

In the minutes of the July 15 meeting of the EFM TSG, the IESO indicated that we would provide a high level design scenario for review at our meeting on July 29. We asked for the input of NGX with respect to an Ontario EFM which would be operated by an exchange. The following points summarize the NGX proposal:

- *NGX would operate (clear and settle) a physical forward market. All forward transactions to be cleared and settled in accordance with the NGX collateral and margining process.*
- *Each participant's forward transactions would be reported by NGX into the IESO's physical bilateral mechanism as a net forward open position. Quantity differences between NGX's reported forward positions and real time quantities to be settled by the IESO.*

Based on the ideas contained in the NGX proposal, the IESO submits the following high level design for discussion purposes. In this design, we have given consideration to changes that may be required to market rules, settlement and prudentials. The design is preliminary, and the associated changes to systems and market rules will require further review and stakeholdering.

## Exchange Energy Forward Market Design:

1. The IESO would create an IESO exchange energy forward market, settled in real-time and supported by new market rules.
2. The exchange EFM market rules would:
  - a. License external exchanges to participate in an official IESO administered market. The exchange would be required to post IESO sponsored Ontario electricity contracts which can only be transacted by market participants (MP).
  - b. License external exchanges to electronically submit to the IESO:
    - i. Their published weighted average transaction price for all IESO exchange EFM transactions, and
    - ii. MP's open position (quantity/delivery point), which could be offset against real time quantities, if any, according to Chapter 8, Section 2, Physical Bilateral Contract Data and Quantities. The total buy/sell quantities for all MPs would net to zero.
3. The IESO administered systems would be required to:
  - a. Receive the weighted average price and total quantity for all forward transactions for IESO contracts on licensed exchanges.
  - b. Receive the forward quantity and delivery point transacted by individual MPs, and transfer this data to the IESO settlement system.
  - c. Manage prudentials.

4. The IESO would publish the forward market price (weighted average transaction price for all licensed exchanges).

### **Questions for Discussion**

1. Why will buyers and sellers participate in the exchange EFM if they are not in the existing NGX financial swap market? Do we need a “carrot” to get buyers and sellers into the day ahead market?
2. IESO Prudentials-what changes are required to implement the proposed design?
3. Is there an overall reduction in the level of prudentials considering both NGX and IESO requirements, or are we simply moving the risk around? In other words, what are the net prudential efficiencies?
4. Are there any other efficiencies created by this design?
5. Will an exchange EFM be a step forward in the evolution of the market?
6. What are the costs to be considered?
7. Do the existing Chapter 8 market rules need to be revised?

## Examples of Exchange EFM Transactions

In a scenario where the IESO licenses NGX to participate in its exchange EFM, NGX posts IESO EFM contracts.

### Example 1

Seller and Buyer are market participants (MP) with real time (RT) quantities.

Exchange EFM:

Seller offers to sell 100 MW at \$40 in the EFM.

Buyer bids \$40 to buy 100MW in the EFM.

NGX requires prudentials from both Buyer and Seller.

NGX clears, settles and invoices for a transaction fee.

Seller is paid \$4000 by NGX and Buyer owes \$4000 to NGX.

IESO Settlement:

In RT, Seller is dispatched at 95 MW and Buyer consumes 110 MW. The exchange electronically transmits their open positions to the IESO for settlement. The IESO settles the real time and forward market quantity differences against RT HOEP of \$50.

Seller:  $(+95-100)*\$50 = -\$250$  - Seller owes the IESO.

Buyer:  $(-110+100)*\$50 = -\$500$  - Buyer owes the IESO.

### Example 2

Seller is a MP that is a virtual participant (e.g. bank) and Buyer is a MP with RT consumption.

Exchange EFM:

Seller offers to sell 100 MW at \$40.

Buyer bids \$40 to buy 100MW.

NGX requires prudentials from both Buyer and Seller.

NGX clears, settles and invoices for a transaction fee.

Seller is paid \$4000 by NGX and Buyer owes \$4000 to NGX.

IESO Settlement:

Seller has no quantity in RT. Buyer consumes 110 MW in RT. The exchange electronically transmits their open positions to the IESO for settlement. The IESO settles Buyer's real time and forward market quantity difference against RT HOEP of \$50.

Buyer:  $(-110+100)*\$50 = -\$500$  - Buyer owes the IESO. If Seller has no additional offsetting physical EFM transaction, then

Seller:  $(0-100)*\$50 = -\$5000$  - Seller owes the IESO and this pays the market for the quantity consumed by Buyer.