ATSI Integration
Capacity Auctions:
Delivery Years 2011/2012 and 2012/2013

The Independent Market Monitor for PJM

December 16, 2009

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Introduction

This report was prepared in response to a request from the Organization of PJM States (OPSI) Advisory Committee, which is attached as Appendix A.

On August 17, 2009, FirstEnergy Service Company filed on behalf of American Transmission Systems, Inc. (ATSI) with the Federal Energy Regulatory Committee (FERC) to withdraw its transmission assets from the Midwest Independent System Operator and integrate those transmission assets into PJM as of June 1, 2011.[1]

FE proposed Integration capacity auctions for the 2011/2012 and 2012/2013 Delivery Years. The MMU has analyzed the expected supply and demand conditions for the proposed Integration Auctions.

The ATSI control zone will have a higher peak load obligation than the total available capacity in ATSI. As a result, available PJM generation will be required to meet the peak load obligations in ATSI.

Based on the available information, the MMU concludes that there is sufficient capacity, including existing and planned generation, behind the meter generation, and DR, in the ATSI footprint, combined with available PJM capacity, to meet peak load obligations for the 2011/2012 and 2012/2013 Integration Auctions at a price less than the identified price cap under the stated assumptions.

Aggregate Supply

The MMU estimated aggregate supply for the 2011/2012 and 2012/2013 Integration Auctions considering all supply side resources in the ATSI footprint, including behind the meter generation and independently owned or operated generators, estimated Demand Response (DR), and uncommitted PJM resources. Uncommitted PJM resources were also net of resources committed to meeting Duquesne's peak load obligation. Data were collected from FirstEnergy Solutions, American Municipal Power, Inc. (AMP), and public sources.

ATSI Footprint Supply Resources

The MMU estimated total installed capacity in the ATSI footprint including the summer installed capacity for all existing and planned generating units listed by FirstEnergy Solutions, AMP or public sources.[2] Generating units identified as behind the meter were

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[1]   Docket No. ER09-1589-000

[2]   MMU analyzed Form EIA860 data, which include all generators capable of producing and delivering 1 MW or more. All generators reported in the ATSI footprint were included in the

included since they are eligible to be offered in the 2011/2012 and 2012/2013 Integration Auctions as Demand Response (DR). In addition, FirstEnergy provided an estimate of additional DR participation based on the capability of contractually interruptible customers.

This analysis does not account for any additional Demand Side Resources not included in the interruptible load forecasts provided by FirstEnergy, which may offer in the Integration Auctions as Demand Response (DR). In addition, this analysis assumes that all generation, including behind the meter generation, within the ATSI footprint listed from any source will offer into the Integration Auctions, unless already committed through a prior RPM transaction.

The MMU calculated total unforced capacity in the ATSI footprint by applying a technology specific equivalent demand forced outage rate (EFORd) or, where possible, a unit specific forced outage rate to each unit's installed capacity. If outage data were provided by the generation owner, the MMU applied the higher of the 12 month or historical five year forced outage rates for the applicable time periods ending September 30.[3] If no forced outage rates were provided, the MMU applied the most recent four year class average forced outage rate calculated by PJM.[4] For behind the meter generation and estimated DR, the Unforced Capacity (UCAP) values were determined by applying the Demand Resource factor and Forecast Pool Requirement (FPR) for the given Delivery Year.

Table 0-1 shows estimated available ICAP and UCAP values for the ATSI Footprint.

ATSI footprint installed capacity. For more information, see: http://www.eia.doe.gov/cneaf/electricity/2008forms/filingreq_860.html

[3] PJM Open Access Transmission Tariff (OATT), "Attachment DD: Reliability Pricing Model," Fifth Revised Sheet No. 608 (Effective November 1, 2009), section 6.6 (a) specifies the time periods for determining the maximum EFORd. When unit specific EFORd data were available, the MMU's determination of available UCAP in ATSI footprint is consistent with PJM's determination of minimum available MW.

[4] http://www.pjm.com/planning/resource-adequacy-planning/~/media/planning/res-adeq/2004-2008-pjm-class-average-values.ashx

Table 0-1 Available ICAP and UCAP MW from ATSI uncommitted resources for Delivery Years 2011/2012 and 2012/2013

Delivery Year	Minimum Available ICAP	Minimum Available UCAP
2011/2012	14,688.4	12,923.2
2012/2013	14,980.4	13,181.3

Uncommitted PJM Resources

PJM capacity resources available for the Integration Auctions include uncleared capacity from the Base Residual Auction (BRA) or prior incremental auction for the given planning year, uprates to existing resources or new capacity resources.

PJM determines available MW in ICAP terms by taking the ICAP owned less any unoffered MW, less any RPM commitments, less any FRR commitments. For the first and second incremental auctions, PJM calculates minimum and maximum available resource positions. To establish a minimum available MW for auctions other than the third incremental auction, when final EFORds are known, the RPM commitments are converted to ICAP using the maximum EFORd allowable for the BRA. The maximum available MW are determined by converting the RPM commitments to ICAP assuming an EFORd of zero. This analysis includes all resource positions with positive minimum available MW at the time of this analysis for the given Delivery Years. No FRR entity resources were included in supply.

Participants specify a sell offer EFORd for incremental auctions other than the third incremental auction which cannot exceed the greater of the one-year EFORd at the time of the BRA, the five-year EFORd at the time of the BRA, or the BRA sell offer EFORd for all auctions expect the Third IA, in which the final EFORds for the Delivery Year are known. This analysis assumed the maximum sell offer EFORds that could be submitted to convert the minimum available MW to UCAP. The maximum available MW assume an EFORd of zero.

Table 0-2 shows the minimum available ICAP and UCAP as well as the maximum available MW for RPM resources. Table 0-3 shows the total available ICAP and UCAP as well as maximum available MW for the ATSI Integration Auctions.

Table 0-2 Minimum and maximum available capacity from PJM capacity resources for Delivery Years 2011/2012 and 2012/2013

Delivery Year	Minimum Available ICAP	Minimum Available UCAP	Maximum Available ICAP	Maximum Available UCAP
2011/2012	2,916.9	2,459.1	10,149.8	10,149.8
2012/2013	5,817.8	5,186.8	13,370.9	13,371.0

Table 0-3 Total Available Capacity for the ATSI Integration Auctions for Delivery Years 2011/2012 and 2012/2013

Delivery Year	ATSI and PJM Min Available ICAP	ATSI and PJM Min Available UCAP	ATSI and PJM Max Available ICAP	ATSI and PJM Max Available UCAP
2011/2012	17,605.3	15,382.3	24,838.2	24,838.2
2012/2013	20,798.2	18,368.1	28,351.3	28,351.4

ATSI Peak Load

PJM provided peak load forecasts, coincident with the PJM peak, for Delivery Years 2011/2012 and 2012/2013, which include all municipal loads in the ATSI footprint. One Load Serving Entity (LSE) in the ATSI footprint has already procured capacity for the 2011/2012 and 2012/2013 Delivery Years. These procurements were subtracted from the ATSI coincident peak load forecasts and the capacity is excluded from available capacity. In addition, FirstEnergy provided an estimate of the amount of interruptible load that will be available during the peak hour for each Delivery Year. The MMU adjusted the estimated interruptible load for both the DR factor and the FPR provided in each auctions' planning parameters to determine a UCAP estimate of DR. It is assumed that this interruptible load, which is in (not subtracted from) the peak hour forecast, will offer into the FirstEnergy Integration Auctions as a DR capacity resource and as a price taker.

The peak load obligation in this analysis includes the PJM reserve margin. The peak load forecast for each Delivery Year was multiplied by the forecast pool requirement (FPR) given in the PJM Planning Parameters to determine the Reliability Requirement (peak load obligation) in UCAP. The FPR is calculated as (1+Installed Reserve Margin) times (1 - Pool Wide Average EFORd), where the Installed Reserve Margin (IRM) is the level of installed capacity needed to maintain an acceptable level of reliability.[5, 6]

Table 0-4 shows the MMU estimated peak load obligations for the 2011/2012 and 2012/2013 ATSI Integration Auctions. The estimated peak load obligation for the ATSI footprint is 13,483.8 MW in the 2011/2012 Delivery Year and 14,207.5 MW in the

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[5]   See "PJM Manual 18: PJM Capacity Market," Revision 7 (August 18, 2009), p. 9 http://www.pjm.com/~/media/documents/manuals/m18.ashx (1.25 MB).

[6]   The IRM, Pool-Wide Average EFORd, and FPR are posted in the PJM planning parameters for each Delivery Year: http://www.pjm.com/markets-and-operations/rpm/rpm-auction-user-info.aspx. For 2011/2012 the IRM is .155, the Pool-Wide Average EFORd is .0621, and the FPR is 1.0833. For 2012/2013, the IRM is .162, the Pool-Wide Average EFORd is .0644, and the FPR is 1.0872.

2012/2013 Delivery Year. The range between upper and lower bounds represents the range between minimum and maximum available capacity.

Table 0-4 Estimated ATSI Peak Load Obligations for Delivery Years 2011/2012 and 2012/2013 in UCAP

Delivery Year	Estimated Peak Load Obligation	Minimum Available ICAP	Minimum Available UCAP	Maximum Available ICAP	Maximum Available UCAP
2011/2012	13,483.8	17,605.3	15,382.3	24,838.2	24,838.2
2012/2013	14,207.5	20,798.2	18,368.1	28,351.3	28,351.4

Conclusion

This report does not address the expected clearing prices but some discussion of price is necessary to frame the conclusions about adequate supply.

With reference to market power mitigation rules, it is the MMU's position that the existing market power mitigation rules should apply to the Integration Auctions, including offer caps, the must offer requirement, and the requirement that the demand curve used in the Integration Auctions should have a price cap equal to 1.5 times Net CONE, which is $257.11/MW-day for 2011/2012 and $414.14/MW-day for 2012/2013 for the RTO. (This is the same price cap used in the PJM Base Residual Auctions.)

In order to assess supply adequacy, the MMU constructed supply curves for the 2011/2012 and 2012/2013 Integration Auctions. For ATSI generating units, offer caps were estimated using the technology specific default Avoidable Cost Rates (ACRs) escalated through the applicable Delivery Year, and net revenues. The MMU assumed that the identified behind the meter generation and DR would offer at a price of $0/MW-day. The MMU assumed that all planned generation would offer at the Net Cost of New Entry (CONE) associated with the Delivery Year, as published in the PJM planning parameters. For uncommitted PJM resources, the MMU used sell offer prices equal to the offer caps used for the given Delivery Year. For the 2011/2012 Delivery Year, the offer caps were recalculated using the revised FERC approved default ACR values. For new units, the sell offer price was that submitted and used in the most recent auction for the given Delivery Year.

The ATSI control zone will have a higher peak load obligation than the total available capacity in ATSI. As a result, available PJM generation will be required to meet the peak load obligations in ATSI.

Based on the available information, the MMU concludes that there is sufficient capacity, including existing and planned generation, behind the meter generation, and DR, in the ATSI footprint, combined with available PJM capacity, to meet peak load obligations for

the 2011/2012 and 2012/2013 Integration Auctions at a price less than the identified price cap under the stated assumptions.

APPENDIX A

Organization of PJM States, Inc. (OPSI)

President: **Hon. Douglas R. M. Nazarian,** Chairman, Maryland PSC
Vice President: **Hon. Steven A. Transeth,** Commissioner, Michigan PSC
Secretary: **Hon. Paul A. Centolella,** Commissioner, PUC of Ohio
Treasurer: **Hon. Dallas Winslow,** Commissioner, Delaware PSC

November 19, 2009
(as email attachment only)

Joe Bowring, Ph.D.
President
Monitoring Analytics
2621 Van Buren Avenue, Suite 160
Eagleville, PA 19403

<u>Re: First Energy/ATSI</u>

Dear Dr. Bowring:

The OPSI Advisory Committee is requesting a brief report evaluating the impact of First Energy's proposed move of ATSI from MISO to PJM, on the fundamentals of supply and demand in PJM markets, but not including predictions about future prices. We intend to provide the information to all OPSI members, and ask that the report not include any confidential information. If you have any questions about this request, please contact OPSI's Executive Director, Raj Barua at 302-757-2441.

Sincerely,

/s/ Fred Butler (Commissioner, New Jersey BPU)
/s/ Mark Christie (Chairman, Virginia SCC)
/s/ Tyrone Christy (Vice Chairman, Pennsylvania PUC)
/s/ Lula Ford (Commissioner, Illinois CC)
/s/ Steve Transeth (Commissioner, Michigan PSC)