

April 27, 2018

IESO Market Renewal

Market Renewal Program: Enhanced Real-time Unit Commitment (ERCU), March 29 meeting

MAG Energy Solutions would like to take the opportunity to comment on the IESO presentation on March 29 regarding the ERUC, mostly on design element 5: intertie transactions. MAG respectfully considers that option 3 may introduce price signal imprecision and may weaken the benefits of intertie flows if implemented as presented.

1- Day-Ahead (DAM) schedules and Real-Time (RT) prices

MAG considers that intertie flow will follow market prices and market signals in the real time market more than DA schedules. Sometimes the DA flow direction will be incorrect, with the flow going from the higher priced market to the lower price market. In this case it may happen that real time flow will go in the opposite direction. Also, even with the DA flow correctly scheduled, if the ISO that exported the MW in the DA market has higher RT prices, the direction of the flow may change. RT flow should follow RT prices between different ISO, and not only DAM schedules. If the evaluation of intertie schedules prior to mandatory window only goes up to DAM schedules, the IESO may introduce inefficiency because there will be major differences between forecasted schedules and actual schedules at T+1 and T+2. This could lead to having the wrong generator being dispatched increasing costs. Interties flow increases flexibility and can help reliability for markets provided they are evaluated in a timely manner.

2- IESO DAM and other ISO DAM

With this proposal the IESO would only evaluate intertie flows up to DAM schedules based on DAM results from the IESO while results from other ISOs DAM markets are not being considered in the odds of a schedule being implemented. For example, for HE 1 a market participant has a flow ONT-MISO at the DAM market of IESO and at the RT market of MISO. Then in HE 2 the same market participant has flow ONT-MISO in the RT market of IESO and the DAM market of MISO. From an outside point of view, it seems both these transactions have a similar certainty of flowing. However, transaction at HE 1 will be evaluated prior to the mandatory window in the IESO, while transaction in HE 2 will not be evaluated prior to the mandatory window. Resources for transaction at HE 1 could be committed in advance and be more cost efficient than resources for transaction at HE 2.

3- IESO could send wrong price signal not evaluating intertie schedules beyond DAM in forecasted price

If the IESO moves forward with this proposition as is, there could be differences between forecasted prices before the mandatory window and after the mandatory window at T+1 and T+2. Those differences will affect the whole market. For example, let's pretend there is a generation unit in the IESO that goes in an unplanned outage at 8:00 and there was no DAM import for that day. The pre-dispatch prices go to 80 \$ for HE 10-24. Other ISOs have 25 \$ RT prices, import flows are scheduled in the IESO. Let's pretend import offers will lower the final PD price at 30 \$ from the original 80 \$. However, as import would only be scheduled at T+1 and T+2, this change of price would only occur very late in the

process and only be seen after the mandatory window. From our understanding, market participants would see 80 \$ prices for the whole day even if import bids are sent in advance which could trigger units being committed for multiple hours that will no longer be needed after the imports are scheduled.

The same could happen with the opposite scenario, where an outage comes back online faster than expected in the IESO. Let's pretend there are no DAM export bids accepted, but because of RT conditions IESO prices are lower than neighboring jurisdictions. Then there would be low PD prices before mandatory window that would jump up after exports are scheduled at T+1 and T+2. Real time exports will come as a surprise at every hour which could lead to the wrong generators being scheduled, focusing on short term and maybe more expensive generation instead of long term generation.

MAG Proposal

The IESO mentions that there could be costs related to export bids that are reduced or withdrawn prior to RT. In order to mitigate that cost the IESO may need to forecast precisely the intertie flows prior to mandatory window. Also with the introduction of congestion it could be appropriate to try to forecast flows for interties. MAG submits the idea that the IESO considers using the maximum realized flow over the last 5 market hours as the maximum flow used for intertie evaluation in the look ahead period. The IESO could evaluate intertie bids up to the maximum of the past 5 hours of realized flow instead of up to the DAM schedules. This would align intertie schedules prior to mandatory window more closely with reality. For example, if the ONT-MICHIGAN maximum net export flows in the past 5 hours is 700 MW, then for the remainder of the look ahead period the IESO could evaluate export bids up to 700 MW instead of evaluating up to DAM schedules, which can be no longer relevant at this point. This would allow the use of RT information to forecast RT flows instead of using DAM information that can be outdated. The IESO could do a review of the best data to use based on analysis of the past. Average flow could be used instead of maximum flow; the 5 hours look back period could be longer or shorter. Also this could be done by intertie which would help predict correct flow impact on the market.

Thank you for the opportunity to discuss this matter with the IESO.

Regards,

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