December 19 2017

IESO Stakeholder Engagement, Market Renewal

**RE: Design Element 5, Intertie congestion pricing**

MAG Energy Solutions would like to take the opportunity to comment on the IESO proposal to modify intertie congestion pricing. MAG agrees that the market renewal initiative is providing the global vision needed to review the market structure and would like to share some of their thoughts on Intertie Congestion Pricing. To simplify the following examples, suppose there are no transaction fees, the US$ = CAN$ and the transmission line capacity is 1000 MW. Also, from our understanding, the ERUC is similar to the PD and both concepts are interchangeable. Furthermore, when using the term market participant (MP), assume it only includes exporters and import suppliers.

MAG Energy is in favor of method 1 to calculate intertie pricing in the SSM. Under method 2 a fully scheduled line on export would have a minimum price and a fully scheduled line on import would have a maximum price. We don't see this as being an efficient way to deal with intertie transactions because:

1. **Inefficient market signals for exporters/import suppliers**

MAG Energy thinks that method 2 will send wrong price signals in the IESO and there will be discrimination between two supply options. For example, suppose an hour where the PD are forecasted at 20 $ across the market and there is no internal constraint or congestion. Thus, the RT price will be the same across all IESO. Import suppliers analyzed that the IESO will have higher market RT prices and scheduled transactions from NY to IESO. They forecast NY at 30 $ and the IESO at 300 $. In order to be scheduled, they need to bid lower than the forecasted PD price.

Scenario A from IESO's document: Import suppliers schedule 500 MW in total. The final PD price is 20 $ in the IESO with no congestion. The final RT prices are 30 $ in the NYISO and 300 $ in the IESO. Import suppliers are paid accordingly and are awarded revenue based on the price of the zone close to the transmission line. The imports are correctly valued by the market and are treated in a coherent manner.

Scenario B from IESO's document: Import suppliers schedule 1000 MW, meaning that the line is full. The final intertie PD price is at 15 $, lower than the market PD at that point. The final RT prices are 30 $ in the NYISO and 300 $ in the IESO. Following the method 1, the import suppliers are paid 295 $. The price close to the line is 300 $ and this price is used to settle transactions internally. However, under method 2, the import suppliers are only paid 15 $. This means that even though market participants did correctly forecast an arbitrage opportunity and that they anticipated high prices in the IESO; they are not paid for it. In that situation, if only 999 MW were scheduled, the import suppliers would have received a full payment. However, with only one more MW scheduled, that payment will diminish greatly and no longer be coherent with the value of the imported energy. This is discrimination for import suppliers and it does not follow the principle of fair competition. It also does not make sense that one MW can change so much to the settlement of 999 MW. Importer suppliers and exporters bring value to the market with external analysis which improves market efficiency if done correctly.

Also if IESO decides to go with method 2, we would like to ask what will happen with the over collected payment from the load? If the final RT price is 300 $ with no congestion across the IESO, the 1000 MW imported in the IESO is valued at 300 $ and that amount will be paid to the IESO by the load. Since the import suppliers only receive 15 $, there will be a discrepancy in the market. How would method 2 align revenues and payments? Method 1 would be more logic by paying the import suppliers 295 $ per MW.

2. **<u>There is a fundamental difference between a zone that is congested and a transmission line that is congested.</u>**

In zonal or nodal markets, there is a difference between internal congestion and intertie congestion. Those ideas cannot be seen as a single concept. There is no gain to use the same logic for zonal congestion and intertie congestion, or to price interties transaction the same way as a congested zone. With a zonal or nodal market, price at the interface will vary with internal congestion. For example, we can take a transaction from ONT to NY and see how method 1 and 2 would be affected by internal congestion. NYISO is using a method similar to method 1. We mention NYISO market here to show an example of what would happen with the implementation of method 2 in a zonal market. Suppose NYISO forecasts both zonal price close to the line and intertie price at 30 $. However, the line is fully scheduled in import with the final intertie MW accepted with an offer at 25 $, creating 5 $ of congestion at the external line. In RT, there is a constraint internal to the NYISO market that creates local congestion, pushing local prices upward. RT prices close to the intertie are at 100 $.

<u>Scenario B from IESO's document:</u>

Using method 1 there is 5 $ of congestion at the intertie. The congestion would be applied to the price at the intertie, resulting in a payment of 95 $ to the MP. That payment would be consistent with the value of the energy injected in the market and would be as similar as possible to the price used for settlement in the zonal market close to the transmission line.

Using method 2 there is 5 $ of congestion at the external intertie. However, since the final forecasted price at the intertie was 25 $, the market participant would be paid 25 $. That payment would be inconsistent with the value of the energy injected in the market at that point and be unfair to import suppliers. The real value of the energy did go up to 100 $ after the time of scheduling because of the local constraint. However import suppliers are not paid the same price that is used for settlement near that intertie. Over time, this will harm market efficiency by preventing transmission line from being fully scheduled when needed.

3. **<u>Import suppliers and exporters can improve market efficiency by doing their own analysis. IESO market forecast should not determine RT payments.</u>**

If HOEP in the IESO was exactly the same than the forecasted PD price, then method 1 and 2 would be equivalent. However, even if the system is forecasting well, it happens that forecasted PD prices do not equal final prices. This is true for current uniform price markets like the IESO, and it gets more complicated with zonal or nodal markets when congestion and losses are accounted for at the intertie. NYISO and CAISO are also using forecasted prices to evaluate schedules and have imprecise evaluations at times. In those cases, if a market participant did correctly predict final prices vs forecasted prices, he should be rewarded because he helped to improve market efficiency.

For example, suppose there is no congestion or constraint in the IESO and a final market wide PD at 20 \$. Exporters are looking to do a transaction and predict to sell in the NYISO at 18 \$. Exporters forecast but may be wrong that the IESO will have a final price at 10 \$ and that NYISO will have a final price at 18 \$. There are two scenarios:

<u>Scenario A from IESO's document</u>: Exporters bid at 22 \$ in the IESO and the line is partially scheduled with a total of 500 MW. The final RT prices are 10 \$ in IESO and 18 \$ in NYISO, meaning a gain for market efficiency and for exporters.

<u>Scenario E from IESO's document:</u> Exporters bid at 22 \$ in the IESO and the line is fully scheduled at 1000 MW. Here is the resolution with each method:

a) Under method 1, which is the current situation, exporters correctly predict that the final RT price close to the intertie will be 10 \$. They pay a 2 \$ export congestion. They make a profit by selling at 18 \$. The decision to flow will help to increase market efficiency and the exporters will be rewarded.

b) Under method 2, exporters correctly predict that the final interface price will be at 10 \$. However, since the line is full, every exporter will pay the maximum between the interface PD and the RT price. Therefore, they will buy at 22 \$ in IESO, sell at 18 \$ in NYISO and incur a loss for scheduling a transaction that did bring efficiency to the markets. In order to schedule the transaction, they had to bid over the forecasted PD price at the interface. Exporters should not be penalized for correctly predicting the prices in the IESO. It is worth mentioning that the situation would be completely different if the line had 999 MW scheduled instead of 1000 MW; the settlement would be the same as scenario A. This means that method 2 creates the incentive to not fully schedule a transmission line even if this is what the price signals as analyzed by the market participant would suggest to do. The incentive to not fully schedule is also present in method 1, but the penalty is much less severe and will, in most cases, still leave revenues for the exporters who made the correct forecast.

In summary, method 2 would reduce the incentive for a market participant to schedule transactions if the exporters forecast that the RT IESO price will be lower than the forecasted interface price. It would diminish market efficiency and would reduce the positive effect of interchange scheduling.

4. **<u>Exporters/Import suppliers are not loads/generators and should not be treated the same. They do not know their final cost/revenues before bids and are taking risks.</u>**

An exporter/import supplier is not operating under the same constraints as a load/generator inside of the market and should be considered differently. Market rules should not try to apply the same logic to those market participants. The exporters/import suppliers are scheduling transactions between markets. They do not know exactly in advance what the cost or revenues from the transactions will be. They cannot bid the marginal cost in import or bid the marginal revenue in export since they don't precisely know it yet. Taking into account all the information available before a given hour, exporters/import suppliers make a forecast for both markets and then schedule a transaction if there is an arbitrage opportunity with a positive forecasted spread. There may be situations when they have to make a bid higher than the selling price in the other market in order for the transaction to be scheduled. The bids and offers are based on arbitrage opportunity logic rather than cost logic. If the selling price is higher than the buying price, the transaction brings efficiency to the markets. The cost/revenue of a single market is only part of the information analyzed before scheduling the transaction.

Since the cost/revenues to buy/sell the energy is not known at the time of the scheduling, the exporter/import suppliers will send bids and offers in both markets in order to schedule the transaction. In major North American markets using forecasted prices to determine schedules, there is a fixed congestion at the intertie that is based on the forecasted prices at the time of the market results. Currently IESO, NYISO and CAISO require market participants to send bids/offers to schedule transactions. In all other markets, the bids/offers can be seen as price taker in the sense that you only need to submit a valid TAG. The markets PJM, MISO, SPP and ERCOT all consider a valid TAG as a price taker import or export with no need to bid the cost or the revenue of the transaction. This highlights the fact that exporters/import suppliers are different from loads/generators.

Furthermore, another difference between a load/generator and an exporter/import supplier is that the latter is taking risks with all transactions. They could face unexpected high prices in export or unexpected low prices in import. It would be unfair and greatly reduce efficiency in the markets if for an export transaction on a line fully scheduled, exporters would pay a higher price than what was forecasted by the IESO, but would not receive a payment if the price was lower than expected.

5. **The IESO would be the only ISO to not reward a correct schedule that differs from the market forecast. This system is not viable if the concept is extended.**

MAG Energy thinks the proposed method 2 would not bring efficiency by looking at what would happen if two adjacent markets adopt that method. This is done only for the purpose of exploring the limits of method 2 as NYISO is not planning to change its market concept. Suppose NYISO and the IESO both adopt that proposition. For example, IESO final PD is at 30 $ and NYISO final Hour-Ahead Market (HAM) is at 20 $. Assume the line is fully scheduled from NYISO to IESO and there is no internal congestion in either market. The first example shows why market participants cannot bid expected costs/revenues.

1. MP bid at the forecasted cost/revenue in each market. MP bid at 30 $ in NYISO, corresponding to the IESO PD. MP bid at 20 $ in the IESO, corresponding to the NYISO forecast. There will be 10 $ of congestion in NYISO that will bring the price up and 10 $ of congestion in the IESO that will bring the price down. This is a transaction that will improve market efficiency. In RT, NY and IESO follow their forecast. The settlement will be that MP are charged 30 $ by the NYISO and are paid 20 $ by the IESO. MP will lose 10 $ per MW for bringing market efficiency. Using method 2, this is their best case scenario. If the line is fully scheduled and MP bid their cost in both markets, the only outcome is a loss. This would be the same with method 1 except that if RT prices had gone differently, market participants could have generated a profit from the transaction.

For the next examples, suppose the market participants bid at 25 $ in both NYISO and the IESO and the settlement is done according to the method 2:

2. RT internal prices are 25 $ in both markets. MP are charged 25 $ by the NYISO and are paid 25 $ by the IESO. They gain nothing but lose nothing.
3. RT internal prices are NYISO at 15 $ and the IESO at 35 $. The transaction brings efficiency to the market with the prices being higher in the IESO and lower in the NYISO. However, MP are charged 25 $ by the NYISO and are paid 25 $ by the IESO. They gain nothing but lose nothing. They are not rewarded for bringing market efficiency.
4. RT internal prices are NYISO at 100 $ and the IESO at 50 $. The transaction did not bring efficiency to the market, with NYISO having a higher price than IESO. MP will lose money because of a bad decision. MP are charged 100 $ by the NYISO and are paid 25 $ by the IESO. They already lose from the transaction but the losses are aggravated by the method 2.
5. RT internal prices are NYISO at 100 $ and the IESO at 150 $. The transaction does bring efficiency to the market, with IESO having a higher price than NYISO. However, MP will lose money because of market design, even if the transaction contributed to market efficiency. MP are charged 100 $ by the NYISO and are paid 25 $ by the IESO. They would gain a profit from the transaction using method 1 but lose a lot using method 2. The latter treats this situation the same as example 4, however it is very different in reality.

From example 1, we can see that sending bids/offers based on cost/revenues in two markets using intertie congestion pricing based on method 1 or 2 is not a viable option for exporters and import suppliers. In both methods it will create intertie congestion in each market that will make the transaction uneconomic for the MP. In method 2, it can only lead to a losing transaction if the line is full. Using cots/revenues for bids would hinder market competition. From examples 2-5, we can see that if method 2 is used in adjacent markets when the line is full, a market participant doing a NY-ONT transaction can only pay more if NYISO prices are higher than forecasted and collect less revenue if IESO prices are lower than the forecast. This sends the incentive to stop scheduling transactions and to not respond to price signals between two markets. If this logic is true for adjacent markets using the method 2, it is also true for a single market using method 2. This method would not price correctly congestion at the intertie and would not bring value to the market. This method would bring harm to MP and lessen the purpose of intertie scheduling.

**Conclusion**

MAG Energy would strongly recommend moving forward with method 1. We feel that method 1 will lead to intertie import/export that will be in line with locational value even if bid/offers may be different, as it is currently in other markets. Costs and revenues are not known at the time of bidding by import suppliers and exporters. This is consistent with what is done across other markets in North America, where, in some markets, bids/offers can be seen as price taker or where bids/offers are compared with forecasted prices but will not distort MP payment or cost. The congestion at interties should be priced the same as the zonal price near the transmission lines plus/minus static congestion. Method 2 would kill the incentive to have a good price forecast and fully schedule the line. Over time, this could lessen competition and drive MP out of the market. What the IESO is proposing will differ from what other markets are doing and will reduce incentives for market participants to correctly schedule transactions. This is a new concept that is not used by any North American market. It is worth mentioning that the IESO would be the only market to penalize exporters/import suppliers who correctly schedule a transaction that brings efficiency to the market on a fully scheduled line. We have to keep in mind that a market participant who brings a better evaluation to the table adds value to the market.

We welcome the opportunity to discuss this matter with you. MAG Energy Solutions would appreciate that the IESO keep stakeholders well informed of the next steps and possibilities for more inputs.

Regards,

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