer of the Capacity Market Seller is submitted certifying that the officer has personal knowledge of, or has engaged in a diligent inquiry to determine, the facts and circumstances supporting Seller's decision to submit a Sell Offer into the RPM Auction for the MOPR Screened Generation Resource and seek an exemption from the MOPR Floor Offer Price for such resource, and to the best of his/her knowledge and belief: (A) the information supplied to the Market Monitoring Unit and the Office of Interconnection in support of its exemption request is true and correct and the MOPR Screened Generation Resource will be Owned and Contracted Capacity for the benefit of the Seller; (B) Seller has disclosed all material facts relevant to the exemption request; and (C) the Seller satisfies the criteria for the exemption.

~~(4) Any Sell Offer that is based on:~~

~~i) a Generation Capacity Resource located in the PJM Region that is submitted in an RPM Auction for a Delivery Year unless a Sell Offer based on that resource has cleared an RPM Auction for that or any prior Delivery Year, or until a Sell Offer based on that resource clears an RPM auction for that or any subsequent Delivery Year; or~~

~~ii) a Generation Capacity Resource located outside the PJM Region (where such Sell Offer is based solely on such resource) that requires sufficient transmission investment for delivery to the PJM Region to indicate a long-term~~

~~commitment to providing capacity to the PJM Region, unless a Sell Offer based on that resource has cleared an RPM Auction for that or any prior Delivery Year, or until a Sell offer based on that resource clears an RPM Auction for that or any subsequent Delivery Year, in any LDA for which a separate VRR Curve is established for use in the Base Residual Auction for the Delivery Year relevant to the RPM Auction in which such offer is submitted, and that is less than 90 percent of the applicable Net Asset Class Cost of New Entry or, if there is no applicable Net Asset Class Cost of New Entry, less than 70 percent of the Net Asset Class Cost of New Entry for a combustion turbine generator as provided in subsection (h)(1) above shall be set to equal 90 percent of the applicable Net Asset Class Cost of New Entry (or set equal to 70 percent of such cost for a combustion turbine, where there is no otherwise applicable net asset class figure), unless the Capacity Market Seller obtains the prior determination from the Office of the Interconnection described in subsection (5) hereof. This provision applies to Sell Offers submitted in Incremental Auctions conducted after December 19, 2011, provided that the Net Asset Class Cost of New Entry values for any such Incremental Auctions for the 2012-13 or 2013-14 Delivery Years shall be the Net Asset Class Cost of New Entry values posted by the Office of the Interconnection for the Base Residual Auction for the 2014-15 Delivery Year.~~

~~(5)~~(8) Unit-Specific Exception. A Capacity Market Seller intending to submit a Sell Offer in any RPM Auction below the MOPR Floor Offer Price for any Delivery Year based on a MOPR Screened Generation Resource may, at its election, submit a request for a Unit-Specific Exception in addition to, or in lieu of, a request for an Exemption under subsection (6), (7), (7A) or (7B), for such MOPR Screened Generation Resource. A Sell Offer meeting the ~~criteria in subsection (4)~~ Unit-Specific Exception criteria in this subsection shall be permitted and shall not be re-set to the ~~price level specified in that subsection~~MOPR Floor Offer Price if the Capacity Market Seller obtains a determination from the Office of the Interconnection or the Commission, prior to the RPM Auction in which it seeks to submit the Sell Offer, that such Sell Offer is permissible because it is consistent with the competitive, cost-based, fixed, net cost of new entry were the resource to rely solely on revenues from PJM-administered markets. The following ~~process and~~ requirements shall apply to requests for such determinations:

i) The Capacity Market Seller ~~may request such a determination by no later than one hundred twenty (120) days prior to the commencement of the offer period for the RPM Auction in which it seeks to submit its Sell Offer, by submitting simultaneously to the Office of the Interconnection and the Market Monitoring Unit~~ shall submit a written request with all of the required documentation as described below and in the PJM Manuals. For such purpose, per subsection (h)(9)(i) below, the Office of the Interconnection shall post~~, by no later than one hundred fifty (150) days prior to the commencement of the offer period for the relevant RPM Auction,~~ a preliminary estimate for the relevant Delivery Year of the MOPR Floor Offer Price ~~minimum offer level~~expected to be established hereunder. ~~under subsection (4). If the minimum offer level subsequently established for the relevant Delivery Year is less than the Sell Offer, the Sell Offer shall be permitted and no exception shall be required.~~

ii) ~~As more fully set forth in the PJM Manuals, t~~The Capacity Market Seller must include in its request for an exception for new entry under this subsection documentation to support the fixed development, construction, operation, and maintenance costs

of the ~~planned generation resource~~ MOPR Screened Generation Resource, as well as estimates of offsetting net revenues. ~~Estimates of costs or revenues shall be supported at a level of detail comparable to the cost and revenue estimates used to support the Net Asset Class Cost of New Entry established under this section 5.14(h).~~ The financial modeling assumptions for calculating Cost of New Entry shall be the same modeling assumptions used to determine Cost of New Entry for the RPM auction parameters: (i) nominal levelization of gross costs, (ii) asset life of 20 years, (iii) no residual value, (iv) all project costs included with no sunk costs excluded, (v) use first year revenues, and (vi) weighted average cost of capital (WACC) based on the actual cost of capital for the entity proposing to build the MOPR Screened Generation Resource~~As more fully set forth in the PJM Manuals,~~ ~~s~~Supporting documentation for project costs ~~may~~ shall include, as applicable ~~and available~~, a complete project description; environmental permits; vendor quotes for plant or equipment; evidence of actual costs of recent comparable projects; bases for electric and gas interconnection costs and any cost contingencies; bases and support for property taxes, insurance, operations and maintenance ("O&M") contractor costs, and other fixed O&M and administrative or general costs; financing documents for construction–period and permanent financing or evidence of recent debt costs of the seller for comparable investments; and the bases and support for the claimed capitalization ratio, rate of return, cost-recovery period, inflation rate, or other parameters used in financial modeling. ~~Such documentation also shall identify and support any sunk costs that the Capacity Market Seller has reflected as a reduction to its Sell Offer.~~ The request shall include a certification, signed by an officer of the Capacity Market Seller, that the claimed costs accurately reflect, in all material respects, the seller's reasonably expected costs of new entry and that the request satisfies all standards for ~~an exception~~a Unit-Specific Exception hereunder. The request also shall identify all revenue sources relied upon in the Sell Offer to offset the claimed fixed costs, including, without limitation, long-term power supply contracts, tolling agreements, or tariffs on file with state regulatory agencies, and shall demonstrate that such offsetting revenues are consistent, over a reasonable time period identified by the Capacity Market Seller, with the standard prescribed above. In making such demonstration, the Capacity Market Seller may rely upon forecasts of competitive electricity prices in the PJM Region based on well defined models that include fully documented estimates of future fuel prices, variable operation and maintenance expenses, energy demand, emissions allowance prices, and expected environmental or energy policies that affect the seller's forecast of electricity prices in such region, employing input data from sources readily available to the public. Documentation for net revenues also may include, as available and applicable, plant performance and capability information, including heat rate, start-up times and costs, forced outage rates, planned outage schedules, maintenance cycle, fuel costs and other variable operations and maintenance expenses, and ancillary service capabilities. ~~In addition to the documentation identified herein and in the PJM Manuals, the Capacity Market Seller shall provide any additional supporting information reasonably requested by the Office of the Interconnection or the Market Monitoring Unit to evaluate the Sell Offer. Requests for additional documentation will not extend the deadline by which the Office of the Interconnection or the Market Monitoring Unit must provide their determinations of the Minimum Offer Price Rule exception request.~~

A Capacity Market Seller using a Unit Specific Exception other than the Unit Specific Exception applicable to new entry, shall submit a Sell Offer equal to the higher of the Avoidable Cost Rate, as defined in 6.8(a), net of Projected PJM Market Revenues, and the value obtained by incorporating the opportunity cost of Capacity Performance participation in a manner

consistent with the derivation of the Market Seller Offer Cap, but employing alternative assumptions for the availability ratio (A), the number of Performance Assessment Hours (H), the Balancing Ratio (B), and the Capacity Performance bonus payment rate (CPBR) based on the actual market conditions and the actual circumstances of the unit. All supporting data must be provided for all requests.

A sworn, notarized certification of a duly authorized officer of the Capacity Market Seller is submitted certifying that the officer has personal knowledge of, or has engaged in a diligent inquiry to determine, the facts and circumstances supporting Seller's decision to submit a Sell Offer into the RPM Auction for the MOPR Screened Generation Resource and seek a Unit-Specific Exception from the MOPR Floor Offer Price for such resource, and to the best of his/her knowledge and belief: (A) the information supplied to the Market Monitoring Unit and the Office of Interconnection in support of its exception request is true and correct and the MOPR Screened Generation Resource will be Owned and Contracted Capacity for the benefit of the Seller; (B) Seller has disclosed all material facts relevant to the exception request; and (C) the Seller satisfies the criteria for the exception.

iii) A Sell Offer evaluated ~~hereunder~~ under the Unit-Specific Exception shall be permitted if the information provided reasonably demonstrates that the Sell Offer's competitive, cost-based, fixed, net cost of new entry is below the ~~minimum offer level prescribed by subsection (4)~~MOPR Floor Offer Price, based on competitive cost advantages relative to the costs ~~estimated for subsection (4)~~implied by the MOPR Floor Offer Price, including, without limitation, competitive cost advantages resulting from the Capacity Market Seller's business model, financial condition, tax status, access to capital or other similar conditions affecting the applicant's costs, or based on net revenues that are reasonably demonstrated hereunder to be higher than ~~estimated for subsection (4)~~those implied by the MOPR Floor Offer Price. Capacity Market Sellers shall be asked to demonstrate that claimed cost advantages or sources of net revenue that are irregular or anomalous, that do not reflect arm's-length transactions, or that are not in the ordinary course of the Capacity Market Seller's business are consistent with the standards of this subsection. Failure to adequately support such costs or revenues so as to enable the Office of the Interconnection to make the determination required in this section will result in denial of ~~an exception~~a Unit-Specific Exception hereunder by the Office of the Interconnection.

(9) Exemption/Exception Process.

i) The Office of the Interconnection shall post, by no later than one hundred fifty (150) days prior to the commencement of the offer period for an RPM Auction, a preliminary estimate for the relevant Delivery Year of the MOPR Floor Offer Price.

ii) The Capacity Market Seller must submit its request for a Unit-Specific Exception, or an Exemption defined in subsections (6), (7), (7A) or (7B) in writing simultaneously to the Market Monitoring Unit and the Office of Interconnection by no later than one hundred thirty five (135) days prior to the commencement of the offer period for the RPM Auction in which such seller seeks to submit its Sell Offer. The Capacity Market Seller shall

include in its request a description of its MOPR Screened Generation Resource, the exemption or exception that the Capacity Market Seller is requesting, and all documentation necessary to demonstrate that the exemption or exception criteria are satisfied, including without limitation the applicable certification(s) specified in this subsection (h). In addition to the documentation identified herein and in the PJM Manuals, the Capacity Market Seller shall provide any additional supporting information reasonably requested by the Office of the Interconnection or the Market Monitoring Unit to evaluate the Sell Offer. Requests for additional documentation will not extend the deadline by which the Office of the Interconnection or the Market Monitoring Unit must provide their determinations of the exemption request. The Capacity Market Seller shall have an ongoing obligation through the closing of the offer period for the RPM Auction to update the request to reflect any material changes in the request.

~~iv~~iii) As further described in Section II.D. of Attachment M-Appendix to this Tariff,~~T~~the Market Monitoring Unit shall review the ~~information~~ request and supporting documentation ~~in support of the request~~ and shall provide its ~~findings~~ determination ~~whether the proposed Sell Offer is acceptable, in accordance with the standards and criteria hereunder, in writing, to the Capacity Market Seller and the Office of the Interconnection~~ by no later than ~~ninety (90)~~forty-five (45) days ~~prior to the commencement of the offer period for such auction~~after receipt of the exemption or exception request. The Office of the Interconnection shall also review all exemption and exception requests to determine whether the request is acceptable in accordance with the standards and criteria under this section 5.14(h) ~~and documentation~~ and shall provide its determination in writing to the Capacity Market Seller, ~~and~~with a copy to the Market Monitoring Unit, by no later than sixty-five (65) days after receipt of the exemption or exception request~~its determination whether the requested Sell Offer is acceptable and if not it shall calculate and provide to such Capacity Market Seller, a minimum Sell Offer based on the data and documentation received, by no later than sixty-five (65) days prior to the commencement of the offer period for the relevant RPM Auction~~. The Office of the Interconnection shall reject a requested exemption or exception if the Capacity Market Seller's request does not comply with the PJM Market Rules, as interpreted and applied by the Office of the Interconnection. Such rejection shall specify those points of non-compliance upon which the Office of the Interconnection based its rejection of the exemption or exception request. If the Office of the Interconnection does not provide its determination on an exemption or exception request by no later than sixty-five (65) days after receipt of the exemption or exception request, the request shall be deemed granted. ~~If~~ Following the Office of the Interconnection's ~~determines~~ determination on a Unit-Specific Exception request~~that the requested Sell Offer is acceptable~~, the Capacity Market Seller ~~S~~shall notify the Market Monitoring Unit and the Office of the Interconnection, in writing, of the minimum level of Sell Offer, consistent with such determination, to which it agrees to commit by no later than ~~sixty (60)~~ five (5) days ~~prior to the commencement of the offer period for the relevant RPM Auction~~ after receipt of the Office of the Interconnection's determination of its Unit-Specific Exception request. A Capacity Market Seller that is dissatisfied with any determination hereunder may seek any remedies available to it from FERC; provided, however, that the Office of the Interconnection will proceed with administration of the Tariff and market rules unless and until ordered to do otherwise by FERC.

(10) Procedures and Remedies in Cases of Suspected Fraud or Material Misrepresentation or Omissions in Connection with Exemption Requests.

In the event the Office of the Interconnection reasonably believes that a request for an Exemption defined in subsections (6), (7), (7A) or (7B) that has been granted contains fraudulent or material misrepresentations or fraudulent or material omissions such that the Capacity Market Seller would not have been eligible for the exemption for that resource had the request not contained such misrepresentations or omissions, then:

i) if the Office of the Interconnection provides written notice of revocation to the Capacity Market Seller no later than thirty (30) days prior to the commencement of the offer period for the RPM Auction for which the seller submitted a fraudulent exemption request, the Office of the Interconnection shall revoke the exemption for that auction. In such event, the Office of the Interconnection shall make any filings with FERC that the Office of the Interconnection deems necessary, and

ii) if the Office of the Interconnection does not provide written notice of revocation no later than 30 days before the start of the relevant RPM Auction, then the Office of the Interconnection may not revoke the exemption absent FERC approval. In any such filing to FERC, the requested remedies shall include (A) in the event that such resource has not cleared in the RPM Auction for which the exemption has been granted and the filing is made no later than 5 days prior to the commencement of the offer period for the RPM Auction, revocation of the exemption or, (B) in the event that the resource has cleared the RPM Auction for which the exemption has been granted and the filing is made no later than two (2) years after the close of the offer period for the relevant RPM Auction, suspension of any payments, during the pendency of the FERC proceeding, to the Capacity Market Seller for the resource that cleared in any RPM Auction relying on such exemption; and suspension of the Capacity Market Seller's exemption for that resource for future RPM Auctions.

iii) Prior to any automatic revocation or submission to FERC, the Office of the Interconnection and/or the Market Monitoring Unit shall notify the affected Capacity Market Seller and, to the extent practicable, provide the Capacity Market Seller an opportunity to explain the alleged misrepresentation or omission. Any filing to FERC under this provision shall seek fast track treatment and neither the name nor any identifying characteristics of the Capacity Market Seller or the resource shall be publicly revealed, but otherwise the filing shall be public. The Capacity Market Seller may apply for a new exemption for that resource for subsequent auctions, including auctions held during the pendency of the FERC proceeding. In the event that the Capacity Market Seller is cleared by FERC from such allegations of misrepresentations or omissions then the exemption shall be restored to the extent and in the manner permitted by FERC. The remedies required by this subsection (h)(10) to be requested in any filing to FERC shall not be exclusive of any other remedies or penalties that may be pursued against the Capacity Market Seller.

i) Capacity Export Charges and Credits

(1) Charge

Each Capacity Export Transmission Customer shall incur for each day of each Delivery Year a Capacity Export Charge equal to the Reserved Capacity of Long-Term Firm Transmission

Service used for such export ("Export Reserved Capacity") multiplied by (the Final Zonal Capacity Price for such Delivery Year for the Zone encompassing the interface with the Control Area to which such capacity is exported minus the Final Zonal Capacity Price for such Delivery Year for the Zone in which the resources designated for export are located, but not less than zero). If more than one Zone forms the interface with such Control Area, then the amount of Reserved Capacity described above shall be apportioned among such Zones for purposes of the above calculation in proportion to the flows from such resource through each such Zone directly to such interface under CETO/CETL analysis conditions, as determined by the Office of the Interconnection using procedures set forth in the PJM Manuals. The amount of the Reserved Capacity that is associated with a fully controllable facility that crosses such interface shall be completely apportioned to the Zone within which such facility terminates.

(2) Credit

To recognize the value of firm Transmission Service held by any such Capacity Export Transmission Customer, such customer assessed a charge under section 5.14(i)(1) also shall receive a credit, comparable to the Capacity Transfer Rights provided to Load-Serving Entities under section 5.15. Such credit shall be equal to the locational capacity price difference specified in section 5.14(i)(1) times the Export Customer's Allocated Share determined as follows:

Export Customer's Allocated Share equals

(Export Path Import * Export Reserved Capacity) /

(Export Reserved Capacity + Daily Unforced Capacity Obligations of all LSEs in such Zone).

Where:

"Export Path Import" means the megawatts of Unforced Capacity imported into the export interface Zone from the Zone in which the resource designated for export is located.

If more than one Zone forms the interface with such Control Area, then the amount of Export Reserved Capacity shall be apportioned among such Zones for purposes of the above calculation in the same manner as set forth in subsection (i)(1) above.

(3) Distribution of Revenues

Any revenues collected from the Capacity Export Charge with respect to any capacity export for a Delivery Year, less the credit provided in subsection (i)(2) for such Delivery Year, shall be distributed to the Load Serving Entities in the export-interface Zone that were assessed a

Locational Reliability Charge for such Delivery Year, pro rata based on the Daily Unforced Capacity Obligations of such Load-serving Entities in such Zone during such Delivery Year. If more than one Zone forms the interface with such Control Area, then the revenues shall be apportioned among such Zones for purposes of the above calculation in the same manner as set forth in subsection (i)(1) above.

5.14A [Reserved.]

5.14B Generating Unit Capability Verification Test Requirements Transition Provision for RPM Delivery Years 2014/2015, 2015/2016, and 2016/2017

A. This transition provision applies only with respect to Generation Capacity Resources with existing capacity commitments for the 2014/2015, 2015/2016, or 2016/2017 Delivery Years that experience reductions in verified installed capacity available for sale as a direct result of revised generating unit capability verification test procedures effective with the summer 2014 capability tests, as set forth in the PJM Manuals. A Generation Capacity Resource meeting the description of the preceding sentence, and the Capacity Market Seller of such a resource, are hereafter in this section 5.14B referred to as an "Affected Resource" and an "Affected Resource Owner," respectively.

B. For each of its Affected Resources, an Affected Resource Owner is required to provide documentation to the Office of the Interconnection sufficient to show a reduction in installed capacity value as a direct result of the revised capability test procedures. Upon acceptance by the Office of the Interconnection, the Affected Resource's installed capacity value will be updated in the eRPM system to reflect the reduction, and the Affected Resource's Capacity Interconnection Rights value will be updated to reflect the reduction, effective June 1, 2014. The reduction's impact on the Affected Resource's existing capacity commitments for the 2014/2015 Delivery Year will be determined in Unforced Capacity terms, using the final EFORd value established by the Office of the Interconnection for the 2014/2015 Delivery Year as applied to the Third Incremental Auction for the 2014/2015 Delivery Year, to convert installed capacity to Unforced Capacity. The reduction's impact on the Affected Resource's existing capacity commitments for each of the 2015/2016 and 2016/2017 Delivery Years will be determined in Unforced Capacity terms, using the EFORd value from each Sell Offer in each applicable RPM Auction, applied on a pro-rata basis, to convert installed capacity to Unforced Capacity. The Unforced Capacity impact for each Delivery Year represents the Affected Resource's capacity commitment shortfall, resulting wholly and directly from the revised capability test procedures, for which the Affected Resource Owner is subject to a Capacity Resource Deficiency Charge for the Delivery Year, as described in section 8 of this Attachment DD, unless the Affected Resource Owner (i) provides replacement Unforced Capacity, as described in section 8.1 of this Attachment DD, prior to the start of the Delivery Year to resolve the Affected Resource's total capacity commitment shortfall; or (ii) requests relief from Capacity Resource Deficiency Charges that result wholly and directly from the revised capability test procedures by electing the transition mechanism described in this section 5.14B ("Transition Mechanism").

C. Under the Transition Mechanism, an Affected Resource Owner may elect to have the Unforced Capacity commitments for all of its Affected Resources reduced for the 2014/2015, 2015/2016, or 2016/2017 Delivery Years to eliminate the capacity commitment shortfalls, across all of its Affected Resources, that result wholly and directly from the revised capability test procedures, and for which the Affected Resource Owner otherwise would be subject to Capacity Resource Deficiency Charges for the Delivery Year. In electing this option, the Affected Resource Owner relinquishes RPM Auction Credits associated with the reductions in Unforced Capacity commitments for all of its Affected Resources for the Delivery Year, and Locational

Reliability Charges as described in section 5.14(e) of this Attachment DD are adjusted accordingly. Affected Resource Owners wishing to elect the Transition Mechanism for the 2015/2016 Delivery Year must notify the Office of the Interconnection by May 30, 2014. Affected Resource Owners wishing to elect the Transition Mechanism for the 2016/2017 Delivery Year must notify the Office of the Interconnection by July 25, 2014.

D. The Office of the Interconnection will offset the total reduction (across all Affected Resources and Affected Resource Owners) in Unforced Capacity commitments associated with the Transition Mechanism for the 2015/2016 and 2016/2017 Delivery Years by applying corresponding adjustments to the quantity of Buy Bid or Sell Offer activity in the upcoming Incremental Auctions for each of those Delivery Years, as described in sections 5.12(b)(ii) and 5.12(b)(iii) of this Attachment DD.

E. By electing the Transition Mechanism, an Affected Resource Owner may receive relief from applicable Capacity Resource Deficiency Charges for the 2014/2015, 2015/2016, or 2016/2017 Delivery Years, and a Locational UCAP Seller that sells Locational UCAP based on an Affected Resource owned by the Affected Resource Owner may receive relief from applicable Capacity Resource Deficiency Charges for the 2014/2015 Delivery Year, to the extent that the Affected Resource Owner demonstrates, to the satisfaction of the Office of the Interconnection, that an inability to deliver the amount of Unforced Capacity previously committed for the 2014/2015, 2015/2016, or 2016/2017 Delivery Years is due to a reduction in verified installed capacity available for sale as a direct result of revised generating unit capability verification test procedures effective with the summer 2014 capability tests, as set forth in the PJM Manuals; provided, however, that the Affected Resource Owner must provide the Office of the Interconnection with all information deemed necessary by the Office of the Interconnection to assess the merits of the request for relief.

5.14C Demand Response Operational Resource Flexibility Transition Provision for RPM Delivery Years 2015/2016 and 2016/2017

A. This transition provision applies only to Demand Resources for which a Curtailment Service Provider has existing RPM commitments for the 2015/2016 or 2016/2017 Delivery Years (alternatively referred to in this section 5.14C as "Applicable Delivery Years" and each an "Applicable Delivery Year") that (i) cannot satisfy the 30-minute notification requirement as described in Section A.2 of Attachment DD-1 of the Tariff and the parallel provision of Schedule 6 of the RAA; (ii) are not excepted from the 30-minute notification requirement as described in Section A.2 of Attachment DD-1 of the Tariff and the parallel provision of Schedule 6 of the RAA; and (iii) cleared in the Base Residual Auction or First Incremental Auction for the 2015/2016 Delivery Year, or cleared in the Base Residual Auction for the 2016/2017 Delivery Year. A Demand Resource meeting these criteria and the Curtailment Service Provider of such a resource are hereafter in this section 5.14C referred to as an "Affected Demand Resource" and an "Affected Curtailment Service Provider," respectively.

B. For this section 5.14C to apply to an Affected Demand Resource, the Affected Curtailment Service Provider must notify the Office of the Interconnection in writing, with regard to the following information by the applicable deadline:

i) For each applicable Affected Demand Resource: the number of cleared megawatts of Unforced Capacity for the Applicable Delivery Year by end-use customer site that the Affected Curtailment Service Provider cannot deliver, calculated based on the most current information available to the Affected Curtailment Service Provider; the end-use customer name; electric distribution company's account number for the end-use customer; address of end-use customer; type of Demand Resource (i.e., Limited DR, Annual DR, Extended Summer DR); the Zone or sub-Zone in which the end-use customer is located; and, a detailed description of why the end-use customer cannot comply with the 30-minute notification requirement or qualify for one of the exceptions to the 30-minute notification requirement provided in Section A.2 of Attachment DD-1 of the Tariff and the parallel provision of Schedule 6 of the RAA.

ii) If applicable, a detailed analysis that quantifies the amount of cleared megawatts of Unforced Capacity for the Applicable Delivery Year for prospective customer sales that could not be contracted by the Affected Curtailment Service Provider because of the 30-minute notification requirement provided in Section A.2 of Attachment DD-1 of the Tariff and the parallel provision of Schedule 6 of the RAA that the Affected Curtailment Service Provider cannot deliver, by type of Demand Resource (i.e. Limited DR, Annual DR, Extended Summer DR) and by Zone and sub-Zone, as applicable. The analysis should include the amount of Unforced Capacity expected from prospective customer sales for each Applicable Delivery Year and must include supporting detail to substantiate the difference in reduced sales expectations. The Affected Curtailment Service Provider should maintain records to support its analysis.

1. For the 2015/2016 Delivery Year, the notice shall be provided by no later than seven (7) days prior to the posting by the Office of the Interconnection of planning parameters for the Third Incremental Auction for the 2015/2016 Delivery Year. Such Affected Curtailment Service Provider that utilizes this transition provision may not sell or offer to sell megawatts in the modeled LDA or sub-LDA where an Affected Demand Resource is located in the Third Incremental Auction for the 2015/2016 Delivery Year.

2. For the 2016/2017 Delivery Year, the notice shall be provided by no later than seven (7) days prior to the posting by the Office of the Interconnection of planning parameters for the Second Incremental Auction for the 2016/2017 Delivery Year. Such Affected Curtailment Service Provider that utilizes this transition provision may not sell or offer to sell megawatts in the modeled LDA or sub-LDA where an Affected Demand Resource is located in the Second or Third Incremental Auctions for the 2016/2017 Delivery Year.

3. For the 2016/2017 Delivery Year, the notice shall be provided by no later than seven (7) days prior to the posting by the Office of the Interconnection of planning parameters for the Third Incremental Auction for the 2016/2017 Delivery Year. Such Affected Curtailment Service Provider that utilizes this transition provision must not have sold or offered to sell megawatts in the modeled LDA or sub-LDA where an Affected Demand Resource is located in the Second Incremental Auction for the 2016/2017 Delivery Year, and may not sell or offer to sell megawatts in the modeled LDA or sub-LDA where an Affected Demand Resource is located in the Third Incremental Auction for the 2016/2017 Delivery Year.

C. For the Third Incremental Auction for the 2015/2016 Delivery Year and the First, Second, and Third Incremental Auctions for the 2016/2017 Delivery Year, the Office of the Interconnection shall publish aggregate information on the undeliverable megawatts declared under this transition provision (hereafter, "non-viable megawatts"), by type of Demand Resource and by Zone or sub-Zone, concurrently with its posting of planning parameters for the applicable Scheduled Incremental Auction. Non-viable megawatts for a Scheduled Incremental Auction for an Applicable Delivery Year represent those megawatts meeting the criteria of subsection A above and declared in accordance with subsection B above. Prior to each Third Incremental Auction for an Applicable Delivery Year, the Office of the Interconnection shall apply adjustments equal to the declared non-viable megawatt quantity to the quantity of Buy Bid or Sell Offer activity in the upcoming Scheduled Incremental Auctions for the Applicable Delivery Year, as described in sections 5.12(b)(ii) and 5.12(b)(iii) of this Attachment DD. Prior to the Second Incremental Auction for the 2016/2017 Delivery Year, the Office of the Interconnection shall adjust the recalculated PJM Region Reliability Requirement and recalculated LDA Reliability Requirements, as described in section 5.4(c) of this Attachment DD, by the applicable quantity of declared non-viable megawatts, and shall update the PJM Region Reliability Requirement and each LDA Reliability Requirement for such Second Incremental Auction only if the combined change of the applicable adjustment and applicable recalculation is greater than or equal to the lessor of (i) 500 megawatts or (ii) one percent of the prior PJM Region Reliability Requirement or one percent of the prior LDA Reliability Requirement, as applicable.

D. Prior to the start of each Applicable Delivery Year, the Office of the Interconnection shall reduce, by type of Demand Resource and by Zone or sub-Zone, the capacity commitment of each Affected Curtailment Service Provider that utilizes this transition provision for the Applicable Delivery Year based on the non-viable megawatts declared by the Affected Curtailment Service Provider under this transition provision. If the Affected Curtailment Service Provider cleared megawatts from multiple Affected Demand Resources of the same type and Zone or sub-Zone, or cleared megawatts in multiple RPM Auctions for the Applicable Delivery Year, the Office of the Interconnection shall allocate the reduction in capacity commitment by type of Demand Resource and by Zone or sub-Zone across the applicable Affected Demand Resources and relevant RPM Auctions. Such allocation shall be performed on a pro-rata basis, based on megawatts cleared by the Affected Demand Resources in the relevant RPM Auctions.

E. For each Applicable Delivery Year, an Affected Curtailment Service Provider that utilizes this transition provision for the Applicable Delivery Year relinquishes an Affected Demand Resource's RPM Auction Credits for the amount of capacity commitment reduction as determined under subsection D above. Locational Reliability Charges as described in section 5.14(e) of this Attachment DD are also adjusted accordingly.

5.14D Capacity Performance and Base Capacity Transition Provision for RPM Delivery Years 2016/2017 and 2017/2018

A. This transition provision applies only for procuring Capacity Performance Resources for the 2016/2017 and 2017/2018 Delivery Years.

B. For both the 2016/2017 and 2017/2018 Delivery Years, PJM will hold a Capacity

Performance Transition Incremental Auction to procure Capacity Performance Resources.

1. For each Capacity Performance Transition Incremental Auction, the optimization algorithm shall consider:

- the target quantities of Capacity Performance Resources specified below;

- the Sell Offers submitted in such auction.

The Office of the Interconnection shall submit a Buy Bid based on the quantity of Capacity Performance Resources specified for that Delivery Year. For the 2016/2017 Delivery Year, the Office of the Interconnection shall submit a Buy Bid, at a price no higher than 0.5 times the Net CONE value for the PJM Region determined for the Base Residual Auction for that Delivery Year, for a quantity of Capacity Performance Resources equal to 60 percent of the updated Reliability Requirement for the PJM Region. For the 2017/2018 Delivery Year, the Office of the Interconnection shall submit a Buy Bid, at a price no higher than 0.6 times the Net CONE value for the PJM Region determined for the Base Residual Auction for that Delivery Year, for a quantity of Capacity Performance Resources equal to 70 percent of the updated Reliability Requirement for the PJM Region.

2. For each Capacity Performance Transition Incremental Auction, the Office of the Interconnection shall calculate a clearing price to be paid for each megawatt-day of Unforced Capacity that clears in such auction. For the 2016/2017 Delivery Year, the Capacity Resource Clearing Price for any Capacity Performance Transition Incremental Auction shall not exceed 0.5 times the Net CONE value for the PJM Region determined for the Base Residual Auction for that Delivery Year. For the 2017/2018 Delivery Year, the Capacity Resource Clearing Price for any Capacity Performance Transition Incremental Auction shall not exceed 0.6 times the Net CONE value for the PJM Region determined for the Base Residual Auction for that Delivery Year.

3. A Capacity Market Seller may offer any Capacity Resource that has not been committed in an FRR Capacity Plan, that qualifies as a Capacity Performance Resource under section 5.5A(a) and that (i) has not cleared an RPM Auction for that Delivery Year; or (ii) has cleared in an RPM Auction for that Delivery Year. A Capacity Market Seller may offer an external Generation Capacity Resource to the extent that such resource: (i) is reasonably expected, by the relevant Delivery Year, to meet all applicable requirements to be treated as equivalent to PJM Region internal generation that is not subject to NERC tagging as an interchange transaction; (ii) has long-term firm transmission service confirmed on the complete transmission path from such resource into PJM; and (iii) is, by written commitment of the Capacity Market Seller, subject to the same obligations imposed on Generation Capacity Resources located in the PJM Region by section 6.6 of Attachment DD of the PJM Tariff to offer their capacity into RPM Auctions.

4. Capacity Resources that already cleared an RPM Auction for a Delivery Year, retain the capacity obligations for that Delivery Year, and clear in a Capacity Performance Transition Incremental Auction for the same Delivery Year shall: (i) receive a payment equal to the Capacity Resource Clearing Price as established in that Capacity Performance Transition

Incremental Auction; and (ii) not be eligible to receive a payment for clearing in any prior RPM Auction for that Delivery Year.

D. All Capacity Performance Resources that clear in a Capacity Performance Transition Incremental Auction will be subject to the Non-Performance Charge set forth in section 10A.

5.14E Demand Response Legacy Direct Load Control Transition Provision for RPM Delivery Years 2016/2017, 2017/2018, and 2018/2019

A. This transition provision applies only to Demand Resources for which a Curtailment Service Provider has existing RPM commitments for the 2016/2017, 2017/2018, or 2018/2019 Delivery Years (alternatively referred to in this section 5.14E as "Applicable Delivery Years" and each an "Applicable Delivery Year") that (i) qualified as Legacy Direct Load Control before June 1, 2016 as described in Section G of Attachment DD-1 of the Tariff and the parallel provision of Schedule 6 of the RAA; (ii) cannot meet the requirements for using statistical sampling for residential non-interval metered customers as described in Section K of Attachment DD-1 of the Tariff and the parallel provision of Schedule 6 of the RAA; and (iii) cleared in the Base Residual Auction or First Incremental Auction for the 2016/2017 Delivery Year, cleared in the Base Residual Auction for the 2017/2018 Delivery Year, or cleared in the Base Residual Auction for the 2018/2019 Delivery Year. A Demand Resource meeting these criteria and the Curtailment Service Provider of such a resource are hereafter in this section 5.14E referred to as an "Affected Demand Resource" and an "Affected Curtailment Service Provider," respectively.

B. For this section 5.14E to apply to an Affected Demand Resource, the Affected Curtailment Service Provider must notify the Office of the Interconnection in writing, with regard to the following information, by the applicable deadline:

i) For each applicable Affected Demand Resource: the number of cleared megawatts of Unforced Capacity for the Applicable Delivery Year by end-use customer site that the Affected Curtailment Service Provider cannot deliver, calculated based on the most current information available to the Affected Curtailment Service Provider; electric distribution company's account number for the end-use customer; address of end-use customer; type of Demand Resource (i.e., Limited DR, Annual DR, Extended Summer DR); the Zone or sub-Zone in which the end-use customer is located; and, a detailed description of why the endues customer cannot comply with statistical sampling for residential non-interval metered customers requirement as described in Section K of Attachment DD-1 of the Tariff and the parallel provision of Schedule 6 of the RAA.

ii) If applicable, a detailed analysis that quantifies the amount of cleared megawatts of Unforced Capacity for the Applicable Delivery Year for prospective customer sales that could not be contracted by the Affected Curtailment Service Provider because of the statistical sampling for residential non-interval metered customers requirement as described in Section K of Attachment DD-1 of the Tariff and the parallel provision of Schedule 6 of the RAA that the Affected Curtailment Service Provider cannot deliver, by type of Demand Resource (i.e. Limited DR, Annual DR, Extended Summer DR) and by Zone and sub-Zone, as applicable. The

analysis should include the amount of Unforced Capacity expected from prospective customer sales for each Applicable Delivery Year and must include supporting detail to substantiate the difference in reduced sales expectations. The Affected Curtailment Service Provider should maintain records to support its analysis.

1. For the 2016/2017 Delivery Year, the notice shall be provided by no later than seven (7) days prior to the posting by the Office of the Interconnection of planning parameters for the Second and/or Third Incremental Auction for the 2016/2017 Delivery Year. Such Affected Curtailment Service Provider that utilizes this transition provision may not sell or offer to sell megawatts in the matching LDA or sub-LDA where an Affected Demand Resource is located in the Second or Third Incremental Auction for the 2016/2017 Delivery Year.

2. For the 2017/2018 Delivery Year, the notice shall be provided by no later than seven (7) days prior to the posting by the Office of the Interconnection of planning parameters for the First, Second and/or Third Incremental Auction for the 2017/2018 Delivery Year. Such Affected Curtailment Service Provider that utilizes this transition provision may not sell or offer to sell megawatts in the matching LDA or sub-LDA where an Affected Demand Resource is located in the First, Second or Third Incremental Auctions for the 2017/2018 Delivery Year.

3. For the 2018/2019 Delivery Year, the notice shall be provided by no later than seven (7) days prior to the posting by the Office of the Interconnection of planning parameters for the First, Second and/or Third Incremental Auction for the 2018/2019 Delivery Year. Such Affected Curtailment Service Provider that utilizes this transition provision may not sell or offer to sell megawatts in the matching LDA or sub-LDA where an Affected Demand Resource is located in the First, Second or Third Incremental Auctions for the 2018/2019 Delivery Year.

C. For the Second and Third Incremental Auction for the 2016/2017 Delivery Year, the First, Second, and Third Incremental Auctions for the 2017/2018 Delivery Year, and the First, Second, and Third Incremental Auctions for the 2018/2019 Delivery Year, the Office of the Interconnection shall publish aggregate information on the undeliverable megawatts declared under this transition provision (hereafter, "non-viable megawatts"), by type of Demand Resource and by Zone or sub-Zone, concurrently with its posting of planning parameters for the applicable Scheduled Incremental Auction. Non-viable megawatts for a Scheduled Incremental Auction for an Applicable Delivery Year represent those megawatts meeting the criteria of subsection A above and declared in accordance with subsection B above. Prior to each Scheduled Incremental Auction for an Applicable Delivery Year, the Office of the Interconnection shall apply adjustments equal to the declared non-viable megawatt quantity to the quantity of Buy Bid or Sell Offer activity in the upcoming Scheduled Incremental Auctions for the Applicable Delivery Year, as described in sections 5.12(b)(ii) and 5.12(b)(iii) of this Attachment DD. Prior to the Second Incremental Auction for the 2016/2017 Delivery Year, the First and Second Incremental Auction for the 2017/2018 Delivery Year, and the First and Second Incremental Auction for the 2018/2019 Delivery Year, the Office of the Interconnection shall adjust the recalculated PJM Region Reliability Requirement and recalculated LDA Reliability Requirements, as described in section 5.4(c) of this Attachment DD, by the applicable quantity of declared non-viable megawatts, and shall update the PJM Region Reliability Requirement and each LDA Reliability

Requirement for such Incremental Auction only if the combined change of the applicable adjustment and applicable recalculation is greater than or equal to the lessor of (i) 500 megawatts or (ii) one percent of the prior PJM Region Reliability Requirement or one percent of the prior LDA Reliability Requirement, as applicable.

D. Prior to the start of each Applicable Delivery Year, the Office of the Interconnection shall reduce, by type of Demand Resource and by Zone or sub-Zone, the capacity commitment of each Affected Curtailment Service Provider that utilizes this transition provision for the Applicable Delivery Year based on the non-viable megawatts declared by the Affected Curtailment Service Provider under this transition provision. If the Affected Curtailment Service Provider cleared megawatts from multiple Affected Demand Resources of the same type and Zone or sub-Zone, or cleared MWs in multiple RPM Auctions for the Applicable Delivery Year, the Office of the Interconnection shall allocate the reduction in capacity commitment by type of Demand Resource and by Zone or sub-Zone across the applicable Affected Demand Resources and relevant RPM Auctions. Such allocation shall be performed on a pro-rata basis, based on megawatts cleared by the Affected Demand Resources in the relevant RPM Auctions.

E. For each Applicable Delivery Year, an Affected Curtailment Service Provider that utilizes this transition provision for the Applicable Delivery Year relinquishes an Affected Demand Resource's RPM Auction credits for the amount of capacity commitment reduction as determined under subsection D above. Locational Reliability Charges as described in section 5.14(e) of this Attachment DD are also adjusted accordingly.