

Discussion Brief 1.1: HDR Qualification and the Standby Availability Charge

Overview

At the August 26, 2022 technical engagement session, IESO presented a recap of the general methodology for capacity qualification and the original proposal for the Standby Availability Charge (SAC) that was presented to the stakeholders. Concerns were raised with the SAC proposal in 2021 as part of the design of enhancements to the 2022 Capacity Auction (Refer to [Discussion Brief 1.0 - HDR Qualification and Standby Availability Charge](#) posted on the engagement page).

Through stakeholder feedback and discussion on the proposal and potential solutions, there was general agreement that a charge in lieu of an availability de-rate for HDR capacity qualification can be developed with stakeholder input. Stakeholders were invited to submit proposals which would be considered along with the revised IESO proposal of a new Standby Availability Charge.

Objective

Key objectives of the capacity auction include:

- Procuring capacity in a transparent, open, and fair manner, with all resource types treated as equal as possible; and
- Ensuring that the capacity product for each type of resource secured through the auction contributes equally towards meeting resource adequacy needs, while considering the unique characteristics of the underlying technology. The capacity product secured through the auction is the availability of capacity (MWs) during the availability window of an obligation period. This availability is represented by offers and bids in the energy market that accurately reflect a resource's capability.
- The demonstrated performance capability and average availability of a resource should be reflected in the qualified capacity methodology, to ensure only reliable capacity is procured through the auction mechanism.

To help meet these objectives a capacity qualification process for all resources is proposed to be used to derive an Unforced Capacity (UCAP) value that a resource can offer into the auction.

The IESO HDR participation model allows for HDR resources to remove their bids for the day if they do not receive a standby notification, therefore daily bid data cannot be used to determine an availability de-rate for this resource. The absence of an availability de-rate for HDRs would represent a level of unfairness across resource types that is unacceptable. An alternative to this availability de-rate must be determined that is empirical and defensible in terms of equivalency to other auction resource types.

Areas of Concerns

Some of the concerns raised by the stakeholder community regarding the proposed SAC included:

- Standby trigger price of \$100 is very low and with the rising energy prices and increased uncertainty, there is a risk of the standby notices not reflecting peak system conditions.
- Capping the number of standby notices to 25 days, and restricting the standby charge to peak months only, seems to indicate that the need for availability occurs only in the peak months. This is contrary to the intent of procuring the capacity product for a 6 month period consisting of both peak months and non-peak months.
- Magnitude of the multiplying factor, and whether this is a comparable level of exposure that other eligible resource types in the auction would be exposed to when an availability de-rate is applied.

IESO Response to Stakeholder concerns

At the August 26, 2022 technical engagement session, IESO responded to some stakeholder concerns and committed to revisiting the proposed design to address other outstanding concerns. Below is IESO's response to the concerns raised by the stakeholder community.

Standby Trigger Price:

At the August 25, 2022 stakeholder engagement session, IESO committed to reviewing and updating the HDR standby price trigger threshold ahead of the 2022 capacity auction.

IESO conducted a review of factors that influence the trigger to issue a standby notice to the HDR resources and proposed to increase the standby notice price threshold from \$100/MWh to \$200/MWh. This was done in order to best capture the changing market conditions, such as the recent increase in gas prices as they have had a significant impact on pre-dispatch prices, and to re-align the issuance of these standby notices with when periods of peak system needs occur.

The analysis also found that by increasing the standby trigger from \$100/MWh to \$200/MWh, the total number of days for which a standby notice would have been issued would have been approximately 50 days per year over the analysis period, and that the split of standby notices between the summer season and winter season is 80% and 20%, respectively.

Detailed information on the analysis can be found in the Design Memo 4.0 posted on the Capacity Auction Enhancement engagement webpage.

Restricting Standby Availability Charge to peak months

In light of the pending update to the standby trigger price and the associated expected reduced number of issuances of standby notices and their distribution across the two obligation periods, IESO is proposing to remove the restriction of applying the SAC during peak months only and make it applicable to the entire obligation period. In the initial proposal, IESO had proposed a cap of 25 on days for which a standby notice is issued resulting in the SAC during each obligation period. However, imposing such a cap would be counter to incentivizing capacity to be available across the obligation period, especially in years when there are sustained periods of capacity needs. Furthermore, with the increase in the standby trigger price, potential number of standby notices issued is expected to decrease. In light of these observations, the IESO is proposing to apply the charge throughout the obligation period. This revision addresses fairness concerns raised by stakeholders and members of the Technical Panel in their review of the SAC.

Multiplier for the Standby Availability Charge and comparison to Dispatchable Load resource

The SAC is meant to incentivize an HDR resource to 'self-de-rate' in the auction to a value that it can reliably make available in the energy market at any time during the obligation period. In other words, the avoidance of a SAC is the behaviour that should drive an HDR participant to self-de-rate to its true capability in the pre-auction period.

At the August 26, 2022 technical session, IESO explained the rationale behind using 5x as a multiplier, using 125 business days to determine the implicit financial loss and comparing the loss to that of a Dispatchable Load (DL) resource. Stakeholders had questioned whether using a generation resource as a proxy for qualification and using EFORD as methodology for de-rate is more appropriate.

The IESO responded that regardless of the de-rate methodology that is utilized, the important piece of the calculation is the revenue that could not be earned at the onset, as a result of that de-rated capacity. The calculation is taking that de-rated amount and applying it across the 125 business days of the obligation period to determine the revenue that is not earned. The magnitude of the SAC should ensure that the financial exposure of an HDR resource is similar to the lost revenue incurred by another resource type and is grounded in equitable treatment across resource types. This is achieved through a SAC applicable to HDR resources only and applying it throughout the obligation period.

However, IESO had committed to revisiting the derivation of 5x multiplying factor for the SAC. With the results of the revised standby trigger threshold that is expected to reduce the frequency of issuance of standby notices, IESO proposes to revise the multiplying factor to 3 during all months of the obligation period (more detail on the revised multiplying factor below).

IESO's revised proposal

As mentioned above, the standby trigger review suggests that by revising the standby trigger price from \$100/MWh to \$200/MWh, the number of days for which a standby notice would be issued per year is expected to decrease. The standby trigger review analysis showed that over the analysis period (September 2021 – August 2022), the standby notices would have been issued on approximately 50 days with 40 days (80%) occurring in summer and 10 days (20%) in winter during which a resource is expected to be put on standby.

Based on the analysis and the fact that a resource is expected to be available for 125 days during an obligation period, out of which standby notices may be issued approximately 40 times during the summer period, a multiplying factor of 3.125 can be derived. Based on this calculation, IESO proposes to use a rounded multiplier of 3x for both summer and winter seasons and removing the cap on the number of days for which a standby availability charge will be applied. The IESO considered having a different multiplier for the summer and winter obligation periods to reflect the split of standby notices (80% summer, 20% winter) and the resulting potential exposure difference in each season but opted for a consistent multiplier across both seasons, for ease of implementation.

The table below shows the following:

1. Implicit financial loss for the DL resource based on an availability de-rate applied for the 125 business days for which a resource is expected to be available during an obligation period.
2. Multiplier of 3x and the charge applicable throughout the two obligation periods (**IESO revised proposal**). For purpose of illustration, it is assumed that the standby notice is issued for 50 days during the year with an 80/20 split between summer and winter seasons

Note: All calculations are done based on 1 MW capacity not available to be offered by the resource and 2021 clearing prices (\$265/MW-day in summer and \$60/MW-day in winter).

Season	Implicit Financial de-rate Loss for a DL	Implicit Financial de-rate Loss for HDR with 10/40 days and 3x
Winter	\$7,500	\$1,800
Summer	\$33,125	\$31,800
Total	\$40,625.00	\$33,600.00

The calculations above indicate that the financial exposure utilizing a 3x multiplier for SAC is approximately equivalent to the financial exposure of non-HDR resources. The slight difference arises in the winter season due to expected low number of standby notices. However, considering ease of implementation, utilizing a consistent multiplying factor across the two periods is being proposed.

The calculations shown above to establish the SAC are independent of the availability charge that is applied to a resource for the MWs that are not made available during the obligation period. The availability charge is applicable to all participating capacity resources and should not be considered as part of the SAC design.

Additional Proposals:

Stakeholder's proposal: SAC equals 2x over peak months

During past discussion with the IESO on the SAC, stakeholders had suggested applying a standby availability charge that doubles the existing availability charge based on their forecast of the number of standby days. The proposal also suggested that the multiplier will only be applicable during peak months and the number of standby notices will be capped at 25 days per obligation period.

Stakeholders suggested that the multiplier of 2x on top of the existing non-performance factor of 2x during peak months would be in close alignment with the intent of the SAC. The table below shows the SAC multiplier based on the stakeholder proposal.

Summer Obligation months	May	June	July	August	September	October
SAC Multiplier	0	0	2	2	2	0

IESO's Comments:

In order to review and compare the financial impact any proposed charge has compared to a pre-auction de-rate, stakeholder proposal to double the existing availability charge during peak months with a 25 standby notice day cap must then be calculated and considered in isolation, and the financial impact compared against the de-rate of a dispatchable load. When this is done, the financial loss applied through the charge is shown to be far below the financial loss applied to the dispatchable load through a de-rate. The table below shows a comparison between the implicit financial loss for a DL and the implicit financial loss based on the proposed multiplier of 2x

Season	Implicit Financial de-rate Loss for a DL	Implicit Financial de-rate Loss for HDR with 25 days and 2x
Winter	\$7,500	\$3,000
Summer	\$33,125	\$13,250
Total	\$40,625.00	\$16,250.00

Furthermore, the application of the proposed SAC only during peak months, does not align with incenting availability over the entire obligation period of six months, as described in IESO response section above.

Stakeholder's Proposal based on ERCOT methodology

In their feedback to the IESO on the August 25 and August 26 engagement sessions, stakeholders provided ERCOT's framework for 'availability de-rate' as an alternative proposal to IESO's proposed SAC. The proposal suggests that the availability of a resource should be considered as 100% during the pre-auction qualification but resources are subject to an availability payment clawback/true-up

after the end of a obligation period. Availability will be calculated on an hourly basis if used in IESO's case. A resource is considered unavailable if:

- Its total load is less than 95% of its obligation; and,
- Data was not received for the time period

If a resource does not fall within the above mentioned criteria, the load will be considered available. availability de-rate for a resource will be the ratio of the number of intervals in which the resource was available divided by the total number of contracted intervals in the settlement period. The following will be excluded from the availability de-rate calculations:

- Any interval in which the resource was deployed
- Any interval following a resource's deployment (recovery period)

If the availability de-rate is above 95%, it is considered to be 100%. If it is below 95%, then total payments are de-rated accordingly

IESO's Comments:

The IESO notes that the ERCOT approach resembles a "pay-for-performance" model for supplying demand response capacity and the capacity accreditation and payment is based on the total load of the resource. The model described is seemingly inconsistent from the IESO's Capacity Auction processes and key objectives of the 2023 Capacity Auction enhancements, particularly, the introduction of a capacity qualification process which will ensure the MWs procured through the auction are reliable and can be counted towards resource adequacy.

Under this proposal, an HDR resource does not have any financial incentive to 'self-qualify' to a value that it can reasonably make available at time of need and in theory could submit any value in capacity qualification during the pre-auction period and receive a UCAP value and obligation for that commitment. The IESO will not have any assurance at time of auction or even throughout the obligation period, that the qualified capacity is in fact going to be reliably available at times of need, and hence could risk reliability.

In the event that the submitted value differed from the actual average availability determined at the end of the obligation period, those MWs that the HDR resource was unable to fulfill are taken away from the MWs that other capacity auction resources could have provided but did not have the opportunity to clear in the auction. Waiting until the end of the obligation period to determine the amount of MWs that are actually available from each HDR resource is a scenario the IESO can't accept when those MWs are expected to be fully reliable during peak system needs of the obligation period in question.

The IESO also notes that a resource's total load consumption does not equal their actual demand response capability and therefore consumption data alone cannot be used to determine the actual amount of demand response capability made available. Demand response capability refers to the ability to curtail load when dispatched.

This approach does not align with objectives of the 2023 Capacity Auction enhancements which aim to bring more rigour, certainty and reliability into the procurement of capacity in the Auction through capacity qualification and assessment of performance against obligations.

Conclusion:

IESO had considered the two proposals submitted by the stakeholders to determine the best possible mechanism to determine an availability de-rate for an HDR resource. The proposal of using a 2x multiplier for the Standby Availability Charge does not account for an important principle that any proposal for an availability de-rate is meant to establish a level playing field such that the magnitude of the potential financial loss is equitable for all participating resources. It also caps the number of days for which a standby notice is issued to 25 days and restricts the application of the SAC to peak months. The proposal based on ERCOT's methodology removes any financial incentive for the HDR resource to 'self-qualify' to a value that it can reasonably make available at time of need thus putting system reliability at risk and removes the opportunity for more reliable capacity to be cleared in the auction from other participants.

Based on the review of the proposals submitted by the stakeholders and in light of the revised standby trigger prices and other observations made during the analysis of the standby trigger prices, IESO is proposing a SAC with a multiplication factor of 3x for the summer and winter obligation period and removing the cap on number of days for which the standby notice is issued. This proposal has been updated based on the observations and proposed updated standby trigger value identified in the standby trigger price threshold review. It also accounts for the discussion held on the August 26, 2022 Technical Session which indicated general agreement to explore the use of a charge or penalty that would apply within the relevant obligation period, as a method for HDR resources to 'self de-rate' their capacity in lieu of an availability de-rate

This proposal demonstrates an equitable potential penalty to what other resource types would be exposed to with the application of an availability de-rate. The risk of incurring the proposed charge incents resources to submit a value in capacity qualification that they can reliably make available on average throughout the obligation period and during times when standby notices may be issued, which achieves the objectives of an availability de-rate.