



Proposed Amendment to “Linked” Wheel-Through Transactions

Presentation to Interjurisdictional Trading Standing Committee

Aquilon Power Corp.
280 King Street East, 4th Floor
Toronto, ON M5A 1K7

AGENDA

1. IESO Definition of Linked Wheel Through Transactions
2. Problems with Linked Wheel Through Transactions for the Market Participant and IESO Dispatchers
3. Implied Wheels Do Not Offer Solution
4. Solutions/Compromises

1. IESO Definition of Linked Wheel Through Transaction

1. Offer in Import transaction at \$-2000
2. Bid out Export Transaction at \$2000
3. The linked wheel has a common amount of MW between the two transactions.
4. The linked wheel has a “common” NERC tag, such that if one leg of the wheel fails, the other fails.
5. There is no Intertie Offer Guarantee (IOG) for Linked Wheel Throughs.

2. Problems with Linked Wheel Through Transactions

- **Market Inefficiencies**

- Linked Wheels take priority over all other imports and exports
- Linked Wheels take up ATC unnecessarily
- Unreasonable risk to Market Participant (i.e. up to \$4000/MWh of congestion risk)
- Market Participants are prevented from managing market risk

- **Reliability Problems**

- Linked Wheels displace Imports which would be problematic on a high demand day.
- Stressing system limits (i.e. loading lines unnecessarily). The IESO should be motivated to use ties at less than their maximum capacity.
- “Congestion” bidding in the opposite direction should be made available to help relieve congestion

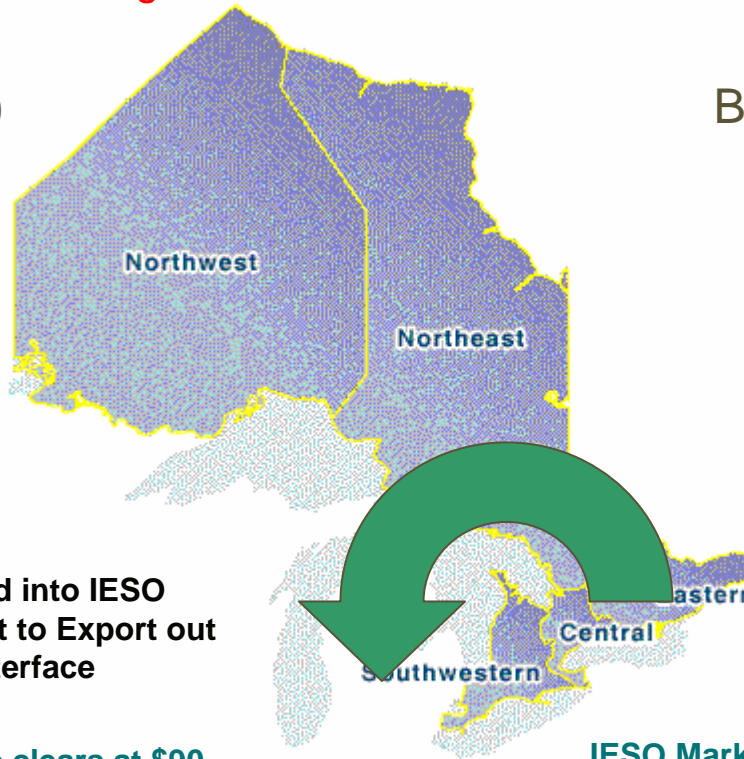
3. Implied Wheels Do Not Offer Solution - EXAMPLE

- Using Implied Wheels to manage Congestion Risk is Imperfect

- willing to pay \$50 of congestion

Sold DA MISO at \$100

Bought DA NYIS at \$50



Submit \$100 Bid into IESO
Predispatch Market to Export out
at MISO Interface

Submit \$50 Offer into IESO
Predispatch Market to Import at
NYISO Interface

IESO Market at MISO Interface clears at \$90
– BID ACCEPTED

IESO Market at NYISO Interface clears at \$45
– OFFER IS UNECONOMIC

Market Participant willing to pay \$50 for congestion but is uneconomic even though Predispatch Market Congestion = \$45

Market Participant is left long in NYISO and exposed to floating price risk

3. Implied Wheels Do Not Offer Solution - EXAMPLE

- **Using Implied Wheels to manage Congestion Risk is Imperfect**

- willing to pay \$50 of congestion

Estimate that MISO RT will be \$50 above NYISO RT (i.e. \$100 vs. \$50)

Uncertain as to where IESO Price will be???

Therefore, trade is to buy in NYISO and Sell in MISO and willing to pay \$50 for congestion



Submit \$100 Bid into IESO
Predispatch Market to Export out
at MISO Interface

IESO Market at MISO Interface clears at \$90
– BID ACCEPTED

MISO RT clears at \$80

Submit \$50 Offer into IESO
Predispatch Market to Import at
NYISO Interface

IESO Market at NYISO Interface clears at \$45
– OFFER IS UNECONOMIC

NYISO RT clears at \$30

Therefore Market Participant is buying at \$90 in IESO and selling in MISO at \$80 when they should have been buying in NYISO at \$30 and selling in MISO at \$80 and paying \$45 for a wheel through

3. Implied Wheels Do Not Offer Solution - EXAMPLE

- Using Implied Wheels to alleviate Congestion is Imperfect

- willing to wheel if paid \$20

Estimate that MISO RT will be equal to or slightly higher than NYISO RT

(i.e. MISO = \$75 and NYISO = \$65)

Therefore, place offer to wheel through Ontario from MISO Interface to NYISO Interface and be paid \$20



Submit \$75 Offer into IESO
Predispatch Market to Import
Into IESO at MISO Interface

Submit \$55 Bid into IESO
Predispatch Market to Export at
NYISO Interface

IESO Market at MISO Interface clears at \$85
– OFFER ACCEPTED

IESO Market at NYISO Interface clears at \$65
– BID IS UNECONOMIC

MISO RT clears at \$80

NYISO RT clears at \$75

Therefore Market Participant is buying at \$90 in MISO and selling in IESO at \$85 when they should have been buying in MISO at \$80 and selling in NYISO at \$75 and receiving \$20 for the wheel through

4. Possible Solutions/Compromises to Linked Wheel Through Transactions

1. Bid Wheel Through transactions economically as is done in NYISO

- Requires new Interface Resource IDs
- Example: 100MW Wheel-through from MISO to NYISO

W_MISI-NYISO (-50,100) } Market Participant willing to pay \$50 of congestion

2. Bid Wheel Through as a “Differential Congestion Bid” with minimum threshold

- Example

Offer in Import: WI_MI.LUDINGTON.SOURCE (0,100)
Bid out Export: WX_NY.ROSETON.SINK (45,100) } **Market Participant willing to pay \$45 in congestion**

3. Offer Import leg into IESO at “\$0/Mwh” and Bid Export leg out of IESO at “\$200/MWh”

- Use existing process but reduce the mandatory bid/offer pair from \$2000/- \$2000 to -\$50/\$250