

# IESO Response to Stakeholder Feedback

## Enabling Resources Program– April 21, 2021 meeting

Following the April 21, 2021 engagement webinar on the Enabling Resources Program, the Independent Electricity System Operator (IESO) received feedback from participants on the analysis, prioritization and sequencing approach and outcomes, and the engagement plan objectives.

The IESO received feedback from:

- [Advanced Energy Management Alliance](#)
- [Capital Power](#)
- [Consortium of renewable generators, energy storage providers, and the Canadian Renewable Energy Association](#)
- [Electricity Distributors Association](#)
- [Energy Storage Canada](#)
- [Hydro One](#)
- [Ontario Energy Association](#)
- [Ontario Power Generation](#)
- [Ontario Waterpower Association](#)
- [Peak Power](#)
- [Power Workers Union](#)
- [Voltus Energy Canada](#)

The presentation materials and stakeholder feedback submissions have been posted on the [Enabling Resources Program webpage](#). Please reference the material for specific feedback as the below information provides excerpts and/or a summary only.

## Notes on Feedback Summary

The IESO appreciates the feedback received from stakeholders. The IESO has provided a summary below, which outlines specific feedback or questions for which an IESO response was required at this time.

## Analysis and Approach – enablement opportunities

Are there resource enablement opportunities missing from this analysis?

### Feedback

Submissions from seven different stakeholders identified enablement opportunities not included in the analysis, and/or emphasized opportunities warranting further consideration. Multiple stakeholders provided recommendations on enabling behind-the-meter (BTM) storage to participate directly in the IESO-Administered Markets (IAMs). The following points summarize these considerations.

Feedback	Response
<p>The Advanced Energy Management Alliance (AEMA):</p> <ul style="list-style-type: none"> <li>• Sought confirmation that the IESO would study aggregation models, similar to those in AESO and ISO-NE, allowing Demand Response resources to provide operating reserves (OR)</li> <li>• Noted that future DER participation models should certainly (vs. “potentially”) enable OR participation in addition to energy and capacity</li> </ul>	<p>Yes, the IESO intends to study aggregation models for loads that enable participation in the OR market through the DER stream of the Enabling Resources Program, specifically the DER Market Vision project</p> <p>The IESO is likely to explore establishing multiple participation models for DERs reflecting the technical capabilities of different resource types, which have differing abilities to meet the requirements to provide OR (e.g. ability to provide sustained energy for at least one hour when activated).</p>

Feedback	Response
<p>Energy Storage Canada (ESC) and Ontario Power Generation (OPG):</p> <ul style="list-style-type: none"> <li>Recommended IESO consider how 'dual use' resources that participate in the IAMs and provide services to a local transmission and distribution system (e.g. as Non-Wires Alternatives) could provide these two distinct types of services</li> </ul> <p>OPG:</p> <ul style="list-style-type: none"> <li>Recommended that Hourly Demand Response resources should be allowed to inject electricity into the grid in order to increase the capability of loads with BTM resources to provide capacity (and OR if eventually enabled)</li> </ul>	<p>The IESO intends to explore questions regarding dual wholesale- and retail-level market participation by DERs by building on its existing work with the <a href="#">IESO Innovation and Sector Evolution White Papers</a> and experience with the underway <a href="#">York Region Non-Wires Alternatives Demonstration Project</a>.</p> <p>The Enabling Resources Program (ERP) is prioritizing opportunities based on existing resources. Engagement discussions and other research to date indicates that the majority of existing BTM storage projects are sized to displace load rather than net-inject into the grid. However; as part of the DER stream of the Enabling Resources Program, the IESO expects to explore the potential for DER (including DER aggregations) that can both withdraw and inject energy.</p>
<p>ESC:</p> <ul style="list-style-type: none"> <li>Sought clarity on whether the Enabling Resources Program will address enablement of DER in Resource Adequacy (RA) acquisition mechanisms</li> <li>Sought clarity on whether enablement of aggregations consisting of multiple technology types (e.g. residential solar plus storage) would be assessed</li> </ul>	<p>The planned timing of RA acquisition mechanisms is a key input into development of the draft Enabling Resources Program work plan. Future acquisition mechanisms will take into consideration whether resources can be enabled in the energy market prior to the start of a commitment period (since energy market participation is a pre-requisite of Capacity Auction participation and likely necessary for scheduling/dispatch purposes for resources that would participate in an RFP) prior to the start of a commitment period. Similarly, the Enabling Resources Program work plan will aim to ensure that resources are enabled in time to meet RA commitment periods where those resources are eligible for and successful in RA mechanisms.</p> <p>The IESO will assess the costs, benefits, and feasibility of enabling heterogeneous DER aggregations as part of the DER Market Vision project launching in fall 2021.</p>

Feedback	Response
	Please note that an aggregation of residential loads with BTM solar plus storage would not be considered a heterogeneous aggregation for market participation purposes if the BTM resources were just displacing load rather than net-injecting into the grid.
<p>Ontario Waterpower Association (OWA)</p> <ul style="list-style-type: none"> <li>Suggested further refining the broad category of DERs as different types of DERs may be more “suitable” for market participation than others and notes that the Resource Adequacy Framework acknowledges potential continued reliance on programs to facilitate “investments in assets, resources and businesses that can meet both electricity and non-electricity objectives”</li> </ul>	The IESO intends to work with stakeholders through the projects captured in the <a href="#">DER Roadmap</a> to further define enablement opportunities for DERs, recognizing the diversity of resources within the DER category. This may include programs as appropriate
<p>Peak Power</p> <ul style="list-style-type: none"> <li>Expressed strong support for pursuing enablement of DER aggregations</li> <li>The full benefits of Ontario’s BTM storage fleet remain untapped – the Energy Storage enablement should include front-of-the-meter (FOTM) and BTM storage assets</li> </ul>	The IESO is exploring opportunities for BTM storage assets as part of Demand Response and broader DER enablement as BTM resources must participate in the market through their host load with performance measured at point of interconnection with the IESO-Controlled Grid (ICG) by the load’s revenue-grade meter. This is critical to ensure that scheduled energy/curtailment is delivered to the ICG, enabling the IESO to maintain system balancing.
<p>The consortium of renewable generators, energy storage providers, and the Canadian Renewable Energy Association represented by Power Advisory (“the Consortium”):</p> <ul style="list-style-type: none"> <li>It is not clear how the IESO determined respective electricity products/services that could be supplied by variable generation and hybrids</li> <li>These resources have capabilities to provide other ancillary services in addition to OR</li> <li>IESO should explain how enhancement/enablement potential was determined and why other ancillary services were not included</li> </ul>	The conclusions regarding the capabilities to supply multiple electricity products/services are drawn primarily from the <a href="#">Expanding Participation in Operating Reserve and Energy (EPOR-E) Report: IESO Participation Requirements, and Misalignments with Models of Participation</a> . While the IESO acknowledges that variable generation and hybrid generation-storage resources may technically be able to provide additional ancillary services, the ERP prioritization exercise did not consider capability to provide additional ancillary services (beyond OR) as the IESO does not forecast a significant need for incremental ancillary services capability (see description of forecasted system needs in <a href="#">the 2021 Annual Acquisition Report</a> ).

## Analysis and Approach – prioritization and sequencing

Is the prioritization and sequencing approach sound and is there clear alignment between the approach and the analysis presented?

### Feedback

Stakeholder submissions broadly supported the prioritization approach, with four stakeholder submissions indicating general support of the proposed prioritization and sequencing approach. Nine stakeholders, including those who indicated general support, provided recommendations for consideration. The following points summarize these considerations.

Feedback	Response
<p>AEMA:</p> <ul style="list-style-type: none"> <li>Stated that the prioritization and sequencing does not take into account hundreds of MW of existing BTM resources seeking access to the wholesale market</li> </ul>	<p>The IESO has taken into account the significant quantity of installed BTM resources in the prioritization exercise. As the most pressing forecasted system need is for capacity, the IESO has prioritized enablement opportunities that will provide material quantities of capacity. Behind-the-meter resources are already enabled to provide capacity through the Hourly Demand Response and Dispatchable Load participation models (the latter also enabling participation in the OR market) and represent the majority of participation in the Capacity Auction, with close to 1500 MW enrolled in the last auction. Please note the IESO will be exploring enhanced participation options for DER, including flexible loads with BTM resources, with stakeholders through the DER Market Vision project beginning this fall.</p>
<p>AEMA, Capital Power, Electricity Distributors Association (EDA), ESC and OWA:</p> <ul style="list-style-type: none"> <li>Sought clarity on the IESO’s identified internal resource limitations and noted resource constraints should be addressed through appropriate venues</li> <li>To the extent that budget or tool capabilities act as a constraint, recommend providing further details to stakeholders regarding quantification of costs driving</li> </ul>	<p>The IESO has a finite amount of human resources and capital. In support of electricity affordability, between 2017 and 2021 the IESO has maintained a flat revenue requirement (with the exception of 2020 where it reduced its revenue requirement in response to the emergence of COVID-19). Accordingly, the IESO must carefully allocate resources amongst a number of high impact, high value projects in order to continue to limit the impact on the organization’s fees.</p> <p>The IESO also has limits on its capacity to undertake additional initiatives that reflect the unique responsibilities of independent</p>

Feedback	Response
<p>constraints since benefits to the ratepayer may be achieved through earlier enablement of resources</p> <ul style="list-style-type: none"> <li>• Stated that when opportunities to reduce costs are identified the IESO should promptly take steps to realize them (e.g. by upgrading IESO tools and processes)</li> <li>• Noted that justification for FERC Order 2222 was that limiting DER participation harms electricity consumers and encouraged the IESO to expedite enablement opportunities where resources are available to compete to avoid delaying consumer cost-savings</li> </ul>	<p>system operators and the active status of foundational work to redesign the electricity market in the Market Renewal Program (MRP). This includes limited availability of internal and external human resources with highly specialized knowledge and skillsets, the limited availability of vendors supporting highly specialized tools, and the practical need to limit market design changes while the process and systems for the renewed market design are being built and tested.</p> <p>The IESO is planning on conducting cost-benefit-feasibility analysis of participation model options for high-priority enablement opportunities. More information will be presented in the forthcoming draft ERP work plan.</p>
<p>OWA:</p> <ul style="list-style-type: none"> <li>• Suggested adding ease and cost of implementation to the framework, both from the perspective of the IESO and market participants</li> </ul>	<p>The IESO is contemplating conducting cost-benefit-feasibility analysis of participation model options for high-priority enablement opportunities. This analysis and options contemplated will reflect the importance of cost and ease of implementation. More information will be presented in the forthcoming draft ERP work plan. For the hybrid integration model the IESO has confirmed that it will prioritize the implementation of an initial foundational model developed with a focus on ease of implementation.</p>
<p>Capital Power</p> <ul style="list-style-type: none"> <li>• Supported the specific prioritization but additionally recommended the IESO also establish prioritization based on principles underpinning the IAMs (competition, efficiency, reliability)</li> </ul>	<p>The IESO's prioritization approach, essentially prioritizing enablement opportunities with the greatest potential to contribute to reliability needs and increase competition to meet those reliability needs, was informed by these underpinning principles.</p>
<p>ESC and Voltus Energy Canada (Voltus):</p> <ul style="list-style-type: none"> <li>• Suggested prioritizing options for BTM resources given the current installed capacity and significant growth potential</li> <li>• Expressed general support for the prioritization and sequencing approach with the exception of the medium priority ranking for Demand Response. Voltus suggested</li> </ul>	<p>Behind-the-meter resources are currently enabled to provide capacity through the Hourly Demand Response and Dispatchable Load participation models (the latter also enabling participation in the OR market). The IESO is proposing to explore opportunities to enable DER aggregations, including aggregation of quick-responding loads, to provide grid services including operating reserves as part of the forthcoming joint OEB-IESO Grid Innovation</p>

Feedback	Response
<p>this should be aligned with or included among the high-priority DER opportunity, given that DR and DER are “two sides of the same coin” with other markets allowing participation of behind-the-meter DER.</p>	<p>Fund (GIF) pilot call, which will inform development of DER market participation models</p>
<p>ESC:</p> <ul style="list-style-type: none"> <li>Recommend IESO consider alignment with Natural Resources Canada (NRCan) funding availability and consumer adoption of DERs</li> </ul>	<p>The IESO is aware of and exploring NRCan funding opportunities; however, it is considered a secondary input into the ERP work plan due to uncertainty about receiving funding and the pressing timeline pressures noted in the April 21 presentation (e.g. coordinating resource requirements with the MRP, enabling additional capacity to participate in forthcoming RA acquisitions). While the prioritization approach focuses on existing resources, the anticipated growth in consumer adoption of DER (potentially driven in part by NRCan funding) was a factor reinforcing the decision to identify DER enablement as a high priority.</p>
<p>OPG:</p> <ul style="list-style-type: none"> <li>Stated demand response enhancements should be assigned a high priority to align with the high priority assigned to DERs, since demand response is one of the mechanisms for DERs to provide grid services like capacity</li> </ul>	<p>The demand response enhancement evaluated in the prioritization exercise related specifically to the provision of operating reserve. Demand response resources, including loads with BTM resources, are already enabled to provide capacity through the Hourly Demand Response and Dispatchable Load participation models. Consequently, the DR enhancement opportunity was rated as a medium priority. However, the IESO will be exploring enhanced participation options for DER, including flexible loads with BTM resources, with stakeholders through the DER Market Vision project beginning this fall.</p>
<p>The Consortium:</p> <ul style="list-style-type: none"> <li>Sought clarity on how IESO reached conclusions to the capabilities to supply multiple electricity products/services and how IESO derived MW capabilities for resources as listed in the “opportunity assessment summary”</li> </ul>	<p>The conclusions regarding the capabilities to supply multiple electricity products/services are drawn primarily from the <a href="#"><i>EPOR-E Report: IESO Participation Requirements, and Misalignments with Models of Participation</i></a>. The ERP prioritization exercise did not consider capability to provide additional ancillary services (beyond OR) as the IESO does not forecast a significant need for incremental ancillary services capability.</p> <p>MW capabilities for resources were primarily pulled from internal IESO inputs to the 2020 Annual Planning Outlook which include</p>

Feedback	Response
	<p>business sensitive information concerning installed vs. effective capacity and contract terms. The two exceptions are:</p> <ol style="list-style-type: none"> <li>1.) Estimated additional OR capability from demand response resources was based on a public Energy Storage Canada (ESC) estimate of provincial BTM storage installation</li> <li>2.) MW capability for [front-of-meter] storage was based on contract information from various IESO procurements.</li> </ol>
<p>Power Workers' Union (PWU)</p> <ul style="list-style-type: none"> <li>• Suggested reviewing the prioritization after the Annual Acquisition Report (AAR) defines the 2026 capacity needs and allocation between mechanism</li> </ul>	<p>The IESO intends to use the first AAR as an input in developing the draft ERP work plan.</p>

## Additional Input – input assumptions

Do stakeholders have additional information or comments on input assumptions for consideration (e.g. limited resource life after contract expiration, additional contribution to meeting local system needs?)

### Feedback

Submissions from six stakeholders included feedback on the input assumptions. Two stakeholders indicated they disagree with an assessment of quantity used in the analysis. Other stakeholders provided recommendations for consideration, or requested further information. The following points summarize the feedback received.

Feedback	Response
<p>Capital Power</p> <ul style="list-style-type: none"> <li>• Agree enablement of resources should be primarily driven by system needs and capability of resources to meet system needs</li> </ul>	<p>Enhancing and establishing new energy market participation models will increase competition in the real-time market and likely increase IESO visibility/control of some resources, supporting competitive, efficient, and reliable outcomes in the operational timeframe.</p>



Feedback	Response
<ul style="list-style-type: none"> <li>Also believe enablement priorities must be set in a manner that is supportive of a competitive, efficient and reliable real-time market for dispatch as well as competitive procurement processes</li> </ul>	
<p>ESC</p> <ul style="list-style-type: none"> <li>Disagreed with assessment of quantity and availability timing of energy storage stating that ESC believes the potential quantity in Ontario exceeds 4,000 MW (pumped storage, compressed air storage, power-to-gas, battery-based storage) and recommended that the IESO not limit analysis to considering existing or contracted storage assets</li> </ul>	<p>The IESO has intentionally premised the prioritization exercise around the quantity and timing of existing off-contract resources as:</p> <ol style="list-style-type: none"> <li>existing resources are broadly expected to have lower acquisition costs than new resources (due to the opportunity to recover capital costs during contracts)</li> <li>All resources have additional potential and there is a high degree of uncertainty with future resource quantity forecasts, particularly with emerging technologies where costs have not stabilized.</li> </ol>
<p>OWA</p> <ul style="list-style-type: none"> <li>Expressed concern that the Resource Adequacy framework as currently proposed will not support ongoing investment in Ontario's hydro resources as the focus on acquiring and re-acquiring resources via capacity auction and mid-term RFPs are fundamentally inconsistent with long lifespan and long capital investment lead times that define hydro assets, consequently efforts to enable the participation of DER hydro assets are likely to be frustrated.</li> </ul>	<p>This feedback has been shared and taken into consideration with the Resource Adequacy engagement</p>
<p>Peak Power</p> <ul style="list-style-type: none"> <li>Requested more information regarding the determination that resources coming off contract will have lower costs to consumers than new resources, noting that new DR or DR can prove to be more beneficial to customers, particularly if located in highly loaded or congested locations</li> </ul>	<p>The IESO expects that in many cases existing off-contract resources will have a lower acquisition cost for consumers than will new resources, as existing resources are expected to have recovered most or all of their capital investment during their previous contract term, whereas new resources will need to recover these costs through their offers in RA procurements in the IAMs. The IESO recognizes that new resources may outcompete</p>

Feedback	Response
	<p>off-contract resources in some instances and welcomes this competition.</p>
<p>The Consortium:</p> <ul style="list-style-type: none"> <li>• Stated that the operational life of contracted Variable Generators (VGs) extends multiple years beyond contract expiry and many sites could enable coupling with energy storage</li> <li>• Stated that the IESO should clarify how “enhancement/enablement potential” was determined and why other ancillary services were not included</li> <li>• Communicated that it is important to enable multiple revenue streams capturing the technical capabilities of variable generation, energy storage, and hybrid resources to supply multiple electricity products and services, as well as supply of non-electricity products (e.g., hydrogen, etc.), which provide needed clarity towards ensuring effective maintenance and potential development (e.g., uprates) on existing resources towards future operations post expiry of contracts</li> </ul>	<p>The IESO appreciates the information confirming the potential for hybrid generation-storage resources.</p> <p>The IESO is taking a strategic approach to enablement activities to prioritize the opportunities that contribute most to meeting forecasted system needs, and encouraging competition to meet those needs. The prioritization exercise has focused on capacity opportunities as this is the most pressing forecasted system need, with secondary consideration for operating reserve opportunities to support increased [intra-hourly] fleet flexibility. Potential to enable provision of additional ancillary services was largely excluded from the prioritization exercise as the IESO does not forecast a pressing need for additional ancillary services.</p> <p>Enhancement/enablement potential determinations were drawn primarily from the <a href="#"><i>EPOR-E Report: IESO Participation Requirements, and Misalignments with Models of Participation, Energy Storage Design Project Long-Term Design Vision, and Innovation and Sector Evolution White Paper series.</i></a></p>
<p>Voltus:</p> <ul style="list-style-type: none"> <li>• Disagreed with estimated quantity of demand response that may be available to provide OR as there are a large number of loads that are able to provide 10-min or 30-min OR that use technologies other than energy storage</li> </ul>	<p>The IESO is undertaking a DER Potential Study in 2021 which will assess the quantities of different types of DER, including DER, which currently exist or are likely to emerge in Ontario over the next ten years, including quantities of DER capable of responding in the timeframes necessary to provide OR.</p>

## Additional Input – prioritization outcomes

Do stakeholders agree with the prioritization outcomes?

### Feedback

Submissions from six stakeholders included feedback on the prioritization outcomes. Two stakeholder submissions indicated their support of the outcomes, with one including an additional point for consideration. Four additional stakeholders provided feedback and recommendation on the prioritization outcomes for consideration. The following points summarize the feedback received.

Feedback	Response
<p>AEMA:</p> <ul style="list-style-type: none"> <li>• Requested HDR ability to provide OR should be moved to high priority for enablement immediately post-MRP, noting these resources currently only have access to one revenue stream.</li> </ul>	<p>The IESO is prioritizing enablement opportunities that will contribute to retaining or securing additional capacity, as capacity is the most pressing forecasted system need. The IESO is proposing to explore opportunities to enable DER aggregations, including aggregations of flexible loads, to provide grid services including operating reserve as part of the forthcoming joint OEB Innovation Sandbox/IESO GIF pilot call, which will inform development of enduring model(s) for DER market participation.</p>
<p>ESC</p> <ul style="list-style-type: none"> <li>• Expressed general support of prioritization, particularly with respect to emphasis on Hybrids and DERs, but suggested [front-of-meter] storage should also be “high” priority given linkages to other enablement opportunities and that the “design vision” for storage should be leveraged as foundation for other enablement opportunities</li> </ul>	<p>The IESO recognizes the potential synergies between storage enablement activities and enablement of hybrid generation-storage resources and DER and is currently considering how to reflect this in the draft ERP work plan and the draft hybrid foundational participation model/future enduring participation models that the IESO will be presenting to stakeholders through the <a href="#">Hybrid Integration Project</a>.</p>
<p>The Consortium</p> <ul style="list-style-type: none"> <li>• Requested clarity on:             <ul style="list-style-type: none"> <li>○ How up to ~500 MW of effective MW was derived relative to the approximately 4,200 MW of operating transmission-connected Variable Generation</li> </ul> </li> </ul>	<p>Effective and installed MW figures for transmission-connected Variable Generation and DER were sourced from internal IESO inputs to the APO reflecting internal modelling of capacity contributions from resources currently under contract. Please refer to the <a href="#">2020 APO Supply, Adequacy, and Energy Outlook Module</a> for more information on typical capacity contribution factors by resource type.</p>

Feedback	Response
<ul style="list-style-type: none"> <li>○ How up to ~1,000 MW DERs that could be available from 2021 to 2035 and approximately 50 MW of energy storage potential was derived</li> <li>● Stated IESO should revisit conclusions once points are clarified along with more detailed review of capabilities of VGs, energy storage and hybrids</li> </ul>	<p>For clarity, the <a href="#">April 21 presentation</a> states there is approximately 50 MW of <u>existing</u> [front-of-meter] storage in the province, rather than 50 MW of potential. This excludes the Sir Adam Beck Pump Generating Station given its unique operating arrangements. The approximately 50 MW figure is based on contract information from various IESO procurements.</p>
<p>Voltus Energy Canada</p> <ul style="list-style-type: none"> <li>● Would like to see DR prioritized equal to DERs. Pilot can be used to test different participation models for distribution resources, however, IESO needs to drive changes to how DR/DER are modelled in the system and enable virtual aggregations of heterogeneous resources to provide all products they are technically capable of providing</li> </ul>	<p>One of the goals of the joint OEB-IESO GIF pilot call is to inform development of future enduring market participation models for DERs, including aggregations of loads that can respond in the timeframes necessary for providing Operating Reserves.</p> <p>Please note that the IESO does not consider an aggregation of loads with different types of behind-the-meter resources to be heterogeneous. Behind-the-meter resources must participate in the market through their host load with performance measured at point of interconnection with the ICG by the load’s revenue-grade meter. This is critical to ensure that scheduled energy/curtailment is delivered to the ICG, enabling the IESO to maintain system balancing. Therefore, an aggregation of load is homogenous regardless of how those loads individually modify their load.</p>

## Additional Input – timing considerations

Are there any additional timing considerations IESO should be aware of (e.g., time-sensitive resource re-investment decisions)?

### Feedback

Submissions from five stakeholders included additional timing considerations for the IESO to be aware of. The following points summarize the feedback received.

Feedback	Response
<p>AEMA</p> <ul style="list-style-type: none"> <li>• IESO needs to move much quicker to align with timelines for peer ISO/RTOs subject to FERC 2222</li> </ul>	<p>As noted above, the IESO has a finite number of resources and a number of large projects underway to ensure electricity reliability and affordability. The IESO is taking a strategic approach to enablement activities to prioritize the opportunities that contribute most to meeting forecasted system needs, and encouraging competition to meet those needs. This approach respects organizational constraints on undertaking additional initiatives while the MRP is underway to put in place a foundation redesign of the wholesale energy market, and reflects specific circumstances of Ontario’s resource fleet (e.g. timing of contract termination for the large existing DER fleet, RA framework plans).</p>
<p>Capital Power</p> <ul style="list-style-type: none"> <li>• Priorities should facilitate and encourage competitive investment decisions and timelines should support this objective</li> <li>• Timelines and schedules need to include detail regarding energy market performance and available capacity revenue mechanisms</li> </ul>	<p>The IESO is carefully considering coordination with the RA framework to ensure the ERP work plan supports efficient investment and competitive outcomes in IESO RA mechanisms. More information will be forthcoming in the draft ERP work plan.</p>
<p>EDA</p> <ul style="list-style-type: none"> <li>• Emphasized the need for IESO to coordinate with Local Distribution Company (LDC) planners regarding plans for enabling DER</li> </ul>	<p>The IESO recognizes the need to coordinate with LDCs regarding DER enablement. The IESO recently launched the <a href="#">DER Roadmap engagement</a> and intends to leverage the engagement, organization to organization discussions, and other forums to consult with the LDC community. Additionally, the IESO and OEB are initiating a joint engagement forum to enhance coordination on DER integration between the two organizations and across the sector with more information shared at the <a href="#">June 22 DER Roadmap engagement</a>. The IESO will also leverage its membership in the OEB’s Framework for Energy Innovation Working Group to understand and advance issues related to transmission/distribution coordination.</p>
<p>ESC</p>	<p>The AAR sets out the IESO’s needs with regards to Resource Adequacy procurements and is intended to communicate these</p>

Feedback	Response
<ul style="list-style-type: none"> <li>Energy storage developers need a clear view of rules/framework to support investment in new projects</li> <li>IESO should consider timeframes required to develop new resources or uprates – current process implies priority will be given to resources already under contract</li> </ul>	<p>needs to asset owners and developers in order to provide them with sufficient time for investment planning. For the purposes of the ERP prioritization exercise, the IESO is prioritizing market enablement opportunities by potential to retain or enhance the capacity contribution of existing and available (i.e. off contract) resources due to the greater certainty that these resources will be available and lower expected acquisition cost relative to new resources. That said, once a resource is enabled in the markets, that participation model can be leveraged by existing facilities or new facilities.</p>
<p>OWA</p> <ul style="list-style-type: none"> <li>A number of DERs are scheduled to come off contract before the ERP is complete; what is the IESO’s plan to address this situation?</li> </ul>	<p>DER greater than 1 MW are currently enabled to participate in the IAMs, and depending on the resource technology type, may already be enabled to participate in the annual Capacity Auction. Off-contract dispatchable hydro resources are currently enabled to participate in the Capacity Auction. Further information on IESO’s resource acquisition plans is shared in the AAR.</p>
<p>Power Advisory</p> <ul style="list-style-type: none"> <li>Since the first Tx wind generator contracts expire in 2026, timing to implement Enabling Resources post-MRP can work, but will need to be revisited if MRP is delayed in 2024 or beyond to ensure Enabling Resources is implemented in time to enable first off-contract VG</li> </ul>	<p>Thank you for the feedback. The IESO is taking MRP timing into consideration in developing the draft ERP work plan.</p>

## Engagement Plan

Are stakeholders supportive of the objectives and approach detailed in the draft Enabling Resources Engagement Plan?

### Feedback

Eight stakeholder submissions included feedback on the objectives and approach detailed in the draft engagement plan. Two submissions indicated general support for the plan, with six submissions including recommendations for consideration and potential inclusion in the engagement plan. The following points summarize the feedback received.

Feedback	Response
<p>Capital Power</p> <ul style="list-style-type: none"> <li>• Supports proceeding once principles guiding the prioritization of opportunities have been established</li> <li>• Application of these principles should be transparent and the analysis should be communicated to stakeholders for feedback</li> </ul>	<p>Thank you for the feedback. As described in the responses above, the prioritization exercise approach was informed by core IESO principles regarding reliability and competition.</p>
<p>EDA</p> <ul style="list-style-type: none"> <li>• Engagement plan should speak to plan to engage with LDCs on T-D interoperability framework development and potential alternatives</li> </ul>	<p>The IESO recognizes the need to coordinate with LDCs regarding DER enablement. The IESO recently launched the <a href="#">DER Roadmap engagement</a> and intends to leverage the engagement, individual discussions, and other forums to consult with the LDC community.</p>
<p>ESC</p> <ul style="list-style-type: none"> <li>• Work plan should establish metrics for success (e.g. implementation of work plan within stated timeline, stakeholder support of work plan, increased participation by resources)</li> </ul>	<p>The IESO will take this feedback into consideration.</p>
<p>OEA</p> <ul style="list-style-type: none"> <li>• The IESO identifies resource availability as a potential barrier to implementation, a high-value opportunity should be pursued and resourced appropriately, or it would not qualify as high value</li> </ul>	<p>Please see response to AEMA regarding constraints on the ability of the IESO to undertake major additional initiatives, particularly initiatives impacting the energy market, while MRP is underway.</p>
<p>OWA</p> <ul style="list-style-type: none"> <li>• Suggest adding two additional objectives for the Enabling Resources Program engagement objectives: 1.) to provide stakeholders with transparency with respect to the data and information used to inform and arrive at decisions 2.) provide stakeholders with timely and comprehensive responses to input and an indication of how input has been considered and applied</li> </ul>	<p>The Enabling Resources Program engagement will adhere to the IESO's <a href="#">Engagement Principles</a>, which include 'Promote Openness and Transparency' and 'Communicate Outcomes'. Publicly available data and information used to inform decisions will be shared with stakeholders, and the IESO will strive to provide comprehensive responses to stakeholder feedback.</p>

Feedback	Response
<p>Voltus:</p> <ul style="list-style-type: none"> <li>Expressed concern with lack of mention of DR OR pilot within the stakeholder engagement plan and requested details on forecasted timing and scale of the pilot or a timeline on when information will become available</li> </ul>	<p>More information about the joint OEB-IESO GIF targeted call, including timelines, is presented in the <a href="#">DER Roadmap engagement presentation</a> at the June stakeholder engagement days.</p>

## General Comments / Other

### Feedback

Two stakeholders provided additional feedback suggesting that designing and implementing a T-D interoperability framework will be a major lift, and that IESO needs to engage with LDCs early and ensure sufficient timing in the Enabling Resources work plan.

Feedback	Response
<p>EDA</p> <ul style="list-style-type: none"> <li>Developing and implementing a T-D interoperability framework is a major undertaking. Request that IESO further define the objectives of such a framework and convene a working discussion with LDCs at the earliest possible opportunity</li> </ul>	<p>The IESO recognizes the need to coordinate with LDCs regarding DER enablement, particularly the design and implementation of an effective transmission-distribution interoperability framework. The IESO has recently launched the <a href="#">DER Roadmap engagement</a> and intends to leverage the engagement, individual discussions, and other forums to consult with the LDC community.</p>
<p>Hydro One</p> <ul style="list-style-type: none"> <li>Developing and implementing a T-D interoperability framework is a major undertaking. IESO should ensure the Enabling Resources work plan builds in sufficient time for this</li> </ul>	<p>Please see response above. The IESO is considering this feedback in development of the draft ERP work plan.</p>

### Feedback

A number of stakeholders submitted general points of feedback for IESO's consideration, which are summarized below.



Feedback	Response
<p>AEMA</p> <ul style="list-style-type: none"> <li>If IESO HR resources and budget are a limitation, IESO should seek and be provided additional resources "to ensure Ontario keeps up with the energy transition"</li> </ul>	<p>Please see earlier response to similar AEMA feedback.</p>
<p>ESC</p> <ul style="list-style-type: none"> <li>Supportive of ambitious undertaking and commend IESO on work that is already underway</li> <li>Clarify scope and priorities related to DERs, in particular options for both BTM and FTM resources</li> <li>Emphasize opportunity on the table to take advantage of federal investment in non-emitting resources (i.e. SREPs; Net Zero Accelerator Fund) – barriers must be removed in order to maximize benefits of these opportunities for Ontarians</li> </ul>	<p>The IESO will explore options for establishing participation models to enable aggregations of DER, including loads with/without BTM resources, to participate in the energy and operating reserve markets and IESO resource adequacy procurement mechanisms (noting that energy market participation is a prerequisite for participation in the Capacity Auction and likely other planned procurements). Please refer to the <a href="#">DER Roadmap engagement</a> for more information.</p> <p>Thank you for your feedback regarding the opportunity presented by funding programs for non-emitting resource investment.</p>
<p>Hydro One</p> <ul style="list-style-type: none"> <li>IESO should engage with OEB/LDCs/Transmitters as enablement work progresses to ensure consideration is provided for the need to update connection assessments, connection agreements, applicable charges and rates, to support the overall success of the program</li> </ul>	<p>Thank you for your input. The IESO will consider it as part of the <a href="#">DER Roadmap engagement</a>.</p>
<p>OEA</p> <ul style="list-style-type: none"> <li>As high-value opportunities are evaluated and identified the IESO should ensure there are sufficient resources to advance the opportunity and capture the benefits in a timely fashion</li> <li>Delays in implementing opportunities will result in less efficient wholesale and capacity markets and higher costs for consumers</li> </ul>	<p>Please see response to similar feedback from the AEMA.</p>

Feedback	Response
<p>Peak Power</p> <ul style="list-style-type: none"> <li>Enabling battery storage/DR/DER/Virtual power plants/V2G are Peak Power's core expertise and enabling these resources will allow Ontario to keep pace with international grid modernization efforts and foster competitive technology developments in the province</li> </ul>	<p>Thank you for your feedback.</p>
<p>PWU</p> <ul style="list-style-type: none"> <li>Suggests fully evaluating the capabilities of the Atikokan Generating Station to provide additional capacity after its current contract term.</li> <li>Recommends, prioritize development of a long-term procurement for new low-carbon, domestically sourced resources</li> </ul>	<p>Biomass generation resources are currently enabled in the IAMs and are eligible to participate in competitive mechanisms identified in the AAR. The ERP is focused on addressing opportunities to enable resources to provide products and services that they can technically provide but are currently limited from providing.</p> <p>Feedback regarding IESO development of procurement mechanisms is out of scope for the ERP engagement but can be directed to the <a href="#">Resource Adequacy engagement</a>.</p>
<p>Voltus:</p> <ul style="list-style-type: none"> <li>Broadly supportive of initiative and is looking forward to the development of new participation models that enable the full dispatchability of DERs and DR</li> <li>Sought clarity on whether the IESO is able to confirm if the market integration of hybrid storage-generation resources will also address current barriers preventing large embedded storage resources from participating in OR?</li> </ul>	<p>For clarity, embedded (i.e. distribution-connected, front-of-meter) storage resources with a capacity greater than 1 MW are currently enabled to participate in the OR market.</p>

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