PJM's Capacity Market Repricing Proposal

Background and Introduction

Since March 2017, PJM Interconnection and its stakeholders have been evaluating how state policy initiatives affect PJM capacity market (known as the Reliability Pricing Model or RPM) outcomes and how market rules could be adapted to ensure that the benefits of competitive markets are retained in the presence of state subsidies.

PJM proposes adopting a path of accommodation, which would address the impact of state subsidies in the capacity market by recognizing subsidized resources as capacity resources in PJM, then administratively adjusting the offer of a subsidized resource to prevent capacity price distortion. This market reform would ensure that state policy actions are accommodated in the market, which would keep load from paying for capacity twice while ensuring that out-of-market subsidies do not affect the overall effectiveness of the capacity market and the efficient entry and exit of resources.

An earlier version of this proposal was evaluated with other potential solutions as part of the Capacity Construct/ Public Policy Senior Task Force (CCPPSTF) and did not receive the simple majority vote required to advance to the Markets and Reliability Committee (MRC). The task force endorsed an extended Minimum Offer Price Rule (MOPR-Ex).

PJM Management believes that the MOPR-Ex proposal is inconsistent with the "accommodate" path and carries with it negative consequences contrary to the goals outlined in the task force's charter. Therefore, PJM is reissuing its Capacity Market Repricing proposal, with some modifications and additional detail, to provide transparency into PJM's current thinking on what it believes to be the best solution to the identified issue. To be clear, this proposal applies only to the RPM capacity market, and does not entail any changes to the PJM Energy or Ancillary Services Markets.

Current Minimum Offer Price Rule

The current Minimum Offer Price Rule (MOPR) in the PJM Tariff applies only to new resources. PJM proposes that the Capacity Repricing approach described here replace the current MOPR provisions and apply only to subsidized resources (as defined below). Unlike the current MOPR, the Capacity Repricing approach would apply to both new and existing resources and all resource types (based on the triggering criteria explained in the "Two-Stage Capacity Auction" section). Applying the Capacity Repricing approach to both new and existing resources has the advantage of accommodating state policy decisions in the same manner for all resource types, as opposed to treating new and existing resources differently — as would result from maintaining the current MOPR.

Subsidies

The question of how to best preserve price integrity in the PJM capacity market in the face of selective, out-of-market subsidies[1] presents, in theory, three broad options:

1. Take action to address all subsidies, recognizing that all subsidies interfere with a theoretically perfect operation of the market
2. Take no action against any subsidy, recognizing the ubiquity of subsidies and the difficulty in justifying distinction between "actionable" and "non-actionable" subsidies
3. Develop criteria or principles that identify subsidies that warrant action based on design or impact, and leave all other subsidies unaddressed

PJM proposes the third approach. The Capacity Market Repricing Proposal distinguishes actionable from non-actionable subsidies. Before examining the approach and rationale used to distinguish actionable from non-actionable subsidies, important preliminary observations should be noted.

First, any action to mitigate subsidies (e.g., PJM's existing MOPR or the MOPR-Ex proposal) or to accommodate subsidies (e.g., the Capacity Market Repricing Proposal discussed here) requires identifying a class of actionable subsidies. The existing MOPR already adopts the third approach by distinguishing between subsidies subject to mitigation (a minimum offer) and those that are ignored. However:

- PJM believes that distinguishing between subsidies would be less controversial and impactful to the Capacity Market Sellers under the PJM Capacity Repricing proposal because the consequence of that distinction does not fall directly on the resource with the actionable subsidy. Under the proposed repricing rule, such resource can freely decide on its capacity market offer. This is not the case under the MOPR.
- The repricing rule imposes no added risk on the resource failing to clear the auction or failing to receive a capacity commitment. Thus, a load-serving entity (LSE) in an affected locational deliverability area (LDA) does not face the potential of "double procuring" capacity under the repricing rule as it does under MOPR.

[1] PJM proposes to adopt a modified definition of a subsidy, which has been previously codified in the PJM Tariff, specifically: a Capacity Market Seller that has 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 to the construction, development, operation, or clearing in any RPM Auction, of the Capacity Resource, or (B) other material support payments obtained in any state-sponsored or state-mandated processes, connected to the construction, development, operation, or clearing in any RPM Auction, of the Capacity Resource.

Second, the rules that define when repricing is triggered will make clear that resources owned by or contracted to either a vertically integrated utility or a municipal/cooperative entity (that is supplying its native load obligations) will not be subject to repricing. However, to the extent there is evidence such resources are procured or developed and offered into the capacity market in a manner intended to suppress capacity market prices or otherwise exercise buyer-side market power, PJM (and/or its Independent Market Monitor) will address those issues through appropriate referral or complaint channels already provided in the PJM Tariff. Similarly, the repricing rule will not apply to resources in a Fixed Resource Requirement resource plan.

Two-Stage Capacity Auction

PJM's Capacity Repricing proposal would institute a two-stage capacity approach. Resources would submit one set of offers into a single capacity auction, as they do today. However, the cleared capacity commitments and the clearing prices would be determined in separate stages.

A two-stage approach to determine cleared commitments and clearing prices in a single capacity auction would:

- Maintain the correct price signal to incent the efficient entry and exit of resources and sustain the competitive resources necessary to achieve long-term resource adequacy
- Commit only the quantity of capacity necessary for any given delivery year

Subsidies that are determined to be actionable would trigger repricing. More detail on distinguishing between actionable and non-actionable subsidies is described in the "Subsidies" section.

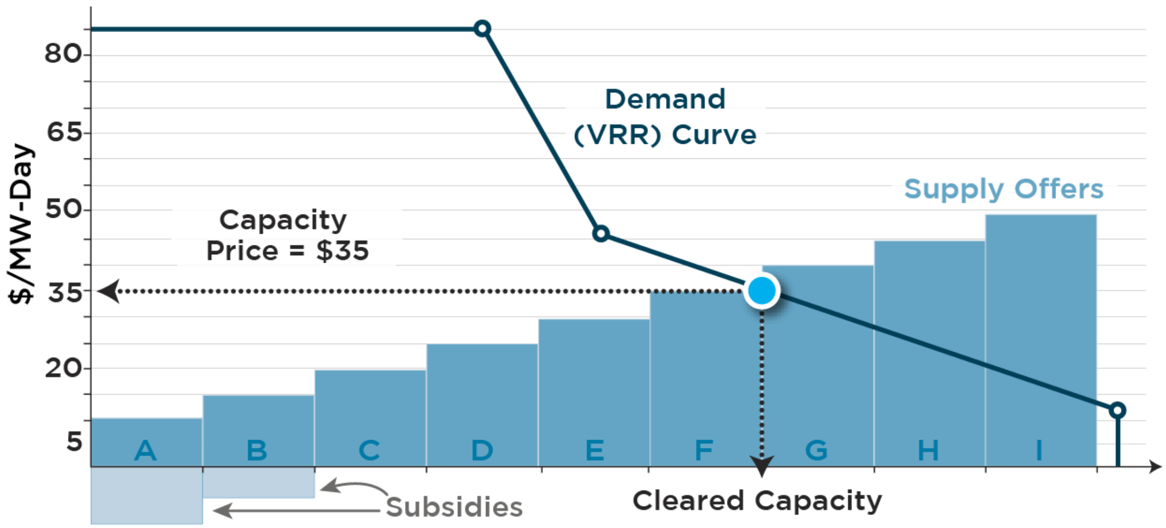
Resources with actionable subsidies that clear the first stage of the auction would be relied upon as capacity resources and subject to the same reliability obligations they are today. Capacity market offers of resources with actionable subsidies would be administratively adjusted in the second stage of the auction to prevent distortion of the capacity price. The adjusted offer price of resources with actionable subsidies would be the net avoidable cost rate (ACR) determined for the each specific resource, including the capacity performance quantifiable risk (CPQR) component.

Should PJM and the Capacity Market Seller not be able to agree on the calculation of the Net ACR for a subsidized resource, or the Capacity Market Seller not provide all the information required to calculate the resource's Net ACR, then the adjusted offer price will be the applicable net cost of new entry (CONE) value for the resource's location multiplied by the balancing ratio, the same value utilized to determine the value of a competitive offer for the purpose of offer-capping.

Stage 1: Determining Cleared Capacity

- Capacity Market Sellers of resources with actionable subsidies that trigger repricing could offer into the auction as they do today, subject to PJM rules.
- Clearing this auction would determine those resources that ultimately would receive a capacity commitment.

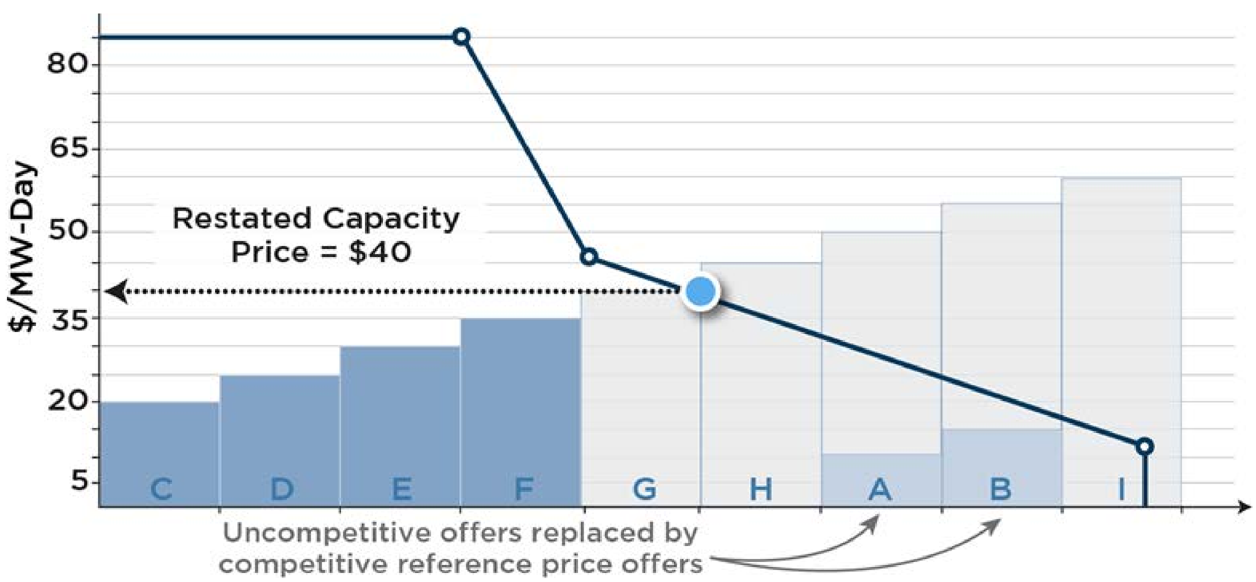
Figure 1. First Stage of Auction, Cleared Capacity Determined



Stage 2: Determining Clearing Price

- PJM would recalculate prices in the auction by:
  - Removing offers submitted by Capacity Market Sellers of resources with actionable subsidies from the price formation and settlement process
  - Replacing those offers with reference price offers (the Net ACR or Net CONE * Balancing Ratio) reflecting what would be a competitive offer determined as described above
- Although units with offers below the restated capacity price, but above what would have been the price in Stage 1, would appear infra-marginal, they would not receive a capacity commitment because they did not clear in the first stage.

Figure 2. Second Stage of Auction, Capacity Price Determined



Settlement

PJM would credit all cleared capacity market sellers from Stage 1 and charge all purchasing LSEs based upon the restated capacity price.

When Would Repricing Be Triggered? Criteria to Identify Actionable Subsidies

The decision tree in Figure 3 describes the criteria PJM would apply to identify subsidies that would trigger repricing under this proposal. If a subsidy is identified as actionable, the associated resource's competitive offer would be administratively adjusted in the second, price-setting, stage of the auction to prevent distortion of the capacity price. All resources that are subject to repricing will still receive capacity commitments and are still subject to the same stringent reliability obligations to the extent they clear in Stage 1.

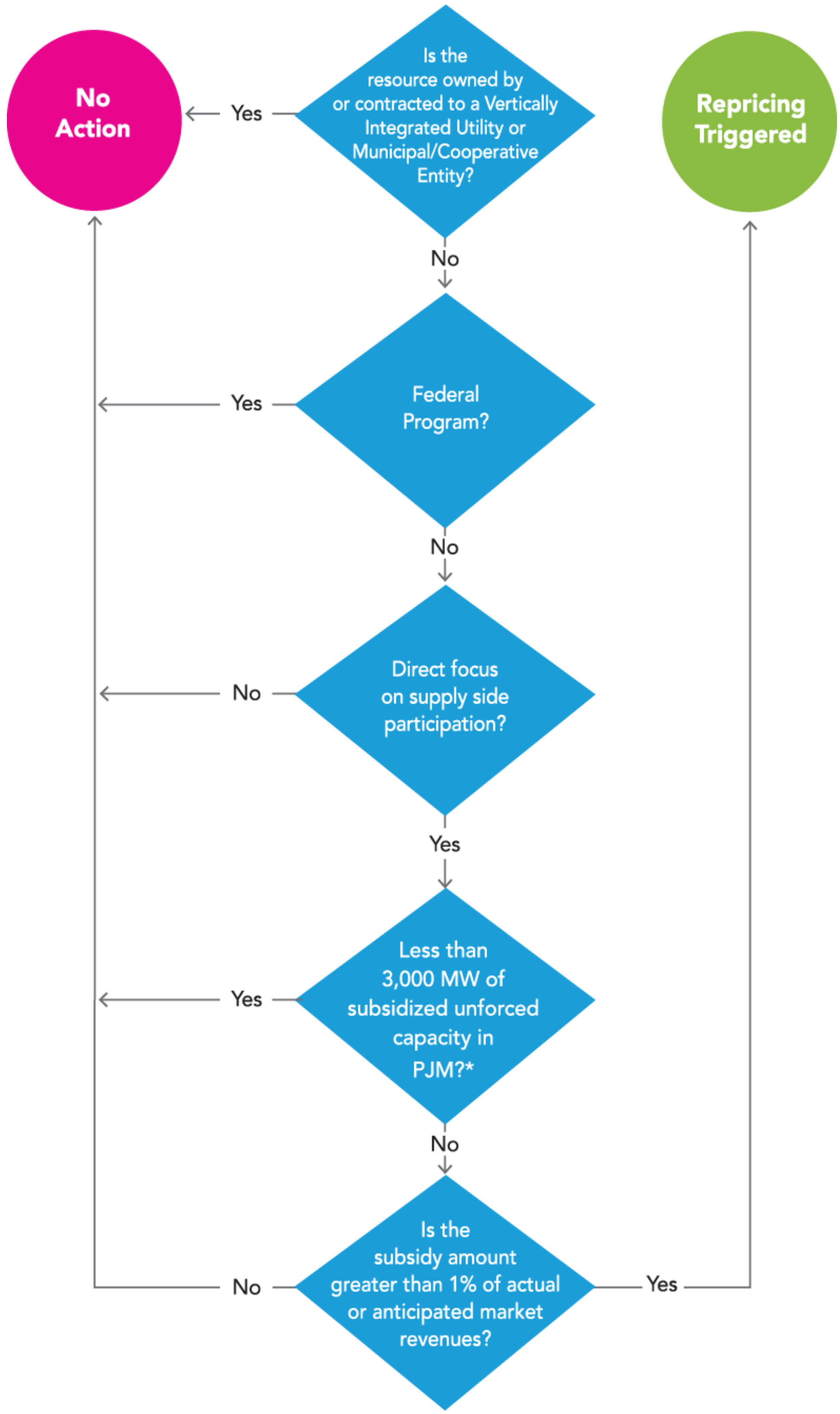
The exercise of distinguishing actionable subsidies from non-actionable subsidies is one of judgment – guided more by practicality and less by pure principle. Although identifying a subsidy as actionable under the proposal is not, as described, as consequential and problematic for the market seller as under MOPR, PJM would prefer to maximize the number of actual competitive offers on the supply curve and minimize repricing subsidized units with administratively-set reference price offers.

Accordingly, the repricing triggers set forth in this proposal reflect a judgment on materiality and recognition that the capacity market can tolerate, and has tolerated for a decade, some modest level of distortion from programs that selectively advance certain resources, whether by design or consequence. PJM's Capacity Market Repricing Proposal is intended to operate by ignoring subsidies that have only a minor or theoretical impact on capacity price outcomes.

The PJM proposal adopts repricing triggers informed by the analysis and reasoning of the federal courts, including the Supreme Court in the *Hughes* case.[2] The Capacity Market Repricing Proposal is designed to ignore "generic" subsidies, such as incentives and tax breaks that support economic development generally. Programs that selectively target the advancement of a particular resource while excluding other similarly situated resources would be subject to repricing under the proposal.

[2]Hughes, Chairman, Maryland Public Service Commission, et al. v. Talen Energy Marketing, LLC, fka PPL Energyplus, LLC, et al. https://www.supremecourt.gov/opinions/15pdf/14-614_k5fm.pdf

Figure 3. Subsidy Decision Tree for Triggering Repricing



* Application of this criterion includes the LDA ratio threshold provisions discussed further in this paper.

Repricing: First Decision Criterion

The first decision criterion distinguishes resources that would have been subject to what was recently a MOPR exemption[3] for self-supply resources. Subsidies to any resources that would have been eligible for the self-supply MOPR exemption would not be considered actionable. Rather than characterize these resources as self-supply exemptions under this proposal, PJM proposes to simplify this criteria. As indicated above, any resource owned or contracted to a Vertically Integrated Utility or a Municipal/Cooperative Entity would not be subject to repricing.

Repricing: Second Decision Criterion

The second decision criterion distinguishes federal from state programs and excludes federal programs from triggering repricing. This distinction does not rest on any economic difference – a federal production tax credit that supports the uneconomic entry of 500 MW is just as distorting as a state purchase power contract for a 500 MW preferred resource.[4] Federal programs apply nationally and arguably form an accepted and understood element of the investment landscape and do not differentiate simply by location of the asset in a particular state. They are widespread (Internal Revenue Service, Department of Energy, Department of Agriculture, etc.), and examples can be found that support all generation resources and fuel types. To be clear, a renewable resource might not be subject to repricing because of a federal tax credit, but it would be subject to repricing to account for any incremental state subsidy.

Repricing: Third Decision Criterion

The third decision criterion is designed to exclude from repricing subsidy programs that:

- Are generic across broad areas of the economy, such as tax credits for any commercial investment and local economic development incentives[5]
- Are directed at the electricity sector but predominantly focused on encouraging reduced consumption and conservation, such as rebates and incentives for behind-the-meter resources or programs that incent insulation, energy efficient buildings, etc.
- Do not directly target wholesale supply side resources through monetary subsidies, either individually or by class of resource
    - Note: Demand response that elects to participate as wholesale supply side resources in the PJM capacity market could be subject to repricing based on the other established criteria. That is, a

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[3] The December 8, 2017, MOPR Remand Order rejected PJM's December 2012 filing that added the competitive entry and self-supply exemptions to the MOPR rules. However, in rejecting those provisions, the Commission did not reject the substance of the exemptions, but, rather, it rejected the manner in which PJM proposed them wherein PJM also proposed removing the unit-specific exception process. The Commission left open the possibility for PJM to make another filing to re-propose and support such exemptions.

[4] For example, 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.

[5] For example, 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. Also, 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.

demand response resource to which a state directs funds to support its participation would be subject to repricing if the other criteria described herein are met. This would apply regardless of whether the financial support is directed to the curtailment service provider that offers the resource into the PJM markets or to another entity.

With respect to state renewable portfolio standard (RPS) requirements, any resource owned by or contracted to an LSE as a direct result of a state-mandated RPS requirement (other than those owned by or contracted to a vertically integrated utility or a municipal/cooperative entity) would be subject to repricing. Such resources could include those that receive renewable energy credits (RECs) pursuant to a state program, or those that are owned or contracted to LSEs in order for those LSEs to meet state-mandated minimum renewable supply levels.

Repricing: Fourth Decision Criterion

The fourth decision criterion is aimed at capturing materiality. Subsidized resources would be subject to repricing only to the extent that more than 3,000 MW of subsidized, unforced capacity was offered into and cleared the PJM capacity market.

To reflect the potential impact of subsidized resources in modeled LDAs, a threshold value would be established for each modeled LDA. The threshold value for any modeled LDA would be equal to the same ratio as the 3,000 MW represents to the reliability requirement for the entire RTO.

For example, if the reliability requirement for the RTO is 150,000 MW, the ratio of 3,000 MW to the RTO reliability requirement would be 3,000 MW / 150,000 MW = 2%. The threshold for repricing in a 20,000 MW LDA in this example would be 2% * 20,000 MW = 400 MW. Once that threshold is exceeded either for the RTO or in any modeled LDA, all subsidized resources in the RTO or in the modeled LDA would be subject to repricing.

PJM acknowledges that this approach relies on judgment. The intent, however, is to filter subsidies in a way that prevents them from having a material impact on future market prices. An amount of subsidies that does not have a material impact on future prices is less likely to result in the creation of more subsidies. However, an appreciable quantity of subsidies could suppress future prices to the point of creating a domino effect, resulting in additional subsidies. In order to ensure the materiality of repriced resources with respect to price formation in the capacity market, PJM also proposes to implement a 20 MW threshold for resources to which repricing would apply. The intent of the 20 MW threshold is to ensure that the resource being subsidized would have a material impact on the capacity market results, and is similar to the 20 MW threshold for resource uprates previously applicable to the MOPR.

Repricing: Fifth Decision Criterion

The fifth decision criterion establishes a cutoff in instances where the subsidy amount is greater than 1 percent of a resource's actual or anticipated market revenues. This element of the test also is one of materiality, designed to exclude trivial benefits that state or local authorities might offer to generation in their regions.

Effective Date

PJM appreciates the significant efforts of its stakeholder community during 2017 to thoroughly examine this issue and vet various alternative proposals for addressing it. PJM believes the time is now right to put the best possible proposal in front of the Federal Energy Regulatory Commission. As such, PJM will recommend to the Board that this

Capacity Repricing proposal be filed with FERC in February 2018. However, PJM will request an effective date for this filing after the May 2018 Base Residual Auction in order to ensure that the market has a clear understanding of the outcome of the associated FERC proceeding prior to implementation. PJM will further request that this Capacity Repricing proposal be effective for all delivery years following the first delivery year for which a Base Residual Auction is executed under these rules, and not to the incremental auctions applying to intervening Delivery Years.

Version History:

Version 1 (5/2/2017)

- Original posted as supporting material for the FERC Technical Conference on State Policies and Wholesale Markets

Version 2 (6/12/2017)

- Addition of sections titled "Subsidies" and "Criteria to Identify Actionable Subsidies: When Would Repricing Be Triggered?"
- Addition to "Introduction" section about the role of this proposal in Capacity Construct / Public Policy Senior Task Force (CCPPSTF)
- Clarifications to "Two-Stage Capacity Auction" section

Version 3 (6/29/2017)

- Clarifications to "Criteria to Identify Actionable Subsidies: When Would Repricing Be Triggered?" section

Version 4 (7/27/2017)

- Clarifications to fourth decision criterion

Version 5 (10/12/2017)

- Updated based on CCPPSTF poll to remove settlement option 2 and update the reference price backup to ACR instead of Net CONE * B.

Version 6 (11/8/2017)

- Updated process to determine the adjusted offer price of actionable subsidized resources

Version 7 (1/16/2018)

- Updated to describe and add detail to PJM's latest thinking on its preferred proposal