# HDR Out-of-Market Activation Payments

Demand Response Working Group

July 29, 2019

# Purpose

- Discuss proposal with rationale to provide payments to compensate Hourly Demand Response (HDR) when activated out-of-market for:
  - Capacity based test activations
  - Emergency Operating State Control Action (EOSCA) activations

# Issue Recap

- HDR is intended to meet those very rare days when energy is needed to help meet Ontario's system needs (i.e., typically 1 day in 10 year planning criteria for a broad provincial need)
  - As such, testing is critical to build confidence that this resource is able to deliver their commitment during periods of extreme need
- HDR resources can be tested up to twice per commitment period
  - In order to be tested, they must be activated out-of-market
  - In this circumstance they may be required to curtail when according to the market price, they would be better off consuming
- In the Demand Response Auction, HDR participants reflected the expected costs of out-of-market planned test activations in DR Auction offer prices
- In the context of the proposed capacity auctions, where HDR will be competing against other resource types, the way in which these out-of-market costs are recovered could potentially impact market efficiency

# Out of Market Costs

- When other resource types (dispatchable load, generator, import) are dispatched out-of-market they are eligible for some form of "make-whole-payment"
  - A make-whole-payment may apply when a participant faces a shortfall between their resource bid/offer price and the revenue earned through market clearing prices
  - The payment restores the participant to the financial situation they would have been in as implied by their bids/offers
- HDR resources do not receive a make-whole payment for out of market activations

# Out-of-Market Activations

| Testing | EOSCA |
|---|---|
| • HDR is not a day-to-day energy market resource so testing is required to prove its capability to reduce consumption<br>• Testing is also important to build confidence that this resource is able to deliver their commitment<br>• Can be tested up to twice per commitment period | • The EOSCA list is a table of control actions that are available to the IESO leading up to and during an "emergency operating state"<br>• Allows the IESO to take "out-of-market" actions to maintain reliability<br>• The list of control actions include: recalling outages, run short of operating reserve, curtail exports, shed load, activating HDR<br>• More information on the EOSCA list can be found in Market Manual 7.1, Appendix B |

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# Context

- IESO identified three high-level approaches to compensation when activated out-of-market, which were discussed at the June 19 DRWG
  1) Using energy bids as representative costs
  2) Historical precedents, such as Capacity-Based Demand Response (CBDR) activation payments
  3) Identify costs on individual or type of resource basis
- It is difficult for the IESO to know the ‘true’ cost of out of market activation
- Need to determine approach that is appropriate to the circumstances

Options and considerations outlined in the next slides

# Option 1: Bid-Based

Under this option, participants would receive a payment that reflects the difference between their bid price and the market price (i.e. Hourly Ontario Energy Price) for the hours of curtailment x MWh curtailed.

# Bid-Based: Considerations

- Utilizes a 'make-whole' process that applies to dispatchable resources
- A reasonable reflection of market value of curtailment during EOSCA activation
  - Similar to treatment of export curtailment
- Payments would enable HDR to remove costs for out of market activations from capacity auction offers
- Allows participants to reflect individual costs
- Relatively straightforward to implement

- Bid reflects HDR position as a pre-emergency capacity resource (i.e. reluctant to be activated regularly)
- The IESO has no way of knowing if bid-based payment is appropriate reflection of price sensitivity or a market over-compensation for a planned test
- Challenges with 'apples to apples' comparison of HDR bids with dispatchable resources (see next slide)

# HDR Bids v. Dispatchable Bids

- HDR Bids
  - Majority of bids (85%) at or above $1999
  - IESO does not settle consumption against these bids; no real-time dispatch instructions
  - <u>No way to determine real-time price sensitivity</u>
  - Do resources continue to consume if the price of electricity in real-time reaches $500? $1,500? When does it make sense to switch to back up generation or behind-the-meter storage?
- Dispatchable Bids
  - Varied bid price-sensitivity
  - IESO instructs dispatchable resources to adjust operations in real-time based on submitted bid price
  - Under Market Rules dispatchable resources must comply with schedules based on bids (whether scheduled to <u>curtail</u> or scheduled to <u>consume</u>)

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# Option 2: Fixed Payments

Under this option, participants would receive a fixed payment ($/MWh) to offset the cost of curtailment.

This approach was part of previous pre-DR Auction programs.

- CBDR and DR3 provided a fixed payment ($200/MWh) meant to offset some of the cost of activation.

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# Fixed Payments: Considerations

- Utilizes a previous process; straightforward to implement
- Greater certainty in compensation to allow aggregators to remove some curtailment costs from auction offers

- May not be accurate reflection of individual resource costs
- Different treatment than dispatchable resources
- May not be appropriate reflection of value of curtailment in all circumstances (e.g. during an EOSCA activation)

# Option 3: Resource-Specific

Under this option, the IESO could ask participants to provide detailed information on the costs of curtailment to help develop a resource-specific cost framework.

# Resource-Specific: Considerations

- May allow for costs appropriate to individual resources
- Could be tailored to various degrees (e.g. by resource or contributor type)
- Pre-approved cost framework has been utilized for other programs (Real Time-Generation Cost Guarantee)
- Cost determinants supported by data

- Complex administrative/quasi-regulatory process required
- Costs not transparent to market
- Would need to account for changes to underlying contributors
- Complex auditing and verification regime required
- Not feasible within current timelines

# Stakeholder Feedback

Feedback received from the June discussion indicates that stakeholders:

- Do not support the resource-specific approach due to complexity and administrative burden
- See the fixed price approach as arbitrary
- Support using bid as basis for out-of-market payments

# IESO Perspective

- Feasibility issues with the resource-specific approach
- Compensation for out-of-market activation should
  - Balance the goal of improving efficiency while accounting for differences between HDR participation vs. dispatchable resources
  - Be proportional to system conditions

# Proposal

Based on stakeholder feedback and the IESO's perspective, a dual approach is proposed:

- Test Activation
  - Apply fixed payment of $250/MWh curtailed
  - Payments are based on CBDR precedent ($200) plus some inflation
- EOSCA Activations
  - Payments based on a participant's (Bid-HOEP) x hours of curtailment

# Why the Dual Approach?

**Different treatment for different circumstances**

- A fixed payment for planned tests offsets some of the cost of out-of-market activation using a previous precedent while managing costs to the market for planned tests
- A bid-based payment for EOSCA appropriately reflects the value to the market in the rare event of curtailing HDR to manage Energy Emergency Alert situations

# EEA Conditions

- The IESO will issue a NERC Energy Emergency Alert (EEA) in advance of entering into an *emergency operating state*
  - An EEA may be issued when there are energy or capacity concerns
  - The IESO will implement control actions to mitigate entering into an Emergency Operating State, dispatching HDR resources is one option IESO may choose to use during an EEA conditions
  - The proposed treatment aligns how other load resources (e.g. dispatchable load and exports) are provided with bid-based make-whole payments when constrained down as an EOSCA control action

| Year | # of EEA-1 Issued in Ontario |
|---|---|
| 2019-YTD | 0 |
| 2018 | 0 |
| 2017 | 2 |
| 2016 | 1 |
| 2015 | 1 |
| 2014 | 0 |

# Proposal

- The proposal is meant to strike a balance:
  - Broadly responsive to stakeholder concerns, proportional to circumstances, while also accounting for the unique HDR participation framework
- As part of the proposal, the IESO will review the design on a regular basis (e.g. after 1 year) with DRWG to discuss the effectiveness of the design
  - This will be reflected in Market Rules/Manuals
- Stakeholders are asked to provide feedback by August 6, 2019 to engagement@ieso.ca

# Implementation

- Proposed Market Rule Development and Implementation Timeline
  - August 6: Stakeholder feedback due
  - August 13 Technical Panel: Present overview of proposal to Technical Panel
  - September 4 DRWG Meeting: Introduce draft Market Rules and Manuals concepts
  - September 24 Technical Panel: Vote to Post
  - October 22 Technical Panel: Vote to Recommend
  - November 27 IESO Board of Directors: For Approval
  - December 20: Market Rules effective

Targeting to have the compensation framework in place for the May 2020 obligation period

# Wrap-Up & Next Steps

- Next DRWG meeting September 4, 2019