June 10, 2025

PJM unit-specific MSOC process and documentation support requirements

1) PJM and the IMM will use the same ACR template to determine MSOC values. Please see the IMM Tools webpage for more information. Please also see IMM_MSOC_slides.ashx.

2) All deadlines for the unit-specific process are published on pjm.com at Capacity Auction Deadlines. Please see Activity Type = "Seller Offer Caps."

3) Avoidable Cost Rate is based on:
    a. Avoidable Cost Rate for unit to not operate ("mothballed") for the Delivery Year but will remain operational for the following Delivery Year or;
    b. Avoidable Cost if unit permanently retires before the applicable Delivery Year
        i. Seller must submit officer certification that the unit will retire prior to the applicable Delivery Year if it does not clear in the auction, or
        ii. Seller submit a deactivation notice to PJM prior to the auction.

4) Seller must update MIRA whether they agree or disagree with IMM price by the deadline. To indicate whether or not the Seller agrees or disagrees, the Seller must update MIRA with the requested MSOC price (see MIRA User Guide, section 7.4 for instructions) before the deadline.
    a. If Seller MSOC price in MIRA is same as IMM-determined price, then Seller agrees with IMM price (PJM will review and accept if the price is consistent with the Tariff prescribed methodology).
    b. If Seller MSOC price is greater than the IMM price, then Seller disagrees with IMM price and would like to escalate to PJM for review.
    c. If Seller does not provide a price by the deadline, then Seller will be subject to default Market Seller Offer Cap (default Gross ACR minus unit-specific EAS offset).

5) If Seller disagrees with IMM-determined MSOC, then Seller must provide PJM all supporting detail by uploading completed PJM template (MSOC Seller Disagreement with IMM template) to MIRA. Supporting information must include the following:
    a. By Gross ACR component (AMOL … CRF) or EAS offset
        i. Why Seller disagrees with IMM
        ii. Reference to qualified supporting documentation that supports Seller requested value
        iii. Seller should only provide new information upon request by PJM and upload to MIRA.

Example of ACR Disagreement Template

Capacity Market Seller =	Member A			
Unit Name =	Wolf Creek Unit 1			
Contact =	joe smith, joesmith@memberA.com			
Type	**Componant**	**Reason item was rejected by IMM**	**Seller reason PJM should approve**	**Support Documentation**
Opportunity Cost				
Gross ACR	Adjustment Factor			
Gross ACR	AOML	no support for % allocation	% allocation was supported	see MIRA, document Y.xls, sheet A (row16)
Gross ACR	AAE			
Gross ACR	AFAE			
Gross ACR	AME	Support documentation not provided	Support information was provided	see MIRA, document X.pdf, page 10
Gross ACR	AVE			
Gross ACR	ATFI			
Gross ACR	ACC			
Gross ACR	ACLE			
Gross ACR	ARPIR			
Gross ACR	APIR			
Gross ACR	CPQR		Officer Certification already provided	see MIRA, OfficCert.pdf
Gross ACR	Other			
EAS revenue				
Avoidable Cost Rate = [Adjustment Factor * (AOML + AAE + AFAE + AME +AVE + ATFI + ACC + ACLE) + ARPIR + APIR + CPQR]				

6) PJM will determine whether to accept or reject the Seller-requested MSOC price submitted in MIRA as described above.
    a. If PJM rejects, then Seller may use default (if available) or upon approval by PJM, the IMM-proposed value.
    b. PJM will not calculate the MSOC value. PJM will either approve or deny the Seller requested value.
    c. Seller may not modify requested value sent to PJM after the deadline to submit.
    d. If PJM determines the Seller value submitted for any component is not supported, then the Seller request will be denied.
        i. For example, if PJM agrees with all components except for AFAE, then PJM will reject the Seller request.
    e. Seller and IMM may agree to an MSOC value prior to the opening of the auction window. The MSOC price will only be valid if PJM has sufficient time to review and approve prior to the start of the auction window. If PJM does not approve, then the MSOC value is rejected. PJM strongly encourages Sellers that discuss MSOC values after the PJM determination deadline to finalize any agreement 5 business days prior to the commencement of the auction.

7) Opportunity Cost shall be the documented capacity value available to an existing generation resource in a market external to PJM. Opportunity Costs are not based on PJM internal energy-only resources. The following supporting documentation is required: the cost of capacity in the external market (supported with broker quotes or contract) converted to $/MW-Day UCAP and netted against transmission cost to transport the capacity from PJM to the external market. Further, please explain how firm transmission service will be obtained (OASIS reservation) both to the border and from border to the sink.

8) The Market Seller Offer Cap, stated in dollars per MW/day of unforced capacity, applicable to price-quantity offers within the Base Offer Segment for an Existing Generation Capacity Resource shall be the Avoidable Cost Rate for such resource, less the Projected PJM Market Revenues for such resource, stated in dollars per MW/day of unforced capacity. Notwithstanding, beginning with the 2026/2027 Delivery Year, the Market Seller Offer Cap shall be the greater of (a) Avoidable Cost Rate for such resource, less the Projected PJM Market Revenues for such resource, or (b) if applicable, the Capacity Performance Quantifiable Risk for such resource, as defined in Tariff, Attachment DD, section 6.8(a), to the extent such value has been supported and obtained approval pursuant to the requirements set forth in this Tariff, Attachment DD, section 6.4(b), stated in dollars per MW-day of unforced capacity. This means it's acceptable for a Seller to submit only CPQR to represent their MSOC value. PJM and the IMM have similar documentation requirements as posted on the MIRA website with the following clarifications for the PJM review process:

    a. PJM MSOC Officer Certification – This certification will facilitate the PJM review process where the Capacity Market Seller does not agree with the IMM determination and requests PJM to review the Seller's submitted netACR value. This can be used to support that Gross ACR does not include cost that is includable in the Seller's cost-based energy market offer.

    b. CPQR determination and support documentation – CPQR represents the estimated cost to mitigate CP penalty risk. It does not represent CP penalty risk.[1] Support documentation may include one or both of the following options:

[1] For example, if Seller believes CP risk is $80 MW/Day at the 95th percentile; this represents the risk and does not qualify as CPQR.

i. Insurance premium/expenses or quote for penalties associated with capacity non-performance risk (energy market risk must be excluded). Please provide: Date of tender, Insured (Legal Entity & Domicile), Perils Insured Against, Inception Date, Expiration Date, Covered Unit(s), Capacity (MW), Committed UCAP (MW), Term Deductible, Policy Coverage Limit $, and Unit-specific information used to determine the premium or quote (eFORd, etc.). If premium or quote is for multiple resources, then Seller must determine resource-specific value and provide the methodology to PJM.

ii. Expected non-performance charges for the Delivery Year that represent the estimated cost to mitigate the risk:
   1. Financial statement, audit report, internal accounting records or other management records that reflect the value, and a description of the process and calculations; or
   2. Officer Certification that the value represents the expected penalty cost for the delivery year and detailed support for all calculations (estimated PAIs, outages during PAIs, balancing ratio, excusals from non-performance, bonus payments and known values such as non-performance charge rate and stop loss time periods used to determine probabilities, stop loss, etc.); or
   3. The estimated cost that will be incurred for a significant change to the operation of the resource that will be implemented prior to the start of the Delivery Year. The new operating practice will be implemented to mitigate the risk of receiving a penalty plus any residual expected penalty cost that remains despite the operating practice change. For example, a resource with a long start time where the Seller shall change the operating practice to start the unit in advance of an expected PAI and such new practice will result in additional cost. Seller may also add any residual expected penalty cost that remains despite the operating practice

Hypothetical Example for a change in operation (9.b.ii.3 above) - this is not indicative of an actual CPQR value. Actual CPQR values will be based on unit specific parameters that are submitted and fully supported by the Seller.

Assume a 500 MW Natural Gas Fired Generator with a Heat rate of 7MMBTU / MWh where there is no PJM day ahead energy commitment on an assumed number of days when a Performance Assessment Interval (PAI) may occur. Under such conditions, the unit would self-schedule and operate as a price-taker in the energy market to ensure it was on-line should a PAI occur to avoid a penalty. The Seller would have reasonable and supported expectations regarding cost to purchase natural gas and energy market prices (LMPs) that could occur during such conditions. Also, Ratable take requirements (i.e. – OFOs) would exist on the gas pipeline serving this unit requiring 24 hours of gas purchase for each assumed operating day.

Given the above assumptions a hypothetical numeric example is:

Assumed cost of gas during conditions when self-scheduling would occur: $30/MMBTU

Assumed number of days per year when self-scheduling would occur: 4 (a single, long, holiday weekend cold snap requiring purchase of a 4-day gas package or 4 individual days where PJM issued a Cold Weather Alert)

Probability of occurrence: 33% (once every three years)

Total assumed hours of operation: 96 (4 x 24)

Hourly cost to operate: 7mmBTU/Mwh x $30/MMBTU = $210/MWh

Assumed average LMP over those 4 days: $100/MWh

Hourly energy market loss / MWh = $210/MWh - $100MWh = $110/MWh

Total cost for 120 hours = $110/MWh x 500 MW x 96 hours = $5,280,000

CPQR adder = Cost per MW-day = 0.33 x $5,280,000 / 500 / 365 = $9.55 / MW-day

Notes: Seller must have reasonable and supported assumptions/estimates in their calculation which include but are not limited to: a) specific conditions and expected number of hours of operation, b) gas prices, c) LMPs, and d) probability of occurrence. Also, Risk of non-performance (e.g.: an outage) during PAI events may also be included in CPQR in addition to the cost represented in this example.

4. Other, consistent with the Tariff and as approved by PJM.

9) Effective with the 2026/2027 Delivery Year, Sellers may request to use and provide support for a segmented offer cap to reflect incremental costs of having a capacity obligation across different segments of their resource. Such request shall be provide adequate justification for the use of a segmented offer cap with supporting documentation and calculations for the Market Seller Offer Cap of each segment. Segmented Market Seller Offer Caps shall be comprised of multiple Market Seller Offer Caps, each calculated in accordance with Tariff, Attachment DD, sections 6.4(a) and 6.8. If elected by the Seller, the first segment shall have a Market Seller Offer Cap reflective of the resource-specific Avoidable Cost Rate, less the Projected PJM Market Revenues for such resource. All subsequent offer segments (and in the first segment if solely requesting a Capacity Performance Quantifiable Risk for the Market Seller Offer Cap) shall include only incremental Capacity Performance Quantifiable Risk associated with the incremental capacity commitment in that offer segment to the extent such value has been supported and obtained approval pursuant to the requirements set forth in this Tariff, Attachment DD, section 6.8(b), and each subsequent segmented offer cap shall be greater than the prior segments.