ONTARIO POWER GENERATION

August 3, 2018

IESO Engagement

Non Emitting Resource Subcommittee – Comments on Modeling Ontario's Future Market

OPG appreciates the opportunity to provide comments on the material presented at the Non Emitting Resource Subcommittee (NERSC) meeting on July 24, 2018.

1. Coordination of Modeling Initiatives

At this meeting, the IESO indicated that there were a number of modeling exercises underway with a common theme to provide insights into the future market. These included:

- long term planning needs;
- capacity requirements for the Incremental Capacity Auction (ICA); and
- future markets under NERSC.

Although the purpose of the IESO's presentation was to seek feedback on the NERSC modeling exercise, we would like to highlight the overlap between these three initiatives and request that the work be integrated. These initiatives have similar objectives to illustrate the robustness of the analysis under a number of scenarios and to explore system impacts of market evolution. With this in mind, we would like the IESO to implement a process that coordinates and aligns inputs, assumptions and reporting of the work. It is understood that the analysis itself may be different for each initiative, depending on its focus and the group conducting the work, but the underlying fundamentals should be the same.

2. Scenario Variables - Market and Customer Impact

At this meeting the IESO and Brattle discussed the modeling exercise being conducted to explore participation across a range of possible market outcomes under different future scenarios.

Beyond the feedback provided at the meeting, OPG would like the model to address market and customer impacts associated with the following variables:

1. Potential contract extensions for facilities currently under contract with a change in operating terms and conditions;
2. A smaller ICA that does not include new build resources;
3. The marginal contribution to the summer peak of higher levels of non emitting resources;

4. Competition and dispatch of supply if low cost non emitting must-run resources set the market clearing price; and
5. Stranded asset costs and reliability impacts due to high distributed energy resource penetration and resulting different operation of the IESO Grid.

With the first variable there is a possibility that the existing contracts could be extended by approximately 10 years in addition to or perhaps in lieu of the ICA. As part of this scenario, it would be beneficial to explore the impact of different operating and environmental incentives that could be included in the proposed contract extensions to increase the value of these resources to the system and the ratepayer. Additional capacity will still need to be procured in the mid 2020s either under a contract or an ICA mechanism.

The second variable considers the implementation of a smaller ICA that does not include new build. Participants in this auction would be primarily demand response, interties and potentially any existing capacity or uprates over and above current contracted facilities. The existing Demand Response Auction framework could be used as the base for the design of this auction using terms of one year. It could also be designed as a spot auction to balance changes in demand forecasts within the year thereby minimizing the costs to carry unneeded capacity. New build, because of its development and financial investment horizon, would be compensated under a different mechanism; such as, contracts. Existing contracts could be extended for their remaining life with perhaps different incentives.

The third variable explores the marginal contribution to the summer peak of different levels of installed non emitting resources. Currently installed solar generation has already shifted the peak demand hour to later in the day when less daylight is available. Future additions of solar generation will have further diminishing value in terms of peak contribution. Wind has a small contribution to summer peak, further incremental wind generation at some point will also have a diminishing return on a marginal basis. Energy storage can assist with solving this issue but it also has diminishing returns and eventually gas generation will be required to meet the net system peak. This situation is exasperated with short duration batteries, which will lead to further shifting of peaks, preventing energy storage to fully contribute during the time of the new peak. If these facilities are charged with CCGTs on the margin (which is one future forecast) there may be insufficient spread between on and off peak prices to recover efficiency losses and non-energy charges. The analysis should identify a range of incremental capacity for these resources that would bring value to the market and customer.

With the fourth variable there is the possibility that a low demand scenario in the Northwest or Northeast zone of Ontario combined with a constrained E-W tieline could result in a significantly greater amount of supply than load. If this supply consists of low marginal cost resources that must run due to regulatory, safety or equipment reasons, the locational marginal price could settle at a value of say -$2000 / MWh. Although some of these resources may have some limited flexibility to be spilled or shutdown, this scenario would explore the situation where these facilities must operate. The analysis should assess market impact, how the market design should dispatch these resources all converging at

the same price and the type of resources that may need to be built (supply and transmission / distribution) or ancillary products / programs developed for Ontario.

The fifth variable addresses “sector disruption” scenarios where increasing amounts of distributed energy resources leads to stranded generation and transmission costs, and necessitates different dispatch methods by the IESO. The impact to the reliability of the market, the total system cost required to achieve comparable reliability to today, the value that customers place on reliability and required changes in policy should be assessed.

Regards,

Lynn Wizniak
Senior Manager, Market Affairs
Ontario Power Generation