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Distributed Energy Resources (DER) - Market Vision and Design Project

Angeli Jaipargas

Lead, System & Sector Development, Innovation, Research & Development

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Agenda

1. DER Market Vision and Design Project Recap
2. Stakeholder Feedback from the October 2021 Session
3. DER Market Vision Project Timelines and Deliverables
4. EPRI Presentation of DER Enablement in other Jurisdictions

Recap: Goals for the Market Vision and Design Project

1. Introduce wholesale participation models that enhance DERs' ability to compete to provide the services they are technically capable of providing
2. Foster greater competition by unlocking DER capabilities to address future reliability needs
3. Make efficient use of IESO resources and minimize implementation risks considering other priorities
4. Serve as a benchmark for more enhanced models

Recap: DER Market Vision and Design Project Structure

- This project is a key focus area of IESO's DER integration activities and is what much of the near-term DER Roadmap efforts build towards
- The DER Market Vision and Design Project will be separated into two phases:
- **Phase I:** 2021-(Q1)2023 *DER Market Vision Project* (MVP)
 - Identify "foundational" wholesale participation models for design and implementation in Phase II and "enhanced" participation models to be implemented at a future date
- **Phase II:** 2023-2026 *DER Market Design Project* (MDP)
 - Design in detail and implement "foundational" wholesale participation models (includes market rule/manual amendments and process/tool updates based on recommendations identified in Phase I)

Recap: Phase I Questions

Key Focus Area	Phase I Question
Participation & Aggregation	<ol style="list-style-type: none">1. What participation and aggregation models will be established for DER resources? And why?2. Which entity/entities represents the IESO market participant?3. Are maximum and minimum size thresholds needed for individual DERs or DER Aggregations (DERAs)?
Eligible Services	<ol style="list-style-type: none">4. What products and services can DERs/DERAs provide?5. In what timeframes will DERs/DERAs be eligible to participate?6. What are appropriate visibility requirements for DERs/DERAs (i.e., telemetry)?
IESO-Distributor Coordination	<ol style="list-style-type: none">7. What coordination protocol(s) will be used amongst the IESO-Distributors-Aggregators to enable reliable wholesale market participation?
Metering and Settlement	<ol style="list-style-type: none">8. What revenue metering arrangements are appropriate for DERs/DERAs?9. Will additional settlement arrangements need to be established for DERs/DERAs?

See [October 2021 Session](#) for additional considerations associated with the Phase I Questions

Stakeholder Feedback Themes from the October Session

In the October 2021 session, stakeholders expressed general support for the IESO's phased approach and determined that the Phase I questions were appropriate. Stakeholders also requested that the IESO:

1. Provide criteria for evaluating between foundational and enhanced participation models
2. Expedite DER implementation timelines
3. Review Measurement and Verification (M&V) processes such that the IESO can leverage strategies being pursued in other jurisdictions
4. Leverage distributor data where applicable for M&V and Settlement
5. Enable Hourly Demand Response (HDR) resources to provide operating reserve

Response to Stakeholder Feedback

#1 Provide criteria for evaluating between foundational and enhanced participation models

- The IESO's foundational models will focus on increasing opportunities for DER participation in support of reliability needs mid-decade while minimizing changes to major tools such as the Dispatch Scheduling and Optimization (DSO) engine. For example, options that require DSO upgrades are more likely to be considered in the enhanced models rather than the foundational.
- In Q2 of 2022, IESO will also present detailed criteria by which options for answering the Phase I questions will be assessed. The IESO will leverage the criteria established by other projects such as the [Hybrid Integration Project](#) and Market Renewal.

Response to Stakeholder Feedback – 2

#2 Expedite DER implementation timelines

- Timelines for DER integration have been developed through the [Enabling Resources Program](#) (ERP). The ERP work plan reflects a number of key considerations including:
 - introducing new participation models once the Market Renewal Program is completed
 - alignment with timing of existing contract expirations (such as RESOP, FIT, microFit etc.)
 - alignment with when system needs are expected to emerge as identified in the IESO's Annual Acquisition Report,
 - availability of IESO staff and budget to complete the work
- Hybrid resources have been identified as the number one priority for enabling resources and the timing of the initiatives reflects this decision.

Response to Stakeholder Feedback – 3 & 4

#3 Review Measurement and Verification (M&V) processes such that the IESO can leverage strategies being pursued in other jurisdictions

#4 Leverage distributor data where applicable for M&V and Settlement

- M&V options will begin to be addressed via Phase I Questions #8 and #9. The IESO will review strategies from various Independent System Operators (ISOs)/Regional Transmission Organizations (RTOs) subject to the Federal Energy Regulatory Commission (FERC) as a part of its jurisdictional scans in determining design options for the Phase I questions
- The IESO has experience with leveraging distributor meter data, particularly for demand response M&V and will explore if additional opportunities are feasible when determining options to answer these questions

Response to Stakeholder Feedback – 5

#5 Enable Hourly Demand Response (HDR) resources to provide operating reserve

- The IESO's Phase I Question #4 will examine options for what services DER/DER Aggregations (DERA) will be able to provide
- The IESO will present these options in Q3 of 2022 and will be seeking stakeholder feedback at that point
- The 2021 Joint IESO-OEB Grid Innovation Fund (GIF) scope seeks to test the ability of various DER resources types/ DERA to provide wholesale services including operating reserve. The IESO intends to use the learnings from the GIF projects as inputs to both the Market Vision and Design Projects

Timeline and Deliverables

Date	Deliverables
October 2021	<ul style="list-style-type: none">• Introduce the DER Market Vision and Design Project• Phase I Questions
January 2022	<ul style="list-style-type: none">• EPRI Presentation on FERC Order 2222• MVP timelines and deliverables for the remainder of 2022
Q2 2022	<ul style="list-style-type: none">• Criteria used to determine foundational vs. enhanced models• Initial set of options of Phase I questions
Q3 2022	<ul style="list-style-type: none">• Recommendations for Phase I questions for foundational models with associated rationale
Q4 2022	<ul style="list-style-type: none">• Options and draft recommendations for enhanced models with associated rationale and criteria to trigger implementation
Q1 2023	<ul style="list-style-type: none">• Contingency and finalization of participation models

Feedback

Questions for stakeholder feedback:

1. Are the deliverables clear? If not, what additional information would be most helpful at this early stage?
2. Which aspects of DER integration efforts from other jurisdictions are most appropriate for Ontario and why?

Please use the feedback form found under the January 26, 2022 entry on the [DER Market Vision and Design webpage](#) to provide feedback and send to engagement@ieso.ca by February 16, 2022

Thank You

ieso.ca

1.888.448.7777

customer.relations@ieso.ca

engagement@ieso.ca



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