



2012/2013 RPM Third Incremental Auction Results

Introduction

This document provides information for PJM stakeholders regarding the results of the 2012/2013 Reliability Pricing Model (RPM) Third Incremental Auction. Incremental Auctions provide both a forum for capacity suppliers to purchase replacement capacity, and a means for PJM to adjust previously committed capacity levels due to reliability requirement increases or decreases combined with the appropriate share of the deferred Short-Term Resource Procurement Target.

The 2012/2013 Third Incremental Auction opened on February 27, 2012 and the results were posted on March 9, 2012. This document begins with a high level summary of the Incremental Auction results followed by sections containing detailed descriptions of the configuration and results of the 2012/2013 Third Incremental Auction.

Summary of 2012/2013 RPM Third Incremental Auction Results

Table 1 summarizes the results of the 2012/2013 Third Incremental Auction. The Third Incremental Auction cleared at a single region-wide clearing price of \$2.51/MW-Day. Across the entire RTO, total cleared participant buy bids (4,382.8 MW) exceeded total cleared supplier sell offers (2,403.5 MW) by 1,979.3 MW; participants procured a total net capacity amount of 1,979.3 MW of replacement capacity at a clearing price of \$2.51/MW-Day.

Across the entire RTO, PJM released a total net capacity amount of 1,979.3 MW meaning total commitments were reduced by 1,979.3 MW. The total net amount of capacity procured or released by PJM is a function of the clearing of the PJM sell offers and PJM buy bids submitted due to changes in RTO and LDA reliability requirements, the procurement of the deferred short-term resource procurement and consideration of the amount of capacity commitments that PJM sought to procure or release that did not clear in previous Incremental Auctions for the same Delivery Year.



2012/2013 RPM Third Incremental Auction Results

Table 1 – Summary of 2012/2013 Third Incremental Auction Results

LDA	Clearing Price (\$/MW-Day)	Cleared Participant Sell Offers (MW UCAP)	Cleared Participant Buy Bids (MW UCAP)	Net Cleared Participant Buy Bids (MW UCAP)	Cleared PJM Sell Offers (MW UCAP)
RTO	\$2.51	2,403.5	4,382.8	1,979.3	1,979.3
RTO TOTAL		2,403.5	4,382.8	1,979.3	1,979.3

2012/2013 RPM Third Incremental Auction Configuration

Participant Buy Bids and Sell Offers

RPM Incremental Auctions provide capacity suppliers with an opportunity to sell or purchase capacity for the Delivery Year through a PJM-administered auction process. Resource-specific sell offers are submitted into this auction by suppliers with available, uncommitted capacity. All resource-specific sell offers into an Incremental Auction are subject to market power mitigation through the application of the Market Structure Test.

Any party that desires to purchase LDA-specific replacement capacity for the Delivery Year may do so by submitting a buy bid into the Incremental Auction. Cleared Buy Bids purchased in an Incremental Auction may be used as replacement capacity to cover Delivery Year commitment and compliance shortfalls.

PJM Buy Bids and Sell Offers

Sections 5.4 and 5.12 of Attachment DD of the Tariff define the Incremental Auction requirements regarding the procurement or sale of capacity by PJM. Section 5.4 describes the triggering tests used by PJM prior to an Incremental Auction to determine the need for the procurement and/or sale of capacity by PJM in relation to updates of the reliability requirement and capacity already procured. Section 5.12 describes the determination of the MW quantities and prices of buy bids and/or sell offers that PJM will submit when the various tests in section 5.4 are triggered.



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Prior to each Incremental Auction, PJM recalculates the RTO Reliability Requirement and each LDA Reliability Requirement based on an updated peak load forecast, updated Installed Reserve Margin and an updated Capacity Emergency Transfer Objective (CETO). For the RTO and each LDA, PJM sums the following component quantities to determine the total quantity that it will seek to procure or release in each Incremental Auction:

- the Updated Reliability Requirement minus the Reliability Requirement utilized in the most recent prior auction conducted for that Delivery Year. Note that this quantity is negative if the Updated Reliability Requirement is less than the Reliability Requirement utilized in the most recent prior auction. For a 1st or 2nd Incremental Auction, this difference is only considered if the change in Reliability Requirement is greater than the lesser of 500 MW or 1% of the prior auction's Reliability Requirement,
- plus the Short-Term Resource Procurement Target Applicable Share (STRPTAS). For a 1st or 2nd Incremental Auction, the STRPTAS is equal to 0.2 times the Short-Term Resource Procurement Target (STRPT) used in the Base Residual Auction (BRA). For a 3rd Incremental Auction, the STRPTAS is equal to 0.6 times the STRPT used in the BRA,
- plus/minus the amount of committed capacity that PJM sought to procure/release that did not clear in previous Incremental Auctions for the same Delivery Year.
- minus any capacity PJM seeks to release in a parent LDA as a result of any Conditional Incremental Auction commitments for the same Delivery Year.

If the result of such summation is a positive quantity, PJM will seek to procure such quantity by employing a PJM buy bid. The price of the PJM buy bid is based on the Updated VRR Curve Increment which is the portion of the Updated VRR Curve located to the right of the point representing all capacity already procured for the Delivery year. If the result of such summation is a negative quantity, PJM will seek to release such quantity by employing a PJM sell offer. The price of the PJM sell offer is based on the Updated VRR Curve Decrement which is the portion of the Updated VRR curve to the left of the point representing all capacity already procured for the Delivery year.

Based on an application of the Incremental Auction requirements of Sections 5.4 and 5.12 of Attachment DD of the Tariff and summarized above, PJM submitted the buy bids and sell offers, shown in Table 2, into the 3rd Incremental Auction for the 2012/2013



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Delivery Year¹. Note that a PJM sell offer is indicated by a negative PJM buy bid in Table 2 and that PJM submitted sell offers for the 3rd Incremental Auction for the 2012/2013 Delivery Year in each LDA with the exception of the DPL SOUTH LDA. Table 2 also defines the pricing points associated with the PJM buy bids and PJM sell offers.

Table 2 – PJM Buy Bids and PJM Sell Offers for 2012/2013 Third Incremental Auction

Location	Change in Reliability Requirement (MW)	STRPT (MW)	Uncleared PJM Buy Bids from Prior IA (MW)	PJM Buy Bid (MW)*	Price Points for PJM Buy Bids and PJM Sell Offers							
					Point 1		Point 2		Point 3		Point 4	
					x-axis (MW)	y-axis (\$/MW-Day)	x-axis (MW)	y-axis (\$/MW-Day)	x-axis (MW)	y-axis (\$/MW-Day)	x-axis (MW)	y-axis (\$/MW-Day)
RTO (Rest of)	-1,655.7	1,001.7	0.0	-654.0	0.0	\$0.00	654.0	\$0.00	NA	NA	NA	NA
MAAC (Rest of)	-291.0	214.7	-219.7	-296.0	0.0	\$0.00	296.0	\$0.00	NA	NA	NA	NA
EMAAC (Rest of)	-741.0	333.5	-262.2	-669.7	0.0	\$0.00	533.5	\$0.00	533.5	\$42.29	669.7	\$60.08
SWMAAC	-387.0	235.9	-402.1	-553.2	0.0	\$0.00	168.5	\$0.00	168.5	\$35.11	553.2	\$129.74
PS (Rest of)	-371.0	99.7	-206.9	-478.2	0.0	\$0.00	338.9	\$0.00	338.9	\$42.29	478.2	\$97.69
PS NORTH	-144.0	82.1	-16.8	-78.7	0.0	\$118.83	78.7	\$181.84	NA	NA	NA	NA
DPL SOUTH	11.0	38.4	-37.8	11.6	0.0	\$232.85	11.6	\$220.92	NA	NA	NA	NA
TOTAL	-3,578.7	2,006.0	-1,145.5	-2,718.2								

* A PJM Sell Offer is indicated by a negative PJM Buy Bid.

¹ The determination of the PJM buy bid sell offer quantities is detailed in the 2012/2013 3rd IA Planning Parameters located at <http://www.pjm.com/markets-and-operations/rpm/~media/markets-ops/rpm/rpm-auction-info/2012-2013-3rd-incremental-auction-planning-parameters.ashx>.



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LDA Capacity Import Limits

Section 5.11A of Attachment DD of the Tariff describes the milestones that a Backbone Transmission Project must meet for it to be included and remain in the system model for a given Delivery Year. Based on an application of these milestone requirements, no changes have been made to the 2012/2013 system model prior to the Third Incremental Auction, therefore the LDA Capacity Emergency Transfer Limit (CETL) values for the 3rd IA are the same as those used in the 2nd IA for the 2012/2013 Delivery Year.

Table 3 shows each LDAs' Capacity Emergency Transfer Limit (CETL) for the Base Residual Auction and each LDAs' CETL updated for each Incremental Auction for the 2012/2013 Delivery Year. The CETL remaining for use in the 3rd IA for the 2012/2013 Delivery Year shown in the last row of Table 3 represents the LDA capacity import limits that were employed in the 3rd IA for the 2012/2013 Delivery Year and are equal to the LDA CETL as updated for the 3rd IA minus the total capacity import levels into the LDA.

Table 3 – LDA Capacity Import Capability for 2012/2013 Third Incremental Auction

	LDA					
	MAAC	EMAAC	SWMAAC	PS	PS NORTH	DPL SOUTH
Base Residual Auction (BRA) CETL	6,377.0	9,079.0	7,400.0	6,356.0	2,755.0	1,746.0
1st Incremental Auction (IA) CETL *	6,377.0	7,624.0	7,400.0	6,077.0	2,675.0	1,746.0
2nd Incremental Auction (IA) CETL **	6,098.0	7,624.0	6,950.0	6,077.0	2,675.0	1,746.0
3rd Incremental Auction (IA) CETL	6,098.0	7,624.0	6,950.0	6,077.0	2,675.0	1,746.0
Capacity Import Level (BRA plus 1st IA plus 2nd IA)	5,583.0	7,624.0	5,991.5	5,504.9	2,612.2	1,590.7
Capacity Import Limit for 3rd Incremental Auction	515.0	0.0	958.5	572.1	62.8	155.3

* Reflects removal of Susquehanna-Roseland from 2012/2013 model

** Reflects removal of Jacks Mountain 500 kV substation (& associated reactive reinforcement) and Keystone 500 kV capacitor from 2012/2013 model



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Incremental Auction Clearing

Participant supply offers and buy bids are combined with the PJM sell offers and buy bids shown in Table 2 to form the supply and demand curves. The solution algorithm clears all buy bids and sell offers in a least-cost manner while respecting the capacity import limits into each LDA.

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Participant Buy Bids and Sell Offers

Table 4 shows the offered and cleared quantities for participant buy bids and sell offers. A total of 5,569.4 MW of supply was offered into the Third Incremental Auction composed of uncleared capacity from prior 2012/2013 auctions, new capacity in the form of uprates or new resources that were not previously capacity resources in PJM.

Participant demand in an Incremental Auction is composed of LDA-specific buy bids submitted by participants. The buy bids are specified in UCAP terms and, if cleared, are binding commitments to purchase capacity for the entire Delivery Year. Cleared Buy Bids purchased in an Incremental Auction may be used as replacement capacity to cover Delivery Year commitment and compliance shortfalls. There was a total of 7,459.2 MW of buy bids submitted by participants into the auction. Across the entire RTO, 2,403.5 MW of participant supply offers and 4,382.8 MW of participant buy bids cleared across the entire RTO region at a clearing price of \$2.51/MW-Day.

Table 4 - 2012/2013 Third Incremental Auction Results / Participant Sell Offers and Buy Bids

LDA	Total Sell Offers (MW UCAP)	Total Buy Bids (MW UCAP)	Cleared Sell Offers (MW UCAP)	Cleared Buy Bids (MW UCAP)	Net Cleared Buy Bid (MW UCAP)	Clearing Price (\$/MW-Day)
RTO (Rest of)	3,440.8	5,140.2	1,871.9	2,127.0	255.1	\$2.51
MAAC (Rest of)	932.8	829.3	215.0	801.2	586.2	\$2.51
SWMAAC	378.6	611.9	16.4	611.9	595.5	\$2.51
EMAAC (Rest of)	510.8	703.8	170.2	668.7	498.5	\$2.51
PSEG (Rest of)	76.5	76.8	37.5	76.8	39.3	\$2.51
PS-NORTH	154.6	36.2	36.2	36.2	0.0	\$2.51
DPL-SOUTH	75.3	61.0	56.3	61.0	4.7	\$2.51
TOTAL	5,569.4	7,459.2	2,403.5	4,382.8	1,979.3	



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Table 5 provides a further breakdown of the capacity offered and cleared into the 2012/2013 Third Incremental Auction. A total of 5,569.4 MW of supply was offered into the Third Incremental Auction composed of uncleared capacity from prior 2012/2013 auctions, new capacity in the form of uprates or new resources that were not previously capacity resources in PJM.

Table 5 - 2012/2013 Third Incremental Auction Supply Resource Mix

Resource Type	Type	Total Sell Offers (MW UCAP)	Cleared Sell Offers (MW UCAP)
DEMAND	DEMAND	2164.6	1,008.0
EE	EE	83	80.5
GEN	New Generation (including Uprates)	166.6	83.0
	Uncleared from Prior Auction	3155.2	1,232.0
		5,569.4	2,403.5



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PJM's Procurement and Release of Capacity

Table 6 shows the total amount of capacity procured and released by PJM by LDA in the 2012/2013 Third Incremental Auction. The total net amount of capacity procured or released by PJM is a function of the clearing of the PJM sell offers and buy bids listed in Table 2. For the 2012/2013 Third Incremental Auction, across the entire RTO region, PJM released a total net capacity amount of 1,979.3 MW.

Table 6 - 2012/2013 Third Incremental Auction Results / PJM's Procurement and Release of Capacity

LDA	Total Sell Offers (MW UCAP)	Total Buy Bids (MW UCAP)	Cleared Sell Offers (MW UCAP)	Cleared Buy Bids (MW UCAP)	Net Cleared Sell Offers (MW UCAP)	Clearing Price (\$/MW-Day)
RTO (Rest of)	654.0	0.0	654.0	0.0	654.0	2.51
MAAC (Rest of)	296.0	0.0	296.0	0.0	296.0	2.51
SWMAAC	553.2	0.0	168.5	0.0	168.5	2.51
EMAAC (Rest of)	669.7	0.0	533.5	0.0	533.5	2.51
PSEG (Rest of)	478.2	0.0	338.9	0.0	338.9	2.51
PS-NORTH	78.7	0.0	0.0	0.0	0.0	2.51
DPL-SOUTH	0.0	11.6	0.0	11.6	-11.6	2.51
TOTAL	2,729.8	11.6	1,990.9	11.6	1,979.3	

Mitigation in the 2012/2013 Third Incremental Auction

All regions of the RTO, including the RTO as a whole, failed the Market Structure Test. As a result, mitigation was applied to all existing generation resources in the execution of the RPM auction clearing. Therefore in the event a generator's price-based offer exceeded the calculated offer cap, cost-based offers were utilized in the RPM auction clearing. Demand Resources and Energy Efficiency Resources are not subject to market mitigation.