

# IMPROVEMENTS TO HOURLY DR UTILIZATION

Demand Response Working Group

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April 6, 2017

# Objective

- This presentation identifies the utilization criteria involved in activating HDR resources in the energy market and suggests several potential options that could be used to improve the utilization frequency
- Stakeholder discussion and feedback will be required to inform decision-making

# Background

- Greater economic utilization of DR promotes the value of DR as a competitive resource to meet system needs
- Stakeholder priority items on the utilization of DR received consensus support from the working group
- Utilization of DR combines a number of items identified by DRWG members including:
  - “Maintain standby notice”
  - “Eliminate or shorten standby notice”
  - “More flexible dispatch duration”

# Design Considerations for Discussion

- Good market design should enable DR to respond to market signals when it is the economically efficient resource
- Forcing or mandating DR to respond at prices that do not reflect the cost of curtailment is inefficient
  - Displaces cheaper resources
  - Increases cost to DR provider unnecessarily
- Economic efficient outcomes must be weighed against practical considerations
  - Not all DR is the same and may be impacted differently by any change
  - Some DR requires more notification time than others
  - May be difficult to demonstrate full value of DR under current supply conditions

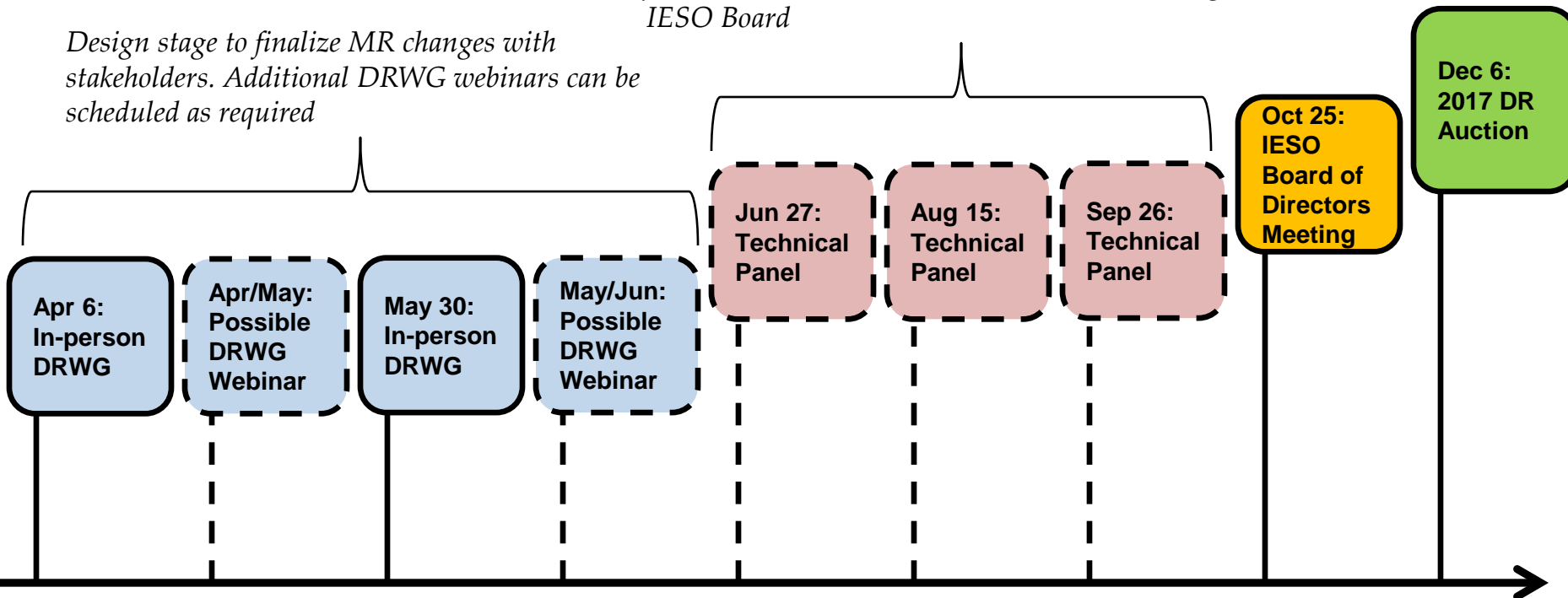
# Market Rule Changes

- IESO's goal is for HDR utilization improvements to be implemented for the Summer 2018 commitment period
- The notification and scheduling of HDR resources is covered by the Market Rules
  - Market Rules Chapter 7, Sec 19.4 covers the standby and activation notice criteria
- Changes to how HDR resources are utilized will require Market Rule changes
- In order to make Market Rule changes, the IESO will need to go through the Technical Panel process as outlined in the earlier presentation on the Market Rules Change Process

# Timeline for Changes

*Design stage to finalize MR changes with stakeholders. Additional DRWG webinars can be scheduled as required*

*Will require 2-3 TP meetings to post proposed MR changes for comment and have TP recommend MR changes to IESO Board*



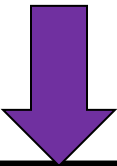
# Existing DR Activation Protocol

- Current HDR operational characteristics are largely unchanged from the DR3 program established in 2008
- A review of the existing utilization process is due to continue to evolve DR to better meet system needs

## Current HDR Activation Protocol

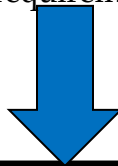
### 1. Standby Notice:

- Required to activate DR in RT



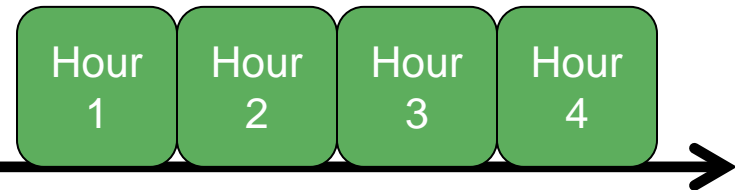
### 2. Activation:

- Review activation requirements



### 3. Duration:

- DR activated for 4 hour blocks



# Evolution of HDR

- The goal of improving economic utilization is to continue to evolve HDR to compete against traditional sources of supply
- A more competitive and flexible HDR resource will be better able to meet IESO system needs
- The purpose of today's presentation is to discuss potential options to improve the 3 different elements of HDR utilization (standby, activation, duration)
  - IESO has proposed the list of potential items for today's discussion
  - Stakeholders are asked to provide feedback and add potential options to the list



# Standby Notice

- To schedule an HDR resource for a DR activation, a standby notice must first be issued to the resource by 7am EST of the dispatch day\*
  - A standby notice is issued if a resource is scheduled for 4 consecutive hours during the availability window by 7am
  - The price at the DR resource's location must have exceeded the resource's bid price for at least four consecutive hours in pre-dispatch
- If a Standby Notice is *not* issued by 7am, the HDR resource removes its energy bids and the IESO does not have the ability to call a DR activation for the remainder of the day
- Increasing the likelihood that DR has been put on standby (and is available to be activated when needed) will improve the probability HDR can be utilized to manage peak demand conditions

\* For more information on the Standby Notice, review Market Rules Chap 7, Sec 19.4; Market Manual 9.3, Sec 4.11.2; Market Manual 4.3, Sec 7.2

# Standby Notice

## *Potential Options*

### Eliminate Standby Notices

- HDR resources could be available for activation every day within the availability window without first receiving a standby notice

### Modify Criteria to Issue Standby Notice

- Could issue Standby Notice if resource scheduled for 1 hour instead of current requirement of 4 hours, or
- Could issue Standby based on broad market trigger such as pre-dispatch zonal price greater than the DR bid price threshold (e.g. > \$100/MWh)

### Other Suggestions?

- *DRWG members to suggest additional options*

# Standby Notice

## Questions for Stakeholder Feedback

- How would eliminating the standby notice impact HDR resources' ability to provide demand response?
- How would modifying the standby notice criteria impact HDR resources?
- Are there additional options to consider?

# Activation and Duration

- To activate an HDR resource, a standby notice must have been sent and it must subsequently be scheduled for 4 consecutive hours during the availability window.
  - The activation notice is issued ~2.5 hours prior to the start of the first dispatch hour.
  - If an HDR resource is not economically scheduled for four consecutive hours or system conditions change closer to real-time, HDR resources cannot be utilized
- Some DR stakeholders have advised that shortening DR activation durations will increase the quantity of competitive DR capacity
- Greater precision in HDR dispatch capability improves demand response's ability to meet system needs

\* For more information on the Standby Notice, review Market Rules Chap 7, Sec 19.4; Market Manual 4.3, Sec 7.2

# Activation and Duration

## *Potential Options*

### Shorten Activation Notice Time

- Can reduce activation notice time from ~2.5 hours to a closer time in advance of real-time
  - Allows HDR resources to be more responsive to emerging and unexpected system needs

### Reduce Duration of Activations

- Can reduce duration of activations from 4 hours to 1 or 2 hours

### Modify Criteria to Send Activations

- Can send an activation notice when 1 or more hours are scheduled within the availability window

### Other Suggestions?

- *DRWG members to suggest additional options*

# Activation and Duration

## Questions for Stakeholder Feedback

- How will shortening the activation notice time by 1 hour (~2.5 to ~1.5 hours prior to dispatch) impact HDR resources?
- How will reducing the duration of a DR activation from 4 hours to 1-2 hours impact HDR resources?
- How will modifying the criteria to send an activation notice after 1 hour is scheduled impact HDR resources?
- Are there additional options to consider?

# Next Steps

- Please provide feedback on potential options to increase utilization of HDR resources to [engagement@ieso.ca](mailto:engagement@ieso.ca)
  - Will likely be a combination of changes
- The IESO will propose changes to stakeholders at the next DRWG meeting for further discussion

