

Discussion Brief 2.1: HDR Performance Thresholds

Overview

Background

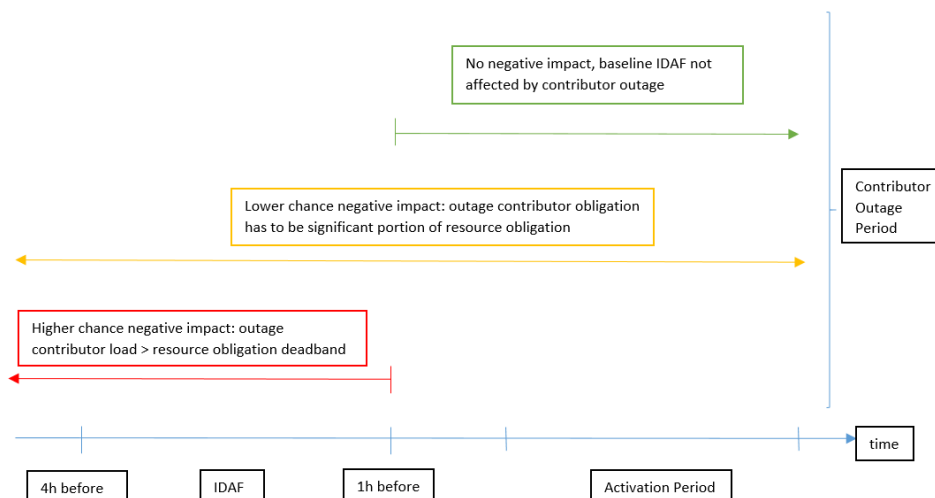
Throughout the 2022 capacity auction engagement, demand response stakeholders raised concerns that a contributor on forced outage may be affecting the Hourly Demand Response (HDR) baseline calculation and subsequent HDR performance assessment. At the August 26 Technical Session, IESO presented a high-level proposal that would remove the contributor on outage from the baseline calculation in order to address the issue. This memo provides further details of the proposal.

Root Cause

- Impact to baseline could be caused by contributor outage during the In-Day Adjustment Factor (IDAF) calculation window
- Impacts can occur when IDAF adjusted baseline is too high (due to 0.8 minimum) and/or the contributor on outage has high capacity value relative to the total capacity value of the HDR resource
- Bids are not adjusted to reflect the impact of the contributor's forced outage on the reduction in the resource's capacity value, resulting in under performance

Impact

- Through internal analysis the IESO determined that potential impacts of a contributor forced outage varies based on the timing when the forced outage occurs



- The magnitude of impact depends on contributor and resource's load and capacity
- In most cases, the in-day adjustment factor correctly accounts for the outage and results in an accurate assessment of delivered capacity
- IESO proposed solution will mitigate potential impacts on baseline calculation and subsequently the performance assessment outcome

IESO Proposed Solution

Purpose

- Address the specific scenario where a forced contributor outage impacts performance assessment and settlement of virtual HDR resource
- Applicable to demand response test and real activations. Not applicable to self-scheduled capacity test
- Applicable to physical and virtual C&I HDR contributors as part of a virtual HDR resource
- Minimize impact on IESO demand response and settlements processes and tools

Limitations

- Solution is designed specific to a contributor forced outage during certain hours on an activation day
- Forced and/or planned outages that started before the actual activation day will continue to be managed based on current processes
- As the participation model of HDR resource is different from other capacity resources, the proposed solution is specific to virtual HDR resources and outage management for other resources is out of scope
- The solution will not change the existing demand response process to establish baseline

Proposal

The proposed solution considers the following two components:

1. Capacity Market Participants (CMPs) to update bids to reflect reduction in resource capacity
2. Meter data of contributor on forced outage to be excluded from baseline calculation, performance assessment and settlement

Note: Both components are equally important, doing one without the other will result in incorrect performance assessment

Step 1: CMP shall reduce their bids if any contributor on forced outage will impact their capacity to deliver the resource obligation

- Reduce the bids by up to the sum of MW capacity loss from the contributors on forced outage
- CMP is free to update bids anytime outside of mandatory window
- CMP shall call Control Room to update bids within mandatory window or during activation period

Note: This is an existing process documented in MM 4.3 Section 7.2.

Step 2: CMP shall timely notify IESO on all contributors on forced outage.

- Notification is required per activation for both physical and virtual HDR contributors
- Notification may be made after the activation window, however shall be made before the measurement data submission deadline
- Notification format, timeline and communication venue to be determined as part of detailed design

Step 3: Remove measurement data of contributors on forced outage

- Baseline calculation, performance assessment and settlement will exclude the measurement data of contributors on forced outage

Note: The process will differ slightly for physical compared to virtual contributors

Virtual HDR contributors:

- Based on CMP notification, CMP to exclude the meter data of virtual contributors on forced outage from the resource at time of measurement data submission
- For two or more activations within the same month, CMP to submit separate copies of measurement data for the three month period in a zip folder if different virtual contributors are on forced outage

Physical HDR contributors:

- Based on CMP notification, IESO will remove the meter data of physical contributors on forced outage from the resource by temporarily suspending the contributor in IESO system for the activation month

Step 4: IESO will perform all calculations and assessments based on revised bids and revised measurement data

- No further action required from CMP after sending forced outage notification and submitting revised measurement data (only for virtual contributors)

Step 5: IESO to account for the impact of contributor forced outage during measurement data audit

- CMP is still required to submit meter data and LDC statement for all virtual contributors (including the ones on forced outage) as part of audit submission

Numerical Example

Suppose a virtual HDR resource has a 100 MW baseline (i.e. load profile) and a 25 MW of obligation

- A single large contributor has a 30 MW baseline and contributes 5 MW of capacity to the resource's 25 MW obligation
- The remaining contributors have a 70 MW baseline and account for the other 20 MW of the resource's 25 MW obligation
- The large contributor experiences a forced outage during In-Day Adjustment Window hours, but load is restored at time of activation

	Status Quo – Contributor Included	Proposed Solution – Contributor Removed
Resource baseline	100 MW	70 MW
Adjusted baseline due to outage	80 MW*	70 MW
Resource load at time of activation	100 MW	70 MW
Resource load after curtailment	75 MW	50 MW
Actual curtailed quantity	25 MW	20 MW
Resource load reduction from baseline	5 MW	20 MW
Bidding quantity reduction to avoid charge	25 MW to 5 MW	25 MW to 20 MW

*Baseline adjustment is limited to 80 MW due to 20% cap on the in-day adjustment

- Under the status quo, the resource must reduce its energy bids to 5 MW in order to avoid charges. The resource is only credited with delivering 5 MW when it curtailed 25 MW.
- Under the status quo, the resource must reduce its bids to 20 MW (the capacity associated with the remaining contributors) and is measured as delivering 20 MW, which is the capacity that was actually curtailed.

Stakeholder Feedback

- Following the August 26 Technical Session, stakeholders provided feedback indicating concern with the contributor outage proposal only applying to outages on the day of the activation
- Stakeholders suggest outages prior to the activation day can also impact performance
- IESO is open to discussing the definition of a forced outage with stakeholders and better understanding the impacts of a contributor outage prior to the activation day, particularly given

the High 15-of-20 baseline automatically excludes the lowest five consumption days from the baseline calculation

- Stakeholders are encouraged to provide a concrete example of these impacts for discussion

Next Steps

- IESO will seek feedback from external stakeholders to confirm the feasibility of the proposed solution
- Once the proposed solution is confirmed, IESO will move on with detailed design and implementation

Note: IESO may need to initiate a formal project to complete the detailed design and implementation