

Marginal Loss Modeling Proposal

Frequently Asked Questions

March 24, 2010

- 1) Why isn't congestion currently calculated on the same basis as losses?

Answer: PJM is required under its Tariff to perform congestion management only on a specifically identified subset of Tariff facilities. PJM "redispatches" for constraints on these facilities, and such redispatch forms the basis for the determination of the congestion component of LMPs at all buses in the PJM region. These facilities are identified with a PJM Monitored Facility Status of "Reliability & Markets" in the PJM OASIS posting of Transmission Facilities at the following link:

<http://www.pjm.com/markets-and-operations/transmission-service/transmission-facilities.aspx>

By contrast, all facilities in the PJM State Estimator model, including those facilities in the State Estimator that are not listed as PJM Tariff facilities, are currently included in the marginal loss calculations.

- 2) Is the current proposal to include only a subset of PJM Tariff facilities in the marginal loss calculations parallel to the treatment of facilities for the purposes of congestion?

Answer: Yes. When PJM implemented marginal losses on June 1, 2007, all facilities in the PJM State Estimator model were included in the calculation of the loss component of LMPs, and this practice continues today. The proposal that is being discussed in the stakeholder process is to limit the facilities included in the loss calculations similar to the way in which only a subset of PJM Tariff facilities are considered for congestion management. A loss component of LMP would still be calculated at every bus. However, only the impacts of those facilities identified as either "Reliability BES" or "Reliability and Markets" would be included in the calculation of LMP.

- 3) Is there a potential loss of dispatch efficiency associated with the proposed elimination of certain facilities from the marginal loss calculations?

Answer: The theoretical simulations PJM has conducted indicate that there will be a very small increase in the amount of generation dispatched under the proposal because system losses will not be minimized to the same extent they are today. However, the reality is that it is impossible to operate a system the

size of the PJM region within tolerances small enough such that the additional system losses calculated by the simulations would even be noticed. The simulations, which are able to calculate the “perfect” commitment and dispatch solution given static input data and perfect foresight, indicate that the losses on the system would increase by only a few MW per hour. This effect needs to be considered in the context of the PJM system where as much as 1,000 MW of generation or more can move in each direction as a result of the Regulation signal, Area Control Error (ACE) can move hundreds of MW in each direction with no adverse effect on control performance, etc. For these reasons, the very small efficiency loss calculated by the simulations is actually negligible from a practical perspective, and far outweighed by the hundreds of millions of dollars by which the marginal loss surplus will be reduced.

- 4) Are LMPs paid by load reduced as a result of the proposed change? Is it possible that some loads may pay more while some loads may pay less?

Answer: Whether load will pay more or less as a result of the proposal is highly dependent on the location of the load. LMPs will increase for some load and decrease for others, and more losses will be paid for physically and less financially as a result of the proposal. In conjunction with the LMP changes, the surplus marginal loss revenue that is allocated to load and exports will decrease as a result of the proposal.

- 5) From the analysis, does the surplus reduction translate directly to increased revenue to generators?

Answer: No. As a result of the proposal, LMPs will increase in some areas of the system and decrease in others. The net result will be a decrease in the marginal loss surplus.

- 6) Will LMP differentials across the system become more hedgeable as a result of the proposed change?

Answer: The proposal will result in a decrease in the differences between loss LMPs at different locations on the system. As a result, marginal loss charges, against which market participants cannot directly hedge themselves, will decrease. Because marginal losses will then not impact the dispatch by as great a degree as they do today, price differentials due to the congestion component of the LMP are likely to increase slightly. Market participants can directly hedge against LMP differentials due to the congestion component of the LMP via FTRs.