



## **2015/2016 RPM Third Incremental Auction Results**

### **Introduction**

The 2015/2016 Third Incremental Auction opened on February 23, 2015 and the results were posted on March 6, 2015. This document provides information for PJM stakeholders regarding the results of the 2015/2016 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. On February 20, 2015, in Docket ER15-738-000, the FERC granted PJM's request for a one-time waiver of the provisions of Attachment DD, section 5.4(c)(3) of the PJM Tariff, that would, absent waiver, require PJM to offer to release, in this auction approximately 1,850 MW of capacity previously committed to the PJM Region.

### **2015/2016 RPM Third Incremental Auction Results**

Table 1 summarizes the clearing prices and cleared participant activity of the 2015/2016 Third Incremental Auction. The Third Incremental Auction cleared with unique prices in three regions of the RTO. In the PSEG LDA, the resource clearing price for Limited, Extended Summer and Annual capacity was \$122.56/MW-Day, \$185.00/MW-Day, and \$185.00/MW-Day, respectively. In the MAAC region outside of the PSEG LDA, which is comprised of the AECO, BGE, DPL, JCPL, Met-Ed, PECO, Penelec, PEPCO, PPL and RECO Zones, the resource clearing price for Limited, Extended Summer and Annual capacity was \$122.33/MW-Day, \$184.77/MW-Day, and \$184.77/MW-Day, respectively. In the rest of the RTO, which is comprised of the AEP, APS, ATSI, ComEd, Dayton, DEOK, DOM, EKPC and Duquesne Zones, the resource clearing price for Limited, Extended Summer and Annual capacity was \$100.76/MW-Day, \$163.20/MW-Day, and \$163.20/MW-Day respectively.

Across the entire RTO, total cleared participant sell offers (3,301.1 MW) exceeded total cleared participant buy bids (3,299.1 MW) by 2.0 MW meaning that PJM effectively procured 2.0 MW of previously available capacity. Across the entire RTO, PJM effectively procured 2.0 MW of capacity from Limited DR capacity, released 189.7 MW of previously committed Extended Summer DR capacity, and procured 189.7 MW of capacity from Annual Resources. PJM participation in this auction was limited to a 2 MW buy bid for Limited Capacity in the PS-North LDA.

The cleared participant sell offer quantities reported in Table 1 do not include 2.9 MW of make-whole MWs associated with a capacity resource located in the MAAC LDA that partially cleared at a quantity below the minimum block specified in the resource's sell offer. The seller will receive a make-whole payment equal to the resource clearing price times the difference between the specified minimum block MW quantity and the cleared MW quantity for the resource; and the cost of such payment shall be allocated and collected from all capacity market buyers in the MAAC LDA on a pro-rata basis based on the MWs purchased in the auction. Based on a make-whole quantity of 2.9 MW and a resource clearing price of \$184.77, the capacity resource will receive a make-whole payment of \$535.83/day which is allocated and collected from 755.3 MW of cleared Annual and Extended Summer buy bids in the



## 2015/2016 RPM Third Incremental Auction Results

entire MAAC LDA resulting in an effective price for each cleared Annual and Extended Summer buy bid of \$185.48/MW-day in the MAAC (minus PSEG) area and \$185.71/MW-day in the PSEG LDA. The quantity of cleared Limited buy bids were fully and exactly met by cleared Limited sell offers and therefore do not share in an allocation of the make-whole costs associated with the partially cleared Annual resource.

**Table 1 – Summary of 2015/2016 Third Incremental Auction Results**

Region	Capacity Type	Clearing Price (\$/MW-Day)	Cleared Participant Sell Offers (UCAP MW)	Cleared Participant Buy Bids (UCAP MW)	Net Cleared Participant Buy Bids (UCAP MW)
<b>RTO (minus MAAC) <sup>(1)</sup></b>	Limited	\$100.76	550.0	336.0	-214.0
	Extended Summer	\$163.20	0.0	49.8	49.8
	Annual	\$163.20	1,760.1	1,924.3	164.2
	<b>TOTAL</b>	--	<b>2,310.1</b>	<b>2,310.1</b>	<b>0.0</b>
<b>MAAC (minus PSEG) <sup>(2)</sup></b>	Limited	\$122.33	17.7	196.0	178.3
	Extended Summer	\$184.77	0.0	82.4	82.4
	Annual	\$184.77	873.7	613.0	-260.7
	<b>TOTAL</b>	--	<b>891.4</b>	<b>891.4</b>	<b>0.0</b>
<b>PSEG</b>	Limited	\$122.56	4.0	37.7	33.7
	Extended Summer	\$185.00	0.0	57.5	57.5
	Annual	\$185.00	95.6	2.4	-93.2
	<b>TOTAL</b>	--	<b>99.6</b>	<b>97.6</b>	<b>-2.0</b>
<b>TOTAL RTO</b>	Limited	--	571.7	569.7	-2.0
	Extended Summer	--	0.0	189.7	189.7
	Annual	--	2,729.4	2,539.7	-189.7
	<b>TOTAL</b>	--	<b>3,301.1</b>	<b>3,299.1</b>	<b>-2.0</b>

(1) Comprised of AEP, APS, ATSI, ComEd, Dayton, DEOK, DOM, EKPC and Duquesne Zones

(2) Comprised of AECO, BGE, DPL, JCPL, Met-Ed, PECO, Penelec, PEPCO, PPL and RECO Zones



## 2015/2016 RPM Third Incremental Auction Results

### Participant Buy Bids and Sell Offers

Table 2 shows the offered and cleared quantities for participant sell offers. A total of 3,721.0 MW of supply was offered into the Third Incremental Auction composed of uncleared capacity from prior 2015/2016 auctions and new capacity in the form of uprates or new resources that were not previously capacity resources in PJM. Across the entire RTO, 3,301.1 MW of participant sell offers cleared mostly in the form of Annual capacity.

**Table 2 – Participant Sell Offers (Offered and Cleared Quantities)**

LDA	Sell Offers (UCAP MW) *				Cleared Sell Offers (UCAP MW)			
	Limited	Extended Summer	Annual	Total	Limited	Extended Summer	Annual	Total
DPL-SOUTH	0.0	0.0	12.5	12.5	0.0	0.0	12.5	12.5
PS-NORTH	4.0	0.0	157.5	161.5	4.0	0.0	66.1	70.1
PSEG (rest of)	0.0	0.0	30.2	30.2	0.0	0.0	29.5	29.5
EMAAC (rest of)	21.6	0.0	86.5	108.1	6.0	0.0	65.2	71.2
<b>EMAAC Total</b>	<b>25.6</b>	<b>0.0</b>	<b>286.7</b>	<b>312.3</b>	<b>10.0</b>	<b>0.0</b>	<b>173.3</b>	<b>183.3</b>
PEPCO	1.2	0.0	4.4	5.6	1.2	0.0	4.4	5.6
SWMAAC (rest of)	10.3	0.0	330.7	341.0	10.3	0.0	330.6	340.9
<b>SWMAAC Total</b>	<b>11.5</b>	<b>0.0</b>	<b>335.1</b>	<b>346.6</b>	<b>11.5</b>	<b>0.0</b>	<b>335.0</b>	<b>346.5</b>
MAAC (rest of)	31.4	0.0	495.5	526.9	0.2	0.0	461.0	461.2
<b>MAAC Total</b>	<b>68.5</b>	<b>0.0</b>	<b>1,117.3</b>	<b>1,185.8</b>	<b>21.7</b>	<b>0.0</b>	<b>969.3</b>	<b>991.0</b>
ATSI	444.4	0.0	66.0	510.4	340.6	0.0	61.5	402.1
RTO (rest of)	305.7	0.0	1,719.1	2,024.8	209.4	0.0	1,698.6	1,908.0
<b>RTO Total</b>	<b>818.6</b>	<b>0.0</b>	<b>2,902.4</b>	<b>3,721.0</b>	<b>571.7</b>	<b>0.0</b>	<b>2,729.4</b>	<b>3,301.1</b>

\* Sell Offers include the MW amounts offered from all Product Types of coupled DR sell offers, only one of which is capable of clearing in the auction.



## 2015/2016 RPM Third Incremental Auction Results

Participant demand in an Incremental Auction is composed of 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. Table 3 shows offered and cleared quantities of participant buy bids. There was a total of 7,121.3 MW of buy bids submitted by participants into the auction. Across the entire RTO, 3,299.1 of participant buy bids cleared comprised of 569.7 MW of Limited capacity buy bids, 189.7 MW of Extended Summer buy bids and 2,539.7 MW of Annual capacity buy bids.

**Table 3 – Participant Buy Bids (Bid and Cleared Quantities)**

LDA	Buy Bids (UCAP MW)				Cleared Buy Bids (UCAP MW)			
	Limited	Extended Summer	Annual	Total	Limited	Extended Summer	Annual	Total
DPL-SOUTH	1.7	0.0	16.4	18.1	0.0	0.0	8.8	8.8
PS-NORTH	25.5	72.1	0.7	98.3	11.1	27.6	0.7	39.4
PSEG (rest of)	33.1	74.3	1.7	109.1	26.6	29.9	1.7	58.2
EMAAC (rest of)	93.6	330.6	967.8	1,392.0	73.3	45.1	393.6	512.0
<b>EMAAC Total</b>	<b>153.9</b>	<b>477.0</b>	<b>986.6</b>	<b>1,617.5</b>	<b>111.0</b>	<b>102.6</b>	<b>404.8</b>	<b>618.4</b>
PEPCO	23.0	12.0	100.1	135.1	23.0	12.0	100.1	135.1
SWMAAC (rest of)	86.6	42.5	28.3	157.4	83.2	0.0	28.3	111.5
<b>SWMAAC Total</b>	<b>109.6</b>	<b>54.5</b>	<b>128.4</b>	<b>292.5</b>	<b>106.2</b>	<b>12.0</b>	<b>128.4</b>	<b>246.6</b>
MAAC (rest of)	47.7	441.2	293.2	782.1	16.5	25.3	82.2	124.0
<b>MAAC Total</b>	<b>311.2</b>	<b>972.7</b>	<b>1,408.2</b>	<b>2,692.1</b>	<b>233.7</b>	<b>139.9</b>	<b>615.4</b>	<b>989.0</b>
ATSI	26.8	56.7	361.1	444.6	26.8	47.9	219.1	293.8
RTO (rest of)	414.9	710.1	2,859.6	3,984.6	309.2	1.9	1,705.2	2,016.3
<b>RTO Total</b>	<b>752.9</b>	<b>1,739.5</b>	<b>4,628.9</b>	<b>7,121.3</b>	<b>569.7</b>	<b>189.7</b>	<b>2,539.7</b>	<b>3,299.1</b>



**2015/2016 RPM Third Incremental Auction Results**

Table 4 provides a further breakdown of the capacity offered and cleared into the 2015/2016 Third Incremental Auction. A total of 3,721.0 MW of supply was offered into the Third Incremental Auction composed of uncleared capacity from prior 2015/2016 auctions and new capacity in the form of uprates or new resources that were not previously capacity resources in PJM.

**Table 4 - 2015/2016 Third Incremental Auction Supply Resource Mix**

Resource Type	Type	Total Sell Offers (MW UCAP)	Cleared Sell Offers (MW UCAP)
<b>DEMAND</b>	DEMAND	891.8	644.9
<b>EE</b>	EE	179.2	174.4
<b>GEN</b>	New Generation (including Uprates)	97.6	55.8
	Uncleared from Prior Auction	2,552.4	2,426.0
		<b>3,721.0</b>	<b>3,301.1</b>



## 2015/2016 RPM Third Incremental Auction Results

### PJM Buy Bids and Sell Offers

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. On February 20, 2015, in Docket ER15-738-000, the FERC granted PJM’s request for a one-time waiver of the provisions of Attachment DD, section 5.4(c)(3) of the PJM Tariff, that would, absent waiver, require PJM to offer to release, in this auction approximately 1,850 MW of capacity previously committed to the PJM Region. As a result of this waiver, PJM participation in this auction was limited to a 2 MW buy bid for Limited Capacity in the PS-North LDA. As shown in Table 5, this PJM buy bid cleared the auction therefore PJM procured a total net capacity amount of 2.0 MW.

**Table 5 – PJM Buy Bids (Bid and Cleared Quantities)**

LDA	Buy Bids (UCAP MW)				Cleared Buy Bids (UCAP MW)			
	Limited	Extended Summer	Annual	Total	Limited	Extended Summer	Annual	Total
DPL-SOUTH	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PS-NORTH	2.0	0.0	0.0	2.0	2.0	0.0	0.0	2.0
PSEG (rest of)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EMAAC (rest of)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>EMAAC Total</b>	<b>2.0</b>	<b>0.0</b>	<b>0.0</b>	<b>2.0</b>	<b>2.0</b>	<b>0.0</b>	<b>0.0</b>	<b>2.0</b>
PEPCO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SWMAAC (rest of)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>SWMAAC Total</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
MAAC (rest of)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>MAAC Total</b>	<b>2.0</b>	<b>0.0</b>	<b>0.0</b>	<b>2.0</b>	<b>2.0</b>	<b>0.0</b>	<b>0.0</b>	<b>2.0</b>
ATSI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
RTO (rest of)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>RTO Total</b>	<b>2.0</b>	<b>0.0</b>	<b>0.0</b>	<b>2.0</b>	<b>2.0</b>	<b>0.0</b>	<b>0.0</b>	<b>2.0</b>



## **2015/2016 RPM Third Incremental Auction Results**

### **2015/2016 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 sell offers into an Incremental Auction from existing generation capacity resources are subject to market power mitigation through the application of the Market Structure Test. All Generation Capacity Resources and Energy Efficiency Resources are of the Annual Capacity type. Demand Resources offering into the Incremental Auction must specify the type of Capacity being offered. A Demand Resource with the potential to qualify as two or more of the capacity types may submit separate but coupled Sell Offers for each Demand Resource type for which it qualifies at different prices and the auction clearing algorithm will select the Sell Offer that yields the least-cost solution. For such coupled Demand Resource offers, the offer price of an Annual Demand Resource offer must be at least \$.01 per MW-day greater than the offer price of a coupled Extended Summer Demand Resource offer and the offer price of a Extended Summer Demand Resource offer must be at least \$.01 per MW-day greater than the offer price of a coupled Limited Demand Resource offer.

Any party that desires to purchase replacement capacity for the Delivery Year may do so by submitting a buy bid into the Incremental Auction. In addition to quantity, price and LDA-specific location, participants submitting a buy bid must also specify the desired capacity type (Annual, Extended Summer or Limited). Cleared Buy Bids purchased in an Incremental Auction may be used as replacement capacity to cover a Delivery Year commitment provided the cleared buy bid has the same locational characteristics and same or better temporal characteristics than the resource that it replaces. Cleared buy bids of Annual capacity type may replace commitments of Annual Resources, Extended Summer DR and/or Limited DR. Cleared buy bids of Extended Summer capacity type may replace commitments on Extended Summer DR and/or Limited DR but may not replace commitments of Annual Resources. Cleared buy bids of Limited capacity type may replace commitments of Limited DR but may not replace commitments of Annual Resources or Extended Summer DR.

#### **PJM Buy Bids and Sell Offers**

On February 20, 2015, in Docket ER15-738-000, the FERC granted PJM's request for a one-time waiver of the provisions of Attachment DD, section 5.4(c)(3) of the PJM Tariff, that would, absent waiver, require PJM to offer to release, in this auction approximately 1,850 MW of capacity previously committed to the PJM Region. As a result of this waiver, PJM participation in this auction was limited to a 2 MW buy bid for Limited Capacity in the PS-North LDA. The determination of the PJM buy bid and PJM sell offer quantities is detailed in the 2015/2016 3rd IA Planning Parameters that were provided at <http://pjm.com/~media/markets->



## 2015/2016 RPM Third Incremental Auction Results

[ops/rpm/rpm-auction-info/2015-2016-3rd-incremental-auction-planning-parameters.ashx](https://ops.rpm/rpm-auction-info/2015-2016-3rd-incremental-auction-planning-parameters.ashx). The posted parameters show PJM participation as is would have been absent the waiver and as it was revised to reflect the waiver.

### LDA Capacity Import Limits

Table 3 shows each LDA’s CETL limits for the Base Residual Auction and each LDA’s CETL as updated for each Incremental Auction for the 2015/2016 Delivery Year. The CETL remaining for use in the 3<sup>rd</sup> IA for the 2015/2016 Delivery Year shown in the last row of Table 3 represents the LDA capacity import limits that were employed in the 3<sup>rd</sup> IA for the 2015/2016 Delivery Year and are equal to the LDA CETL as updated for the 3<sup>rd</sup> IA minus the total capacity import levels into the LDA.

**Table 3 – LDA Capacity Import Capability for 2015/2016 Third Incremental Auction**

	LDA							
	MAAC	EMAAC	SWMAAC	PS	PS NORTH	DPL SOUTH	PEPCO	ATSI
3rd Incremental Auction (IA) CETL	6,156.0	9,177.0	8,373.0	6,220.0	2,972.0	1,822.0	6,522.0	5,417.8
Capacity Import Level (BRA + 1st & 2nd IA Imports)	6,156.0	7,567.4	5,933.8	6,220.0	2,674.9	1,506.5	3,557.6	5,417.8
Capacity Import Limit for 3rd Incremental Auction	0.0	1,609.6	2,439.2	0.0	297.1	315.5	2,964.4	0.0

### 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. Annual capacity buy bids may only clear against sell offers from Annual Resources; Extended Summer buy bids may only clear against sell offers from Annual Resources and/or Extended Summer DR; and Limited buy bids may clear against sell offers of any capacity type.

### Mitigation in the 2015/2016 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.