

Expanding Participation in Operating Reserve and Energy Stakeholder Feedback Following April 2 Market Development Advisory Group Webinar

Following the April 2, 2020 Market Development Advisory Group (MDAG) stakeholder webinar, the IESO invited stakeholders to provide comments and feedback on the information presented in the Expanding Participation in Operating Reserve and Energy (EPOR-E) agenda item. Since the April 2 MDAG webinar, the EPOR-E initiative has been launched as a separate stakeholder engagement to ensure all stakeholders can participate effectively and to bring the MDAG into alignment with its original stated objectives outlined in the Terms of Reference.

The IESO received feedback from:

Capital Power

Consortium of Renewable Generators, Energy Storage Providers, and Industry Associations – Power Advisory LLC Enel-X

Energy Storage Canada Peak Power

TC Energy Essex Energy

The webinar presentation and stakeholder feedback submissions can be accessed from the MDAG [engagement webpage](#).

Note on Feedback Summary

The IESO appreciates the feedback received from stakeholders on the items requested and has provided a summary table below, which outlines a summary of the feedback received and the IESO response in relation to this feedback.

Stakeholder Comments and IESO Responses

1. Topic/Question - EPOR-E Scope of Work

Stakeholder/s	Summary of Stakeholder Comment(s)	IESO Response
Consortium of Renewable Generators - Power Advisory LLC	The Scope of Work should include benchmarking existing IESO market participation requirements and IESO tools to other jurisdictions that already enable greater numbers of resources to supply OR along with initiatives that are presently exploring changes to participation requirements (including participation models) to enable supply of multiple electricity products and services (including OR).	Stakeholders have provided various suggestions the IESO should consider regarding requirements and participation models being used and investigated for future implementation in other jurisdictions. In Phase 2 of the EPOR-E engagement, the IESO will review this information and compare it with IESO requirements outlined in Phase 1 to determine if there are learnings that could be applied to Ontario.
Capital Power	<p>To date, the IESO identifies two drivers for the need of the EPOR-E initiative: 1) expanding competition; and 2) increasing grid flexibility. Capital Power understands that assessing the participation requirements for misalignment or opportunities could assist in reducing barriers to competition and increase participation. However, it's unclear how this will necessarily add to increased grid flexibility as none of the existing OR products are specifically designed for this purpose.</p> <p>The IESO should provide additional detail regarding how it intends on increasing flexibility through the EPOR-E initiative. This would focus efforts during the review phase as well as ensure that any potential options being considered are aligned with MRP-related energy design details.</p>	<p>Flexibility is the capability of the system to respond to intra-hour differences between expected supply/demand levels and actual production/consumption. Increasing the OR supply increases flexibility on the system because the number of resources capable of responding to 10 and 30 minute dispatch instructions will increase.</p> <p>Through EPOR-E, the IESO seeks to increase OR supply through enabling greater participation.</p>
Peak Power	Peak would like to ask if facilities contemplated under EPOR-E will have to be direct-connect facilities? A large number of behind-the-meter (BTM) storage resources are utility connected and Peak is worried that this could prevent their participation.	The EPOR-E Scope of Work and previous webinar presentations indicate the technologies to be assessed and further explored through this engagement. Individual resources within those technology types may include directly and indirectly-connected facilities. This includes hybrid resources where configurations could potentially include embedded resources with BTM storage.

2. Topic/Question – Coordination with other ongoing initiatives

Stakeholder/s	Summary of Stakeholder Comment(s)	IESO Response
a) Consortium of Renewable Generators Power Advisory LLC b) Capital Power c) Energy Storage Canada	It is unclear how related IESO and MSP initiatives will be coordinated with the EPOR-E initiative, particularly the Market Renewal Program (MRP) and the Energy Storage Advisory Group's (ESAG's) Energy Storage Design Project (SDP). The IESO should provide more clarity on how these efforts will be coordinated in future MDAG and other IESO engagements. The IESO should consider combining the EPOR-E work into ESAG and MRP design efforts.	<p>The IESO will provide a more comprehensive overview of how ongoing EPOR-E work is being coordinated with related IESO initiatives at a future EPOR-E engagement webinar.</p> <p>EPOR-E is focused on identifying opportunities to enable greater participation in energy and OR markets. In Phase 3 of EPOR-E, these opportunities will be evaluated against the MRP guiding principles to ensure any changes to market rules or manuals contemplated within the initiatives are aligned.</p> <p>The SDP being conducted through the ESAG, is focused on enabling direct-connected storage in the IESO-Administered Markets (IAM). EPOR-E will investigate opportunities for hybrid and BTM storage resources to participate in the IAM</p>

3. Topic/Question – Are the requirements to participate in energy and OR clear and understandable?

Stakeholder/s	Summary of Stakeholder Comment(s)	IESO Response
Various stakeholders	Various stakeholders indicated that general agreement that the requirements to participate in energy and OR are clear and understandable.	Thank you for the comments.
Capital Power	Participation requirements should be designed in accordance with the purposes of the Electricity Act, ensure the reliable and efficient operation of the IAM and allow participants to manage the risk of participation when MRP design changes to the energy and OR market are implemented.	The IESO will work with stakeholders to develop any new or modified participation requirements to enable expanded competition in the energy and OR markets through the EPOR-E engagement. The IESO agrees the participation requirements should align with the purposes of the Electricity Act and ensure the reliable and efficient operation of the IAM.

4. Topic/Question - Based on the models and opportunities presented, is it clear what could be limiting a resource from participating?

Stakeholder/s	Summary of Stakeholder Comment(s)	IESO Response
Consortium of Renewable Generators - Power Advisory LLC	IESO should work with stakeholders to benchmark OR participation requirements used in other jurisdictions and review compliance requirements set by applicable North American electricity reliability authorities (e.g., North American Electric Reliability Corporation (NERC) and Northeast Power Coordinating Council (NPCC)).	Stakeholders have provided various suggestions the IESO should consider regarding requirements and participation models being used and investigated for future implementation in other jurisdictions. In Phase 2 of the EPOR-E engagement, the IESO will review this information and compare it with IESO requirements outlined in Phase 1 to determine if there are learnings that could be applied to Ontario. A technical review of the compliance requirements from NERC and NPCC are out of scope for this project.
Peak Power	<p>Based on the presentation, it is clear that a number of decisions were made in the past that prevent or limit resources from participating. Key examples include: the 1MW Resource limit and the modelling and dispatch of DR resources at an hourly and zonal level. Many of these limitations are not based on regulatory requirements or the capabilities of the resources to follow energy and OR signals.</p> <p>Peak Power recommends that the IESO evaluate what steps could be taken within reasonable timelines to begin relaxing some of these requirements to enable greater market participation.</p> <p>Additionally, Peak believes it is pivotal for the IESO to evaluate the current cost and timelines of interconnection and metering for smaller sites. It is possible that these costs and timelines are creating a de facto barrier for some sites that can otherwise participate.</p>	In Phase 2 of the EPOR-E engagement, the IESO will review the requirements under our purview to determine if any can be relaxed. This will include the metering and interconnection requirements and how they are applied to smaller sites. The IESO will ensure any potential changes to metering requirements do not conflict with requirements set by Measurement Canada when conducting its review.

5. **Topic/Question – Is our current focus of generator/load with behind-the-meter storage solutions consistent with stakeholder expectations of what “hybrid participation” consists of?**

Stakeholder/s	Summary of Stakeholder Comment(s)	IESO Response
Consortium of Renewable Generators - Power Advisory LLC	<p>Hybrid projects utilizing storage that are located in front-of-the-meter (FTM) should be considered in addition to BTM projects. The SDP addresses co-locating FTM storage for hybrid projects but the scope doesn't involve modelling storage with the energy injection and withdrawal capabilities modelled as one resource.</p> <p>IESO should work with market participants and stakeholders to enable true hybrid projects and not just enable co-location of storage and generation.</p>	The IESO is committed to further exploring hybrid participation through EPOR-E and looks forward to continued collaboration with stakeholders as we work to define hybrid resources within the Ontario context.
Capital Power	<p>Market participants should be able to configure sites in the manner that best suits the circumstances of the facility.</p> <p>Requirements should be designed in accordance with those for all other existing resources to ensure no unfair advantage is created.</p>	The IESO is mindful of ensuring a fair and competitive market as we consider options for future market changes.
Energy Storage Canada	The focus would appear to capture the majority of the current developments in the province and it should work with the potential opportunities that will arise as the FiT contracts expire and these resources seek to increase their capacity capabilities through the addition of storage to their resource.	The IESO agrees that there could be additional opportunity when FiT contracts expire. Through the Innovation and Sector Evolution White Paper Series , and specifically the DER White Papers, pathways to participation for distributed energy resources, including those currently under contract, in the IAMs are being explored

6. Topic/Question - Do stakeholders have experience with hybrid participation in other jurisdictions? If so, are there any learnings we should be considering from other System Operators?

Stakeholder/s	Summary of Stakeholder Comment(s)	IESO Response
a) Consortium of Renewable Generators – Power Advisory LLC b) Energy Storage Canada c) Peak Power	<p>IESO should carefully review the CAISO and NYISO stakeholder engagements, and other ISO/RTO initiatives, regarding enabling participation of hybrid projects within their respective wholesale electricity markets.</p> <p>Peak Power shared various learnings from their experience in CAISO’s market that the IESO should consider</p>	<p>The IESO will review materials from CAISO and NYISO to determine if their current analysis on hybrids can be applied in Ontario. Learnings from those jurisdictions could present unique challenges in how they approached hybrids and a hybrid participation model. Any hybrid participation model developed by the IESO will be designed to meet Ontario’s specific needs.</p> <p>These insights are informative and will be considered as the IESO develops options through Phase 2 of EPOR-E. In addition, we have shared this information with the IESO team involved in the ESAG’s SDP.</p>

General Comments:

Stakeholder/s	Summary of Stakeholder Comment(s)	IESO Response
Capital Power	Capital Power understands that the IESO is looking to prioritize its stakeholder engagement streams to focus on design activities of critical importance to the market and market participants. To this end, Capital Power recommends that the IESO suspend the EPOR-E initiative until the future of critical priority stakeholder engagements such as the Resource Adequacy initiative and the IESO's Planning Outlook have been addressed. This will assist in ensuring that relevant market design streams do not work at cross purposes.	The IESO conducted surveys with the stakeholder community to determine which stakeholder engagements were of critical importance to continue and whether stakeholders were able to continue to participate effectively in these engagements going forward. The survey responses indicated that stakeholders believed the EPOR-E project, SDP and MRP were among the IESO stakeholder engagements that were of critical importance to continue. The IESO believes the work included in the EPOR-E scope of work will not conflict with future discussions with stakeholders on the Resource Adequacy and Planning Outlook engagements
Energy Storage Canada	Energy Storage Canada would like to see the EPOR-E consultation expanded to include Demand Response resources beyond the current defined HDRs. Other jurisdictions have managed to access the potential of DR or BTM storage resources and it would create a more efficient IAM if this was included in the consultation.	While dispatchable loads are fully enabled in the Ontario market, the IESO agrees that there could be greater opportunities for DR resources beyond the current HDR resource type to be explored through EPOR-E.
Energy Storage Canada	To maximize the value of utility-scale ESRs, the IESO should consider as part of the EPOR-E initiative the potential for tri- optimization between the three services of real-time energy (RTE), regulation service (RS) and OR. At a high level this would involve scheduling RTE, RS and OR under the same scheduling and dispatch algorithm to determine which resources are best suited for each role. The benefit of tri- optimization would be to ensure that ESRs are scheduled and dispatch where the system values them the most for any given hour and could	Thank you for your feedback. Co-optimization of energy, OR and ancillary services would involve significant changes to various aspects of the Ontario market which are unlikely to be implemented until after MRP is implemented in 2023. In upcoming phases of this engagement, the IESO will review this suggested change along with other potential opportunities to identify high-value opportunities to expand participation in the energy and operating reserve markets.

	potentially consider future constraints where ESRs can be maneuvered to address that need.	
Essex Energy	Currently only generators that have a dedicated tap line for exporting and metering the power are able to participate. Many facilities that have generation have installed it for primary purposes such as emergency backup and don't consider the IESO Market opportunities at the time of system design. This opportunity is often realized several years later. IESO market rules could be revised to allow generation facilities to participate through bidirectional Utility meters which would allow a much larger list of eligible sites, and therefore competitive pricing.	To clarify, both transmission and distribution-connected facilities are able to register and participate in the energy and OR markets, if they are able to meet the market participation requirements. Participation of behind-the-meter resources, such as those referred to in this feedback, will be explored further in Phase 2 as part of investigation of a hybrid participation model.

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