

# IMPROVED UTILIZATION OF HDR RESOURCES

Demand Response Working Group

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November 16, 2017

# Purpose

- To continue discussion on increasing utilization of HDR resources



# Introduction

- The IESO has been working with stakeholders since spring 2017 to propose ways to increase utilization of Hourly Demand Response (HDR) resources
- Most of the discussions at previous meetings focused on improving the scheduling flexibility of HDR resources including a review of:
  - Standby notice
  - Activation notice lead time
  - Activation duration
- Other potential options also discussed include:
  - Recognizing that some DR is more flexible than others
  - Utilization payments may have an impact on utilization
  - Utilizing HDR to avoid or mitigate system emergencies

# Proposed Steps Forward

## 2017 DR Auction:

Add HDR resources to the Emergency Operating State Control Actions (EOSCA) list

## 2018 DR Auction and Beyond:

Continue to evolve the HDR resource to better meet system needs and to prepare to compete in the future ICA

# 2017 DR Auction

## *EOSCA List*

- For the upcoming DR Auction in December 2017, the IESO proposes to add Hourly Demand Response resources to the Emergency Operating State Control Actions (EOSCA) list
- The EOSCA list is a table of control actions that are available to the IESO leading up to and during an “emergency operating state”
  - Allows the IESO to take “out-of-market” actions to maintain reliability
  - The list of control actions include: recalling outages, run short of operating reserve, curtail exports, shed load, activating CBDR, etc.
  - More information on the EOSCA list can be found in [Market Manual 7.1, Appendix B](#)
- Adding HDR resources to the EOSCA list would be consistent with the IESO’s treatment of Capacity Based DR (CBDR) and dispatchable load resources, as well as other generation resources

# 2017 DR Auction

- The IESO will issue a NERC Energy Emergency Alert 1 (EEA-1) in advance of entering into an *emergency operating state*
  - An EEA-1 may be issued when there are energy or capacity concerns
  - The IESO will implement control actions to mitigate entering into an Emergency Operating State
- Potential triggers that may lead to the IESO issuing an EEA-1 include:
  1. Extreme temperatures and significant weather events (eg Consecutive days of extreme hot or cold weather)
  2. Unplanned Outages

Year	# of EEA-1 Issued in Ontario
YTD 2017	2
2016	1
2015	1
2014	0

# 2017 DR Auction

## *Proposal*

- The IESO proposes to add HDR resources to the EOSCA list using the following two control actions, effective May 1, 2018:

1. Issue Standby Notice for HDR resources
2. Issue Activation Notice for HDR resources

*These control actions will have similar placement as CBDR resources on the EOSCA list.*

- Activations from control actions will be treated the same as in-market activations
  - Existing scheduling protocol will be followed if/when HDR resources are called upon out-of-market
    - Standby notice will be issued by 7am of the dispatch day
    - Activation notice will be issued ~2.5 hours prior to dispatch *or earlier*
  - HDR resource can be activated up to the MW quantity bid into the energy market
  - Compliance with dispatch (capacity and dispatch charges) will be evaluated as an in-market activation

# 2017 DR Auction

## *Market Manual Updates*

- Adding HDR resources to the EOSCA list will require an update to Market Manual 7.1, Appendix B
  - Market manual changes to reflect this update will be published for stakeholder review around Mar-Apr 2018 with an effective date of May 1, 2018 on the IESO's [Pending Changes webpage](#)



# 2018 DR Auction and Beyond

- The IESO remains committed to increasing utilization of HDR resources and is targeting additional improvements for the 2018 DR Auction

## 2018 Goals for DR *(proposed)*

Develop DR to ensure it can compete with traditional supply

Alignment with Market Renewal

### Criteria for Improvements:

1. Must support efficient dispatch and evolve the effectiveness of the DR resource
2. Is likely to increase the number of Hourly DR Activations to demonstrate DR value when economic
3. Balances stakeholder needs
4. Can be implemented for the next DR Auction in December 2018

# Scheduling Flexibility

- At the previous DRWG session, the IESO identified improving scheduling flexibility as a method of increasing utilization of HDR resources.

Reducing  
Activation  
Duration

Eliminating  
Standby  
Notice

Reducing  
Activation  
Lead Time

# Scheduling Flexibility

- Activation Duration:
  - Stakeholders in general are in agreement with transitioning from a fixed four-hour block activation to one-up-to four hour dispatch based on system needs
- Standby Notice:
  - Eliminating the Standby notice increases the availability and opportunities for HDR resources to meet system needs
  - Currently, HDR resources must be scheduled by 7am in the pre-dispatch timeframe for it to be available to be utilized for the rest of the day. Creates a high threshold for utilization.
  - DR from other jurisdictions such as NYISO and PJM do not have a similar mechanism

# Scheduling Flexibility

- Activation Notice Lead Time:
  - Currently, HDR is activated with ~2.5 hours lead time [schedule is determined in the pre-dispatch minus 3 hour (PD-3) timeframe]
  - Shorter activation notice times provide greater flexibility in meeting system conditions (eg dispatchable loads respond with 5 min notice, imports respond with 1 hour notice)
  - In PJM, capacity-backed DR resources have 30 minutes activation lead time; in NYISO, capacity-backed DR resources have 2 hours.
- Discussion questions:
  - Standby notices are a unique feature to Ontario. Stakeholders have shown preference to maintain them but the IESO wants to know if they are necessary given that DR in other jurisdictions do not have a similar feature?
  - HDR resources are dispatched in the PD-3 hour timeframe. Can this be reduced to ~45 minutes to dispatch to be more similar to PJM's 30 minute lead time?

# Stakeholder Feedback

- In addition to improving scheduling flexibility, the IESO is interested in hearing from stakeholder on other ways to increase utilization of HDR resources
- The IESO has received the following feedback:
  - DR does not necessarily need to be used only when the system is under most stress and could potentially be used more frequently
  - HDR resources should be subject to a reliability-based activation trigger
  - Some portion of DR could be capable of being much more responsive and should be valued accordingly
  - Utilization payments could reduce bid prices, which increase likelihood of utilization
  - Bid price threshold (\$100) may be impediment to increased utilization
  - Market Renewal changes must be considered in design
- All stakeholder feedback is shared on the DRWG webpage

# Stakeholder Feedback

## *Other Areas of Investigation*

### **Stakeholder Feedback:**

*Resources procured through the DR Auction should be subject to a reliability-based activation trigger, such as an EEA event.*

### **IESO Response:**

Capacity from dispatchable loads and HDR resources are procured through the DR Auction. Dispatchable loads are currently subject to reliability-based activations from the EOSCA list as are CBDR resources and other generation resources. The IESO is proposing to add HDR resources to the EOSCA list for the 2017 DR Auction, which will be effective at the start of the summer commitment period on May 1, 2018 .

# Stakeholder Feedback

## *Other Areas of Investigation*

### **Stakeholder Feedback:**

*More responsive DR has greater value than the current Demand Response scenario of day-ahead notification and day-of activation four hours in advance... DR that could be activated on short notice could provide System Flexibility that is currently not recognized. For example, it could avoid start up costs for conventional generation, provide 30 minute and 10 minute Operating Reserve to meet system requirements, and avoid price spikes that might otherwise occur.*

### **IESO Response:**

The IESO is interested in expanding participation in operating reserve from resource types not currently participating. On November 10, the IESO held a public information session through webinar to seek feedback. For more information and to submit feedback, please email [engagement@ieso.ca](mailto:engagement@ieso.ca) and visit: <http://www.ieso.ca/en/sector-participants/engagement-initiatives/overview/public-information-sessions>

# Stakeholder Feedback

## *Other Areas of Investigation*

**Stakeholder feedback:** *An effective change to induce greater utilization would be to reduce or eliminate the \$100/MWh bid price threshold. The number is arbitrary and marginalizes the utility of DR under contract; possibly driving low utilization*

### **IESO Response:**

- Current DR Auction capacity qualification process does not adjust capacity for a DR resource's Industrial Conservation Initiative (ICI) participation
- The \$100/MWh bid price threshold was put in place to help prevent "double-dipping". A resource planning on reducing for ICI could submit low-priced bids to generate a "DR Activation" when the incremental DR capacity would not have been available in the first place
- Could be revisited during ICA design stage depending on capacity qualification design
- Observed participant bidding history shows recent bid prices are much higher than \$100



# Feedback

## Feedback can be provided on multiple topics:

1. IESO's proposal to include HDR resources on the EOSCA list for the 2017 DR Auction
2. Eliminating the Standby notice for HDR resources to improve availability to respond to system conditions. Comparable resources in NYISO and PJM do not have a similar feature.
3. HDR resources are activated with ~2.5 hours lead time. Can this be reduced to be more similar to PJM's 30 minute lead time?
4. What are other ways to increase utilization of HDR resources?

Feedback can be submitted to [engagement@ieso.ca](mailto:engagement@ieso.ca)

Please provide feedback by December 1, 2017