

AUGUST 6, 2020

Demand Response Working Group

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- This webinar is conducted according to the [IESO Engagement Principles](#) available on the IESO website.

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

Stakeholder Engagement

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



Detailed Design Documents

Various detailed design documents have been posted throughout 2020 for stakeholder review and feedback



Webinars

Webinars have been scheduled to provide updates and support stakeholders in their review of the design documents

List of Documents and Feedback Deadlines

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, 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



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:

to allow an aggregator to enroll up to two C&I virtual demand response resources per zone



April update

No comments or questions we 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

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.

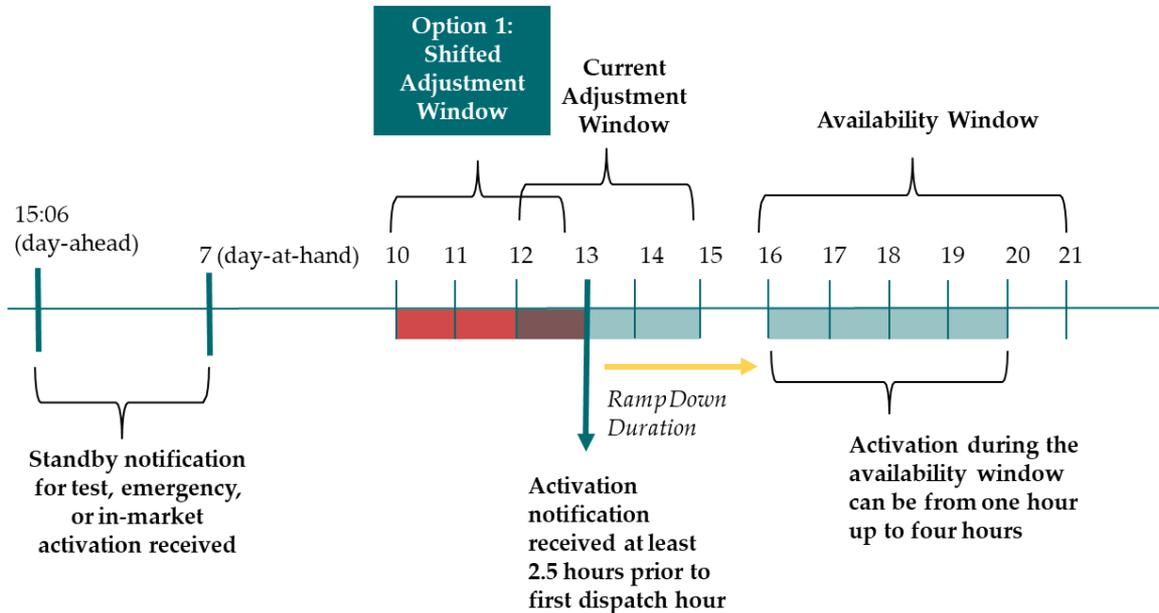
There are two options: Refine the IDAF and Opt out of the IDAF



Option 1: Refine the IDAF

Option 1: Objective

The objective is to 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

Option 1: Curtailment Behaviour Challenge

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.

Option 1: Performance Challenge

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

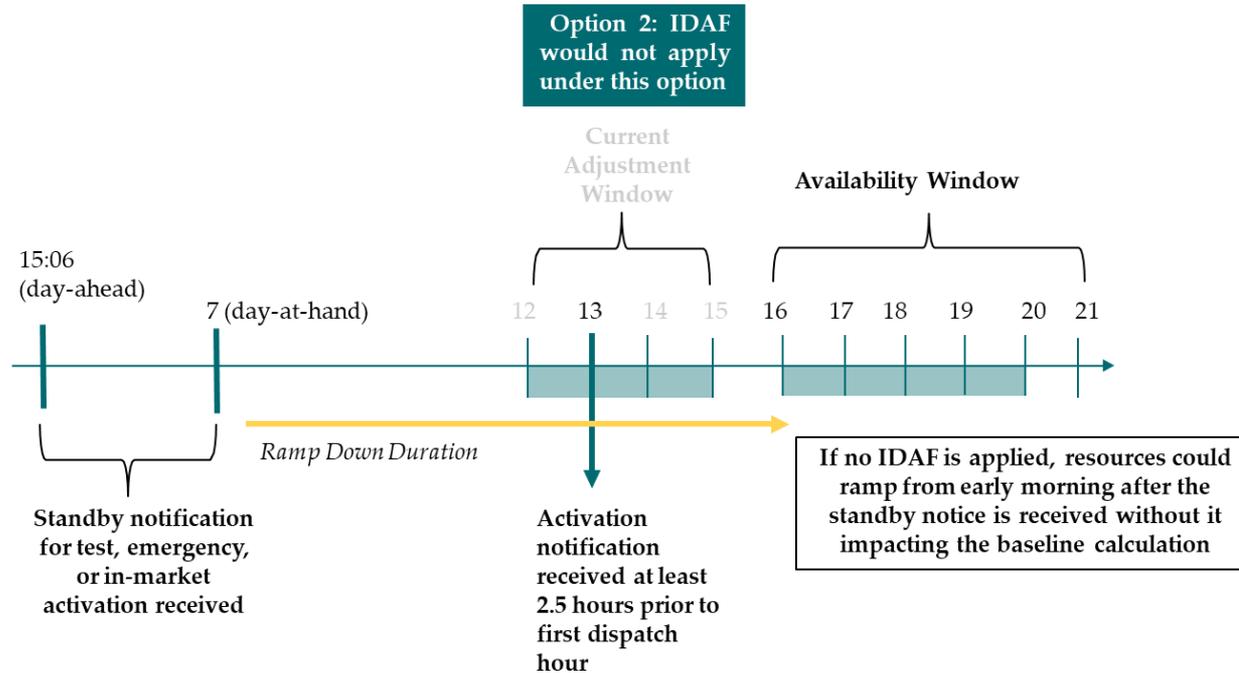
Balancing would be more difficult and would require additional use of regulation services



Option 2: Opt out of the IDAF

Option 2: Objective

Option 2 would 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

Option 2: Reliability Challenge

This could potentially lead to larger reliability concerns relative to Option 1

There would be smaller deviations from the hourly schedule modelled in the IESO's tools over a longer period of time

Option 2: 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
- Expenditures would need to be prioritized against other IESO projects

Option 2: Questions about HDR as an hourly product

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

Option 2: 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.

Option 2: Taking a step back

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 34.



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.

Aggregator

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 .

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
- The IESO believes that this initiative could also benefit from more discussion on how demand response resources should participate in Ontario

IESO would like to understand

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?

IESO working in parallel

The IESO proposes to include these points in the broader discussion on demand response participation in Ontario

The IESO 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

Context - continued

- Contributor management process
- Audit documentation requirements
- Testing criteria
- Standby notice price trigger

Engagement with DRWG stakeholders

The majority of these design changes were developed through engagement with DRWG stakeholders as part of the 2019 DRWG work plan.



Significant environmental shifts

There have been significant environmental shifts since the DRWG 2020 work plan prioritization discussion took place.

Fundamental questions raised

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

Timing of discussion

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 1 to 3

There are currently a number of parallel IESO initiatives relevant to demand response resources, including:

1. Design changes resulting from the 2019 DRWG Work Plan
2. Approach to the shut-down cost question raised through the [Energy Payments for Economic Activation of DR Resources engagement on the IESO website.](#)
3. Discussions resulting from the Brattle Report recommendations in the Energy Payments for Economic Activation of Demand Response engagement to enable greater DR resource participation

Ongoing DR-Related Initiatives 4 to 6

4. Evolving capacity auction and MRP design
5. [Expanding Participation in Operating Reserve and Energy \(EPOR- E\) initiative available on the IESO website.](#)
6. [Innovation and Sector Evolution White Papers regarding integrating DER into the IESO-administered markets on the IESO website.](#)

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

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

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.

Outcome of this discussion

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.

Clarifying objectives

Support the IESO in clarifying objectives for demand response, which will:

1. Inform more effective market design changes that are driven by fundamentals rather than incremental ad hoc changes to address pain points.
2. Provide a consistent lens for assessing and prioritizing potential design changes.
3. Establish a strong basis for future market design changes consistent with objectives



Support Integration

Discussion will support integration across DR-related IESO initiatives

Discussion Questions 1 to 3

In order to begin framing these discussions, including the format, scope, and objectives, we are interested in hearing your feedback on the following questions:

1. Have your priorities shifted since the 2020 DRWG work plan was finalized in late 2019? If so, how?
2. Do you see value in proceeding with the multiple virtual HDR resources registration initiative concurrently with the broader discussion?
3. What benefits do you see coming from pivoting to this approach for the second half of 2020?

Discussion Questions: 4 to 6

4. 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?
5. What is your preferred format for these discussions? E.g. stakeholder presentations, round table discussions, etc.
6. 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](#).