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DER Market Vision and Design Project

T-D Coordination Foundational Questions - Update

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Recap: DER Market Vision and Design Project Structure

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: DER MVP - 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 DERs? And why?2. Which entity/entities represents the IESO market participant in the IESO-administered markets?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 DER(A)s provide?5. In what timeframes will DER(A)s be eligible to participate?6. What are appropriate visibility requirements for DER(A)s (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 DER(A)s?9. Will additional settlement arrangements need to be established for DER(A)s?

Participation & Aggregation – Question 2

Phase 1 Question	Options	Recommendation For Foundational Models
Which entity/entities represents the IESO market participant?	<ol style="list-style-type: none"><li>1. Stand-Alone DER<li>2. Aggregators<li>3. Distributors	<ul style="list-style-type: none"><li>• RECOMMENDATION: Permit stand-alone DER (i.e., single contributor) and Aggregators to take on all of the roles and responsibilities of a Registered Market Participant (RMP)<ul style="list-style-type: none"><li>○ For stand-alone DER, the RMP is associated with the single contributor<li>○ For DERA, the aggregator will be the RMP<li>○ Additional direction from the OEB required for Distributors<li>• RATIONALE: Distributor participation in IESO markets is subject to legislation (the OEB Act) and regulatory interpretation of that legislation.

IESO-Distributor Coordination – Question 7

Phase 1 Question	Sub-Feature/Sub Question	Options	Recommendation For Foundational Models
<p>What coordination protocol(s) will be used amongst the IESO-Distributors-Aggregators to enable reliable wholesale market participation?</p>	<p>In addition to the existing emergency, forced outage, safety, equipment, & applicable law “dispatch deviation” Market Rules today, are there additional distribution conditions that should qualify for “override”?*</p>	<ol style="list-style-type: none"> 1. Yes 2. No 	<ul style="list-style-type: none"> • RECOMMENDATION: Outline the additional conditions that would qualify for distributor override • Development of the detailed protocols will be established via the Transmission-Distribution Working Group and will be finalized via the MDP phase • RATIONALE: Existing requirements do not outline/contemplate distribution activities impacting capability

* Distributor “override” of IESO schedules/dispatch

Added requirements to capture distribution activities?

Yes, to capture the capability impacts of distributors using DER(A) for distribution services

- Given today's processes, IESO expects DER(A) will be able to operate at maximum registered and assessed capability, unless the distribution system has a forced/planned outage
- DER(A)'s inability to operate due to distribution reconfiguration / load transfers consistent with established distribution system procedures would be considered to constitute a forced outage condition
- Distributors using DERA(A) for distribution services (i.e., as non-wires alternative) involves additional requirements, intended to be captured in the T-D coordination protocol (and has been structure to not constitute "override" per se)
 - T-D coordination expected to involve distributors to identify their service needs in advance of IESO's day-ahead and real-time market processes

IESO-Distributor Coordination – Question 7 (cont'd)

Phase 1 Question	Sub-Feature/Sub Question	Options	Recommendation For Foundational Models
<p>What coordination protocol(s) will be used amongst the IESO-Distributors-Aggregators to enable reliable wholesale market participation?</p>	<p>For Distributor “override,” does IESO require new communication processes between the DER(A) and the IESO outside of existing Market Rule/Market Manual requirements (for outage management and real-time dispatch data submission)?</p>	<ol style="list-style-type: none"> 1. Yes 2. No 	<ul style="list-style-type: none"> • RECOMMENDATION: Outline new communication processes • RATIONALE: Existing requirements do not outline/contemplate distribution activities impacting capability. Development of the detailed protocols will be established via the Transmission-Distribution Working Group and will be finalized via the MDP phase • No changes anticipated to IESO tools (e.g., outage management tool) & associated system and market timing requirements

Processes outside of existing requirements needed?

Yes, the T-D coordination protocol details a process outside existing IESO requirements

- Coordination steps in advance of IESO's day-ahead and real-time market processes to facilitate DER(A) providing both distribution and wholesale market services will be outlined in the protocol
- With the T-D coordination protocol,
 - IESO would have awareness of (or "visibility" into) DER(A) providing distribution NWA service and what is available for wholesale market services
 - Opportunity for distributors to have awareness of (or "visibility" into) DER(A) providing wholesale market services
- A draft conceptual T-D coordination protocol for the Dual Participation model will be discussed at today's TDWG session

IESO-Distributor Coordination – Question 7 (cont'd)

Phase 1 Question	Sub-Feature/Sub Question	Options	Recommendation For Foundational Models
What coordination protocol(s) will be used amongst the IESO-Distributors-Aggregators to enable reliable wholesale market participation?	Are there assurances that the IESO needs regarding communications between DER(A) and Distributor	<ol style="list-style-type: none">1. Yes2. No	<ul style="list-style-type: none">• RECOMMENDATION: Outline what constitutes assurances between between the DER(A) and the Distributor. Development of the detailed protocols will be established via the Transmission-Distribution Working Group and will be finalized via the MDP phase• RATIONALE: Helps to ensure processes are in place and followed, for audit/dispute purposes, etc.)

Assurance of distributor-DER(A) communication?

Yes, IESO will require codification of service and outage coordination between distributors and DER(A)

- Distributors may otherwise not have a direct relationship with the DER(A), i.e., the registered market participant with the IESO
- DER(A)-IESO coordination is/will be codified in IESO market rules/manuals
- Requirements for distributor-DER(A) (i.e., DER owner or DERA aggregator) coordination could be in the form of new market rules, multi-party agreements, or regulatory instruments.
 - Exact approach to be determined as part of the DER Market Design Project and through discussions with the OEB.

Next Steps: 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">• Electric Power Research Institute (EPRI) Presentation on FERC Order 2222• MVP timelines and deliverables for the remainder of 2022
June 2022	<ul style="list-style-type: none">• Criteria used to determine foundational vs. enhanced models• Initial set of options of Phase I questions for foundational models
September 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

Question for Feedback

- Are the IESO's recommendations for T-D coordination appropriate for foundational models in the DER MVP? Do any recommendations involve risk for distributors that would inhibit DER(A) participation in wholesale market?

Please use the feedback form found under the November 9 entry on the [TDWG webpage](#) to provide feedback and send to engagement@ieso.ca by November 30

Thank You

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