

Enabling System Flexibility

January 27, 2017

Meeting Notes

Date held: January 27, 2017	Time held: 10:00 – 12:00 pm	Location held: Webinar
Company Name	Attended	Attendance Status (A)ttended; (R) Registered; (S)ubstitute; (TC) Teleconference; (P) Presenter
Registered to attend in person were:		
Aegent Energy Advisors Inc.	Mozayyan, Ronak	Webinar
Ameresco	Fonger, Jim	Webinar
Atmospheric Energy Systems	Wilson, David	Webinar
Brookfield Renewable Power Inc.	Wu, Julien	Webinar
Bruce Power	Manzarpour, Natalie	Webinar
CanWEA	Giannetta, Brandy	Webinar
Customized Energy Solutions	Tinkler, Mark	Webinar
EDF EN Canada Inc.	Thornton, David	Webinar
Enbridge Gas Distribution	Teichroeb, David	Webinar
ENERCON Canada Inc.	Godin, Patrice	Webinar
EnerNOC, Inc.	Griffiths, Sarah	Webinar
FN Power	Canean, Oliver	Webinar
ENGIE Canada	Hiltz, Bonnie	Webinar
Goreway Power Station	Coulbeck, Rob	Webinar
Goreway Power Station	Sutherland, Chris	Webinar
Green Charge	Goodhand, Jason	Webinar
Green Charge	Margolius, Dave	Webinar
Hydrogenics Corp.	Ibrahim, Ahmad	Webinar
Hydro Quebec Energy Marketing	Belanger, Frederic	Webinar
London Economics Intl LLC	Chow, Ian	Webinar
Market Surveillance Panel	Shalaby, Amir	Webinar
Market Surveillance Panel	Koetsier, John	Webinar
NextEra Energy Canada	Gilmour, Charles	Webinar
Next Hydrogen Corporation	Andres, Philipp	Webinar
Northland Power	Samant, Sushil	Webinar
NRStor Inc.	Osborne, Geoff	Webinar
NRStor Inc.	McIsaac, Alexander	Webinar
NRStor Inc.	Chotalia, Shivani	Webinar
N-Sci Technologies Inc.	Reid, Robert	Webinar
Open Access Technology Intl	Wallace, Andrew	Webinar
Ontario Power Generation	Wizniak, Lynn	Webinar
Ontario Power Generation	Kyte, Brad	Webinar
Ontario Society of Professional Engineers (OSPE)	Acchione, Paul	Webinar
Power Advisory LLC	Cumming, Alison	Webinar

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Power Advisory LLC	Lusney, Travis	Webinar
PowerStream	Carr, Daniel	Webinar
RBC Capital Markets	Doolittle, Robin	Webinar
Renewable Energy Systems Canada	Canean, Oliver	Webinar
Resolute Forest Products	Degelman, Cara	Webinar
Rodan Energy Solutions Inc.	Dudka, Marko	Webinar
Rodan Energy Solutions Inc.	Goddard, Rick	Webinar
Samsung Renewable Energy	Park, Katherine	Webinar
South Cott Ventures	Lampe, Aaron	Webinar
Temporal Power	Murray, Eric	Webinar
TransAlta Corporation	Nguyen, Thanh	Webinar
TransAlta Corporation	Marshall, Brenda	Webinar
TransAlta Corporation	Shutt, Tony	Webinar
TransAlta Corporation	Sabine, Doug	Webinar
TransCanada Energy Ltd.	Kuntz, Margaret	Webinar
TransCanada Energy Ltd.	Mikkelsen, John	Webinar
TransCanada Energy Ltd.	Mount, Fraser	Webinar
Veresen Inc.	Fitzgerald, Steve	Webinar
Workbench Corp.	Jayapalan, Jennifer	Webinar
Workbench Corp.	Sears, Heather	Webinar
	Dorey, Steve	Webinar

All meeting material is available on the IESO web site at:

<http://www.ieso.ca/Pages/Participate/Stakeholder-Engagement/Enabling-System-Flexibility.aspx>

1. Introduction – Ryan King

This was the third meeting of the Enabling System Flexibility Stakeholder Engagement. Ryan King (IESO) welcomed the attendees and outlined the meeting agenda. The purpose of the meeting was to discuss the near term flexibility need for 2017/2018, and the characteristics required for resources to provide flexibility.

2. Stakeholder engagement – Hok Ng

Hok provided a re-cap of the flexibility need addressed in the first two Enabling System Flexibility meetings, and gave an overview of the updated engagement timeline. The focus over the next few months will be on facilitating the near term 2017/2018 flexibility need.

Stakeholder feedback

Stakeholder feedback falls broadly into two categories; improvements to the market features, and the type of resources which can provide flexibility.

Suggested improvements to the market were predominantly around the variable generation forecasting and more frequent intertie scheduling. We are looking to improve the variable generation forecast currently in place, although the benefits are likely to be incremental. The more frequent intertie scheduling is something the IESO is looking to implement and is covered under the scope of Market Renewal.

When considering resources for flexibility, we do not want to be too prescriptive on the types of resources that could assist with this need. We do recognize that resources have different emissions profiles. With the Province's Cap and Trade regulation in place this year, the cost of emissions would be factored into the overall evaluation of resources considered for flexibility.

For resources such as newer technology batteries that have multiple capabilities, Market Renewal aims to deliver a platform that allows for resources to choose from multiple markets to participate in and receive revenue from.

Enabling flexibility for the near term

In our jurisdictional review we found that other ISO's have looked to address the following two aspects.

1. Acquiring flexible capacity
2. Providing signals to indicate the need for and dispatch flexibility

The solutions other ISO's picked were based on their generation mix and the market features that have in place. What was common across the board was locational pricing and the need for an optimised Day-ahead and Real-time unit commitment. For Ontario, Market renewal aims to put in place the market features needed for the enduring flexibility solution beyond 2018.

For the near term 2017/2018 flexibility requirement, we will be revising the initial 1,000 MW flexibility need to reflect some of the recent changes in the market. The figure will likely be lower due to the government suspension of LRP II and reductions to the FIT program.

During the course of the next stakeholder meeting we will provide an updated MW flexibility value, as well as outlining our preference for acquiring flexible resources.

Other than acquiring flexibility from resources, there are other improvements that we can look to put in place for 2017/2018. Examples of which are, enhanced reporting capabilities when monitoring ramping events, and increasing the number of intervals that the Multi Interval Optimisation (MIO) tool looks ahead. Currently MIO evaluates five intervals ahead; however as

better computing power is available, we may be able to evaluate all intervals in the hour ahead for the real time need.

3. Flexible resource characteristics – Ahmed Rashwan

Ahmed Rashwan addressed some of the key characteristics required by resources in order to qualify contributing towards the near term flexibility need. Some of these characteristics are as follows:

- Resources should be online in 10 minutes and be at full output within half an hour of being called upon.
- Flexible resources in congested areas will not be considered unless they are in areas with a high proportion of VG output.
- Minimum run time of 2 hours and sustainability of flex contribution of approx. 2 hours. Capable of starting at least twice a day. And a turnaround time of 3 hours (de-sync to re-sync).

4. Next steps – Hok Ng

At the next stakeholder meeting we will aim to provide more information on the range of options available to provide the near term flexibility, and how we envision acquiring this. Between now and then, we continue to welcome feedback regarding the flexibility initiative and its linkage with other IESO initiatives, as well as the timing of near term and enduring activities for enabling flexibility.

As we recognize some stakeholders may have commercial information to discuss, we encourage contacting us for one-on-one meetings as well. Stakeholders who would like to use this option can contact engagement@ieso.ca

Feedback submission requested by February 17th.

Questions from the meeting

Q: Is the IESO looking to issue an RFP for the short term requirement despite Market Renewal goes beyond 2018?

The IESO has not concluded that an RFP will be the chosen mechanism to acquire flexibility, but we hope to have a better idea by the next stakeholder meeting. A competitive market process such as an RFP or auction is preferred for the short term requirement, however Market Renewal will account for the long term solution.

Q: If a resource is already committed to provide OR or is participating in the RT market, can they also provide any additional capacity they may have for flexibility?

The enduring market based solution will commit resources when they are needed, for the product they are offering. For example, if Ontario were to pursue a ramping market in addition to the energy and OR markets, a resource would be dispatched to provide the service for which the dispatch algorithm determines they are optimal.

We are currently looking evaluating ways to manage this in the interim.

Q: Question regarding slide 20. Are we paying for ramp rate capability over a certain period? Does the size of the unit come into consideration?

A resources flexibility contribution is the amount of generation/load displacement it can achieve within 30 minutes, irrespective of resource capacity.

Q: In an RFP for flexibility, would the IESO consider giving extra points for resources that can start quicker than the 30 minute start time?

As mentioned above, a resources flexibility contribution is the amount of generation/load displacement it can achieve within 30 minutes. Resources with quicker start-up times will have more time to ramp during that 30 minute window.

Q: What about the use of resources capable of providing faster second-to-second response for flexibility?

The nature of the flexibility need is to compensate for missing generation, and does not necessitate second-to-second response. However, this type of quick response is very suitable for frequency regulation service.

Q: Can the IESO confirm whether the flexibility is always able to provide load through increased generation or reduced load? Would it sometimes mean reducing generation / increasing load?

The IESO has the ability to dispatch variable generation. When the variable generation fleet is under-forecast, resulting in over-commitment, the IESO can dispatch variable generation down to balance supply and demand. Conversely, when the variable generation fleet is over-forecast, resulting in under-commitment, the IESO must increase generation or decrease load in order to balance supply and demand. The flexibility we are seeking is to address instances of over-forecast variable generation output.