



## **2009/2010 RPM Third Incremental Auction Results**

### **Introduction**

This document provides additional information for PJM stakeholders regarding the results of the 2009/2010 Reliability Pricing Model (RPM) Third Incremental Auction. The 2009/2010 Third Incremental Auction was held from January 5, 2009 to January 9, 2009.

### **The Third Incremental Auction**

RPM Third Incremental Auctions provide capacity suppliers with a final 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 excess capacity beyond what is needed to satisfy their commitments from previous auctions for the Delivery Year. All resource-specific sell offers into a Third Incremental Auction are subject to market power mitigation through the application of the Three-Pivotal Supplier 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 Third Incremental Auction. Cleared Buy Bids purchased in a Third Incremental Auction may be used as replacement capacity to cover Delivery Year commitment and compliance shortfalls. Those parties that do not clear buy bids in a Third Incremental Auction but still desire to purchase capacity for the Delivery Year may do so bilaterally.

A Third Incremental Auction is cleared in a similar fashion to that of a Base Residual Auction with the exception that no Variable Resource Requirement curve is utilized. The demand in a Third Incremental Auction is composed of the LDA-specific buy bids submitted by participants who wish to purchase replacement capacity. The relative positions of supply and demand in each region will determine the resulting cleared MW and price quantities.

Since the purpose of the Third Incremental Auction is to allow resource owners to purchase replacement capacity, PJM does not procure additional capacity on behalf of load and the zonal capacity prices that LSEs in PJM pay for capacity are not affected by the results of this auction. Zonal capacity prices are only affected by the Base Residual and Second Incremental Auctions. Those prices are then finalized after the ILR Certification Period.



## 2009/2010 RPM Third Incremental Auction Results

**Table 1 - 2009/2010 Third Incremental Auction Results**

	Total Sell Offers (MW ICAP)	Total Sell Offers (MW UCAP <sup>***</sup> )	Total Buy Bids (MW UCAP)	Cleared Buy Bids (MW UCAP)	Cleared Sell Offers (MW UCAP)	Clearing Price (\$/MW-Day)
<b>EMAAC</b>	806.9	741.3	424.7	241.7	353.8	\$86.00
<b>SWMAAC</b>	1054.8	985.1	135.5	135.5	762.8	\$86.00
<b>MAAC+APS<sup>**</sup></b>	2303.8	2142.3	1953.2	1275.3	1275.3	\$86.00
<b>RTO *</b>	3433.3	3255.8	2697.6	1798.4	1798.4	\$40.00

\* RTO supply and demand values include MAAC+APS

\*\* MAAC+APS supply and demand values include EMAAC and SWMAAC.

\*\*\* Resource offers converted to UCAP using Delivery Year EFORD for generation resources or applicable FPR and DR Factor for Demand Resources

Table 1 contains a summary of the offer, bid and clearing data for 2009/2010 Third Incremental Auction. The summary includes all resources located in the RTO (including all LDAs within the RTO) and each modeled LDA separately. Each column in this table is explained in more detail in the upcoming sections of this report.

### Supply in the 2009/2010 Third Incremental Auction

The 3433.3 MW of sell offers (supply) offered into the Third Incremental Auction is composed of uncleared capacity from the 2009/2010 Base Residual Auction, new capacity in the form of uprates or resources were not previously capacity resources in PJM, and additional capacity that resulted from an improvement in resource forced outage rates (EFORD) between the Base Residual and Third Incremental Auctions. Over half of the supply offered into the auction was from the EMAAC and SWMAAC LDAs, 806.9 MW, and 1054.8 MWs respectively. All supply offers provided by sellers are quoted in Installed Capacity (ICAP) terms.

Each generation resource sell offer was converted to UCAP using the Delivery Year EFORD and each demand resource sell offer was converted to UCAP using the Delivery Year Forecast Pool Requirement (FPR) and Demand Resource (DR) Factor. As a result, 3255.8 MW of UCAP was offered into this auction, 741.3 MW from the EMAAC LDA, 985.1 MW from the SWMAAC LDA, and 2142.3 MW from the MAAC+APS LDA (includes values for EMAAC and SWMAAC).



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### **Demand in the 2009/2010 Third Incremental Auction**

The demand in a Third 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. There was a total of 2697.6 MW of buy bids submitted into this auction where 424.7 MW were for capacity in the EMAAC LDA, 135.5 MW were for capacity in the SWMAAC LDA, and 1953.2 MW were for capacity in the MAAC+APS LDA. The remaining buy bids were to purchase capacity in the unconstrained portion of the RTO.

### **2009/2010 Third Incremental Auction Clearing Results**

In the 2009/2010 Third Incremental Auction, a total of 1798.4 MW of UCAP was cleared. Of the cleared amount, 523.1 MW cleared in the unconstrained region of the RTO at a price of \$40/MW-Day and 1275.3 MW cleared in the constrained MAAC+APS LDA at a price of \$86/MW-Day. Included in the 1275.3 MW of cleared capacity in the MAAC+APS LDA is 353.8 MW of cleared supply in EMAAC and 762.8 MW of cleared supply in SWMAAC.

Though SWMAAC and EMAAC were modeled as separate LDAs in the Third Incremental Auction, there was no price separation between these and their parent LDA, MAAC+APS. Although modeled in the auction, the SWMAAC and EMAAC LDAs were not individually constrained because the import limits into these regions were not a limiting factor in the clearing results.

### **EMAAC Results**

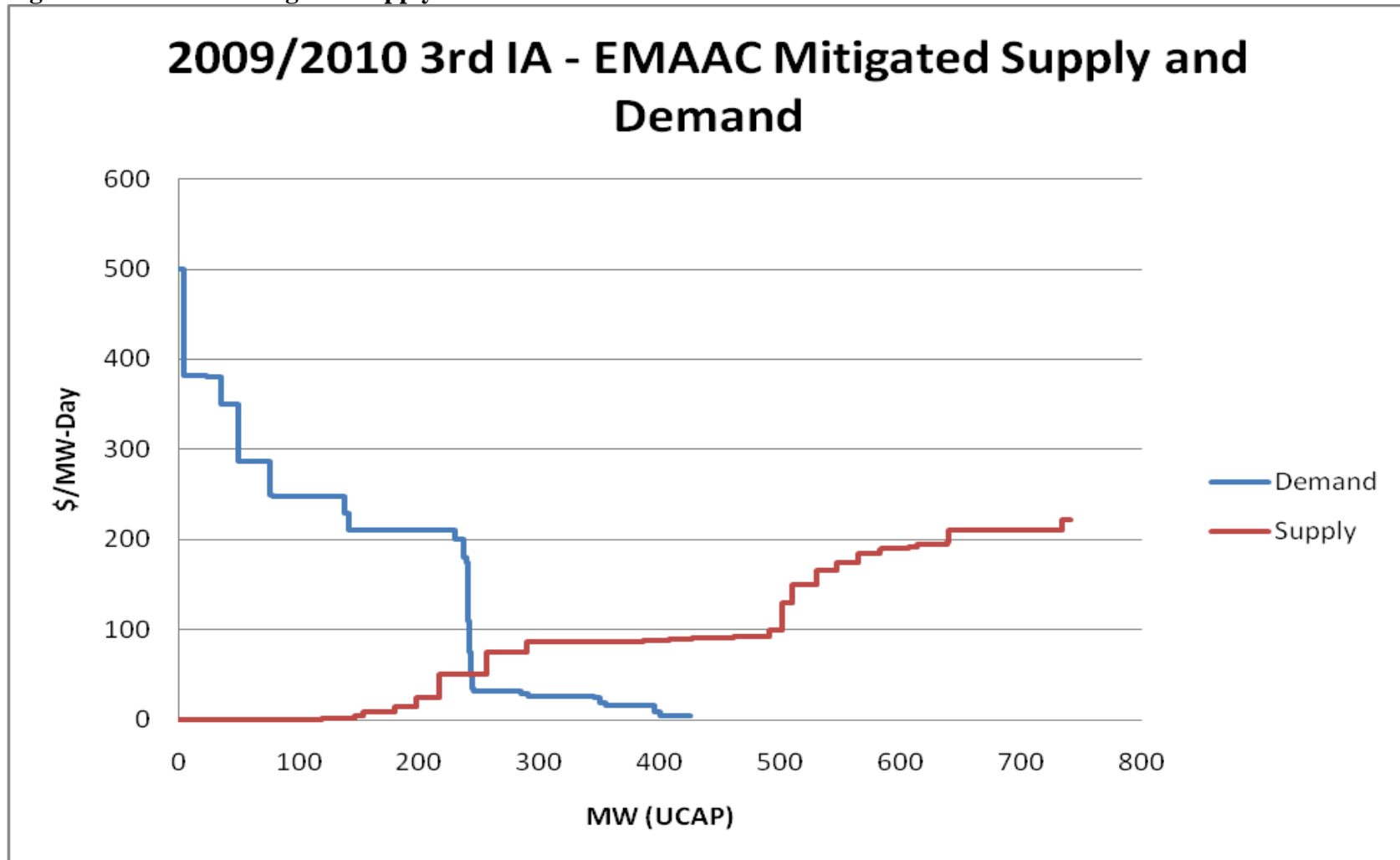
As illustrated in Table 1, the 353.8 MW of cleared unforced capacity (UCAP) supply in EMAAC exceeds the 241.7 MW of cleared demand. This is a result of the larger quantity of supply available within EMAAC and the relatively small demand for higher priced replacement capacity from that region. Because EMAAC is an LDA within MAAC+APS, MAAC+APS buy bids can also be cleared with incremental supply offers from EMAAC resources if they are economic. In the case of the 2009/2010 Third Incremental Auction, the excess capacity cleared in EMAAC, 112.1 MW (353.8 MW – 241.7 MW), is used to satisfy the MAAC+APS buy bids as it provides a lower cost solution than committing MAAC+APS supply with higher price offers. This market clearing result causes the price convergence between MAAC+APS and EMAAC.



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Figure 1 shows the intersection of the EMAAC mitigated supply and demand curves. Note that there is additional supply available above the intersection point that can be exported to satisfy MAAC+APS buy bids.

**Figure 1 – EMAAC Mitigated Supply and Demand Curves**





## **2009/2010 RPM Third Incremental Auction Results**

### **SWMAAC Results**

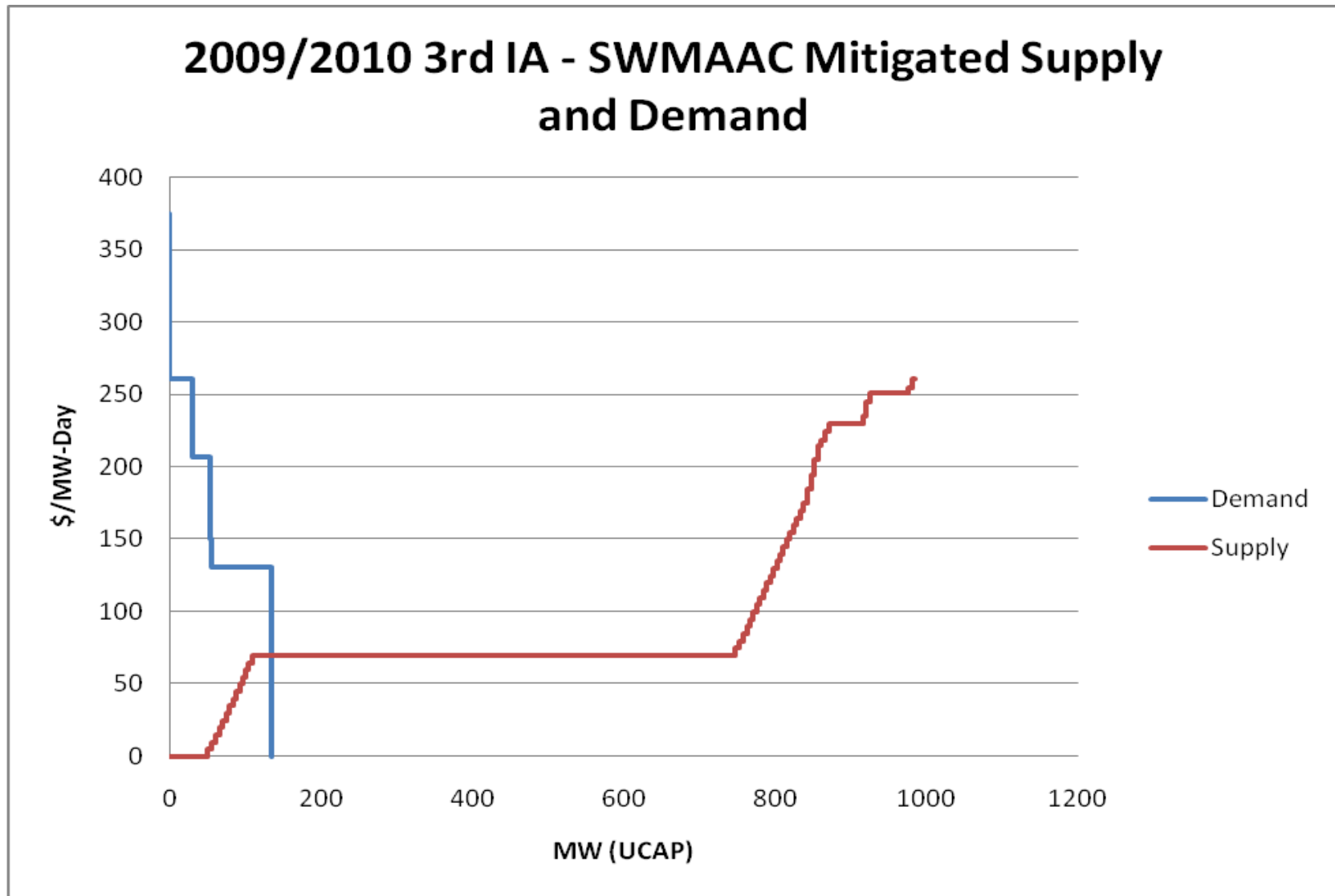
As illustrated in Table 1, the 762.8 MW of cleared UCAP supply in SWMAAC exceeds the 135.5 MW of cleared demand. This is a result of the large quantity of less expensive supply offers available from the SWMAAC LDA and the relatively small demand for replacement capacity from that region. Because SWMAAC is an LDA within MAAC+APS, MAAC+APS buy bids can also be cleared against SWMAAC supply resources if they are economic. In the case of the 2009/2010 Third Incremental Auction, the excess capacity cleared in the SWMAAC LDA, 627.3 MW (762.8 MW – 135.5 MW), is used to clear MAAC+APS buy bids as it provides a lower cost solution than committing higher priced MAAC+APS supply. This clearing result also causes the price convergence between MAAC+APS and SWMAAC.

*Figure 2* on the following page shows the mitigated supply and demand curves for SWMAAC.



## 2009/2010 RPM Third Incremental Auction Results

Figure 2 – SWMAAC Mitigated Supply and Demand Curves





## **2009/2010 RPM Third Incremental Auction Results**

### **MAAC+APS Results**

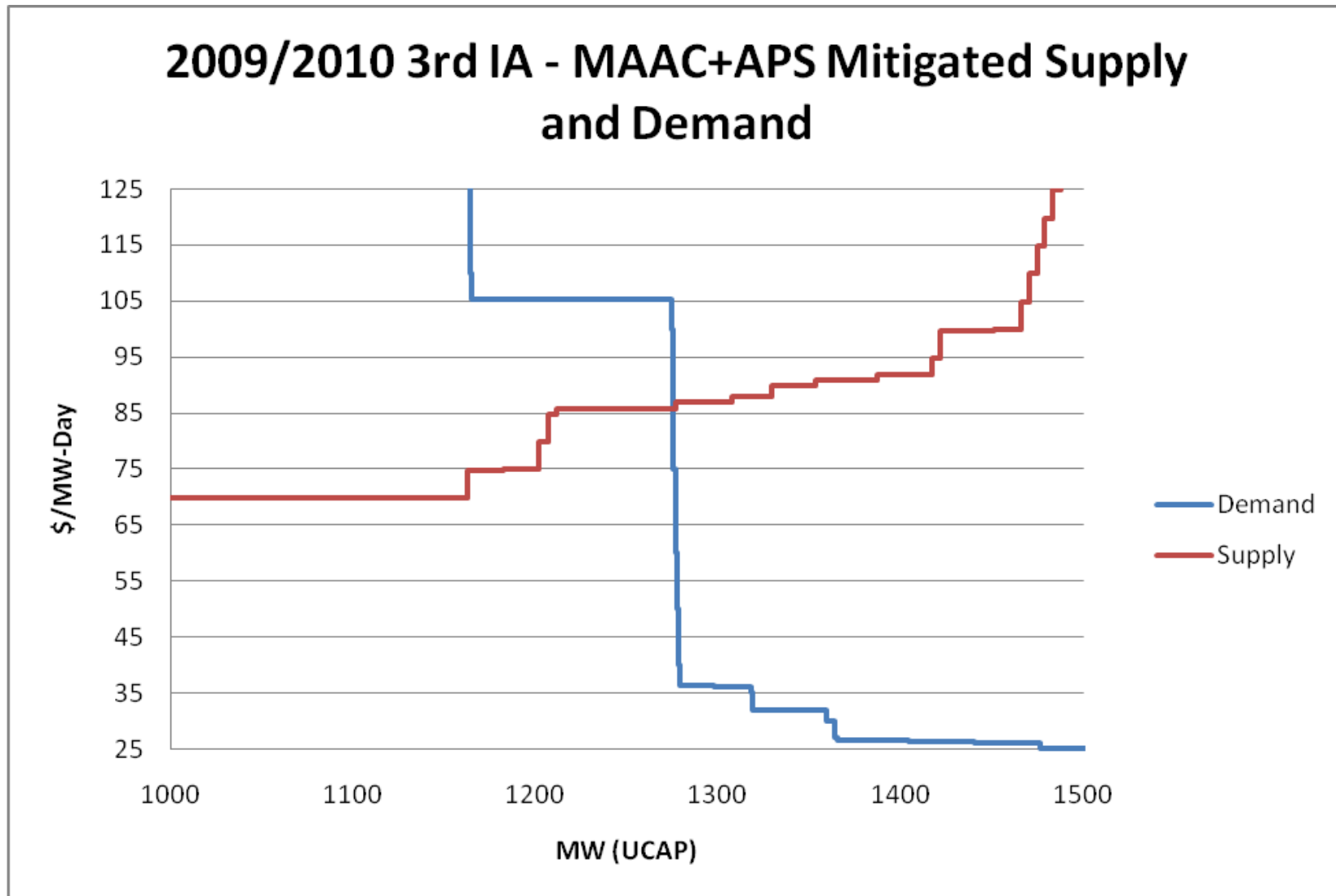
As discussed above, the total cleared supply in the EMAAC LDA and the SWMAAC LDA exceeded the amount of cleared demand. Because EMAAC and SWMAAC are LDAs within MAAC+APS, MAAC+APS buy bids can also be cleared against EMAAC and SWMAAC supply resources if they are economic. In the case of the 2009/2010 Third Incremental Auction, the excess capacity cleared in the EMAAC LDA, 112.1 MW, and the excess capacity cleared in the SWMAAC LDA, 627.3 MW, is used to clear MAAC+APS buy bids as it provides a lower cost solution than committing higher priced MAAC+APS supply. This clearing result also causes the price convergence between MAAC+APS, EMAAC, and SWMAAC. In addition to the 739.4 MW cleared supply in the EMAAC and SWMAAC LDAs, there was an additional 535.9 MW of cleared supply in the MAAC+APS region that is not part of the EMAAC or SWMAAC LDAs.

*Figure 3* shows the intersection of the combined MAAC+APS, EMAAC, and SWMAAC mitigated supply and demand curves. The plot below is truncated to show the intersection at \$86.00/MW-Day. The full MAAC+APS supply and demand curves are shown in *Figure 5* of the Appendix.



### 2009/2010 RPM Third Incremental Auction Results

Figure 3 – Truncated MAAC+APS Mitigated Supply and Demand Curves







## **2009/2010 RPM Third Incremental Auction Results**

### **RTO Results**

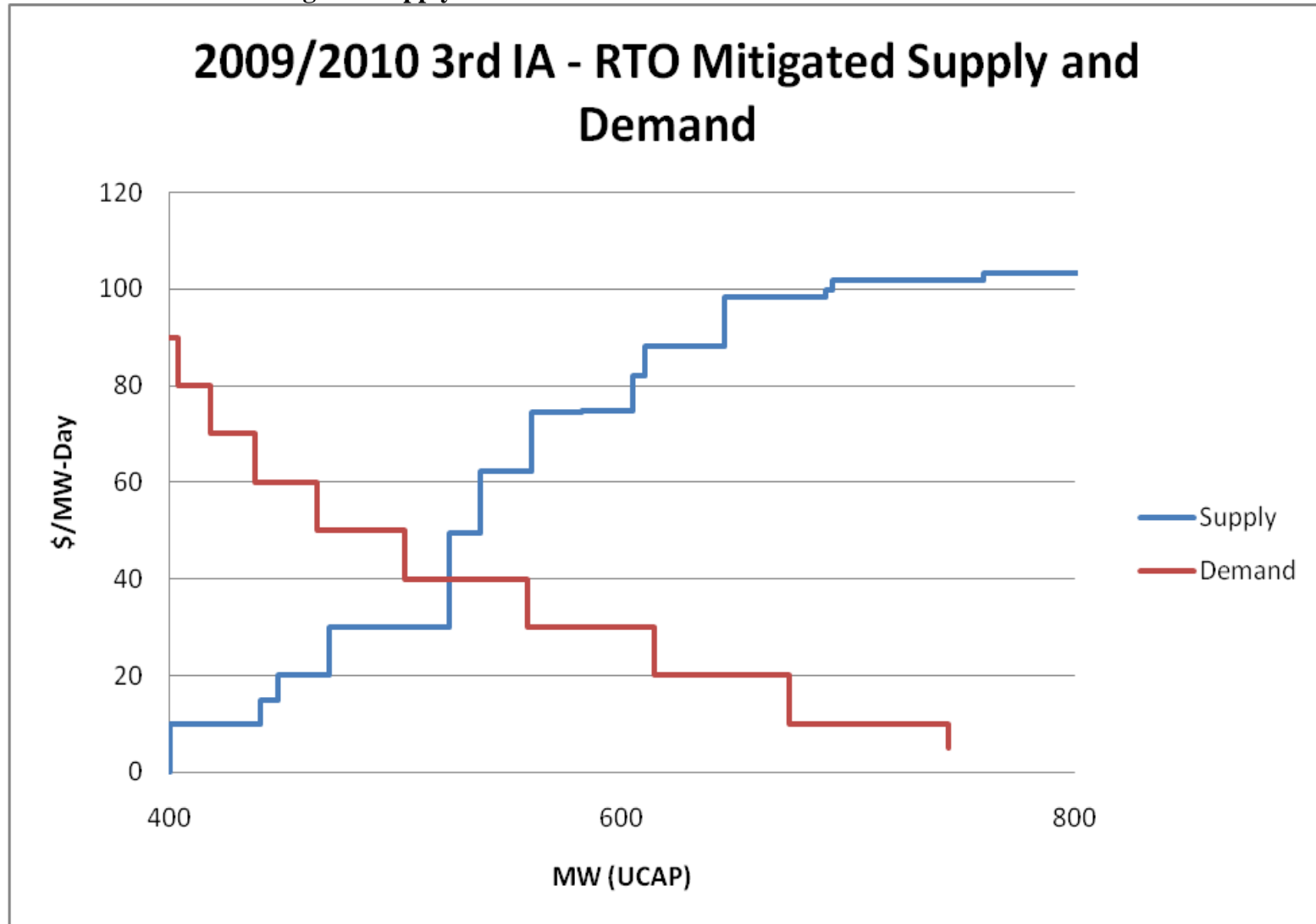
Because the export limit of 4941.0 MW (CETL) from the RTO to the MAAC+APS region was reached during the 2009/2010 Base Residual Auction, RTO capacity that is not in a constrained LDA cannot be imported into the MAAC+APS LDA. As a result, the clearing of the unconstrained region of the RTO is independent from the constrained LDAs by comparing the supply and demand of the unconstrained region.

*Figure 4* shows the intersection of the RTO mitigated supply and demand curves. The plot below is truncated to show the intersection at \$40.00/MW-Day. The full RTO supply and demand curves are shown in Figure 6 of the Appendix.



## 2009/2010 RPM Third Incremental Auction Results

Figure 4 – Truncated RTO Mitigated Supply and Demand Curves

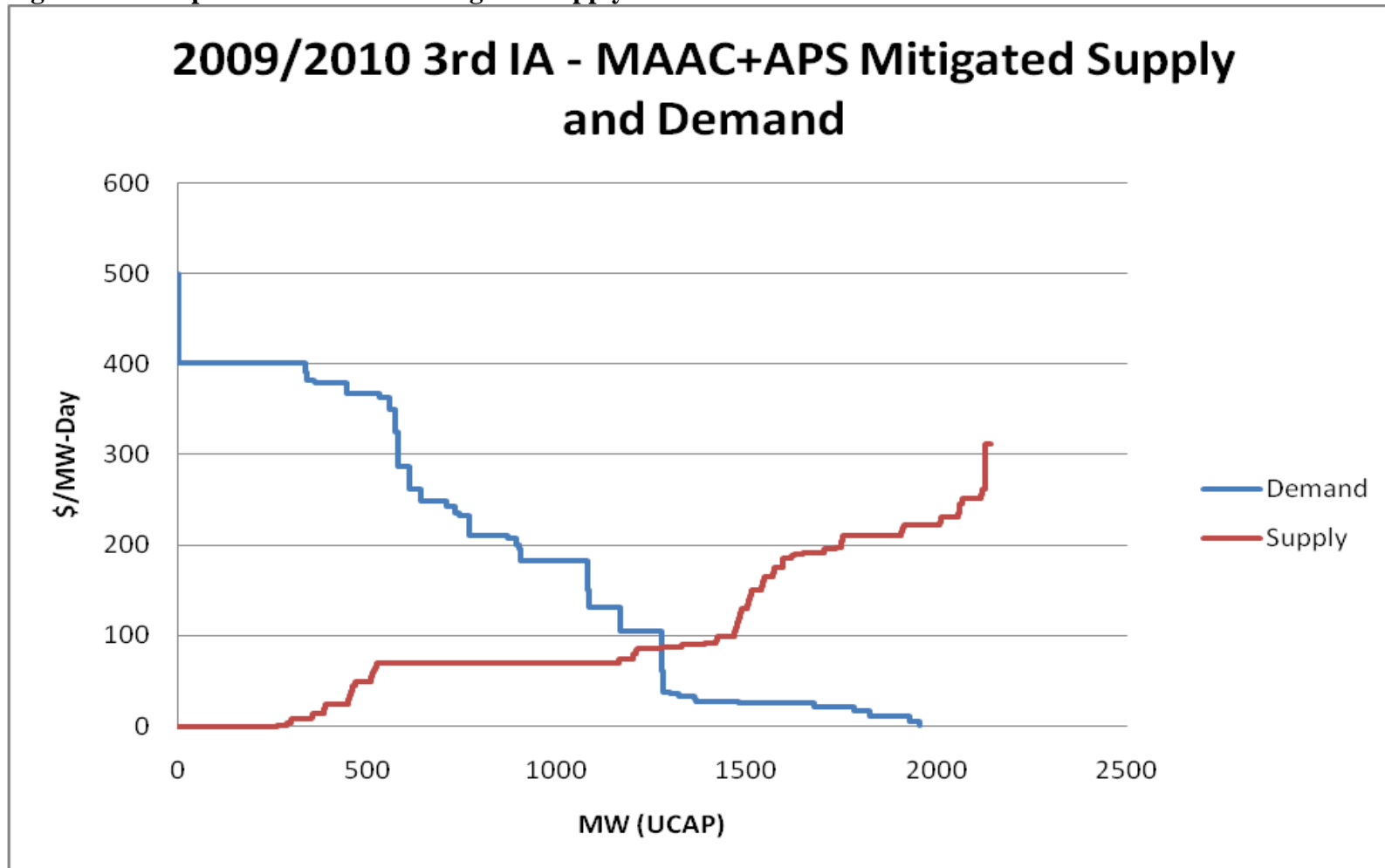




## 2009/2010 RPM Third Incremental Auction Results

### Appendix - Complete Mitigated Supply and Demand Curves

Figure 5 – Complete MAAC+APS Mitigated Supply and Demand Curve





## 2009/2010 RPM Third Incremental Auction Results

Figure 6 – Complete RTO Mitigated Supply and Demand Curve

