

# Discussion Brief 1.0: Potential Enhancements and Required Resources

## Overview

The purpose of this discussion brief is to summarize the details of each potential Capacity Auction enhancement as currently understood and to support additional discussion at the November 22, 2023, Capacity Auction Enhancements technical session. In addition to summarizing the suggested enhancement and its potential benefits as they have been described by stakeholders, the IESO has provided stakeholders with additional information regarding the IESO resources required if pursued through to implementation. The IESO will use the information below, responses to these additional questions and any additional information from the technical session to support enhancement prioritization activities that will take place following this meeting.

### General Question and Goal of Technical Session

- Is there any more information you can provide to the IESO with that will support the investigation and prioritization of this enhancement, such as examples?

Table 1 – Summary of Potential Enhancements

Suggested Enhancement	Will the enhancement require:				Possible benefits of enhancement	Additional questions from the IESO
	MM/MR changes?	IESO Tools & Systems changes / resources?	Settlement changes / resources?	CA / DSV		
<p><b>A) Review of Hourly Demand Response (HDR) Measurement Data Audit</b></p> <p>Stakeholders believe the HDR measurement data audit process should be reviewed due to the significant potential risk that it poses to HDR participants. The likelihood of avoiding an audit failure is not entirely within the participant’s control in some cases and the amount of Capacity Auction funds that could be clawed back is overly punitive. In order to prepare for the</p>	MAYBE	MAYBE	MAYBE	DSV	<ul style="list-style-type: none"> <li>- Lower auction offer prices</li> <li>- Reduce over-commitment of capacity</li> <li>- Reduce administrative burden for participants and IESO</li> <li>- Lower risk profile may encourage more HDR participation</li> </ul>	<ul style="list-style-type: none"> <li>- Questions on this topic should be directed to the Demand-Side Vision engagement</li> </ul>

risk of an audit failure, participants include a risk premium in their capacity auction offers that could be reduced if the current high measurement data audit standards are re-considered by the IESO.						
<b>B) Update reference resource/price in CA Demand Curve</b>  The reference price in the Capacity Auction Demand Curve is currently based on the net cost of new entry of a single cycle gas turbine generator. In the 2022 Demand Curve Parameter review, the Brattle Group recommended the IESO review the reference resource that is the basis of this reference resource to reflect a resource with the lowest net CONE in current market and policy conditions in Ontario.	NO	NO	NO	CA	<ul style="list-style-type: none"> <li>- Allow a wider range of economic resources to participate competitively</li> <li>- Enable pricing that is more consistent with the anticipated cost of new generating capacity</li> <li>- More accurately reflect current market and policy conditions for procuring capacity to inform price discovery</li> </ul>	<ul style="list-style-type: none"> <li>- No further questions from the IESO at this time</li> </ul>
<b>C) Understanding import and virtual zonal limits</b>  Stakeholders request clarity on how the Capacity Auction import and virtual zonal limits are determined and whether the limits can be increased. Any increase in these limits will allow participants to offer more readily available capacity to the IESO, resulting in more liquidity and competition which could drive down auction prices and costs to ratepayers	MAYBE	YES	MAYBE	CA	<ul style="list-style-type: none"> <li>- Reduced modelling uncertainty</li> <li>- Enable greater virtual participation in capacity-constrained zones</li> <li>- Better signalling of where physical constraints lie</li> <li>- More competitive auction clearing prices</li> </ul>	<ul style="list-style-type: none"> <li>- No further questions from the IESO at this time</li> </ul>
<b>D) Capacity Auction testing</b>	YES	NO	MAYBE	CA	<ul style="list-style-type: none"> <li>- Incline more CMPs to participate in dispatch testing</li> </ul>	<ul style="list-style-type: none"> <li>- How are the costs of responding to dispatch tests worked into your auction offers?</li> </ul>

<p>Stakeholders cite the high frequency and duration of the IESO's performance testing regime as a barrier to entry for more capacity participants. By reducing the number of discretionary dispatch tests to only one per obligation period, participants would incur fewer costs and could reflect those cost savings in auction offers. Stakeholders also suggest the IESO modify the out-of-market activation payment that HDR resources receive to encourage greater participation in dispatch tests.</p>					<ul style="list-style-type: none"> <li>- Increased participation (decreased barrier to entry)</li> <li>- Lower costs to ratepayers</li> <li>- Reduced administrative burden</li> </ul>	<ul style="list-style-type: none"> <li>- Would cost savings on testing directly lead to lower offer prices?</li> <li>- What other mechanisms could ensure compliance with IESO dispatch instructions?</li> </ul>
<p><b>E) Enable monthly buy-outs</b></p> <p>Stakeholders suggest the IESO consider allowing participants to buy out of obligations on a monthly basis instead of for the entire obligation period. By enabling more granular buy outs, obligations could be tailored to the technology participating and provide an accurate reflection of availability by month vs. 6-months. More capacity could be submitted in certain periods, and mitigate risks of underperformance.</p>	YES	YES	YES	CA	<ul style="list-style-type: none"> <li>- Auction bids would better reflect operational/business realities and risks</li> <li>- Reduced administrative burden</li> <li>- Lower costs to ratepayers</li> </ul>	<ul style="list-style-type: none"> <li>- No further questions from the IESO at this time</li> </ul>
<p><b>F) 4-hour energy storage duration requirement</b></p> <p>Stakeholders request the IESO consider removing the 4-hour energy duration factor from the current capacity qualification methodology for energy storage resources. The current factor serves to reduce the capacity that could be offered by an</p>	MM Only	YES	NO	CA	<ul style="list-style-type: none"> <li>- Allow resources to maximize their availability</li> <li>- Promoting participation of resources that better fit IESO needs</li> <li>- Increase auction participation and submitted capacity</li> </ul>	<ul style="list-style-type: none"> <li>- No further questions from the IESO at this time</li> </ul>

energy storage resource by a quarter, thereby reducing the amount of storage capacity that could be offered to the IESO.						
<p><b>G) Participation model for weather-sensitive/HVAC loads</b></p> <p>Stakeholders suggest the IESO consider the benefits of enabling a weather-sensitive resource class and/or moving to four seasonal obligation periods to more accurately value HVAC load contributions and increase eligible capacity.</p>	YES	YES	YES	DSV	<ul style="list-style-type: none"> <li>- More accurate procurement and utilization of capacity from HVAC resources</li> </ul>	<ul style="list-style-type: none"> <li>- Questions on this topic should be directed to the Demand-Side Vision engagement</li> </ul>
<p><b>H) More flexibility to manage commitments</b></p> <p>Stakeholders suggest that similar to other jurisdictions' capacity markets, the IESO should consider providing more options for participants to manage and modify their obligations leading up to and during the commitment period. This can better mitigate risks of underperformance, fewer charges and/or buy-outs, possibly can provide more MW</p>	YES	YES	YES	CA	<ul style="list-style-type: none"> <li>- Allow MPs to actively manage their risk and not need to include that risk in auction offers</li> <li>- Reduce unfulfilled capacity obligations, buyouts, etc.</li> <li>- Improved resource performance</li> <li>- Increased participation</li> </ul>	<ul style="list-style-type: none"> <li>- Is there any additional information that the IESO can provide to help facilitate bi-lateral transfers?</li> <li>- Can participants provide more details on their typical timelines for firming up obligation amounts, whether it be in the forward period or during the obligation period, if it were allowed?</li> </ul>
<p><b>I) Multiple HDR resource per zone</b></p> <p>Stakeholders have requested the IESO enable HDR participants to register more than one HDR resource per zone. This could allow for more accurate accreditation, performance</p>	YES	YES	YES	CA and DSV	<ul style="list-style-type: none"> <li>- Better resource management</li> <li>- Better representation of MPs contribution to the grid</li> <li>- Reduce over-procurement</li> <li>- More accurate accreditation and performance assessment</li> </ul>	<ul style="list-style-type: none"> <li>- We would like to understand how aggregators would segment their contributors if multiple HDR resources in one zone were enabled. Would aggregators segment their contributors based on: <ul style="list-style-type: none"> <li>o Contributor size</li> <li>o Curtailment method (e.g. load displacement via behind-the-meter generation and/or storage, load curtailment, other)</li> </ul> </li> </ul>

assessment, and participant management of HDR resources.						<ul style="list-style-type: none"> <li>○ Performance</li> <li>○ Load type (e.g. HVAC, industrial processes, etc.)</li> <li>○ Other</li> </ul> <ul style="list-style-type: none"> <li>- How would this improve resource performance and reliability?</li> <li>- Why are inaccuracies introduced when different types/sizes of resources are combined under one resource?</li> </ul>
<p><b>J) Review of in-day adjustment factor</b></p> <p>Stakeholders believe additional review beyond the 2020 review of the in-day adjustment factor is required as it can unfairly credit HDR resources for their actual demand response contributions. The baseline with the in-day adjustment factor only serves to reduce performance in most cases and should only apply to weather sensitive loads.</p>	MM Only	YES	YES	DSV	<ul style="list-style-type: none"> <li>- Improve baseline accuracy, performance assessment</li> <li>-</li> </ul>	<ul style="list-style-type: none"> <li>- Questions on this topic should be directed to the Demand-Side Vision engagement</li> </ul>
<p><b>K) Reduce 1 MW minimum participation requirement</b></p> <p>Stakeholders request the IESO review and reduce the minimum energy market participation requirement of 1 MW as it could open up participation in the IESO-administered markets to more resources.</p>	YES	YES	YES	n/a	<ul style="list-style-type: none"> <li>- Increase competition</li> <li>- Increase aggregator participation</li> </ul>	<ul style="list-style-type: none"> <li>- No further questions from the IESO at this time</li> </ul>
<p><b>L) Introduce performance-based incentives</b></p> <p>Stakeholders suggest that by offering incentives for performance over their obligation during in-market and emergency activations, participants would have a greater incentive to</p>	YES	NO	YES	CA	<ul style="list-style-type: none"> <li>- Provide participants with more incentive, agency, and flexibility to follow market signals more closely</li> <li>- Increased competition and reliability</li> <li>- Potential for improved performance during activations</li> </ul>	<ul style="list-style-type: none"> <li>- No further questions from the IESO at this time</li> </ul>

provide more capacity to the IESO during times when it is most needed. Participants would follow market signals more accurately.						
<p><b>M) Resource-specific EFORd for storage resources</b></p> <p>The current capacity qualification methodology for energy storage resources uses a 5% proxy EFORd value as an availability de-rate due to lack of sufficient historical operating and outage data for this resource type. Stakeholders suggest the IESO should use resource-specific historical operating and outage data to determine a resource-specific EFORd value instead of a proxy value to more accurately reflect storage resources' UCAP value.</p>	MM Only	NO	NO	CA	<ul style="list-style-type: none"> <li>- Increased accuracy of de-rate methodology</li> </ul>	<ul style="list-style-type: none"> <li>- No further questions from the IESO at this time</li> </ul>
<p><b>N) Avoided line losses credit in demand response capacity qualification</b></p> <p>Stakeholders have noted that the IESO does not credit demand response resources for avoided line losses in their capacity qualification methodology while many other jurisdictions do. Demand response capacity can contribute additional value to the resource adequacy of the system by avoiding line losses from delivering energy to the load and should be credited for these contributions.</p>	YES	YES	YES	CA	<ul style="list-style-type: none"> <li>- Values capacity being provided but not currently accounted for, reduces capacity need from other resources</li> <li>- Compensates DR resources for service they could be currently providing</li> <li>-</li> </ul>	<ul style="list-style-type: none"> <li>- What is the rationale for including an avoided line loss factor in capacity qualification if they are only achieved when demand response is activated?</li> </ul>
<b>O) Contributor-level assessments</b>	YES	YES	YES	DSV	<ul style="list-style-type: none"> <li>- No feedback received</li> </ul>	<ul style="list-style-type: none"> <li>- Questions on this topic should be directed to the Demand-Side Vision engagement</li> </ul>

Stakeholders have made various suggestions for the IESO to qualify, assess and credit performance at the contributor level instead of the resource level. By moving these processes to a more granular, contributor level, more accurate capacity accreditation and performance assessment will be achieved.						
<p><b>P) Dynamic standby trigger</b></p> <p>Stakeholders believe that the current pre-dispatch shadow price trigger for HDR standby notices to result in frequent issuance of standby notices which does not accurately indicate when these resources are likely to be called upon to deliver capacity. A more dynamic approach to triggering standby notices should be investigated that can prepare HDR resources for activations.</p>	MM Only	NO	NO	DSV	- No feedback received	- Questions on this topic should be directed to the Demand-Side Vision engagement
<b>IESO Suggested Enhancements</b>						
Expanding participation to wind, solar, hybrid, other resources	YES	YES	YES	CA		
Comprehensive review of the demand curve	YES	MAYBE	NO	CA		
Semi-regular review of capacity qualification methodologies	YES	YES	YES	CA		
Updates to some requirements for generator backed imports	YES	YES	NO	CA		
Benefits of rebalancing auctions	YES	YES	YES	CA		
Ensure accurate and reliable performance during an emergency event	YES	YES	YES	CA		