

Phase 1 Summary

Non Emitting Resource Subcommittee

Introduction

In Phase 1 of its scope of work, the Non-emitting Resource Subcommittee (NERSC) embarked on a process to better understand non-emitting resource (NER) participation within existing and potential future IESO Administered Markets. The focus of this work was to consider the value NERs can offer to the bulk system and to identify the barriers that may prevent NERs from providing the full range of these services. Where barriers to participation exist, the IESO's near-term objective is to identify the appropriate forum for exploring these issues. Over the longer-term, our aim is to remove unnecessary barriers to participation in order to increase competition and deliver more efficient market outcomes.

This document provides a brief overview of a number of the key themes that emerged through Phase 1 and is a supplement to the presentation that will be made at the June MRWG meeting. The themes in this document have been identified using stakeholder feedback provided through a number of venues including: a NERSC workshop held in February, the NERSC Technical Conference held in April, written submissions from NERSC members, and responses to Phase 1 of the NER Request for Information. The key themes identified through this work include:

- Potential Gaps in Revenue Streams
- Challenges for Capital Intensive Resources
- Participation of Distributed Energy Resources
- Design Considerations

Theme 1 - Potential Gaps in Revenue Streams

Stakeholders identified a number of products or services at the bulk level that could be introduced or expanded to work alongside existing and planned IESO Administered Markets. This discussion was primarily focused on ancillary services and Environmental Attributes. Stakeholders also identified that some NERs provide non-electricity benefits and that these attributes also require consideration.

Ancillary Services

Stakeholders identified a range of opportunities to expand participation in, unbundle, and introduce new ancillary services. For example, stakeholders identified that a range of NERs that do not currently provide operating reserve in Ontario may be able to do so. Stakeholders also

identified that a market for regulation may be beneficial in Ontario and that Ontario may want to consider unbundling regulation into regulation up and down products to increase participation and competition. Further, stakeholders identified that with continued growth in variable generation and distributed resources there may be a need for new ancillary services products like a ramping product and/or inertial response product to cost-effectively maintain grid reliability.

The principle underpinning all of these comments is that market design should reflect system needs and should enable robust competition to meet those needs. The IESO is strongly supportive of this view and is open to exploring the potential barriers outlined above. This work will occur in a number of ways. For example, the IESO has begun to engage with stakeholders to explore opportunities to expand participation in operating reserve. Further, the IESO expects that a key focus area for future market evolution will be system flexibility. Working with stakeholders, the IESO will explore Ontario's flexibility and operability needs including the opportunity for new or expanded ancillary services to cost-effectively meet those needs over the long-term. In the interim, leveraging the experience of the 2017 Regulation Services RFP, the IESO will continue to explore competitive mechanisms to meet its ancillary service needs.

Environmental Attributes

Stakeholders identified a potential need for some form of incentive mechanism to ensure the electricity sector delivers on environmental policy objectives. Ontario currently has a very clean supply mix that is more than 90% emission free. However, in the absence of incentives for clean energy, that may not always be the case.

Today, the province has had an economy wide cap-and-trade program in place that results in a carbon price being reflected in the energy market when emitting resources are on the margin. In the future, new policy directions may result in a different approach.

In Phase 3 of the NERSC scope of work, the IESO has committed to work with stakeholders to explore potential clean energy incentive mechanisms. The purpose of this exercise is to identify potential approaches to cost effectively meet policy objectives if and when they arise. This work will begin in Q3 of 2018.

Non-Electricity Value Streams

Finally, a number of stakeholders identified value that their resources provide outside of the electricity market and questioned how that value would be compensated. For example, the hydro community highlighted the role that their resources play in managing the provinces'

waterways. Further, a number of resource types highlighted job creation benefits and an ability to help remote communities transition to cleaner energy supply.

The IESO Administered Markets are focused on procuring the products that the electricity system needs to reliably meet demand. Under Market Renewal, Ontario is moving towards an unbundled electricity market where system needs are clearly defined and valued through market prices. To enable efficient outcomes, energy, capacity, and ancillary service markets must provide transparent price signals for the value of those products. While the IESO recognises that electricity resources may provide non-electricity benefits, the IESO Administered Markets are not necessarily the appropriate place to value and pay for these benefits.

Theme 2 - Challenges for Capital Intensive Resources

A second theme identified by stakeholders is that the Incremental Capacity Auction (ICA) may not be the appropriate tool to support development of large capital intensive resources like nuclear, pumped storage, and large hydroelectric projects. Stakeholders identified that these resources have long development timelines that may not work with the 3-4 year forward period proposed under the ICA. Further, stakeholders noted that development of these resource types would require longer-term financial commitments than the ICA is likely to provide.

Ontario has gone through a decade of intense capital investment in its electricity sector. The province is in a strong supply situation and is unlikely to require new large capital intensive resources in the foreseeable future. In the near-term, the ICA is expected to unlock value from lower risk investments (like uprates, capacity expansions, imports, demand response, and emerging technologies) in order to flexibly meet modest growth in our incremental capacity needs.

In the longer-term, the IESO is working on new planning processes that can help to weigh the value of market based procurements against the potential for longer-term investments in capital intensive resources. For example, in a high electrification scenario, where there is certainty around sustained growth in system needs, an investment in a major supply project may be the most cost effective solution. A valuable benefit of Market Renewal is that it will provide locational price signals for energy and capacity that can help to inform this type of assessment. As the IESO reviews its planning processes there will be greater transparency about the province's long term resource adequacy needs. We will seek to provide more information on the review of our planning processes and how we will engage with stakeholders on this subject prior to publication of the final NERSC report.

Theme 3 – Participation of Distributed Energy Resources

Stakeholders identified a range of barriers related to distributed energy resource (DER) participation in the future market design. Stakeholders emphasized the importance of this topic given the large number of DERs already operating in Ontario and the potential for growth amongst these resources. In particular, the following topics were identified as being worthy of further exploration with the IESO:

- Stakeholders noted that the 1 MW size threshold for Market Participants in Ontario’s energy market would exclude many existing and potential DERs from operating in Ontario’s electricity market as individual resources.
- Stakeholders expressed a desire to explore options for aggregation of DERs.
- Stakeholders identified requirements and costs related to metering and communications as a potential barrier to participation in the IESO Administered Markets.
- Stakeholders identified a number of potential barriers specific to energy storage resources. Many of these comments were focused on removing charges that are applied when storage facilities withdraw from the grid. Other comments related to a lack of clarity in the Market Rules on treatment of storage facilities and a desire to model storage facilities differently in the DSO.

The IESO acknowledges the concerns above and is committed to developing an efficient and enduring participation model for DERs in Ontario. An Energy Storage Advisory Group has already been established to assist the IESO in evolving policy, rules, processes and tools to better enable the integration of storage resources. The forum(s) and timing for addressing other issues related to DER participation in Ontario have yet to be established. However, dealing with DER related issues is an important focus area for the organization and we will endeavour to provide further clarity on how this will occur before the final NERSC report is published.

While the DER issues above are closely related to Market Renewal they do not need to be resolved within the program. For example, an initial capacity auction can be run with the current 1 MW size threshold and later evolve to reflect any changes to that threshold. The initiatives under Market Renewal can continue to be developed alongside efforts to address DER participation and the relationship between the two will be considered as work on Market Renewal progresses.

Theme 4 - Design Considerations

Stakeholders identified a number of design decisions within Market Renewal that will have important implications for NERs. Comments were primarily related to the Day-Ahead Market (DAM) and ICA.

For the DAM, stakeholder comments were focused on variable generation participation and modelling of hydroelectric resources. Discussions on both of these items have begun within the formal DAM stakeholder engagement and dialogue is ongoing with impacted stakeholders. The IESO will continue to work with stakeholders through the engagement and at the MRWG towards efficient and practical design decisions.

For the ICA, stakeholders outlined a range of design decisions that will impact their ability to compete in the auction. These design decisions include how capacity will be qualified, what performance obligations will be, how the distinction between existing and uprated capacity will be made, what the forward period will be, and what the details for multi-year commitments will be. All of these are important design discussions underway within the ICA and the IESO will continue to work with stakeholders through the engagement towards an effective auction design.

Conclusion

Over the past several months, stakeholders have provided substantial and valuable feedback on potential barriers to NER participation in Ontario's electricity market.

For Market Renewal, this process provided an opportunity for a broader range of stakeholders to provide feedback than those who typically participate in the engagement. The feedback we received was largely consistent with the input that has been received through the engagement to date. The IESO will continue to collaborate with stakeholders on the design questions outlined in Theme 4 above.

Other feedback has helped to focus attention on issues that will require further exploration outside of Market Renewal. These issues include the potential for new or expanded ancillary services, the potential for a clean energy incentive mechanism, challenges for capital intensive resources, and the need for an enduring model for DER participation in our future market design.

Forums for addressing some of these issues have already been established. For example, the IESO has launched the Energy Storage Advisory Group and is beginning to explore opportunities to expand participation in operating reserve. As we transition beyond the high-level design phase for Market Renewal, the IESO will continue to work with stakeholders on addressing the other issues identified in this document. Greater clarity on the forum(s) and timing for these discussions will be provided prior to the final NERSC report.