

Demand Response Working Group

August 6, 2020

Meeting Participation

- Webinar participation (including audio):
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- Mute your audio at all times unless you wish to speak by clicking on the microphone icon in meeting controls row at the bottom of the application window
- This webinar is conducted according to the IESO [Engagement](#)

[Principles](#)

Purpose

- The purpose of this presentation is to:
 - Update stakeholders on how work is progressing on the priority Demand Response Working Group (DRWG) 2020 work plan initiatives; and
 - Introduce the need for a broader discussion on demand response participation in Ontario

Market Renewal Program Detailed Design

Dale Fitzgerald, Senior Advisor, Stakeholder Engagement

Market Renewal Program Detailed Design

- Market Renewal Program (MRP) Detailed Design stakeholder engagement is underway
 - Developing changes with stakeholders to improve the way electricity is priced and scheduled in order to meet Ontario's energy needs reliably, transparently and efficiently
- Various detailed design documents have been posted throughout 2020 for stakeholder review and feedback
- Webinars have been scheduled to provide updates and support stakeholders in their review of the design documents
- The full list of design documents and associated feedback deadlines can be found [here](#) on the MRP webpage
- For any DR-specific questions on MRP detailed design documents or to indicate interest in participating in the MRP Implementation phase, email engagement@ieso.ca

Update on Priority 2020 DRWG Work Plan Initiatives

Emma Ferner, Advisor, Market Development

Re-Cap: April 2020 DRWG Update

- In April 2020, the IESO provided a written update on the following priority 2020 DRWG work plan initiatives:
 - Baseline methodology and in-day adjustment factor
 - Reported key findings from a scan of baseline methodologies used in other electricity markets to inform what may be possible in Ontario
 - Registering virtual hourly demand response (HDR) resources
 - Presented the primary option under consideration, which is to allow an aggregator to enroll up to two C&I virtual demand response resources per zone
- No comments or questions were received in response to the April update

August 2020 DRWG Update

- The following slides provide stakeholders with an update on the following priority 2020 DRWG work plan initiatives:
 - Baseline methodology and in-day adjustment factor
 - Including the options under evaluation and key challenges associated with IESO tools
 - Registering virtual HDR resources
 - Including an update on the technical feasibility of the option under evaluation and key challenges

UPDATE ON BASELINE METHODOLOGY AND IN-DAY ADJUSTMENT FACTOR (IDAF) INITIATIVE

Options Under Evaluation

- The IESO has been assessing two options that could help address stakeholder concerns regarding the impact of the IDAF on the baseline calculation for certain loads:

Option 1: Refine the IDAF

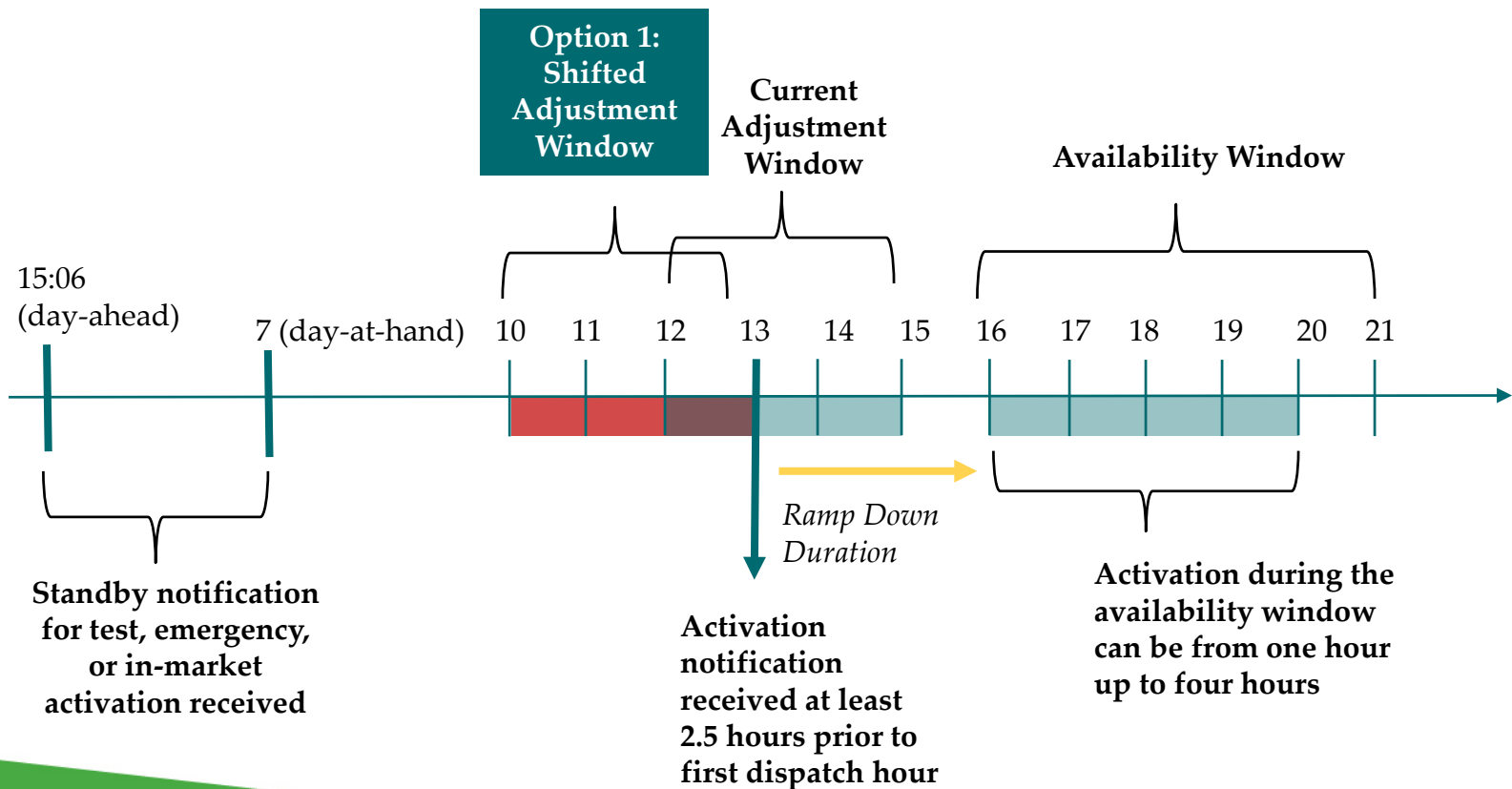
- Shift the adjustment window in the IDAF to align with when HDRs receive their activation notification (three hours before the dispatch hour or PD-3)

Option 2: Opt-Out of the IDAF

- Allow a participant to opt-out of the IDAF

Option 1: Refine the IDAF

Objective: Shift the adjustment window in the IDAF to align with when HDRs receive their activation notification (PD-3)

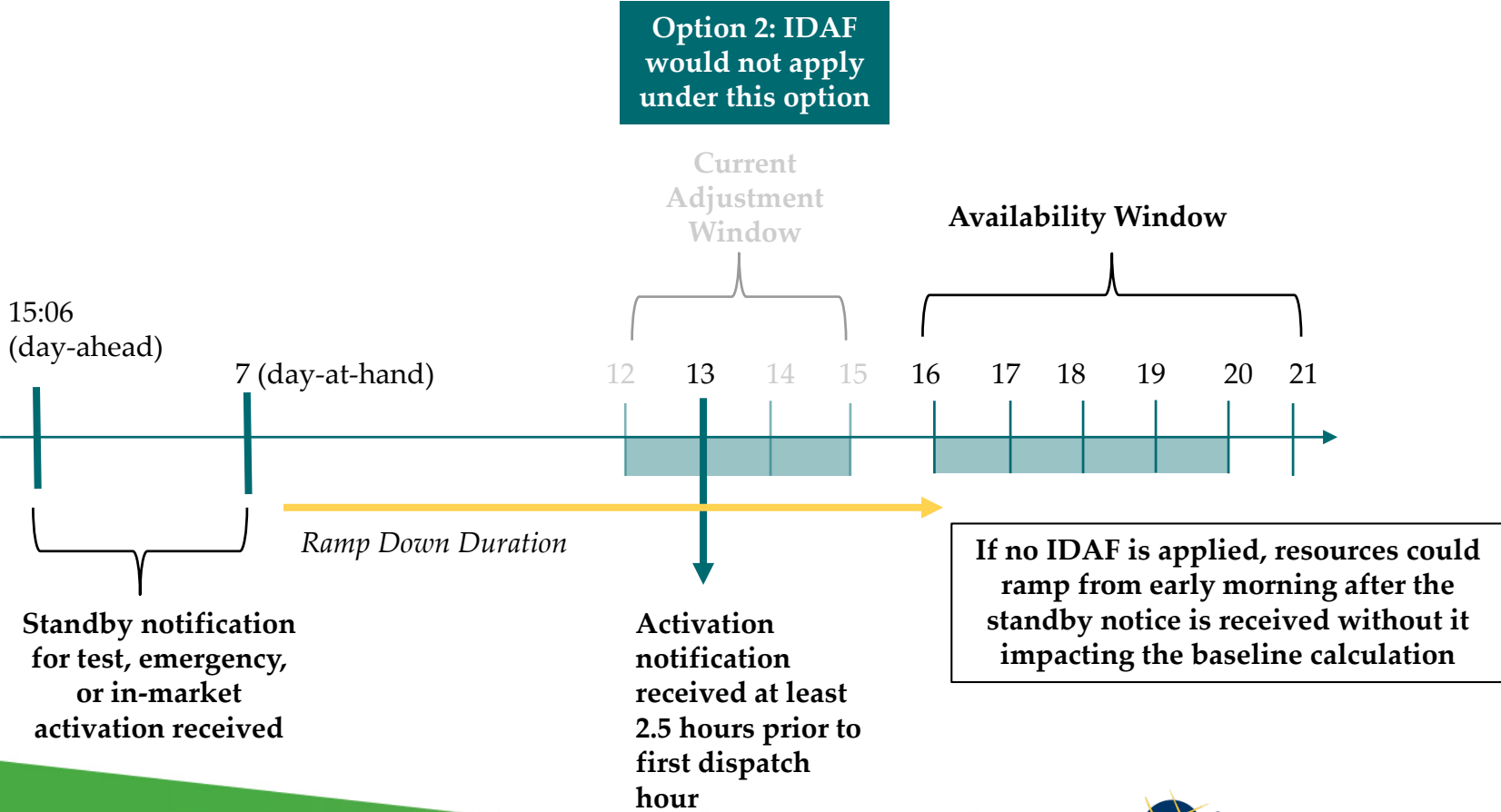


Option 1: Key Challenge

- This option would allow HDR resources to curtail over a 3 hour period without impacting the baseline calculation
 - The current IDAF indirectly incentivizes resources to curtail over a 1 hour period
- Allowing an HDR resource to curtail over durations greater than 1 hour would represent a shift away from the definition of HDR resources as an hourly product
- This curtailment behavior could present a reliability concern by creating challenges in balancing supply and demand
 - IESO tools assume that the resources are following an hourly schedule, meaning that they are curtailing their load to reflect the energy bid within 1 hour
 - Because HDR resources do not have telemetry, there is no way for IESO tools to reflect actual performance if an HDR resource deviates from their hourly schedule, making balancing more difficult and requiring additional use of regulation services

Option 2: Opt-Out of the IDAF

Objective: Allow HDR resources to opt-out of the IDAF



Option 2: Key Challenge

- This option would effectively allow HDR resources to curtail at any point on the day of activation, meaning it presents the same key challenges as Option 1, including:
 - Results in a deviation from the definition of an hourly product; and
 - Would require tool changes in order to model the multi-hour curtailment
- This could potentially lead to larger reliability concerns relative to Option 1 to the extent that there would be smaller deviations from the hourly schedule modelled in the IESO's tools over a longer period of time

Challenges with Accommodating a Longer Ramp

- Without tool changes, a longer curtailment cannot be accommodated (and therefore Options 1 or 2) due to the reliability concerns that could result
 - Capital costs could be material; a business case would need to be developed with input from stakeholders, and expenditures prioritized against other IESO projects
- While it may be technically possible to update the tools to accommodate a multi-hour curtailment, this potential change raises fundamental questions about HDR as an hourly product

Need for a Broader Discussion

- More discussion is needed internally, with input from stakeholders, to determine whether HDR resources should be enabled to curtail over periods longer than 1 hour prior to continuing discussions on changes to the baseline methodology
- The IESO believes there is value in taking a step back and having a broader discussion on demand response participation in the Ontario market
 - 2019 DRWG work plan items have been implemented and there are various other ongoing IESO initiatives related to demand response participation that should be considered as a part of implementation of the 2020 DRWG work plan items and 2021 work planning
- Additional details of this broader discussion presented from Slide 21

REGISTERING MULTIPLE VIRTUAL HDR RESOURCES INITIATIVE

Option Under Evaluation

- The primary option under consideration involves allowing an aggregator to enroll up to two Commercial & Industrial (C&I) virtual HDR resources per zone in the pre-auction period
- Under this option, the aggregator:
 - Could submit offers for each C&I virtual HDR resource in the auction
 - Could transfer obligations between the two resources in the forward period following the auction and prior to the obligation period (once contributors are signed up)
- Furthermore:
 - No changes would be made to the virtual zonal limits as there are no proposed changes to the modelling approach in the IESO tools
 - Each virtual resource would need to individually meet the requirements in the market rules and manuals

Key Challenges

- The IESO has evaluated this option and while it is technically feasible there are a number of tool and process changes that would be required to implement this option
- Tool changes would require capital expenditures, requiring development of a business case with input from stakeholders to evaluate the costs and benefits / value of the changes to justify the expenditures

Need for a Broader Discussion

- The IESO does not have a good articulation of the value that would be derived from enabling registration of multiple virtual resources per zone and believes that this initiative could also benefit from more discussion on how demand response resources should participate in Ontario
- As part of this discussion, the IESO would like to understand:
 - Is there still value in considering this change independent of baseline methodology changes?
 - Does this initiative still provide value when considering implementation of the 2019 DRWG proposals (including meter data submissions and DR audits)?
 - Is there a future participation model that would make the need for this change obsolete?
- The IESO proposes to include these points in the broader discussion on demand response participation in Ontario but is also open to continuing work in parallel subject to stakeholder feedback
 - Refer to the next section of the presentation for additional details

Framing a Broader Discussion on Demand Response Participation in Ontario

Tom Aagaard, Supervisor, Market Development

Context

- In 2020, the IESO implemented a suite of new HDR design changes, including:
 - Measurement data submission criteria
 - Validation, Estimating, and Editing (VEE) process for missing measurement data
 - Contributor registration requirements
 - Contributor management process
 - Audit documentation requirements
 - Testing criteria
 - Standby notice price trigger
- The majority of these design changes were developed through engagement with DRWG stakeholders as part of the 2019 DRWG work plan
- There have been significant environmental shifts since the DRWG 2020 work plan prioritization discussion took place

Context (cont'd)

- Through internal IESO evaluation of the options associated with the two priority 2020 DRWG work plan initiatives, fundamental questions have been raised indicating a need for a broader conversation to clarify IESO's objectives with existing DR products and inform the evolution of demand response resource participation in Ontario
- The timing of this broader discussion provides an opportunity to take a holistic look at demand response participation in Ontario and ensure a coordinated strategic approach to evolving market design and the DR participation model

Ongoing DR-Related Initiatives

- There are currently a number of parallel IESO initiatives relevant to demand response resources, including:
 - Design changes resulting from the 2019 DRWG Work Plan
 - Approach to the shut-down cost question raised through the [Energy Payments for Economic Activation of DR Resources](#) engagement
 - Discussions resulting from the Brattle Report recommendations in the Energy Payments for Economic Activation of Demand Response engagement to enable greater DR resource participation
 - Evolving capacity auction and MRP design
 - The [Expanding Participation in Operating Reserve and Energy](#) (EPOR-E) initiative
 - [Innovation and Sector Evolution White Papers](#) regarding integrating DER into the IESO-administered markets
- A broader discussion would ensure that recent developments emerging from these initiatives are fully considered in directing DR product evolution work

Discussion Objectives

- Assist the IESO in an internal exercise centered around clarifying objectives for demand response
 - The exercise is intended to determine whether the current HDR product aligns with system needs or whether changes to the product definition should be considered (e.g. multi-hour ramp)
- Assess alignment of current HDR product definition with objectives articulated by IESO to identify high-value opportunities to evolve the product
- Ensure a coordinated approach to DR market design changes that factor in the existing capacity market and Market Renewal design, as well as DR product evolution more broadly
- The outcome of this discussion will be:
 - a clear articulation of IESO objectives for DR development that will inform the continued use of DR as part of Ontario's resource mix; and
 - a prioritized list of DR development activities

Discussion Benefits

- Create opportunity for stakeholders to communicate current priorities and identify additional opportunities for DR resources to competitively meet system needs
- Support the IESO in clarifying objectives for demand response, which will:
 - Inform more effective market design changes that are driven by fundamentals rather than incremental ad hoc changes to address pain points
 - Provide a consistent lens for assessing and prioritizing potential design changes
 - Establish a strong basis for future market design changes consistent with objectives
- Support integration across DR-related IESO initiatives

Discussion Questions: Scope of Discussion

- In order to begin framing these discussions, including the format, scope, and objectives, we are interested in hearing your feedback on the following questions:
 - Have your priorities shifted since the 2020 DRWG work plan was finalized in late 2019? If so, how?
 - Do you see value in proceeding with the multiple virtual HDR resources registration initiative concurrently with the broader discussion?
 - What benefits do you see coming from pivoting to this approach for the second half of 2020?
 - Beyond discussion on the hourly product and re-establishing priorities for the DR community, are there other areas of DR participation that this discussion should focus on?
 - What is your preferred format for these discussions? E.g. stakeholder presentations, round table discussions, etc.
 - What questions about demand response participation and product design would stakeholders benefit from having IESO clarify?

Next Steps

- The IESO will consider feedback as articulated in today's discussion, as well as written feedback submitted after this meeting in order to draft a proposed format and scoped objectives for stakeholder review ahead of the next touchpoint
 - Exact timing of touchpoint is to be determined and based on the nature of stakeholder feedback received
- Please provide feedback by August 27 to engagement@ieso.ca using the feedback form on the [DRWG engagement webpage](#)