

# Demand Response Working Group

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September 11, 2018

# Agenda

<b>9:30am</b>	Welcome
<b>9:35am</b>	DR Operational Updates
<b>10:45am</b>	Break
<b>11:00am</b>	DR Utilization & Market Rules Updates
<b>11:15am</b>	2018 DR Auction Parameters
<b>11:30am</b>	Closing & Adjourn

# DR Operational Updates

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# Agenda

- Background
- HDR Resource Modeling
- HDR Resource Dispatch
- Mitigation Measures
- Proposed DRMP – IESO Communication Protocol
- Proposed Update to DR Activation Timeline

# Background

- Per MM 7.3 Section 4.2.4, IESO can test Demand Response Auction (DRA) resources up to twice per Commitment Period
- Tests are conducted to verify DRMPs ability to deliver demand response capacity obligation when needed
- **Erroneous HDR dispatches** (Standby & Activation Notices) and **testing notification failures** have created concerns for DRMP's
  - Test preparation requires effort from both IESO and DRMPs
  - Testing notification failures lead to cancellations of scheduled tests
  - Erroneous notification creates confusion for DRMPs
- Main causes of these issues:
  - Transmission equipment outage slips inadvertently removing connectivity to DR resources
  - IT outages interfering with publication of Standby or Activation Notices

# HDR Resource Modeling

- HDR resources within each IESO zone are aggregated and modeled as connected to single transmission busses within Ontario Zones:

Zone	Virtual DR Connection Point
EAST	Lennox 500 kV K Bus
ESSA	Essa 230 kV A Bus
NIAGARA	Allanburg 115 kV D1 Bus
NORTHEAST	Hanmer 500 kV J Bus
NORTHWEST	Lakehead 230 kV H Bus
OTTAWA	Hawthorne 500 kV HT1 Bus
SOUTHWEST	Middleport 230 kV K2 Bus
TORONTO	Cherrywood 230 kV (North) D1 Bus
WEST	Chatham 230 kV D Bus

- Proper connectivity is required for accurate dispatch scheduling
  - Dispatch tools must see resources as energized and consuming load

# HDR Resource Dispatch

- Standby Notices to HDR resources are issued when:
  - Pre-dispatch Shadow price exceeds resource bid price for 4\* consecutive hours within the Availability Window
  - An outage slip causes the resource's Pre-dispatch schedule to be 0 MW for four\* consecutive hours within the Availability Window – used by IESO for testing or manually activating HDR in advance of or during emergency conditions
- Outage to bus to which HDR resource is virtually connected breaks network connectivity of HDR, causing erroneous Standby and Activation notices
- Manual intervention by IESO staff required to maintain connectivity and avoid these erroneous dispatches

\*Prior to HDR Utilization Improvements scheduled for May 2019

## Mitigation Measures (Ahead of Time)

- Monitoring implemented to alarm in IESO SCADA applications when a DR resource connectivity is broken
  - Alarming alerts Operations staff of potential impacts of bus outages to HDR resources in the planning timeframe
- Market Forecasts & Integration have implemented processes to regularly run special outage queries that check for upcoming outages to HDR-connected busses
  - These alert staff of when manual intervention will be required to maintain network connectivity of HDR resources



## Mitigation Measures (Should an Error Occur)

- Real-time alarming has been implemented to notify Control Room staff immediately when any HDR resources are placed on Standby
  - Alarming alerts operator to immediately verify validity of Standby issuance
- If notification was issued in error, Advisory Notice will be published
  - Market Participants can expect to receive relevant instructions on how to proceed via the Advisory Notice feed

# Test Notification Failures

- Interference caused by IT outages with the publishing of Standby/Activation Notices has resulted in cancellation of planned HDR testing

## Mitigation

- IESO has implemented rigorous checks and coordination with IT within the HDR testing procedure to ensure planned testing proceeds without issue

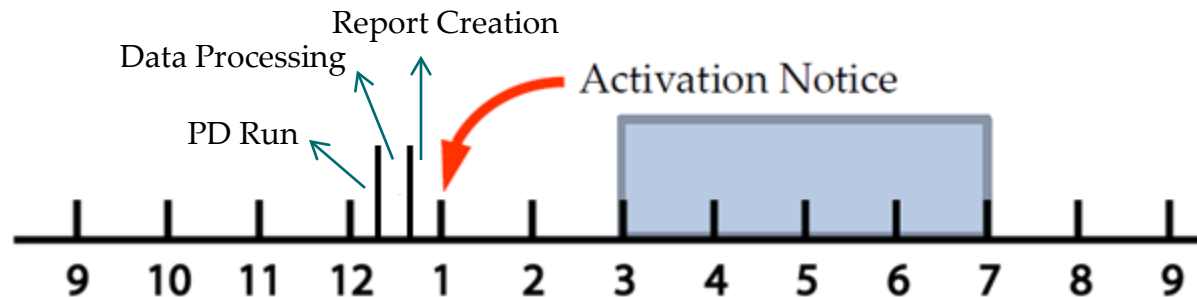
# Proposed DRMP – IESO Communication Protocol

- DRMP's have raised concern about unavailability of IESO contact after business hours
  - IESO contact during business hours is IESO Customer Relations
- Outside of business hours, IESO is considering a providing DRMPs direct communication path with IESO Control Room, provided they have completed the following steps:
  - Check all available, applicable Pre-dispatch shadow price reports (published between 15:00 EST day ahead and 06:30 day at hand)
  - Check Advisory Notices for any applicable information
- Guidelines for communication with IESO real-time operations staff can be found at:

<http://www.ieso.ca/sector-participants/market-operations/marketplace-training/training-materials>

# Proposed Update to DR Activation Timeline

- As per *Market Manual (MM) 4.3: Real-Time Scheduling of the Physical Markets*, IESO is required to publish activation report approximately 2.5 hours before the start of the dispatch hour
- Use of “approximately” creates uncertainty for DRMPs
- IESO is proposing to revise the language in applicable MMs to “Activation notice will be released at least 2 hours prior to the start of the dispatch hour”
  - If HDR resources do not receive an activation notice 2 hours prior to the dispatch hour, then no activation notice will be issued within that hour
  - IESO’s proposed change should provide more certainty to HDR resources on DR activation



# Metering and Testing Updates

IESO has completed its internal review of the DR Contributor Management, Measurement Data Submission and Audit processes.

As a next step, the following items have been identified for review and discussion with DRMPs.

- **Contributor Management**
  - Physical vs Virtual Resource Registration
  - Transfer of contributor between DRMP's
  - Information requirements at the time of registration
    - Single Line Diagram (SLD)
    - Record of Installation (ROI)

# Metering and Testing Updates

- **Measurement Data Submission**
  - Review of the measurement data submission process to better understand data integrity and submission barriers
- **Audits**
  - Audits have identified a number of DRMP concerns beyond their control
    - LDC meter maintenance activities hinder DRMP's timely access to meter
    - LDC's secured portal hinder DRMP's access to meter data
  - Need to establish DRMP record retention requirements including LDC statement
  - Need to establish controls when accessing the meter using KYZ pulses and reconciling collected data to the LDC statement
- Outcome of this engagement will likely result in updates to Market Manual 12

# QUESTIONS?

# IMPROVED UTILIZATION OF HDR UPDATE

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# Purpose

- Provide an update on the status of proposed DR utilization improvements

# Recap

- IESO and DRWG members have been discussing ways to increase utilization of HDR resources to maximize its value to the system
  - For the 2017 DR Auction, the IESO has added HDR resources to the EOSCA list
- For the 2018 DR Auction, the IESO stakeholdered two areas for utilization improvement that focused on scheduling flexibility

1. Reduce Minimum Dispatch Duration

2. Increase Real-Time Availability

# 2018 Improved Utilization Proposal

## Current HDR Activation Protocol

### 1. Standby Notice:

4-hour schedule required for a standby



### 2. Activation:

4-hour schedule required for an activation



### 3. Duration:

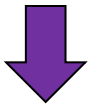
DR activated for 4 hour blocks



## Proposed Changes

### 1. Standby Notice:

*At least 1-hour is  $\geq$ \$200 trigger price required for a standby by 7am*



### 2. Activation:

Activate when *at least 1 hour* scheduled for DR ~2.5hrs prior



### 3. Duration:

DR activated for **up to 4 hours** based on schedule **when 1<sup>st</sup> hour activated**



- A standby notice is issued for a resource when its respective pre-dispatch shadow price is equal to or greater than \$200 for an hour during the availability window prior to 7am of the dispatch day
- The price-based trigger for standby notice will be reduced to \$100 for the 2019 Auction

# Stakeholder Feedback

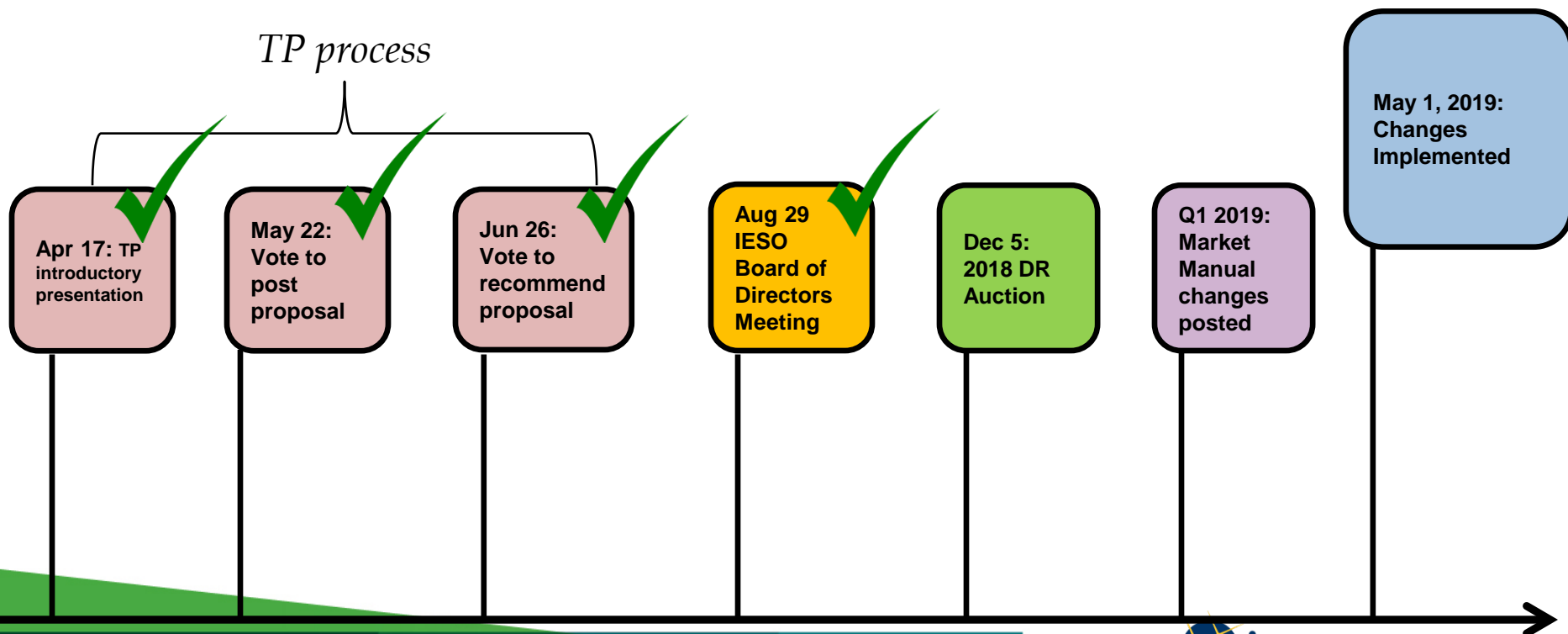
- Stakeholders have been supportive of proposed changes to dispatch duration
- IESO discussed various options with respect to changes to the standby trigger with DRWG:
  - \$500
  - \$200
  - \$100
- Some stakeholders advocated for a 'phase-in' of the price trigger to allow time for DR participants to adjust to changes and to review impacts.
- A proposed transition from \$200 to \$100 standby trigger is supported by stakeholders

# Summary

- The IESO believes shortening the minimum dispatch duration and moving to a price-based trigger for standby will improve the value of HDR resources in the short-term and help support transition to the Incremental Capacity Auction
- At the May 3 DRWG, the IESO indicated it would begin the market rule amendment process starting at the May 26 Technical Panel meeting

# Timeline for May 2019 Changes

- The IESO brought forward draft Market Rules to Technical Panel at the May 22 TP meeting and sought and received a vote to post for stakeholder comment
  - No further comments were received during the comment period
- At the June 26 TP, the panel voted in favour to recommend the proposal to the IESO Board
- The proposed rule package was approved by the IESO Board on August 29



# Market Manuals

- IESO will also be updating market manuals to reflect updates to HDR utilization changes
- IESO currently reviewing market manuals to determine where updates/clarifications are required
- Market Manual updates will be effective prior to beginning of Summer 2019 commitment period

# QUESTIONS?



# DR Auction 2018 Parameters

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# Purpose

- To provide an overview of the 2018 DR Auction parameters and highlight any updates

# Pre-Auction Report

- The Pre-Auction report publishes information about the parameters of the upcoming DR Auction
  - Relevant dates
  - Demand curve parameters
  - Zonal limits
- Report typically published in September ahead of the DR Auction held in December
- Report is published on the IESO's public report site: <http://reports.ieso.ca/public/DR-PreAuction/>

# Demand Curve Elements – Prices

- Demand curve pricing elements will not change for the 2018 DR Auction
  - Reference price remains at the historical contracting cost to procure DR
  - Maximum Clearing Price remains at 1.25x the Reference Price

Demand Curve Elements	Summer 2019 (May 1 to Oct 31)	Winter 2019/20 (Nov 1 to April 30)
Reference Price	\$413/ MW-day	\$413/ MW-day
Maximum Clearing Price	\$516/ MW-day	\$516/ MW-day
Minimum Clearing Price	\$0/ MW-day	\$0/ MW-day

# Demand Curve Elements – Target Capacity

- 2018 DR Auction Target Capacity is set to match 2017 Auction and all remaining Capacity Based Demand Response (CBDR)
- DR Auction Target Capacity will be:
  - Winter Target Capacity = **606 MW**
  - Summer Target Capacity = **611 MW**
    - a result of adding the remaining CBDR program (~121 MW) which was already included in the winter period in the 2017 auction
    - summer target includes 5 MW that were rolled into the 2017 DR auction for the expired Peaksaver Plus program

# Zonal Constraints

- Zonal constraints reflect the quantity of DR MW that can be accommodated within ten electrical zones of Ontario
- Two types of zonal limits:
  - Total Zonal DR Limit:
    - Total quantity of DR that can be accommodated within a zone including both physical and virtual capacity
  - Virtual Zonal DR Limit:
    - Total quantity of virtual DR capacity each zone can accommodate
- For the 2018 DR Auction, both the total and virtual zonal limits for summer and winter commitment period will be set to match total and virtual zonal limits from 2017 DR Auction – Winter Commitment period

# Upcoming Timelines

Process	Activity Milestones	Responsibility	Dates
<b>Pre-Auction Registration</b>	Last day to be authorized as a DRAP	Market Participant/IESO	October 10, 2018
<b>Reports</b>	Publish Pre-Auction Report	IESO	September 20, 2018
<b>Capacity Qualification</b>	Start submission of Capacity Qualification information	Market Participant	September 27, 2018
	Last day to submit Capacity Qualification information	Market Participant	October 29, 2018
	Last day to provide DR Auction Deposit	Market Participant	November 28, 2018
<b>Conduct DR Auction</b>	Start of DR Auction Offer Submission Window	Market Participant	December 5, 2018- 09:00 AM
	End of DR Auction Offer Submission Window	Market Participant	December 6, 2018- 11:59 PM
<b>Reports</b>	Publish DR Auction results	IESO	December 13, 2018

Full timeline calendar available at: <http://www.ieso.ca/-/media/files/ieso/document-library/calendars/2019/dr-auction-timelines-2019.pdf?la=en>

# QUESTIONS?



# Next Steps

- Next DRWG meeting – November 2018
- Please send any feedback to [engagement@ieso.ca](mailto:engagement@ieso.ca)