

April 23, 2010

PJM Board of Managers
PJM Interconnection
955 Jefferson Avenue
Valley Forge Corporate Center
Norristown, PA 19403-2497

Request for Board Action to Implement Corrections to System Model Used to Calculate Marginal Loss Component of LMP

Dear Board of Managers:

Action requested

The members of the Marginal Loss User Group (MLUG) request that the Board direct PJM staff to implement needed changes to the PJM System Model to reflect physical generator step transformer metering points and to standardize zonal transmission voltages consistent with transmission facilities monitored for markets and reliability effective June 1, 2011. The MLUG is seeking Board action after an extensive effort to gain stakeholder support to correct these modeling issues, as members were unable to resolve the need or the timing of the model changes due to voting that was reflective of individual member commercial interests.

Rationale for Board action

The concept of marginal loss dispatch is to recognize the financial impact of the varying amounts of energy that are lost on the transmission system during delivery from various parts of the PJM region to load. The objective is to make dispatch more efficient by decreasing transmission system energy losses. The MLUG uncovered errors and inconsistencies in the transmission system model used by PJM to calculate the marginal loss component of LMP. These issues were presented to the PJM Members Committee via the established stakeholder process. The Members Committee was unable to reach a consensus to implement the proposed system model changes. The final step in the user group process is a direct appeal to the Board that they direct PJM to take appropriate corrective action.

History of this Issue

PJM was directed by FERC to implement marginal loss dispatch and settlement effective June 1, 2007. The MC had previously approved removal of the requirement to utilize marginal losses from the OA and retain the use of average losses prior to PHI filing a complaint at FERC due to concerns about the potential size and distribution of the over-collection of losses. After several months of experience with marginal losses, the MRC directed formation of a Marginal Loss

Working Group (MLWG) in January 2008 to review the implementation and to consider potential modifications. The MLWG worked for about six months, and concluded that the process used by PJM to implement ML was acceptable. However, PJM staff noted inconsistencies in how losses were collected and distributed at the April 24, 2008 MRC meeting¹. The MRC did not grant approval for the MLWG to continue further investigation into this issue.

A small group of PJM Members wanted to look further into how marginal losses were implemented in PJM, as well as explore the potential to design a method to hedge the marginal loss component of the LMP difference between generator buses and load zones (similar to the use of FTRs to hedge the congestion component of these LMP differences). These Members petitioned the MC to form a User Group. The MC accepted the formation of the MLUG at their September 9, 2008 meeting.

While the group was attempting to understand how marginal losses worked within the PJM dispatch software to allow for the creation of an acceptable hedging mechanism, the MLUG uncovered anomalies among the zonal transmission models used by PJM for ML purposes that led to non-uniform results among market participants. The User Group worked with PJM staff to understand the details of marginal loss dispatch and settlements and verify the findings into the spring of 2009. Further examination of these anomalies led the MLUG to identify these key issues when we reported our findings to the MC in November 2009:

- The system model used by PJM to calculate the marginal loss component of LMP is not the same one as PJM uses to calculate the congestion component of LMP.
- Voltages of equipment modeled by individual transmission owners varied from zone to zone and lacked common requirements for inclusion into the system model.
- All generating plants in PJM were modeled as if their output was being measured at the generator terminals (low side of generator step up transformer or GSU). However, many units have their output metered at the high side of the GSU. Such units were being charged twice for energy losses in the GSU – physically through their net meter reading and financially through a lower LMP at the generator terminals.
- Inclusion of system elements like GSUs for units metered on the high side results in distortions of the marginal loss component of LMP at all locations in PJM, without adding to dispatch efficiency

Initially the MLUG proposed a uniform ML calculation threshold of 100 kV, while simultaneously eliminating the inclusion of the generator step up transformers from the ML system model. This would correct the error as well as to allow all generators to self supply their losses across the GSU and minimize the impact of distribution losses in the transmission network model.

¹ MRC 4/24/2008 Agenda Item 6 page 4; 20080424-item-06-mlwg-update

6. The way that zones contribute to the loss revenue in PJM does not correspond to how the loss surplus is allocated.

•For example, the net loss revenue contribution from generation and load in a zone can be 19% while the surplus allocation to the same zone is 15%. Another zone may contribute 8% to the overall loss revenue while the surplus allocation is 13%.

The MLUG presented its initial findings to the MC on June 4, 2009. The MC directed the MIC to evaluate the MLUG's findings and to report back at the November 19, 2009 MC meeting. During this time, PJM staff proposed an improved plan to make the marginal loss and congestion models more consistent. The improved recommendation was accepted by the MLUG, and was presented to the MC at their November 2009 meeting. The MC directed the MIC to make a focused three month comparison of the results of implementation of the original and revised model change recommendations. PJM presented a set of Manual changes to implement the proposed changes to the MRC at their March 2010 meeting. The PJM proposal was put to a sector vote, but was not approved. The MLUG presented its final recommendations to the MC at their March 2010 meeting. The proposal failed a sector weighted vote at the MC.

The MLUG held a meeting on April 19, 2010 and unanimously voted to present the proposal to the PJM Board for implementation.

Reasons to adopt the MLUG recommendations

- Cure the inconsistency in calculation of the congestion and marginal loss components of LMP
- Eliminate zonal transmission modeling inconsistencies
- Assign appropriate LMPs to all generators going forward
- Better meet the objective of ML dispatch of balancing the competing goals of decreasing physical system energy losses and decreasing the delivered price of energy.

Comments on reasons offered against implementation of these model changes

Several PJM Members offered reasons why these modeling consistency improvements should either be delayed or ignored. The positions fell into two main categories – the impact of any change in the marginal loss refund on the cost of energy to load, and the financial impact of model changes on the financial value of forward positions.

Price to load – An indirect result of this correction will be to decrease the over-collection of dollars used to pay for system losses. While the surplus decreases, so does the LMP. It is the reduction of the surplus that causes some loads to pay slightly more. FERC ordered that the entire over-collection be allocated hourly to loads and certain system export transactions. Members receiving payments in the past would prefer not to give up such payments in the future. The MLUG position is that certain PJM load serving entities may have been receiving excess revenues due to the modeling issues inherent in the initial implementation of ML, and that this apparent inequity should be addressed.

Forward positions – PJM members who have executed forward contracts to supply energy or serve load likely considered the impact of marginal losses when they set prices for their bilateral deals. Some of these Members have suggested that the implementation of any change in the ML model be deferred until their forward commitments roll off. The MLUG wishes to point out that a certain percentage of market participants have forward positions at any given time (some for ten years or more) and that PJM would not be able to make any market fixes or improvements if PJM had to wait for the forward bilateral positions of all market participants to cease. The bilateral forward commitment argument has been made in relation to a number of past

enhancements to energy, FTR and other markets. It has always been rejected as a private business risk rather than a socialized market obligation.

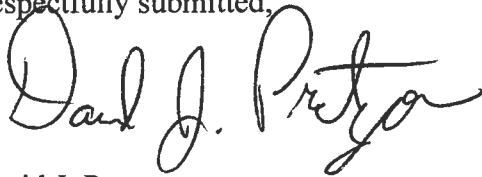
Other issues – One market participant has raised theoretical issues around the idea that the proposed move to more consistent LMP calculation for marginal losses and congestion will lead to less efficient dispatch. PJM staff has refuted these suggestions in two ways. First, they reinforced the concept that the goal of ML dispatch is to decrease transmission energy losses only to the extent that it is economical to do so. PJM also pointed out that any purported efficiency decrease was not significant and was outside PJM’s ability to control flows in the physical system that it manages to that level of granularity.

In short, the MLUG believes that the enhancements in the ML calculations are necessary to bring more consistency and accuracy to the marginal loss calculations across the PJM footprint, despite the vote of the stakeholders. This is why the MLUG is presenting our petition to the Board for action.

Next Steps

This letter briefly outlines the marginal loss modeling issue in question, and the action being requested of the Board by the MLUG. The Members of the MLUG stand ready to provide any additional supporting material and to answer any questions that Board members may have about our work or the resulting proposal. We look forward to hearing from you concerning the best way we can help you resolve this matter.

Respectfully submitted,

A handwritten signature in black ink that reads "David J. Pratzon". The signature is written in a cursive, flowing style.

David J. Pratzon
Exelon Power Team
Chairman, PJM MLUG