Stakeholder Feedback and IESO Response

Distributed Energy Resources (DER) Market Vision and Design Project – January 26, 2022

Following the January 26, 2022 public webinar on the DER Market Vision and Design Project (MVDP), the Independent Electricity System Operator (IESO) received feedback from participants on clarity of the DER Market Vision Project (MVP) Timelines and Deliverables, and with respect to the EPRI presentation on FERC Order 2222, feedback on which aspects of DER integration efforts from other jurisdictions are most appropriate for Ontario and why.

The IESO received feedback from:

- Energy Storage Canada (ESC)
- Leapfrog Power

The presentation materials and stakeholder feedback submissions have been posted on the DER Market Vision and Design Project 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.

DER Market Vision Project Timelines and Deliverables

Are the deliverables clear? If not, what additional information would be most helpful at this early stage?

The feedback submission from ESC included comments requesting clarity on several points with respect to the project deliverables, and the submission from Leapfrog Power included comments/questions on the expected timelines. These points are included in the table below.

Feedback	**IESO Response**
ESC: • Additional clarity with respect to the approach for establishing criteria and initial options for Phase I questions would be useful. For example, will the IESO prepare options for stakeholder feedback and input? How will IESO account for unique attributes of the Ontario market relative to other markets? What will be IESO's process for decision making related to enablement; including completion of analysis? • With respect to criteria to determine foundational vs. enhanced models, can the IESO clarify if changes to IESO dispatch tools would be considered in the foundational model considering the proposed implementation period is post-MRP? • We recommend that the IESO clarify whether the foundational model will build on the Long-Term Storage Design Vision; or clarify any dependencies.	In accordance with the schedule presented at the January 26th session, the IESO intends to provide stakeholders with a holistic list of options for each of the Phase I Questions and will be seeking feedback on those options. The options, which are currently under development, will be informed by a variety of inputs, including, but not limited to, the jurisdictional scans presented by the Electric Power Research Institute (EPRI), and various other DER Roadmap initiatives (e.g., the DER Potential Study) as applicable. In addition, the options will take into consideration attributes unique to Ontario's electricity system especially given the enhancements being implemented via the Market Renewal Project (MRP). Further, as noted in the feedback from the October 2021 session, enhancements requiring changes to major tools such as the Dispatch Scheduling and Optimization (DSO) engine post-MRP, will likely be considered for enhanced participation models rather than the foundational. Along with the options, in the latter half of Q2 2022, the IESO will present criteria by which the options will be assessed for the foundational and enhanced models. While still under development, given the DSO example above, the IESO expects to prioritize criteria that extract wholesale market benefits, represent manageable implementation costs and minimize complexities associated with tool changes for foundational models. Following the Q2 session, the IESO will focus on options and recommendations for the foundational models in Q3 followed by enhanced models and associated criteria in Q4 2022 into Q1 2023. The criteria for implementing the energy storage long-term vision are currently being explored within the IESO's Hybrid Integration Project (HIP) Design Vision. The long-term vision applicability to the DER MVP will likely inform the enhanced participation models to be explored later this year.

Feedback	IESO Response
Leapfrog Power: • We appreciate the timelines provided in the January 26th presentation as well as the ongoing IESO responsiveness to stakeholder comments, such as in the December 16th presentation. • If it was possible to indicate the generally expected timing of deliverables within a quarter (e.g., mid-Q3 2022 vs late-Q3 2022) that would be helpful. • Additionally, if the schedule changes between stakeholder meetings an updated roadmap would be appreciated. It is unclear if other feedback will be collected or reviewed between now and the Q2 item of foundational vs. enhanced model criteria.	The IESO appreciates this feedback and generally expects that MVP stakeholder sessions will be scheduled in the later part of the quarters (i.e., June, September, December of 2022). The IESO will also ensure that timelines communicated from the various DER Roadmap initiatives are done in a consistent manner and any schedule changes are communicated in advance. The IESO will not be requesting additional DER MVP feedback until Q2 2022 following the presentation of criteria for the foundational and enhanced participation models and the options to the Phase I questions.

DER integration efforts from other jurisdictions

Which aspects of DER integration efforts from other jurisdictions are most appropriate for Ontario and why?

Both stakeholder feedback submissions included comments for consideration on aspects of DER integration efforts from other jurisdictions which may be most appropriate for Ontario. These points are included in the table below.

Feedback	IESO Response
ESC: 1. Development of options for dual participation framework which enables DERs to provide services to both IESO-administered markets (IAM) and local markets (e.g., distribution-level NWAs); ESC expects that LDCs will acquire energy storage as a service in the future, and there should be a framework in place to avoid duplication and enable revenue-offsets from wholesale market. 2. Ensuring framework for BTM energy storage, where energy storage can inject energy from a BTM connection; ESC believes that BTM storage should be treated differently from DR (load control) as it has potential to inject energy. 3. Options for metering and telemetry that reduce costs and complexity for participants; ESC is mindful that participation models will only be viable and useful if not unduly costly. 4. Enabling heterogeneous aggregations; ESC believes that storage could be added to aggregations of existing assets to firm up capacity and enable aggregated resources to provide additional ancillary services. IESO should clarify how the DER market vision relates to the continued availability of current participation models; e.g., HDR. 5. Continued optionality for zonal aggregations in future market; ESC is mindful that IESO currently procures aggregated HDR capacity on a zonal basis.	The IESO appreciates this feedback and will take these considerations into account in the development of options to the Phase I questions. The IESO anticipates that the Hourly Demand Response (HDR) participation model will continue to exist and that the enhanced participation models under development in this engagement will be in addition to the HDR model.

Feedback	IESO Response
Leapfrog Power: • It is useful to review the market concepts that the NYISO previously filed as part of its DER model (pre-2222), particularly in the context of enabling multiple technology types to participate and aggregate, but in developing a model the IESO should ensure significant detail and thought is given to coordination issues between aggregators, distribution utilities and the IESO. This includes operational coordination once a new market participation model is in place, but also regular engagement and feedback during the design and implementation process. For example, should a distribution utility call for DERs to deviate from an IESO schedule in the day-ahead period, what real-time coordination between the three parties will need to take place to ensure effective operations and minimize the impact of potential derates.	In the development of options to the Phase I questions, the IESO has reviewed the design features associated with not only NYISO's compliance filing, but also the filings of other FERC jurisdictions such as CASIO, ISO-NE, and PJM. The IESO will also review the filings of MISO and SPP upon availability and continues to monitor the development of their participation models via their stakeholder materials. The IESO recognizes that transmission-distribution coordination is an important area of work that requires a substantive consultation and collaboration with stakeholders including resource owners, aggregators, distributors, and regulatory entities. To that end, the IESO has established the Transmission-Distribution Working Group (TDWG) which is committed to developing high-level transmission-distribution protocols by the end of Q1, 2023 (for implementation as part of the DER Market Design Project (MDP) by the summer of 2026). The example referenced in this feedback item will be directly addressed via the TDWG and will be represented in the coordination protocol developed by the group.

General Comments/Feedback

The feedback submission from ESC included a general comment, which is summarized in the table below.

Feedback	IESO Response
ESC: • ESC is supportive of the IESO's DER Market Design vision project. We, however, continue to raise concerns regarding timelines for fully enabling DERs, distributed energy storage & Behind-the-Meter (BTM) storage in particular, to participate in the IAMs. With upcoming capacity needs this decade ESC believes all energy storage resources, In front-of-Meter (IFM) FM & BTM, short and long duration and Distribution and Transmission connected will need to play a role to ensure reliability and timelines should be accelerated. We look forward to next steps in this discussion and to continued progress.	Timelines for DER integration have been developed through the Enabling Resources Program (ERP). The ERP work plan reflects a number of key considerations including aligning DER integration with when system needs are expected to emerge as identified in the IESO's Annual Acquisition Report. Through the DER MVDP, the IESO has committed to implementing foundational DER participation models by summer, 2026 and to identifying the criteria for implementing enhanced models by Q1, 2023. The IESO notes that despite FERC order 2222, DER integration is proceeding on a variety of timelines at other system operators. As discussed at the January engagement session, New York has made significant progress in implementing DER participation models. Other jurisdictions are at various stages in the same process. For example, PJM, on February 1, 2022, submitted a compliance filing in response to FERC Order 2222, requesting an extended DER integration effective date (i.e., in-service date) of February 2, 2026 given the complexities associated with DER integration. The IESO looks forward to continued stakeholder collaboration and recognizes the mutual commitment to advancing DER integration in the province.