

July, 2016
Independent Electricity System Operator
Stakeholder Engagement

Comments on the Enabling System Flexibility Stakeholder Engagement

OPG appreciates the opportunity to submit the following comments on the material presented at the initial Enabling System Flexibility Stakeholder Engagement Meeting.

The following is a list of potential solutions to address the IESO's need for enhanced flexibility from existing resources in the electricity system. Some of these ideas may more appropriately fit with the Market Renewal Stakeholder Engagement; however, with some modifications and the use of a pilot approach they could be an interim measure until a permanent solution is implemented.

1. Offering Operating Reserve and Regulation Service Simultaneously

Currently IESO market operating tools do not allow a unit to provide both Regulation and Operating Reserve (OR). Co-optimization of energy, Regulation and OR could yield a lower cost solution for the market and may stimulate the introduction of more competition in the Regulation market. Developing and implementing a pilot with a small group of participants (currently there is only a small pool of facilities that can supply both ancillary services) could be manageable and yield some of the flexibility required.

2. New Ancillary Products

New ancillary products could be developed to provide a lower cost and slower response service than Regulation. Examples from other markets include: load following and energy imbalance. Regulation would remain as the fastest response and highest cost service. Facilities with lesser capabilities would have the opportunity to participate in the market and provide flexibility.

3. 15 Minute Scheduling – Hydroelectric and Interties

Currently 5 minute dispatches are solved independently and you may see as an example, 10 units increasing and 5 units decreasing in each interval to accommodate demand changes and system constraints. Further interconnected transactions are ramped in during the first 10 minutes of the hour forcing other generation, mainly hydroelectric, to back down and ramp back as load picks up to the forecasted level.

This results in inefficient hydroelectric operation with units going up and down during the hour and increased generator wear and tear. It also increases the frequency of lock-out requirements -

necessary for public safety and regulatory compliance to reduce sluice gate operations and to stabilize river flows after a discharge change from a dispatch instruction.

15-minute scheduling / dispatch, which could be designed as part of a modified load following service, may result in smaller and less frequent changes thereby improving the availability of hydroelectric systems as the number of lock-out situations would be reduced. 15 minute schedules would also enable hydroelectric generation to be dispatched and respond to load variations throughout the hour not just at the beginning of the hour.

Multi Interval Optimization (MIO) is currently used for ramping thermal units through the hour. Application of MIO to hydroelectric units is one way to adapt the above concept and potentiality provide better inter hour load following from the hydroelectric system.

Another option for the short-term, if feasible from a market impact perspective, would be to allow dispatchable hydroelectric resources up to 15 minutes to respond to the dispatch signal.

4. Transmission Capability Information

The equations defining the transmission system capability and related information have historically been contained in IESO System Control Orders (SCOs) which are unavailable to market participants. Many of the system capability limits include parameters that can change with real-time conditions (so-called dynamic limits). Lack of this information makes it difficult to forecast and conduct advance assessments of the risks of system constraints to generation facilities. This is particularly relevant to hydroelectric plant operation which is governed by multiple environmental and safety regulations.

Publishing this specific information, would assist in planning and coordinating maintenance activities, and for modifying operating strategies while respecting safety, environmental, regulatory, and equipment criteria.

5. Embedded Generation Data

As noted, the quantity and impact of embedded generation in Ontario has grown considerably in the last few years and this growth is expected to continue, yet there is very little information available on the energy and capacity of these resources from either a historical or forecast perspective. The IESO should consider obtaining and publishing information on embedded generation similar to the data for grid-connected supply and demand. This information may help market participants in managing their respective interactions with the IESO market.

6. Improved Day Ahead Commitment Process

Given that migration to a full Day Ahead Market would require substantial retooling costs, the following lower cost modifications to the current DACP process are suggested to enhance flexibility:

- provide a schedule guarantee for energy storage facilities similar to the production cost guarantees for non-quick start units as part of the Day Ahead Commitment Process; and

- eliminate the financial barriers of non-energy charges for energy storage facilities supplying services to the market. This could be implemented as a reimbursement of costs similar to the existing Uplift Reimbursement Charge Code 119.

OPG is interested in meeting with the IESO to discuss the applicability of these options to OPG and how OPG could contribute to addressing the IESO's requirement for additional flexible resources.

Regards,

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