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**DECEMBER 3, 2020**

# Demand Response Working Group

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# Purpose

- The purpose of this presentation is to:
  - Review feedback received in response to materials presented at the October 8, 2020 Demand Response Working Group (DRWG) meeting
  - Provide updates on the priority 2020 DRWG work plan initiatives and the HDR objective statement
  - Continue the broader discussion on demand response (DR), particularly regarding stakeholder market development priorities, including a presentation by the Advanced Energy Management Alliance (AEMA)

# Stakeholder Engagement Framework

- Implementation of Phase II of the IESO's Stakeholder Engagement Framework was presented at the November 3, 2020 Stakeholder Advisory Committee (SAC) meeting
- Phase II of the framework streamlines existing groups and introduces a new stakeholder planning and priorities advisory group that supports IESO efforts to advance sector and market changes by bringing together stakeholder interests and perspectives to facilitate the advancement of IESO activities

## Stakeholder Engagement Framework (continued)

- The new stakeholder advisory group will consolidate priorities from the DRWG and other IESO engagements (Energy Storage Advisory Group, Market Development Advisory Group, etc.) including the results of the broader DR market development prioritization discussion that will be continued today



# Stakeholder Feedback – October 8, 2020 DRWG Meeting

Emma Ferner, Advisor, Demand Response Market Development

# Re-Cap of October DRWG Meeting

- At the last virtual DRWG meeting, the IESO:
  - Presented results of the July 9<sup>th</sup> and 10<sup>th</sup> Hourly Demand Response (HDR) activations and discussed lessons learned; and
  - Advanced the broader discussion on demand response introduced at the August DRWG meeting, including sharing a draft HDR objective statement and proposed format and scope for the discussions

## Re-Cap of October DRWG Meeting (cont'd)

- IESO indicated interest in learning more about the issues Demand Response Market Participants (DRMPs) with HDR resources faced during the July activations
- IESO also requested feedback on the draft HDR objective statement and solicited stakeholder interest in presenting at the next DRWG meeting on priorities and opportunities for DR resource evolution

# Stakeholder Feedback - Overview

- The IESO received one feedback submission from the Advanced Energy Management Alliance (AEMA)
- Enel X also submitted feedback indicating support for the comments provided by AEMA
- The following slides summarize the feedback and the IESO's responses

# Stakeholder Feedback

- AEMA indicated the objective statement for HDR is too narrowly defined, restricting the resource's participation to "during times of localized or global system stress"
  - As the HDR resource evolves and the participation model changes, the objective statement could restrict the IESO from getting the full value of this flexible resource
  - Instead, the IESO should state the needs and HDR resources will adapt to meet those needs

# IESO Response

- IESO appreciates AEMA's feedback on the HDR objective statement
- Amendments to the draft HDR objective statement based on AEMA's feedback are included in a later section of the presentation

# Stakeholder Feedback

- AEMA noted the HDR resource is a cost-effective capacity resource that follows a compensation and rule scheme that identifies poor performers and penalizes them for not following dispatch orders
- AEMA recommends IESO identify existing issues with scheduling and dispatching HDR resources then the DR community can provide input on how to improve response

# IESO Response

- Discussions with DRMPs to-date regarding challenges associated with HDR resource performance during the July activations have been highly informative in terms of identifying potential root causes and opportunities to improve HDR resource performance
- IESO encourages DR providers to continue to share lessons learned from participating in the Ontario market
- IESO continues to consider options to increase confidence in HDR resource performance

# Stakeholder Feedback

- AEMA indicated that as the needs of the system evolve (including the reduction of over-supply), the HDR resource type may be used in a different manner than it has over the past few years as it is versatile and capable of meeting different needs
- Specifically, the IESO should allow HDR resources that can meet “fair technical requirements” to participate in Operating Reserves

# IESO Response

- IESO recognizes that demand-side resources may have the potential to provide services beyond capacity in the IESO-Administered Markets (IAMs)
- IESO is committed to enabling resources to participate more fully in the IAMs

## IESO Response (cont'd)

- The IESO is in the process of finalizing a memo that summarizes the Phase 1 research of the Expanding Participation in Operating Reserve and Energy (EPOR-E) engagement, which assessed the requirements and processes to provide energy and OR in the IAMs and analyzed areas of misalignment with specific resources types, including HDR
- At the November 3, 2020 Stakeholder Advisory Committee (SAC) meeting, the IESO provided an update on the EPOR-E and indicated its intent to revise its engagement approach to enable resources

## IESO Response (cont'd)

- IESO is establishing a work plan to enable emerging and evolving resource types, and will introduce the details of the expanded engagement and work plan in Q1 2021

# Stakeholder Feedback

- AEMA recommended IESO set up an engagement to ensure resources that are technically capable of providing service on their own to participate in the IESO-Administered Markets
- AEMA recommends using FERC Order 2222 as a roadmap for removing barriers to the participation of Distributed Energy Resource (DER) aggregations

## IESO Response (cont'd)

- At the November 3, 2020 SAC meeting, IESO also provided an update on the IESO Innovation Roadmap
  - IESO will be developing a roadmap to fully enable DERs to compete in IAMs for all products/services they are technically capable of providing, and will look to activities in the U.S. to inform the roadmap
- Also in November, IESO published the draft Part II of the Exploring Expanded DER Participation in the IAMs white paper
  - Part II identifies specific solutions to barriers to participation that merit further consideration for future design work/pilot exploration

# IESO Response

- The IESO York Region Non-Wires Alternative Demonstration Pilot is testing the design of a local market to procure energy and capacity from DERs as cost-effective alternatives to traditional infrastructure to meet distribution level needs while enabling simultaneous bulk market participation
  - The local capacity auction took place in November 2020 for a May to October 2021 commitment period



# HDR Objective Statement

Tom Aagaard, Supervisor, Demand Response Market Development

# HDR objective statement

- The AEMA communicated that the draft objective statement was too narrowly defined, restricting HDR's value to times of localized or global system stress, and risked restricting the IESO from obtaining the full flexibility of the resource (particularly with the proliferation of behind-the-meter DER and changes to business processes)
- The IESO has updated the objective statement (changes highlighted in teal) to respond to these comments

## HDR objective statement

The **primary** objective of the Hourly Demand Response resource type is to provide capacity to maintain reliability during times of localized or global system stress.

IESO is broadly supportive of exploring design changes that can enhance the value of the resource type, **and demand side resources more broadly**, for maintaining system reliability, such as increasing flexibility of utilization, or enhanced competition in the IESO-Administered Markets, **including through the provision of additional services**

(cont'd next slide)

## HDR objective statement

Consistent with expectations for other resources, the IESO expects the HDR resource type to be dependable in the planning timeframe (e.g. HDRs reliably make their full obligated capacity available in the energy market) and operational timeframe (e.g. energy market bids reliably reflect actual capacity available); and when activated, to comply with dispatch instructions for the duration of the activation.



# In-Day Adjustment Factor (IDAF)

Tom Aagaard, Supervisor, Demand Response Market Development

# In-Day Adjustment Factor

- As part of the DRWG's 2020 work plan, the IESO committed to exploring as a priority initiative whether the in-day adjustment (IDAF) methodology should be revised to better reflect consumption patterns for non-weather sensitive loads
- Currently the IDAF is applied to all HDR resources and adjusts a resource's baseline based on consumption during the three hours, four hours prior to the dispatch hour

## In-Day Adjustment Factor (cont'd)

- The current baseline methodology is consistent with the definition of an HDR resource, which is expected to curtail load to scheduled consumption within one hour
  - Curtailment over durations greater than one hour is captured by the IDAF and impacts resource performance assessment for settlement and testing purposes
- As work progressed, stakeholders articulated that part of the interest in IDAF changes was to enable slower-moving resources to start curtailing load more than an hour preceding the dispatch hour without penalty

## In-Day Adjustment Factor (cont'd)

- At the August 27 DRWG, the IESO communicated that allowing HDR resources to curtail load over more than one hour preceding the dispatch hour without penalty would represent a fundamental shift from the current definition of HDR as an hourly resource
  - Additionally, as IESO tools used to balance supply and demand currently model resources as following an hourly schedule, it would also require tool changes to avoid negative impacts to reliability and additional use of ancillary services
- The IESO communicated that it required additional internal discussion to determine whether it was open to exploring the issue further

## In-Day Adjustment Factor (cont'd)

- The IESO has determined that it is not open to exploring changes to the application of the IDAF that would enable resources to curtail load more than one hour preceding the dispatch hour without penalty
  - Enabling multi-hour ramp would not be consistent with the HDR objective statement by creating a participation model that would create further challenges to HDR performing as a true hourly resource and limit potential future changes aimed at increasing the operational value of the resource type by making it more responsive (e.g. changes to standby and activation timelines)

## In-Day Adjustment Factor (cont'd)

- The current application of the IDAF also plays an important role in ensuring the capacity procured through the Capacity Auction is incremental to capacity reductions from the Industrial Conservation Program



# Broader DR discussion – Summary of historic DR market development initiatives

Tom Aagaard, Supervisor, Demand Response Market Development

# Summary of DR Market Development Activities

- The table below summarizes the various initiatives the IESO has undertaken since 2014 to evolve the DR participation model in Ontario

<b>Initiative</b>	<b>Description</b>
Enable residential DR participation in the Demand Response Auction (2016)	HDR participation model updated with residential-specific baseline methodology, contributor management and other requirements to enable participation of aggregated residential loads
Enable emergency-use of HDR resources (2018)	Enabled greater utilization of HDR resources by adding them to the EOSCA list and increasing the availability of HDR resources in the energy market at times of system need by modifying the trigger for a standby notice
DR potential initiative (2019)	Initiative to better understand DR potential in Ontario over the 2020s

# Summary of DR Market Development Activities (cont'd)

<b>Initiative</b>	<b>Description</b>
Demand Response Pilot (2016-2017)	Launched the Demand Response Pilot to better understand the capabilities of DR resources to provide hourly load following and unit commitment services to the bulk power system
Introduced Out-of-market payments for HDR resources (2019)	Introduced out-of-market payments for test and emergency activations to reduce the financial risk associated with an out of market activation
DR Demonstration Projects (2016-2017, 2019-present)	Launched the Brant Local Demand Response Pilot and York Region NWA Demonstration Project to better understand capabilities of DR resources to address local wires constraints
Improved HDR Resource Data Submission Process (2019)	Changes to measurement data submission criteria and VEE process for missing measurement data to reduce the cost of audit for DRMPs
Revised HDR Resource Testing Criteria (2019)	Introduced reduced duration testing for HDR resources that successfully demonstrate performance



# Broader DR Discussion – AEMA Presentation Placeholder



# Stakeholder Feedback Requested and Next Steps

# Summary of Stakeholder Feedback Requests

- Please provide any further feedback, beyond the information presented in the AEMA presentation, to inform the development of a draft list of DR market development priorities.
- Do the revisions to the HDR Objective Statement address the stakeholder concerns that were identified?

# Submitting Stakeholder Feedback

- Please provide written feedback by December 24<sup>th</sup> to [engagement@ieso.ca](mailto:engagement@ieso.ca) using the feedback form on the [engagement web page](#).
- Please use the feedback form provided to ensure stakeholder feedback is compliant with the Accessibility for Ontarians with Disabilities Act (AODA). If you choose not use the IESO feedback form, please provide an AODA compliant pdf document.

## Next Steps

- The IESO will consider feedback as articulated in today's discussion, as well as written feedback submitted after this meeting, in order to develop a draft list of DR market development priorities which will be presented at the next and final DRWG virtual meeting
- Stakeholders will be notified when the next meeting is scheduled

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# Thank You

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