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

Options to the Phase I Questions for Foundational Models

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# Recap: Foundational Vs. Enhanced Models

## Foundational Models

Focus on establishing pragmatic participation models that enable resources to provide required grid services with manageable implementation cost and complexity

- Outcomes of this work will progress to design & implementation (i.e., Phase II or MDP)

## Enhanced Models

Explore more sophisticated, "participation models and the criteria for implementing those models

- Explore remaining options not selected in the foundational stage for applicability to the enhanced models
- Outcomes of this work will progress to detailed design and implementation once the criteria have been met

# Recap: What is Enabled Today?

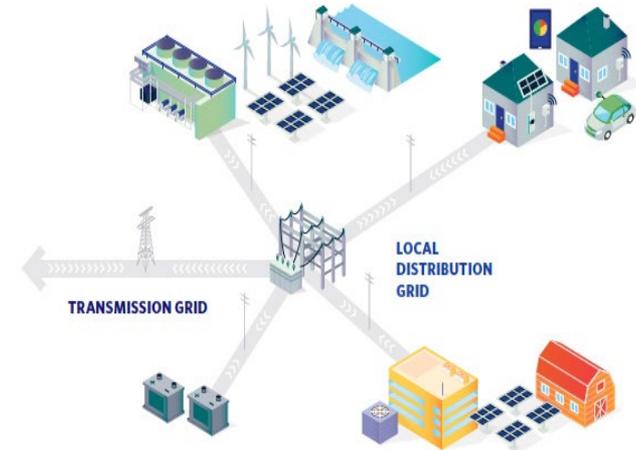
Through existing market rules, DER(A)s can participate in either the “Single Resource” model or the “Demand Response” aggregation model

Requirements	Single Resource Model	Demand Response (DR) Aggregation Model
A) Aggregation	Single resource (e.g., generation, storage or dispatchable load)	Part of a physical hourly demand response (HDR); virtual HDR – residential; virtual HDR – commercial and industrial (C&I)
B) Delivery Point	Single delivery point	Multiple connection points; aggregated by zone
C) Size	1MW of greater	Contributors can be less than 1MW; aggregation must be 1 MW or greater
Eligible Services if A+B+C are met	Capacity, Energy, Ancillary Services	Capacity (majority are not 5-min dispatchable)

# Recap: What We Are Seeking to Enable Via New Foundational Models

The DER MVP is seeking to establish new foundational participation models for DER(A) integration into wholesale markets by:

- creating opportunities for aggregations to provide additional wholesale services by becoming 5-minute dispatchable
- enabling aggregations to be comprised of different fuel/technology types (where possible) and modelling aggregations as single resource (where possible)
- enabling wholesale market participation in order to expand opportunities for resources to participate in future procurements
- seeking to expand opportunities for resources less than 1 MW to participate
- seeking to reduce participation barriers by re-examining telemetry and metering requirements



# IESO-Distributor Coordination – Question #7

Phase 1 Question	Sub-Feature/Sub Question	Options
What coordination protocol(s) will be used amongst the IESO-Distributors-Aggregators to enable reliable wholesale market participation?*	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”?**  ** Distributor “override” of IESO schedules/dispatch	1. Yes 2. No
	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)?	1. Yes 2. No
	Are there assurances that the IESO needs regarding communications between DER(A) and Distributor (e.g., to ensure processes are in place and followed, for audit/dispute purposes, etc.).	1. Yes 2. No

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# Thank You

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