

July 7, 2009

TO : IESO - Economic Dispatch of Linked Wheels participants

**RE: Economic Dispatch of Linked Wheels**

**BEMI agrees that finding a better solution to the linked wheel process that reduces the congestion risk of linked wheels and makes the IESO transmission system more open and available for market participants is needed as long as there is no advantage for linked wheels over imports/exports.**

The IESO is the only stakeholder attending the meeting with the requirement of funding the project. The IESO's need to quantify the "net benefit" to the market rather than determining that this process is legitimately needed has led to some basic analysis, but the analysis cannot be completed accurately without all bid/offer data made available (which is unavailable to market participants).

The current analysis had the following issues (which are to the concern of the IESO to move forward):

- The analysis doesn't take into account the double counting of DAM and Real Time opportunities (if more participants take advantage of the DAM spread, then there would be less spread and opportunities in RT)
- The analysis doesn't take into account transmission availability (the minimum available on any path throughout the wheel is the maximum that can be scheduled; therefore, if any line is at zero along a path, the opportunity is zero)
- The future opportunities may not be represented well due to the big change in market rules (no wheeling through IESO from NY to PJM)
- The analysis isn't a "net benefit" analysis; it's an incremental revenue analysis from the point of view of linked wheel volume and has no consideration of reduced revenues from other sources (especially the net benefit to load/generators if linked wheels lead to less economic internal dispatches)

**BEMI's issues with the proposed market rule changes are:**

**BEMI believes the market is best served by finding a solution that does not treat linked wheels different from imports/exports (to keep consistent treatment).**

**1) For the current solution to be fair, imports/exports should also be allowed to bid/offer congestion if they choose; instead of only price relative to pre-dispatch.**

Currently inter-tie schedules are evaluated relative to pre-dispatch price, not congestion price. Since imports/exports have all the advantages of linked wheels (plus the added benefit of supply/demand balancing) we feel imports/exports should be able to bid/offer in the same manner as linked wheels. Imports/exports cannot just bid on congestion, they must bid/offer based on a fixed price. If the pre-dispatch price is not a good estimate of real time price then linked wheels will be able to be accepted



regardless of how high/low the pre-dispatch price settles and imports/exports are unable to (imports/exports cannot just bid/offer based on congestion).

For example: a wheeler may put together a NYISO to MISO spread of \$10. Linked wheels could then put into the IESO a congestion bid/offer for the wheel of \$10 and cut the transaction when the net congestion spread is greater (there is more than \$10 of congestion), regardless how high/low the pre-dispatch price is. An importer/exporter cannot do this; imports/exports may have an IESO to NYISO spread, but they cannot bid/offer the congestion at an external node independently (imports/exports may want to cut their transaction if the external congestion is also greater than \$10; so an exporter may bid \$80 when the pre-dispatch shows \$70, but if the pre-dispatch goes to \$81 with no congestion then a linked wheel with a \$10 bid/offer would be scheduled and the export would not be). An importer/exporter must have a fixed bid price and is subject to that regardless how much of the price represents congestion and how much is pre-dispatch energy. An importer/exporter may have a \$10 spread, but they cannot protect themselves with a congestion bid at an external interface.

**2) For the current solution to be fair, if linked wheels are able to set price on external inter-ties then they should be subject to failure charges to incent them to flow on their obligation (as with imports/exports).**

Currently linked wheels are set up as “must run” contracts and imports/exports set the marginal price at external interfaces. Imports/exports are incented to flow on their contracts through the use of failure charges (they do have the option not to flow, but they will be charged for the “net harm” they cause by not fulfilling their obligations). If linked wheels are allowed to set external node pricing they will be affecting imports/exports and the marginal price. Linked wheels should not be allowed to set (or impact) that price if they are not subject to the same incentives to fulfill their contract obligations. Linked wheels may artificially create additional congestion or reduce congestion with contracts that are either unlikely to flow or unable to flow and they would have no consequences for their impact to the market (as imports/exports do). This flaw in this market proposal leaves a great opportunity to “game” the market as linked wheelers may take advantage of this “no-consequence” scenario while impacting market pricing, creating value through distorting pricing with illegitimate contracts.

For example: if an exporter fails to flow his contract and the pre-dispatch is \$70 and the real time price is \$60; then he would have to pay  $(\$70 - \$60 = \$10 - \text{adjustment factor}) \times \text{the number of megawatts accepted}$ . This failure charge incentes exporters to flow out so that the real time price isn't suppressed artificially (or the pre-dispatch price artificially raised) relative to the pre-dispatch price (contracts that set the marginal price have to be incented, but not obligated, to fulfill their contract obligations as they will effect other contracts through participating in setting the marginal price). As well, if an importer fails to flow his contract and the pre-dispatch is \$70 and the real time price is \$80 then he would have to pay  $(\$80 - \$70 = \$10 - \text{adjustment factor}) \times \text{the number of megawatts accepted}$ . This failure charge incentes importers to flow in so that the real time price isn't artificially raised (or the pre-dispatch price artificially lowered) relative to the pre-dispatch price.

Gaming example: if a participant owned FTR's from: (IESO to MISO) and (NYIS to IESO); then they could schedule a large amount of wheel from NYISO to MISO. They could congest the NYISO to IESO line and the IESO to MISO line in the direction so they collect on their FTR's on each FTR node path. They could leave their bid in NYISO at (-\$999.7) and have the transaction set the congestion on both inter-ties and have their transaction evaluated as uneconomic in NYISO and have nothing flow. This would create and set the congestion for FTR holders to collect on, but without a flow no participant would *be paying for* the congestion created. This strategy could also be used to “guarantee” that no congestion is paid for contracts flowing in the opposite direction if not used in this

manner. Artificial wheels could be created to produce the desired market output a participant wants as the transactions setting the marginal price would not be liable for failure charges (if a transaction is used to calculate the marginal price, it should have some incentive to fulfill it's obligations; otherwise, it's easy to create a desired market output).

### **3) FTR Market Issues**

Linked wheels are conditional schedules; therefore, they are less likely to flow relative to imports/exports due to the fact that they have more conditions that must be met (all simultaneously) for the schedule to flow. Without failure charges linked wheels will have no incentive to fulfill their obligations and flow so that the congestion created is paid for or the congestion relief offered doesn't skew down the value/payments to FTR holders (artificial transactions or "gaming" transactions could be created to skew; up or down depending on the market participants positions, the congestion and the transaction will fail and have no payment or consequence). This means there will be more distortion of congestion due to linked wheels that are scheduled, contribute to congestion (positive or negative), and do not flow. This will further under-fund the FTR market; as well as, creating opportunities to "game" the market.

### **4) Other Issues**

The analysis doesn't show that the additional linked wheel volume will result in more economic dispatches as we are unsure how good pre-dispatch shadow prices reflect actual real time prices. If they are not a good indicator of internal real time congestion then the additional linked wheel volume could result in less economic dispatches; as well as, additional costs to the IESO through CMSC's from uneconomic dispatches.

The algorithm should still evaluate the congestion bid/offer with a maximum and minimum of +/- \$2000 so that linked wheels will be evaluated with the same price max/min cap that imports/exports would be subject to (so their bids/offers are not evaluated as more economic when their bid/offer +/- dispatch price exceed +/- \$2000).

### **BEMI's Market Rule Suggestions/Changes:**

Using the current market rule design proposal, BEMI would make these additional changes:

- 1) Imports & exports should be able to choose to bid either a fixed price (energy price + congestion) or just an independent congestion bid so they have the same opportunities as linked wheels
- 2) linked wheels should be subject to failure charges as they affect the marginal price and the scheduling of other contracts (imports/exports pay the "net harm" they create if the real time price goes against the intended impact of their schedule, so it makes sense that wheels should pay the "net harm" if the real time congestion (shadow price congestion) is higher than their bid/offer when they are flowing against congestion (or opportunistically) and they should pay the "net harm" when the real time congestion (shadow price congestion) is lower than their bid/offer when they are flowing with congestion (setting or adding to congestion)).

With these 2 changes added to the design proposal, the FTR under-funding issue will be minimized or eliminated (as the opportunity for “gaming” will be minimized through the use of failure charges). There will be no advantage to linked wheels over imports/exports as imports/exports will also be given the ability to bid congestion (or they may still bid/offer based on a fixed price if they wish). The evaluation of congestion bids would still have to have a maximum/minimum of +/- \$2000, so the evaluation of congestion bids will have to be set to a maximum of = (\$2000 – congestion bid) & a minimum of = (\$-2000 + congestion bid) so that there is no additional priority for congestion contracts than contracts bid/offered at with a fixed price, eg. +/- \$2000 (as if the pre-dispatch is set at \$2000 with no congestion, a congestion bid/offer of \$10 would set that contracts priority higher and would have the ability to bid/offer above/below the max/min market price).

Sincerely,

Darryl Kaiman

Brookfield Renewable Power