

# Draft Recommendation: Inter-market Trading of Operating Reserve

MPWG Meeting, June 05, 2008



- 1. Stakeholder comments and IESO Response.**
- 2. Recommending whether and how expanded Inter-market commercial trading of operating reserve should/could be pursued.**

# Stakeholder (OPG) Comments and IESO Response

- 1) **OPG's Comment:** The IESO should continue to pursue export of operating reserve as it is consistent with the existing objective of maximizing gain from trade.

**IESO Response:** IESO recommending pursuing export of operating reserve.

- 2) **OPG's Comment:** IESO should determine whether the new MISO Ancillary Service market which will allow OR to be supplied to Ontario, would also accept OR from Ontario. If the MISO market won't or can't accept OR, then the IESO should reconsider whether it is fair to accept the import of OR from MISO as this may be nonreciprocal access. In general the principle of reciprocal handling of OR should apply to all intertie zones.

**IESO Response:** This suggestion will be taken into consideration in future pursuits.

3) OPG's Comment: Although the export of OR is of interest to OPG, we suggest that it is less important than the current issue of scheduling recallable exports in final pre-dispatch to NYISO.

IESO Response: IESO will consider the stakeholder inputs to determine the priority and importance of pursuing expanded inter-market OR Trade. Scheduling of recallable exports to NY is being examined under Issue 013-CAOR.

## The qualitative analysis of

- Findings of the survey of major North American electricity markets and energy regulatory bodies, as far as inter-market operating reserve trade is concerned.
- Potential market efficiency and reliability impacts *if* expanded commercial inter-jurisdictional operating reserve (OR) trade be incorporated into the IESO administered market.

**IESO should pursue expanded inter-market commercial trade of operating reserve.**

**Rationale:**

**Potential efficiency improvements as the following high level economic efficiency impacts of expanded OR trade demonstrates.**

**Requirement for commercial inter-market OR trade is price differences in OR markets of neighboring jurisdictions.**

**A cursory comparison of OR market prices in Ontario and New York markets reveals that there are price differences in hours of day that may give trading opportunities in the following two scenarios.**

## Scenario 1

**Ontario has lower priced OR relative to New York.**

- Lower priced operating reserve can be exported from Ontario to New York.

## Scenario 2

**New York has lower priced OR relative to Ontario.**

- Lower priced operating reserve can be exported from New York to Ontario.

- 1) Improved use and allocation of regional resources reduce the regional average production cost of electricity.**
- 2) Increase in incentives for generation investment.**
- 3) Improvements in generation efficiency benefits wider environment.**
- 4) Opportunities for new usages of energy will foster economic growth.**
- 5) Trade promotes competition and allows price convergence among the trading markets.**

**As OR and energy products are associated via joint optimization, the energy price is likely to reflect impacts of inter-jurisdictional OR trade.**

- 6) Economic gain from operating reserve trade =  
(Value to consumers of the electricity) – (The cost of  
producing that electricity)
- 7) Increased OR trade may decrease Shared Activation of  
Reserve (SAR) or even make SAR unnecessary,  
promoting reliability standards via market based  
mechanisms.

**It is expected that commercial operating reserve trade  
would maintain reliability of the Ontario's electricity  
system at a decreased cost.**

**ISOs in North-East regions determine the quantity of scheduled OR in accordance with reliability standards established by the North American Electricity Reliability Corporation (NERC) and Northeast Power Co-ordinating Council (NPCC).**

- NPCC's OR requirement is 1 ½ times the largest contingency.**
- Only non-synchronized operating reserve could be traded between markets.**

## **IESO**

**IESO's typical total hourly operating reserve requirement is 1418MW, 25% of which must be spinning, i.e. 1063 MW can be from 10 minute non-spinning and 30-minute reserve.**

## **NYISO**

- NYISO - hourly 30 min Operating reserve requirement is 600 MW**
- NYISO - hourly 10 min Non-Synchronized requirement is 600 MW**

## **Potential OR Trade Volume Between (IESO-NYISO)**

- Potential hourly OR trading market size between Ontario-New York is approximately 2000MW.**
- Including other markets (eg. MISO, PJM, ISO-NE) will increase the volume of inter-jurisdictional OR trade market.**

**IESO should request the ISO/RTO Council (IRC) Markets Committee to examine expanding inter-market commercial trade of operating reserve, examining regional market efficiency and reliability impacts, costs of regional implementation. In this request, IESO should take into consideration the priority and importance of the issue.**

**Rationale:**

**Expanded OR trade would require significant inter-market cooperation and coordination, including changes to individual market systems and inter-market scheduling protocols.**

- **Solicit MPWG Feedback on Recommendations in writing by 30 June, 08:**  
[iesomarketpricingworkinggroup@ieso.ca](mailto:iesomarketpricingworkinggroup@ieso.ca)
- **Report back to MPWG in August, 08.**
- **Presenting Final Recommendation to the IESO Board in September, 08.**

# Appendix 1: OR Price Difference Between New York and Ontario on a Typical Date

| Time Stamp       | New York (Day Ahead Market Price)                 |   |   |   | Ontario  |          |
|------------------|---|---|---|---|----------|----------|
|                  | East 10<br>Min Non-<br>Synchrono<br>us<br>Reserve | East 30<br>Min<br>Operating<br>Reserve<br>(\$/MWH | West 10<br>Min Non-<br>Synchrono<br>us<br>Reserve | West 30<br>Min<br>Operating<br>Reserve<br>(\$/MWH | 10N      | 30R      |
| 05/16/2008 00:00 | 2.69  | 0.25  | 0.25  | 0.25  | 0.22     | 0.22     |
| 05/16/2008 01:00 | 3.49  | 0.25  | 0.25  | 0.25  | 0.22     | 0.22     |
| 05/16/2008 02:00 | 0.2   | 0.2   | 0.2   | 0.2   | 0.22     | 0.22     |
| 05/16/2008 03:00 | 0.2   | 0.2   | 0.2   | 0.2   | 0.22     | 0.22     |
| 05/16/2008 04:00 | 0.2   | 0.2   | 0.2   | 0.2   | 0.22     | 0.22     |
| 05/16/2008 05:00 | 3.59  | 0.25  | 0.25  | 0.25  | 0.2      | 0.2      |
| 05/16/2008 06:00 | 2.69  | 0.25  | 0.25  | 0.25  | 1.99     | 1.99     |
| 05/16/2008 07:00 | 4.39  | 0.5   | 0.5   | 0.5   | 1.99     | 1.99     |
| 05/16/2008 08:00 | 4.39  | 0.19  | 0.19  | 0.19  | 4.19     | 4.19     |
| 05/16/2008 09:00 | 3.39  | 0.5   | 0.5   | 0.5   | 5.3025   | 5.3025   |
| 05/16/2008 10:00 | 3.35  | 0.5   | 0.5   | 0.5   | 30.1     | 30.      |
| 05/16/2008 11:00 | 3.35  | 0.5   | 0.5   | 0.5   | 28.16583 | 28.16583 |
| 05/16/2008 12:00 | 3.35  | 0.5   | 0.5   | 0.5   | 12.745   | 12.745   |
| 05/16/2008 13:00 | 3.35  | 0.5   | 0.5   | 0.5   | 7.395    | 7.395    |
| 05/16/2008 14:00 | 3.35  | 0.5   | 0.5   | 0.5   | 4.19     | 4.19     |
| 05/16/2008 15:00 | 3.35  | 0.5   | 0.5   | 0.5   | 2.       | 2.       |
| 05/16/2008 16:00 | 3.33  | 0.5   | 0.5   | 0.5   | 0.44     | 0.44     |
| 05/16/2008 17:00 | 3.33  | 0.5   | 0.5   | 0.5   | 2.       | 2.       |
| 05/16/2008 18:00 | 3.32  | 0.5   | 3.32  | 0.5   | 3.1125   | 3.1125   |
| 05/16/2008 19:00 | 3.33  | 0.5   | 0.5   | 0.5   | 3.93833  | 3.93833  |
| 05/16/2008 20:00 | 3.38  | 0.8   | 0.8   | 0.8   | 4.57     | 4.57     |
| 05/16/2008 21:00 | 3.46  | 0.5   | 0.5   | 0.5   | 2.       | 2.       |
| 05/16/2008 22:00 | 3.89  | 0.5   | 0.5   | 0.5   | 0.53583  | 0.53583  |
| 05/16/2008 23:00 | 3.89  | 0.25  | 0.25  | 0.25  | 0.2      | 0.2      |

## Appendix 2: Some Key Findings of the Survey

- **Currently the IESO allows commercial Operating Reserve import, which is the *only* existent provision of commercial inter-jurisdictional OR trade among North American ISOs.**
- **The survey did not identify any existing regulatory barrier to commercial operating reserve trade from regulatory bodies such as FERC, NERC, NPCC, OEB and NEB.**
- **NYISO does not allow OR import and export. Their Ancillary Services Manual states, “All Suppliers of Operating Reserve must be located within the NYCA and must be under NYISO Operational Control.**
  - Commercial OR trade with NYISO would require:
    - 1) Review and approval by the NYISO Committees
    - 2) Modifications to the NYISO tariffs.

# Appendix: Some Key Findings of the Survey

- **Operating Reserve Trades with MISO could occur only to the extent it is allowed by the Midwest Contingency Reserve Sharing Group (CRSG) agreement. MISO operating reserve market opens in Fall 2008.**
- **Addressing ways to work around some of the seams issues or resolving them would reduce unnecessary trading costs and could expand regional energy trading. For example, New York and MISO have a Day Ahead Market and Nodal Price, while Ontario does not.**
- **System software in other jurisdictions, including the IESO's Dispatch Scheduling Optimizer has not been developed considering commercial inter-jurisdictional OR trade.**

## Appendix: Some Key Findings of the Survey

- **A co-ordinated software upgrade among jurisdictions to accommodate commercial inter-jurisdictional operating reserve trade is a prerequisite to actual inter-jurisdictional OR trade.**
- **Major North American operating reserve markets such as MISO, CAISO and others are evolving. The present study and set of recommendations can be set as a starting benchmark to assess future evolution of operating reserve markets.**

Thank You.