

5.2 RPM Auction Timeline

The following Auction timeline provides the deadline for key RPM activities:

RPM Activity	Deadline
Submittal of preliminary request to remove resource from Capacity Resource status and preliminary must-offer exemption request for BRA for the reason specified under OATT Attachment M-Appendix § II.C.4.A	Sept 1 st immediately preceding BRA for applicable Delivery Year (Nov 1, 2013 for 2017/18 Delivery Year)
Submittal of final request to remove resource from Capacity Resource status and final must-offer exemption request for BRA for the reason specified under OATT Attachment M-Appendix § II.C.4.A	Dec 1st immediately preceding BRA for applicable Delivery Year
Submittal of preliminary request to remove resource from Capacity Resource status and preliminary must-offer exemption request for IA for the reason specified under OATT Attachment M-Appendix § II.C.4.A	240 days prior to commencement of offer period
Submittal of final request to remove resource from Capacity Resource status and final must-offer exemption request for IA for the reason specified under OATT Attachment M-Appendix § II.C.4.A	120 days prior to commencement of offer period
Submittal of must-offer exemption request for any reason other than the reason specified under OATT Attachment M-Appendix § II.C.4.A	120 days prior to commencement of offer period
PJM posts a separate summary of MW of Generation for which it has received requests to remove resource from Capacity Resource status, and for exceptions to the must-offer requirement for the reason specified under OATT Attachment M-Appendix § II.C.4.A, on an aggregate basis by Zone and LDA that comprises a subset of a Zone. Posting shall specify the following aggregate ranges: less than 100 MW; 100 to 500 MW; 500 to 1000 MW; and specific MW total if over 1000 MW	Within 5 business days of receipt of request or notification

5.4 Sell Offers in RPM

5.4.1 Resource-Specific Sell Offer Requirements

Sell Offers for the Base Residual and Incremental Auctions must be submitted in PJM's eRPM system. Sell offers are only accepted during a fixed bidding window which is open for at least five (5) business days. The bidding window for a Base Residual Auction and Incremental Auctions will be posted on the PJM website. Sell offers may not be changed or withdrawn after the bidding window for a Base Residual Auction or Incremental Auction is closed.

The following are business rules that apply to Resource-Specific Sell Offers:

- The smallest increment that may be offered into any auction is 0.1 MW
- A resource-specific sell offer will specify, as appropriate:
 - Specific Generating Unit, Demand Resource, Energy Efficiency Resource, or Aggregate Resource
 - For the 2014/2015 through the 2017/2018 Delivery Year, a demand resource with the potential to qualify as two or more product types may submit separate but coupled Sell Offers for each product type for which it qualifies at different sell offer prices and the auction clearing algorithm will select the Sell Offer that yields the least-cost solution. Separate resources will be modeled in the eRPM system for each product type. For coupled Sell Offers, the offer price of the Annual Demand Resource offer must be at least \$.01/MW-day greater than the offer price of the coupled Extended Summer Demand Resource offer and the offer price of an Extended Summer Demand Resource must be at least \$.01/MW-day greater than the offer price of the coupled Limited Demand Resource offer.
 - For the 2018/2019 and 2019/2020 Delivery Year, a generation, demand resource, or energy efficiency resource with the potential to qualify as Base or Capacity Performance product type may submit separate, but coupled Base and Capacity Performance sell offer segments and the auction clearing algorithm will select the sell offer segment that yields the least-cost solution. The submission of a coupled sell offer segments shall be mandatory for any Capacity Performance Resource submitting a cost-justified sell offer price greater than the product of the historical balancing ratio times the Net Cost of New Entry in the zonal LDA where the resource resides. For such coupled sell offer segments, the sell offer price of a Capacity Performance sell offer segment must be at least \$.01 per MW-day greater than the sell offer price of a coupled Base sell offer segment.
 - With the exception of Intermittent Resources and Capacity Storage Resources, each Generation Capacity Resource with available capacity that is capable or can reasonably become capable of qualifying as a Capacity Performance Resource must submit a Capacity Performance sell offer segment.
 - Intermittent Resources are generation capacity resources with output that can vary as a function of its energy source, such as wind, solar,

landfill gas, run of river hydroelectric power and other renewable resources. An acceptable method for determining the quantity of unforced capacity MWs that may offer as Capacity Performance for an intermittent resource is based on calculating the average of the hourly output (MWh) of the intermittent resource during the expected performance hours in the summer and winter. The expected performance hours in the summer are hours ending 15:00 through 20:00 EPT in the months of June, July, and August. The expected performance hours in the winter are hours ending 6:00 through 9:00 EPT and 18:00 through 21:00 EPT in the months of January and February. Notwithstanding the above, PJM may review and accept alternative proposed methods for determining the quantity of unforced capacity MWs that may be offered as Capacity Performance for an Intermittent resource.

- Capacity Storage Resources shall mean any hydroelectric power plant, flywheel, battery storage, or other such facility solely used for short term storage and injection of energy at a later time. An acceptable method for determining the quantity of unforced capacity MWs that may offer as Capacity Performance for a Capacity Storage Resource is based on calculating the average of the hourly output (MWh) of the intermittent resource during the expected performance hours in the summer and winter. The expected performance hours in the summer are hours ending 15:00 through 20:00 EPT in the months of June, July, and August. The expected performance hours in the winter are hours ending 6:00 through 9:00 EPT and 18:00 through 21:00 EPT in the months of January and February.

○ Exceptions to the capacity performance must-offer requirement will be permitted for a generation capacity resource which the Capacity Market Seller demonstrates is reasonably expected to be physically incapable of satisfying the requirements for a Capacity Performance Generation Resource by the start of the Delivery Year. The Seller must submit a request for an exception (with all supporting information) no later than 120 days before the offer window opens for the relevant RPM Auction.

○ Capacity Market Sellers may specify multiple auctions in their written must-offer exception request (with all supporting documentation) to be reviewed by the IMM and PJM with each applicable auction. Sellers must notify PJM and the IMM of any material changes related to the request up through the closing of the relevant auction(s) offer window.

- Seller should continue to submit any required information needed by the IMM in their online system (MIRA) for each subsequent auction.

○ A generation resource that can qualify as Capacity Performance product type, but requires substantial investment to do so, is not excused from the capacity performance must-offer requirement, but may submit coupled Base and Capacity Performance offer segments.

- Intermittent Resources, Capacity Storage Resources, Demand Resources, Energy Efficiency Resources are not required to submit a Capacity Performance sell offer segment.
 - Minimum and maximum amount of installed capacity offered in MWs for the resource by Offer Segment (Base or Capacity Performance offer segment effective for 2018/2019 and 2019/2020 Delivery Years)
 - Minimum and maximum amount of installed capacity offered in MWs for the resource by Capacity Performance (annual) Offer Segment and Maximum amount of installed capacity offered in a Seasonal (summer or winter) Capacity Performance Offer Segment. The Seasonal Capacity Performance Offer Segment is considered a flexible offer segment with a minimum MW quantity set to zero MW. (Effective with the 2020/2021 Delivery Year)
 - Offer Segment price willing to receive in \$/MW-day (in UCAP terms)
 - Regular Schedule, Self-Schedule or Flexible Self-Schedule flag
 - EFORd to apply to the offered MWs (only applicable in the Base Residual Auction, First Incremental Auction, and Second Incremental Auction) for generation resources
 - New Unit Pricing participation flag for Planned Generation Capacity Resources requesting New Unit Pricing Adjustment.
- The ICAP MW quantity specified in the Offer Segment will be converted into an UCAP MW quantity by the sell offer EFORd for use in the auction clearing. The sell offer price specified in the Offer Segment is in UCAP terms and will not be converted for use in the auction clearing.
 - A Base, Capacity Performance, or Seasonal Capacity Performance Offer Segment may be offered as either a single price quantity for the capacity of the resource or divided into up to ten offer blocks with varying price-quantity pairs that represent various segments of capacity from the resource. The Offer Segment will consist of block segments at the specified price-quantity pairs.
 - The seller specifies the EFORd to apply if participating in a Base Residual Auction, First Incremental Auction, or Second Incremental Auction.
 - The EFORd cannot exceed the greater of the EFORd calculated based on outage data for 12 months ending September 30th prior to the Base Residual Auction, the 5 Year Average EFORd based on outage data for 12 months ending September 30th prior to the Base Residual Auction, or the EFORd submitted by the market participant in their Base Residual Auction Sell Offer.¹
 - The EFORd applied to the Third Incremental Auction will be determined by PJM using the forced outage data for the 12 months ending on September 30 prior to the relevant Delivery Year. The seller is willing to accept the clearing of any amount equal to or greater than the minimum MW amount offered and equal to or less than the maximum MW offered.

¹Prior to March 27, 2009, the EFORd could not exceed the EFORd calculated based on outage data for 12 months ending September 30th prior to the auction.

- If the self-scheduled flag is enabled in the Base or Capacity Performance Offer segment, the sell offer price must be set to zero and the minimum and maximum amounts specified in the sell offer must be equal.
- The acceptance of the sell offer is based on the party's Maximum Available ICAP Position for the Delivery Year at the opening of the auction's bidding window. Effective with the 2020/2021 Delivery Year, the acceptance of the sell offer is based on the party's Maximum Available ICAP Position for the entire Delivery Year (annual position) if Capacity Performance Resource, Maximum Available ICAP Position for summer period (summer position) if Summer-Period Capacity Performance Resource, Maximum Available ICAP Position for winter period (winter position) if Winter-Period Capacity Performance Resource.
- If a participant has a positive Maximum Available ICAP Position for the Delivery Year, PJM only accepts a sell offer up to the Maximum Available ICAP Position for the Delivery Year. (Prior to 2020/2021 Delivery Year)
- Effective with the 2020/2021 Delivery Year, the total MWs offered across all Capacity Performance offer segments may not exceed the Maximum Available ICAP Position for the Delivery Year (i.e., the annual position). The total MWs offered across the Capacity Performance offer segments and the Seasonal Capacity Performance-Summer offer segments may not exceed the Maximum Available ICAP Position for summer period (i.e., the summer position). The total MWs offered across the Capacity Performance offer segments and the Seasonal Capacity Performance-Winter offer segments may not exceed the Maximum Available ICAP Position for winter period (i.e., the winter position).
- If a participant has a zero or negative Maximum Available ICAP Position, PJM will reject the sell offer.
- A sell offer in an RPM Auction that violates any "Conditions on Sales by FRR Entities" as presented in the FRR Business Rules will be rejected.
- For Planned Resources and external resources without firm transmission, sell offers for which the RPM Credit Requirement exceeds the credit available will be rejected.
- A generation resource's default sell offer cap for any capacity performance offer segment shall be the product of the historical balancing ratio times the Net CONE of the zonal LDA in which the resource resides. Market Sellers may qualify to submit a sell offer price above the default offer cap for a capacity performance offer segment by submitting Avoidable Cost Rate data to IMM and PJM 120 days prior to the RPM Auction.
- All sell offers for a supplier that fails the Three-Pivotal Supplier Test will be capped within the mitigated LDA
- Prior to the 2020/2021 Delivery Year, cleared sell offers and offers receiving Make-Whole payments are binding commitments to provide capacity for the entire Delivery Year.
- Effective with the 2020/2021 Delivery Year, cleared MWs and make-whole MWs for Capacity Performance Offer Segments are binding commitments to provide capacity for the entire Delivery Year. Cleared MWs for Seasonal Capacity Performance-Summer Offer Segments are binding commitments to provide capacity for the summer period of June through October and May of the Delivery Year. Cleared MWs for Seasonal Capacity

Performance-Winter Offer Segments are binding commitments to provide capacity for the winter period of November through April of the Delivery Year.

5.4.7 Removal of Generation Capacity Resource Status

A Capacity Market Seller seeking to remove a Generation Capacity Resource from its Capacity Resource status shall submit a preliminary and final written request to PJM and the IMM, along with supporting data and documentation, by the deadlines specified in section 6.6 of Attachment DD of the PJM OATT prior to an RPM auction.

- Requests should be sent to PJM via email to the rpm_hotline@pjm.com and the IMM through the MIRA application.
- The request should provide the following information:
 - Indication of the Generation Capacity Resource and MW seeking to remove its Capacity Resource status.
 - The Delivery Year in which the Seller is seeking to remove the resource from Capacity Resource status.
 - Explanation and supporting data/documentation describing the decision to remove the Generation Capacity Resource from Capacity Resource status.
- PJM will post the preliminary and final requested MW of Capacity Resource status changes by Zone and sub-zonal LDA and grouped in a manner consistent with the posting of preliminary and final Must-Offer Exception requests for deactivation.

PJM Capacity Market Operations will notify PJM Planning of the request to perform any necessary reliability studies for the relinquishment of Capacity Interconnection Rights by the Generation Capacity Resource. In addition, the IMM will analyze the effects of the Capacity Resource status removal with regard to potential market power issues.

Removal of Capacity Resource status will not be accepted while the Generation Capacity Resource holds a capacity commitment for the time period in which it seeks to become energy-only.

Once a Generation Capacity Resource has lost its Capacity Resource status:

- The generation unit will no longer be a Capacity Resource effective with the date of the status change, and as such, will be removed from the capacity resource model and no longer eligible to offer in RPM auctions or take on a capacity commitment.
- The Capacity Interconnection Rights of the resource will be relinquished in a manner consistent with a generation unit deactivating as described in Section 230.3.3 of the PJM OATT.
- The Interconnection Service Agreement of the resource will be amended to remove the Capacity Interconnection Rights of the generation unit.

Effective with the 2022/2023 Delivery Year, an Existing Generation Capacity Resource that repeatedly requests and is approved for a Capacity Performance Must-Offer exception in the BRAs for three consecutive Delivery Years, and does not offer in those auctions, shall have its Capacity Resource status removed effective with the start of the following Delivery Year.

Notwithstanding, no later than 135 days prior to the date of Capacity Resource status removal, a Capacity Market Seller may submit a written request to PJM and the IMM requesting that the unit retain its Capacity Resource status to be offered in an RPM auction. Such request must provide supporting data and documentation showing verifiable evidence that the resource can meet the operational and performance requirements of Capacity Performance Resources by the start of the relevant Delivery Year, consistent with the process for support and review in Tariff, section 5.5A of Attachment DD. If PJM grants such request and the Generation Capacity Resource is offered in the applicable RPM auction, the unit shall no longer have its Capacity Resource status removed.

8.9 Replacement Resources

Participants may specify replacement resources in order to avoid or reduce resource performance assessment shortfalls and the associated deficiency/penalty charges. Participants may not specify replacement resources in order to avoid or reduce performance assessment shortfalls and associated deficiency/penalty charges related to price responsive demand.

Replacement capacity for generation resources, Demand Resources, Energy Efficiency Resources, or Qualifying Transmission Upgrades committed to RPM may be specified via the eRPM system by entering a “Replacement Capacity” transaction before the start of the Delivery Day. However, upon a request to PJM made no later than three business days after a Delivery Day containing a Performance Assessment Interval, Replacement Capacity Transactions may be permitted retroactively effective with the Delivery Day provided such transaction meets the following criteria: (1) the replacement resource must have already been in the same sub-account as the resource being replaced on the Delivery Day, (2) the replacement resource must have been included in the same Performance Assessment Intervals as the resource being replaced, (3) the replacement resource must have the same or better temporal availability characteristics as the resource being replaced, (4) the replacement resource must be located in the same LDA (or a more constrained child LDA) as the resource being replaced, and (5) the resulting total Daily Resource Commitments (RPM and FRR) (in UCAP terms) on a generation resource used as a replacement resource cannot exceed such replacement resource’s Actual Performance during the Performance Assessment Intervals. Such requests must be submitted to rpm_hotline@pjm.com and include the start date and end date, resource being replaced, replacement resource, and the desired change in Daily RPM Commitments (in UCAP terms) for the resource being replaced and product type (i.e., Base Generation, Base DR/EE, or Capacity Performance) of the commitment being replaced.

Through the “Replacement Capacity” transaction functionality in eRPM, PJM will provide participants with a list of the available capacity for each generation or demand resource in their portfolio as well as a list of cleared buy bids from any Incremental Auction via the eRPM system and a list of resources with RPM Resource Commitments. Participants will have the ability to match a generation, Demand Resource, Energy Efficiency Resource or Qualifying Transmission Upgrade resource committed to RPM that they would like to replace with available capacity from a generation resource, demand resource, cleared buy bids in an Incremental Auction, or from

Locational UCAP transactions. Effective with the 2019/2020 Delivery Year, available capacity from an EE Resource may be utilized to replace the commitment of only another EE Resource because such commitments are accompanied by the adjustment that is required to avoid double-counting of energy efficiency measures as described in section 2.4.5 of this manual.

The following are business rules that apply to Replacement Resources for Resources Committed to RPM:

- The start date and end date of the replacement must be specified.
- The Delivery Year commitment of a Generation Capacity Resource may not be replaced until after the EFORd for the Delivery Year has been locked in the eRPM system (November 30 prior to the Delivery Year). After November 30 prior to the Delivery Year and prior to the conduct of the Third Incremental Auction for the Delivery Year, the commitment of such a resource may be replaced but only up to the quantity of any commitment deficiency of the resource caused by the differences between sell offer EFORd and Final EFORd, and/or derating.
- Any or all of a Delivery Year commitment of a Generation Capacity Resource, Demand Resource, or Energy Efficiency Resource may be replaced any time prior to the conduct of the Third Incremental Auction for that Delivery Year when the owner of the replaced resource provides transparent and verifiable evidence to support the expected final physical position of the resource at the time of request. Such requests shall be submitted in writing simultaneously to PJM rpm_hotline@pjm.com and the Independent Market Monitor rpmacr@monitoringanalytics.com documenting the reason for the early replacement. PJM will approve or deny a request for early Replacement Capacity, based upon the below criteria, with input from the Market Monitor, within 15 days of receiving a completed early Replacement Capacity request.
 - Acceptable reasons for early replacement are:
 - Generator Deactivation (properly noticed to PJM and posted to the website)
 - Pending request to PJM for Generation Capacity Resource status removal (in accordance with Manual 18, section 5.4.7)
 - Withdrawal of generation queue position / cancellation of generation project (accompanied by written notification to PJM Interconnection Projects manager)
 - Generation delayed in-service date (accompanied by written notification to PJM Interconnection Projects manager)
 - Permanent departure of load used as a basis for an existing DR or EE resource at the time of commitment
 - Generation replaced may not be recommitted for the Delivery Year. As such, an Existing Generation Capacity Resource may not resell the MW in a subsequent auction for the Delivery Year, and has no requirement to submit a Must-Offer Exception request for such auctions.
 - DR/EE sites replaced may not be registered or committed for the Delivery Year.

- A Replacement Resource used to reduce a Demand Resource commitment shall be specified for no less than the balance of the Delivery Year. An available Demand Resource may only be used as a Replacement Resource when the start date of the Replacement Capacity transaction is from June 1 through September 30th unless the Demand Resource can demonstrate through the prior summer's event or test compliance data that the Demand Resource met both its Summer Average RPM Commitment and the new daily RPM commitment level that would result if the Replacement Capacity transaction was approved.
- The desired change in Daily RPM Resource Commitments (in UCAP terms) for the resource being replaced and the replacement resource must be specified. The change in Daily RPM Resource Commitments cannot result in a negative value for the Daily RPM Resource Commitments for the resource being replaced. Effective for the 2016/2017 Delivery Year, the desired change in Daily RPM Resource Commitments (in UCAP terms) for the resource being replaced must also indicate the product type (i.e., Base Generation, Base DR/EE, or Capacity Performance) of the commitment being replaced.
- The replacement resource must be located in the same sub-account as the resource that is being replaced.
- The replacement resource must be located in the same LDA as the resource that is being replaced or reside in the Sink LDA of the Qualifying Transmission Upgrade being replaced.
- Resources located in a constrained LDA can serve as replacement capacity for a generation resource located in a less constrained parent LDA.
- The replacement resource must have the same or better temporal availability characteristics as the resource that is being replaced.
- Annual Resource commitments can only be replaced by available capacity from an Annual Resource, or by cleared Buy Bids for Annual Capacity, or by Locational UCAP originating from an Annual Resource
- Extended Summer DR commitments can only be replaced by available capacity from an Annual Resource or Extended Summer DR, or by cleared Buy Bids for Annual or Extended Summer Capacity, or by Locational UCAP originating from an Annual Resource or Extended Summer DR
- Limited DR commitments can only be replaced by available capacity from an Annual Resource, Extended Summer DR or Limited DR, or by cleared Buy Bids for Annual, Extended Summer or Limited Capacity, or by Locational UCAP originating from an Annual Resource, Extended Summer DR or Limited DR..
- Capacity Performance Resource commitments can only be replaced by available capacity from a capacity resource that is eligible to be committed as CP, or by cleared Buy Bids or Locational UCAP of the Capacity Performance product type..
- Base Capacity commitments on a Generation Resource can only be replaced by available capacity from a generation resource that is eligible to be committed as Base, available capacity from a capacity resource that is eligible to be committed as CP, or by cleared Buy Bids or Locational UCAP for Base Generation product type or Capacity Performance product type

- Base Capacity commitments on Demand Resource or Energy Efficiency Resources can be replaced by available capacity from a capacity resource that is eligible to be committed as Base or CP, or by cleared Buy Bids or Locational UCAP for Base Generation product type, Base DR/EE product type or Capacity Performance product type.
- If a generation, demand, or EE resource is used as replacement capacity, a decrease in the Daily RPM Resource Commitments for the resource that is being replaced will result and a corresponding increase in the Daily RPM Resource Commitments for the replacement generation, demand, or EE resource will result during the time period specified for replacement. A change in the Daily RPM Resource Commitments for a generation resource will result in a change in the Total Unit ICAP Commitment Amount for the generation resource.
- If cleared buy bids from an Incremental Auction or Locational UCAP transactions are used as replacement capacity, a decrease in the Daily RPM Commitments for the resource that is being replaced will result during the time period specified for replacement. A change in the Daily RPM Commitments for a generation resource will result in a change in the Total Unit ICAP Commitment Amount for the generation resource.

Replacement resources for Generation Capacity Resources, QTU, Energy Efficiency Resources, or Demand Resources committed to FRR Capacity Plan are specified by an FRR Entity through the update of the FRR Entity's FRR Capacity Plan prior to the start of the Delivery Day. FRR Entities may update their FRR Capacity Plan to reduce the FRR Capacity Plan Commitment on the resource being replaced and increase the FRR Capacity Plan Commitment on a replacement resource. The change in the Daily FRR Capacity Plan Commitments for a generation resource will result in a change in the Total Unit ICAP Commitment Amount for the generation resource.