

# NOTIFICATION AND ACTIVATION OF HOURLY DR RESOURCES

Demand Response Working Group

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# Overview

- Provide the rationale for exploring changes to the standby and activation criteria for Hourly DR resources
- Propose options for discussion on:
  - Standby notice criteria
  - Activation notice criteria
  - Activation length
- Request stakeholder feedback on options in advance of May 30<sup>th</sup> DRWG in-person meeting

# DRWG Goals for Demand Response

## Develop DR to ensure it can compete with traditional sources of supply

- Lower cost through competition by increasing participation and expanding opportunities for new technologies and capabilities
- Reduced emissions
- Broader economic benefits to Ontario businesses and residences
- Capable of providing energy, capacity and ancillary services

## Develop an auction platform as an alternative to traditional procurements

- Lower cost relative to alternative procurement means
- Provide flexibility to respond to changing system conditions
- Showcase and test auction mechanism in the Ontario market
- Provide a clear, long-term path to the sector

# Utilization of DR Auction Resources

- The costs of procuring DR capacity have fallen thanks to competitive pressures in the auction
- However, the combination of:
  - energy market bid prices (submitted by market participants) and
  - the notification and activation criteria for Hourly DR resources

means that the likelihood of dispatching HDR resources in the energy market is remote

# Utilization of DR Auction Resources

## Historical Information

	2014		2015		2016	
	# Activations	MWh	# Activations	MWh	# Activations	MWh
DR Auction	Not applicable as the Auction and Pilot only entered service in 2016				45	1,431
DR Pilot	Not applicable as the Auction and Pilot only entered service in 2016				937	8,813
CBDR	CBDR did not exist in 2014		0	0	1	636
DR3	0	0	1	1,679	DR3 ended in 2015	

- DR Auction activation has been limited to dispatchable load resources
- Hourly DR resources have not been activated

# Utilization of DR Auction Resources

## (cont'd)

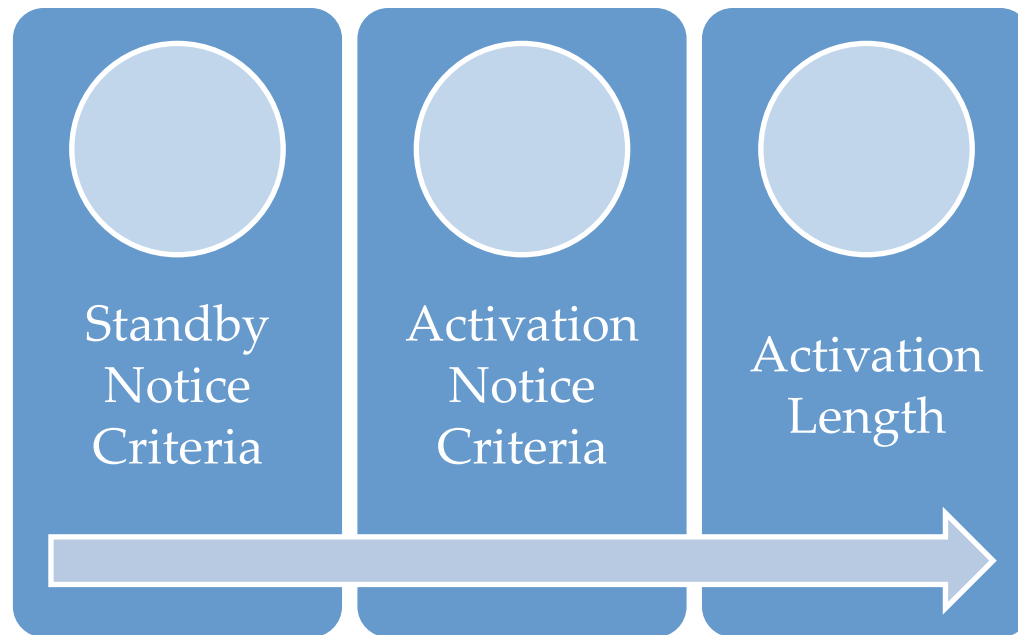
- The electricity system increasingly needs resources that can respond to emerging system conditions closer to real-time
- The IESO is working with different types of resources and technologies to understand ways in which to unlock additional responsiveness to meet system needs
  - Through formal discussions such as the Enabling System Flexibility stakeholder engagement but also working through other stakeholder outreach channels
- The IESO is looking to increase the economic dispatch of HDR resources to meet the needs of a changing electricity system

# Increasing the Economic Dispatch of HDR

- Dispatching DR resources out of merit is inefficient and introduces costs to both ratepayers and DR providers
- Evolving the Hourly DR resource and associated market rules will allow the IESO greater capability to dispatch resources when needed
  - Demonstrates the value of DR as a competitive resource to meet system needs
  - Consistent with the IESO's goal to evolve the DR resource to deliver greater parity with other conventional resources in the market

# Increasing the Economic Dispatch of HDR (cont'd)

- Increasing the economic dispatch of HDR can be achieved through modifying parameters, and likely a combination of these parameters

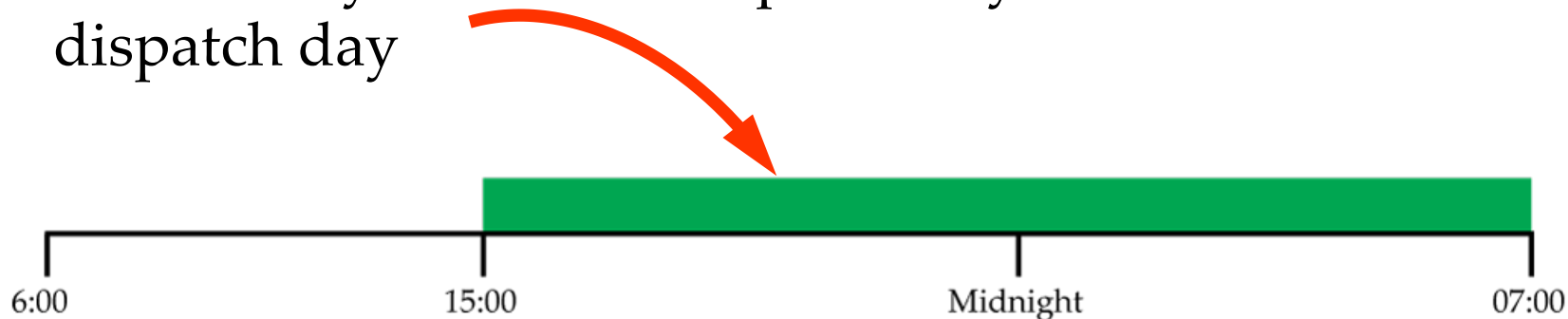




# Standby Notice Criteria - Today

A Standby Notice is sent, before 7am, when a resource is given a predispach schedule to reduce its consumption for four consecutive hours in the Availability Window

A Standby Notice can be sent any time between 15:00 EST the day before the dispatch day until 7:00 of the dispatch day



# Standby Notifications

- Today, if a DR resource is not on standby at 7:00 day-at-hand, it can remove its energy bids and still receive the full Availability Payment for that day
- Once those energy bids are removed, the IESO cannot send an Activation Notice to that DR resource to reduce its consumption later in the day, regardless of system conditions
- This is a significant barrier to dispatching DR to efficiently respond to system conditions

# Standby Notice Criteria

## Options to Explore

1. Treat every business day in the commitment period as a “standby” day
  - Resources would be required to maintain their bids until the 2.5 hour activation window passed for a given hour
  - Greater parity between DR and supply resources procured in a future Incremental Capacity Auction
  - Absent a day-ahead market, it would require more dynamic decision making on a daily basis to manage interaction with Industrial Conservation Initiative

# Standby Notice Criteria

## Options to Explore

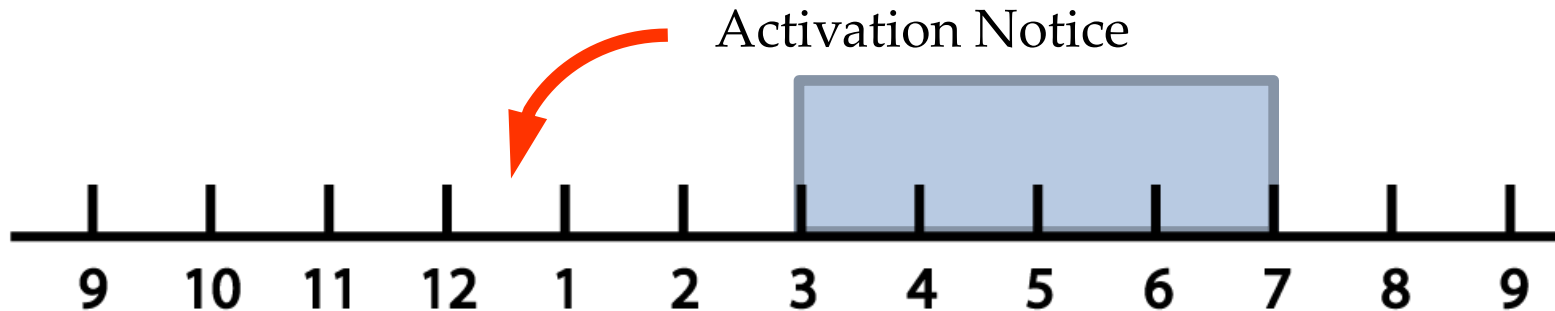
2. Reduce the 4 Hour Scheduling Requirement to 1 Hour
  - Would increase the likelihood of sending a standby notification for a given day
  - Would maintain the 7am “deadline” for the IESO to send a standby notification
  - Schedules only those resources that appear to be economic for a given day based on pre-dispatch results and DRMP energy bid prices
  - If conditions change, there may still be some capacity that wasn't put on Standby but is desired

# Standby Notice Criteria

## Options to Explore

3. Adopt a Price Trigger as Standby Criteria
  - The IESO would establish a price point (e.g. \$100/MWh to align with the Bid Price Threshold)
  - If DACP or predispach shadow prices exceed that threshold in any hour of the Availability Window, all HDR resources would be notified
  - Would maintain the 7am “deadline” for the IESO to send a standby notification
  - Mitigates against the risk of DRMPs specifying very high prices in order to avoid being scheduled and put on standby

# Activation Notice Criteria - Today



- An Activation Notice will be sent ~2.5 hours in advance of an activation when a resource is scheduled to reduce its consumption for 4 consecutive hours in predispatch

# Activation Notice Criteria

## Only One Feasible Option

- The requirement to be scheduled for four consecutive hours in predispatch is a significant barrier to the economic dispatch of Hourly DR resources
- A. Reduce the criteria such that an activation notice is sent when a DR resource is scheduled for at least 1 hour in the 3 hour-ahead predispatch for an hour within the Availability Window

# Activation Length

## Options to Explore

- All resources are currently activated for a block of 4 consecutive hours
- I. Maintain the 4 hour block dispatch
  - Dispatch block would begin with the first hour scheduled in predispatch
  - Would increase the likelihood of dispatch but maintain the operational expectations of DR resources
  - Might distort real-time prices in later hours if DR has been dispatched out of merit



# Activation Length

## Options to Explore

2. Align activation block hours with only those hours scheduled in predispach
  - e.g. if predispach schedules a resource for 2 consecutive hours, the activation block would be 2 hours, not 4
  - Would allow for dispatches **up to** 4 consecutive hours
  - Would better align DR dispatch blocks with system needs and allow market to solve efficiently for other hours

# Combinations of Options

- It was noted that a solution would likely be a combination of options
- The following solutions are proposed for consideration and feedback

Standby Notice Criteria	Activation Notice Criteria	Activation Length
Option 1	Option A	Option I
Option 1	Option A	Option II
Option 2	Option A	Option I
Option 2	Option A	Option II
Option 3	Option A	Option I
Option 3	Option A	Option II

# Request for Feedback

- The IESO is asking that members provide feedback on the proposed options, including a ranking of options, in order of preference
- The IESO will work internally to identify the operational, settlement and market impacts of the proposed options
- Taking into account these findings and stakeholder feedback, the IESO will present a proposal at the May 30<sup>th</sup> DRWG meeting

# Next Steps

- **Please provide your feedback by May 19<sup>th</sup>**, to allow the IESO to prepare materials for the in-person meeting on May 30<sup>th</sup>
- Feedback can be sent to [engagement@ieso.ca](mailto:engagement@ieso.ca)
- If further discussion is warranted, another DRWG webinar or meeting can be arranged
- The proposed solution will be discussed at the next meeting and any required Market Rule amendments will be brought to the Technical Panel meeting on June 27<sup>th</sup>