JULY 25, 2024

Capacity Auction Enhancements

Capacity Auction Team

ieso
Connecting Today. Powering Tomorrow.

Today's Discussion

- Stakeholder feedback from June 25, 2024 engagement
- Winter 2023-2024 test results
- Update on Summer 2024 test results and settlement charges
- Updates on 2024 Capacity Auction enhancements
- 2025 Capacity Auction enhancements investigation kick-off
  - Review of Commitment Management Options (Part 1)
  - Expand Participation

Summary of Stakeholder Feedback (June 2024 session)

June Stakeholder Feedback

- The IESO requested participant feedback following the June stakeholder engagement session and one response was received.
- The IESO's response to stakeholder feedback is posted to the Capacity Auction Enhancements engagement webpage.

Reference Price/Technology - Stakeholder Feedback 1/2

- **Feedback**: Stakeholders indicated that the reference technology and reference price must accurately reflect current market conditions and cost structures, including an assessment of potential impacts on various market participants. Economic assumptions that consider capital and operational costs, efficiency, and technological advancements are essential. This alignment helps market participants confidently plan and invest in new assets and technologies, facilitating a reliable and sustainable energy market.

Reference Price/Technology - Stakeholder Feedback 2/2

- **Response**: Thank you, and we agree that the reference technology must reflect current market conditions. The four-hour storage reference technology and reference price determined through analysis of recent Long-Term 1 RFP results accurately reflects current market conditions and costs for these new-build capacity resources.

Virtual Zonal Limits - Stakeholder Feedback

- **Feedback**: Stakeholders feedback on the virtual zonal limits (VZL) analysis emphasized the urgency for an adjustment to VZL to enable better deployment of demand response resources.
- **Response**: An update on the IESO's VZL analysis for the 2024 Capacity Auction is presented in the following slides.

Summer 2024 Testing - Stakeholder Feedback

Feedback: A stakeholder suggested there be 1) more flexibility in the scheduling of the test week, and 2) a process for HDR resources to inform the IESO of contributors down for maintenance outages.

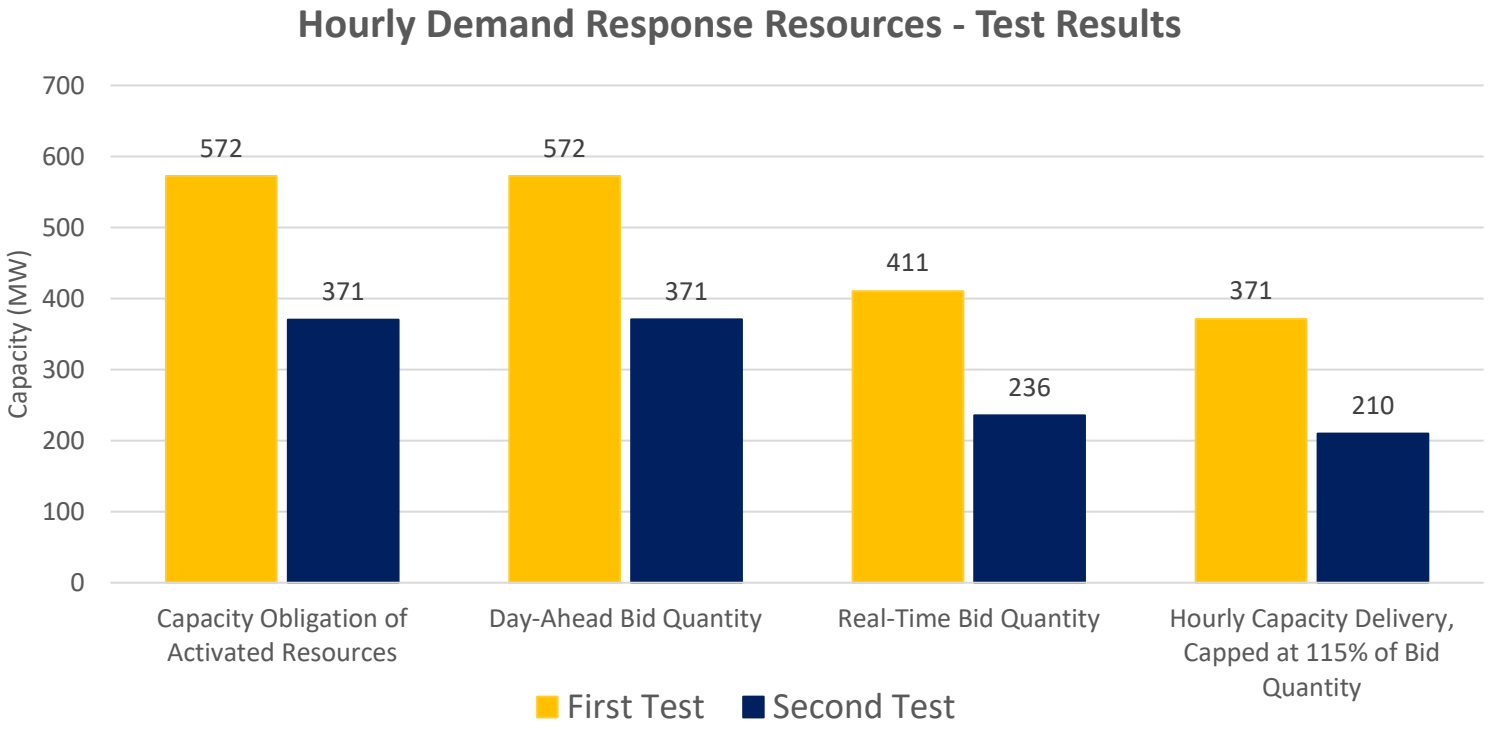
IESO Response: To ensure this feedback is properly interpreted and considered, we ask that stakeholders respond to the more targeted questions in the July feedback form.

Winter 2023-2024 Test Results

Capacity Auction Testing – HDR Results 1/2

- HDR resources were tested January 17, 2024 & April 17, 2024
- Key Observations:
  - **Overall, 57% of resources that were tested passed the test.**
  - In aggregate, activated resources delivered 65% and 57% of their MW obligation in the first and second test, respectively.
  - A handful of HDR resources over-delivered in load reduction compared to bid quantity.

Capacity Auction Testing – HDR Results

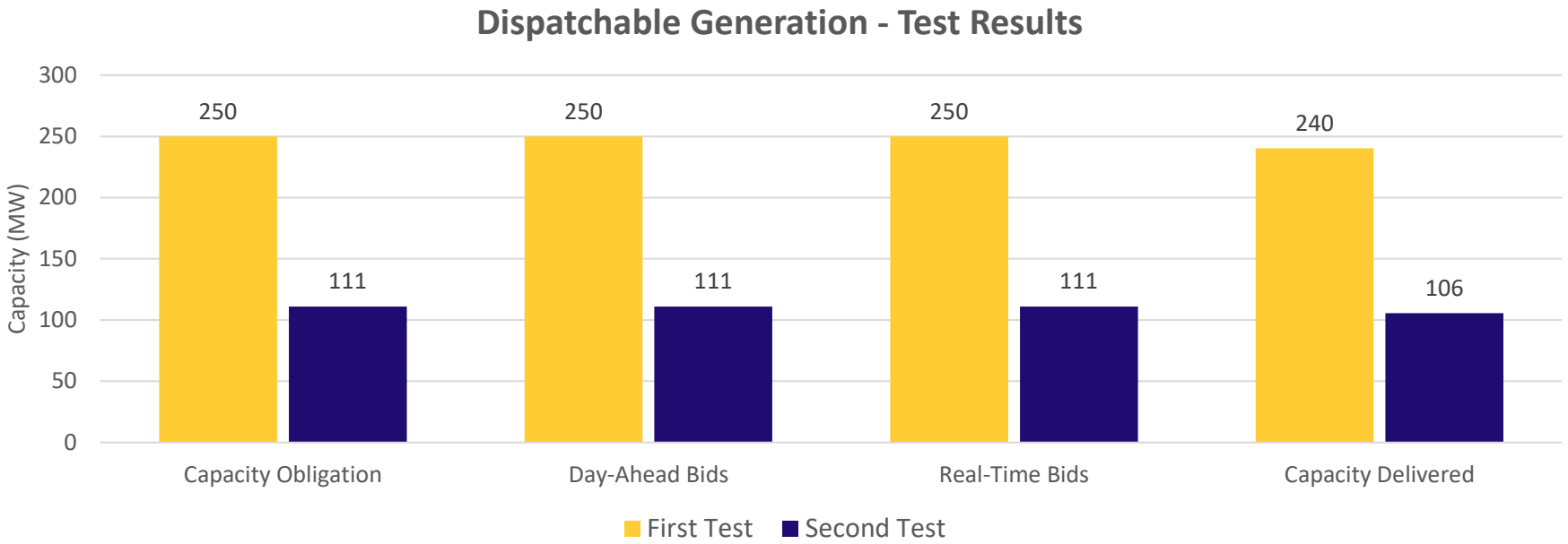


Capacity Auction Testing – Dispatchable Resources Results

- Capacity dispatchable resources were tested January 19, 2024 and April 18, 2024
- Key Observations – Dispatchable Generators:
  - **Overall, 66% of resources that were tested passed the test.**
  - In aggregate, resources delivered 96% and 95% of their MW obligation in the first and second test, respectively
- Key Observations – Dispatchable Loads:
  - **Overall, 80% of resources that were tested passed the test.**
  - In aggregate, resources delivered ~89% and 100% of their MW obligation in the first and second test, respectively
- Storage resources were not available to be tested

Capacity Auction Testing - Dispatchable Generation Results

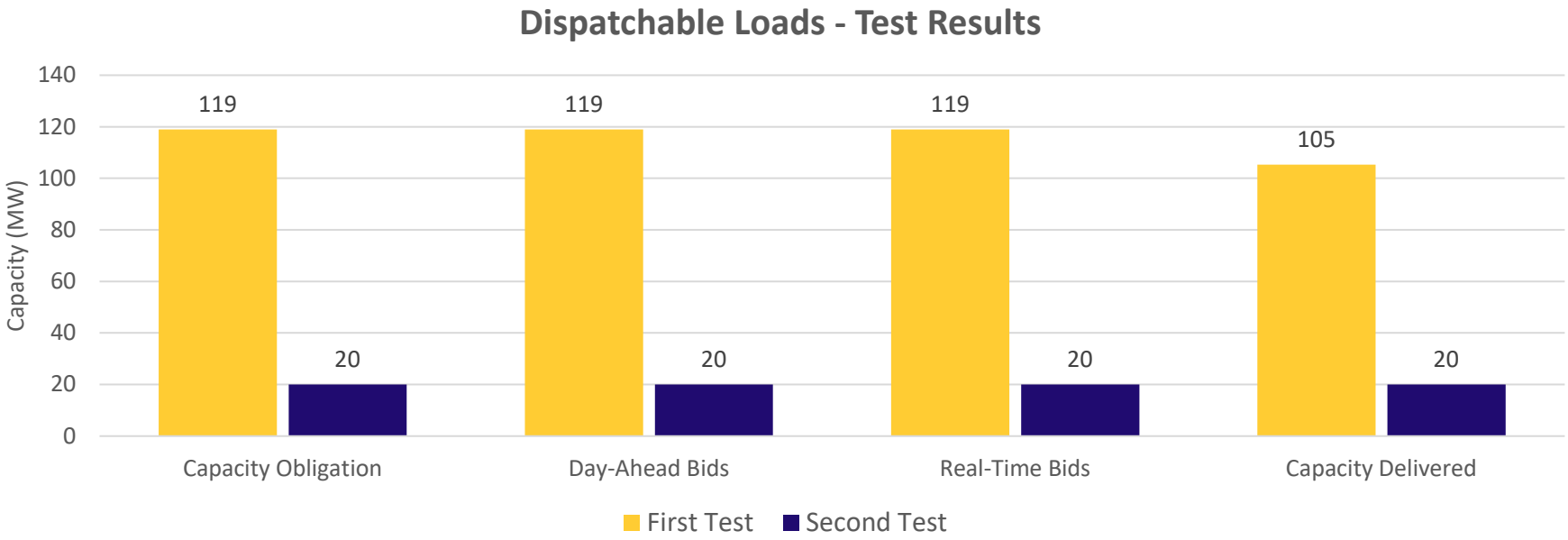
For every 100 MW of Dispatchable Generation capacity tested,
~96 MW are actually delivered in Real-Time (RT)



ieso
Connecting Today. Powering Tomorrow.

Capacity Auction Testing - Dispatchable Loads Results

For every 100 MW of Dispatchable Load capacity tested, **~90 MW** are actually delivered in Real-Time (RT)



ieso
Connecting Today. Powering Tomorrow.

Capacity Auction Testing – Import Results

- No capacity imports were tested in the winter 2023-2024 period
- Rationale:
  - There were no generator-backed capacity import resources with capacity obligations in the winter 2023-2024 period.
  - There were sufficient dispatches in the energy market to satisfy the test requirements for a system-backed capacity import resource, per Market Manual 12

2024 Summer Capacity Test Update

Test Results Delay

- Test assessment results and associated settlement charges could not be issued as part of the May RCSS-1 (issued July 15) settlement due to an IT issue
- This applies to all capacity auction resources tested during the testing week in May
- Test assessment results will be issued via email as soon as they are available, and any settlement charges related to the capacity test will be reflected on the May RCSS-2 statement to be issued on August 15, 2024
- A summer 2024 capacity testing update will be presented as part of the September 2024 Capacity Auction Enhancements engagement session

2024 Enhancements Updates: Market Rule & Manual Amendments

Market Rule and Manual Amendments

Administrative Topic	Market Rule or Manual	Updates and Next Steps
Performance Adjustment Factor (PAF)	MM 12: Capacity Auctions	- Draft Market Manuals were posted for review as part of the baseline process; comments were due July 10 and none were received - Early August: Market Manuals effective
Settlements	MM 5.5: Physical Markets Settlement Statements	
Import Operations	MM 4.2: Submission of Dispatch Data	
Cleared ICAP	MR Ch. 7	- One comment was received on the proposed market rule amendments following the June 11 Technical Panel meeting that has been incorporated - The Technical Panel voted to recommend the changes to the Board at the July 16 meeting - August: IESO Board Approval - September: Market Rules effective
Availability Charge	MR Ch. 9	

2024 Enhancements Updates: Reference Price and Technology Update

2024 Reference Price & Technology Update - Recap 1/2

- At last month's engagement, the IESO shared the results of its review of the auction's reference price and reference technology based on the results of the IESO's most recent procurement for new capacity resources, the Long-Term 1 RFP (LT1 RFP).
- The reference price is set based on the indicative estimate of the net cost of new entry of a reference resource. The reference resource is an economic and scalable, grid-capacity resource that is capable of meeting the system’s capacity and operational requirements and is broadly representative of what is being built or likely to be built if new capacity supply is needed.

2024 Reference Price & Technology Update - Recap 2/2

- The IESO's analysis showed that the LT1 RFP results signalled a market preference for development of four-hour battery storage resources, given the large volume of projects and MWs that were successful from this technology type and the technology agnostic design of the procurement.
- Additionally, the price for storage resources was considerably lower than the project prices in the non-storage category.
- The IESO proposed moving the reference price and technology from a simple cycle gas turbine resource, to the median price of a 4-hour storage resource from the LT1 RFP.
- Stakeholders were invited to comment on the proposed change to the reference price and technology, and one stakeholder feedback submission was received.

2024 Reference Price & Technology Update - Next Steps

The reference price will be updated from $644/MW-bd to **$651/MW-bd**, and will be reflected in the 2024 Capacity Auction pre-auction report, which will be published on August 8, 2024.

- The IESO will continue to conduct reviews of the reference technology and price, based on new sources of data that are relevant to consider for the Capacity Auction demand curve

2024 Enhancements Updates:
Review of Virtual Zonal Limits (short-term solution)

Review of Virtual Zonal Limits (short-term solution) 1/2

Overview: At last month's engagement, the IESO provided an update on its review of the virtual zonal limits (VZLs) for Niagara and West zones.

Due to how virtual DR resources participate in the market, there is uncertainty associated with their real-time status and actual availability that can cause market inaccuracies and operational challenges. Due to these uncertainties, the IESO must carefully assess the impacts of increasing the amount of virtual capacity in these areas of the province.

The IESO continues to assess the impact of an increase of the VZLs in the West and Niagara zones on its tools and processes to determine whether the risk of these market inaccuracies has a material impact on reliability.

Review of Virtual Zonal Limits (short-term solution) 2/2

Next Steps:

The new VZLs for Niagara and West zones will be reflected in the pre-auction report, which will be published on August 8, 2024.

- Prior to August 8, 2024, the IESO will hold a meeting with interested stakeholders to share the results of the analysis, and the VZL values that will be published. This will be a forum to ask any questions about the analysis and outcomes. If you are interested in taking part in this meeting, please email engagement@ieso.ca
- Investigation into the long-term VZL solution, scheduled for implementation in the 2026 auction, will begin shortly

2024 Enhancements Update: Summary and Next Steps

2024 Enhancements: Summary and Next Steps

Enhancement	Status	Next Steps
Market Rule Amendments	The Technical Panel voted to recommend the amendments to the IESO Board of Directors on July 16	IESO Board approval in August. If approved, amendments will take effect prior to November 2024 Capacity Auction.
Market Manual Amendments	No stakeholder feedback was received through the baseline process	The IESO will finalize and make these manuals effective prior to the November 2024 auction
Reference Price Review	Proposed updating the reference technology to 4-hour battery storage, and the reference price to $651/MW-bd; one piece of feedback received	The new reference price of $651/MW-bd will be published in the pre-auction report on August 8, 2024
HDR Standby Price Trigger Review	Complete; refer to the May 2024 Capacity Auction Enhancements engagement presentation	HDR standby price trigger will be maintained at $200 for 2024 Capacity Auction
Review of Virtual Zonal Limits (short-term solution)	Finalizing analysis of VZLs for Niagara and West zones	All VZLs will be published in the pre-auction report on August 8. Final Niagara and West VZLs will be discussed in a meeting with stakeholders prior to publishing.

2025 Capacity Auction Enhancements

Prioritized Enhancements (2025)

Enhancement	Description	Commentary
Review of Commitment Management Options (Part 1)	Review of tools, systems, processes available to participants to manage commitments	Further discussion needed
Expand Participation	Enable additional resource types to participate including wind and solar	Complex design including changes to MM/MRs, IESO tools, processes and systems
Comprehensive Demand Curve Review	Review of Capacity Auction Demand Curve, including max and min capacity, curve width and shape	Discussion on this enhancement will begin in a later engagement session.

Focus of Capacity Auction Enhancements 1/2

- With forecasted demand expected to increase over the next several years, the IESO will continue to leverage competition through various Resource Adequacy Framework mechanisms to ensure resource adequacy in a cost-effective manner
- The Capacity Auction is expected to continue to grow, securing a significant portion of Ontario's resource adequacy needs on an annual basis
- To prepare for the Capacity Auction's growing role, the 2024 - 2027 Capacity Auction Enhancements work plan will investigate opportunities to increase competition and available supply, while maintaining reliability as a top priority. Both, in terms of:
    - Performance in accordance with IESO dispatch instructions
    - Fulfilling obligations/commitments

Focus of Capacity Auction Enhancements 2/2

- Stakeholder engagement discussions on the Capacity Auction Enhancements will support this focus and the enhancements objective statement:

  "Future Capacity Auction enhancements should help ensure the Capacity Auction can adapt to evolving market conditions and continue to be a competitive, transparent and accessible marketplace for a diverse range of capacity resources"

- Our investigations will not just explore the benefits of new processes, tools, requirements, etc. but enhancements to existing processes as well

Review of Commitment Management Options for 2025 Capacity Auction

Key Terms and Processes (1/2)

- **Capacity Transfer** - An organization can request a full or partial transfer of their capacity obligation to another organization or to itself.
- **Buy-Out Process** - An organization can request a full or partial release of their capacity obligation for the entirety or remainder of the obligation period.
- **Buy-Out Charge** - A capacity auction charge meant to represent the lost value of an unfulfilled capacity obligation.

Key Terms and Processes (2/2)

- **Forfeiture** - The process of IESO revoking the capacity obligation and the capacity auction participant forfeiting its capacity auction deposit for not satisfying the applicable eligibility requirements.
- **Capacity Auction Deposit** - Deposit submitted during qualification to establish the creditworthiness of the participant for auction activities at the outset of an auction process, and to ensure that auction and pre-seasonal obligation period requirements can be fulfilled.

Issue: Unfulfilled Commitments (1/2)

- Where possible, capacity obligations should be awarded to participants who are likely to fulfill the commitment. When a capacity market participant does not fulfill its obligations, the following negative effects can result:
  - Reduced capacity the IESO can call upon to support operational and reliability needs
  - Potential need for interim short-term adequacy assessments based on reduced capacity availability
  - A loss of capacity that a prospective participant could have been awarded in the auction
  - Distortion of market signals - clearing prices that are not reflective of the true cost of the capacity
  - Administrative burden of having to process buy-outs, forfeitures, etc.

Issue: Unfulfilled Commitments (2/2)

- Through past experiences and internal investigation, the Capacity Auction team has identified a trend of unfulfilled obligations/ commitments season over season.

Obligation Period	No. of Buy-outs	Total MW of Buy-outs	No. of Forfeitures	Total MW of Forfeitures	Total MW Unfulfilled
Summer 2021	22	63.4	0	0	63.4
Summer 2022	29	64.3	0	0	64.3
Winter 2022-23	10	26.7	3	9.1	35.8
Summer 2023	9	14.5	3	23	37.5
Winter 2023-24	15	73.3	4	74	147.3
Summer 2024*	18	61.7	0	0	61.7

**Buy-outs still possible through until April 30, 2025*

Unfulfilled Commitments: Current Options

- Before offering into the Capacity Auction, participants should consider the risks of not being able to fulfill their commitment, should they be awarded a capacity obligation, which includes incurring a buy-out charge.
- In the event that a capacity obligation cannot be delivered upon, participants should seek to transfer all or a portion of their obligation to an eligible participant in advance of the obligation period.
- If the obligation cannot be transferred, participants should then initiate the process to buy-out their capacity obligation.

Minimizing Unfulfilled Commitments

- The following slides introduce four items for discussion in support of improved management of capacity obligations and reduced instances of unfulfilled commitments.

  1. Physical-virtual obligation transfers (to/from)
  2. New dispatchable load registration
  3. Review of current buy-out charge
  4. Review of deposit and forfeiture rules

- This package aims to improve options for participants to avoid buy-outs by increasing bi-lateral transfer opportunities as well as applying commensurate penalties when commitments cannot be fulfilled.

Item 1: Physical-Virtual Obligation Transfers

Current: There is an existing limitation in the market rules that prevents the transfer of capacity between different resource types (ie. physical and virtual).

Ch. 7, 18.9.1.3 - A capacity obligation transfer shall consist of the same attributes (e.g. physical or virtual), as the capacity transferor's capacity obligation.

Objective: To provide participants with more options with which to transfer their capacity and manage their obligation commitments.

Discussion: The Capacity Auction team proposes enabling transfers between physical and virtual resource types.

1. Is this something that would be of benefit to participants?
2. To what extent would this reduce the need to buy-out of commitments?

Item 2: New Dispatchable Load Registration (1/2)

Current: If a participant holding an obligation for a future dispatchable load resource is unable to complete the applicable registration requirements prior to the start of the obligation period, the participant must transfer, buy-out or forfeit their capacity obligation/auction deposit.

Objective: To provide participants with more options with which to transfer their capacity and manage their obligation commitments.

Discussion: The IESO proposes to formalize an existing solution that can be used by participants in these circumstances to avoid having to buy-out of their obligation. It should be noted that participants are encouraged to begin this registration process as early as possible (i.e., prior to the auction).

Item 2: New Dispatchable Load Registration (2/2)

Proposal: At the time of capacity qualification, a participant would submit two qualification requests and two auction deposits: one for the existing non-dispatchable load resource participating as a physical HDR, and one for the future dispatchable load resource.

Note: the participant would only offer the future dispatchable load resource into the auction.

If the future dispatchable load resource cannot be registered by the start of the obligation period, the participant would have the option to transfer the obligation over to its existing physical HDR resource (within the transfer window timelines). The auction deposit pertaining to the secondary qualification request can be returned when the transfer request is completed.

1. Is this something that would be of benefit to participants?
2. To what extent would this reduce the need to buy-out of commitments?

Item 3: Review of Current Buy-out Charge (1/3)

Current: The buy-out charge is applied when a participant can no longer fulfill its capacity obligation.

Buy-out charge equation ($CABOC_k^m$)

$$CABOC_k^m = 50\% \times \sum H\ CBOC_k^m \times CACP_k^m \times (1 - CNPF_{tm})$$

Rationale:

- Current buy-out charge has not been reviewed since the inception of the capacity auction.
- Based on the current clearing prices, a buy-out charge only represents ~30% of the availability payment.

Item 3: Review of Current Buy-out Charge (2/3)

Rationale (cont.):

- Buy-out capacity reduces the volume of procured capacity that the IESO has access to, and the IESO does not have a formal mechanism for procuring replacement capacity.
- Typically, in other North American capacity markets, the penalty for not fulfilling a capacity obligation is to the value of what a participant would have earned from the entire commitment, plus an additional charge.
- Encourages participants to only offer what they can deliver into the auction resulting in a more accurate clearing price rather than buy-out after the fact. IESO wants to ensure the procurement of reliable capacity.

Item 3: Review of Current Buy-out Charge (3/3)

Discussion:

- Re-assess and modify the buy-out charge to more accurately reflect the cost of procuring capacity in the auction.
- Revise the buy-out charge to match the availability payment that would have been earned by the participant for the obligation amount that is being bought out.
- How might this impact future Capacity Auction participation?

Item 4: Review Deposit and Forfeiture Rules (1/2)

Current: The forfeiture rule is intended to encourage participants to complete the applicable resource registration in time for the start of the obligation period.

Ch. 7, 18.4.4 - If a participant has not satisfied the applicable eligibility requirements prior to the start of the obligation period, and has not elected to buy-out of their obligation, the IESO shall revoke the obligation and forfeit its auction deposit.

Rationale: The IESO needs to ensure reliable resources are being secured through the auction. If a participant is not ready by the start of the obligation period, the IESO needs to recoup the cost of the obligation through this mechanism.

Item 4: Review Deposit and Forfeiture Rules (2/2)

Discussion:

- The IESO is interested in discussing the implications of the following changes to the deposit calculation and forfeiture rule in the instance that the applicable eligibility requirements are not met prior to the start of the obligation period.
  - Increase the deposit amount to represent the costs for failure to meet commitments.
  - Standardize the enforcement of the buy-out charge for failure to meet commitments.
  - Revise the deposit forfeiture rule to address instances of failure to meet commitments and failure to pay buy-out charge. For those organizations wishing to participate in future Capacity Auctions, additional risk assessments to be applied in deposit calculation.
- How might these changes impact future Capacity Auction participation?

Summary

- Feedback will be considered on the following items:
  1. Enabling of physical-virtual obligation transfers (to/from)
  2. Participation option for existing physical HDR resource that has not completed new dispatchable load registration
  3. Modification of current buy-out charge to match availability payments
  4. Review of deposit and forfeiture rules
- The IESO will consider feedback before finalizing proposed options to be presented at a future engagement session.
- Various other commitment management options will be introduced to stakeholders ahead of the 2026 and 2027 capacity auctions.

Expanding Participation

Purpose of Enhancement

- Previous expansions to resource eligibility in the Capacity Auction have introduced greater competition and liquidity, allowing the auction to clear greater amounts of capacity at competitive prices for a diverse range of capacity resources
- With greater amounts of wind and solar resources approaching the end of their contracts, the IESO is preparing the Capacity Auction to offer an annual revenue opportunity for available capacity from these resources
  - The opportunity to participate in the IESO's annual Capacity Auction will allow existing wind and solar resources to continue to provide system value and grid reliability

Overview

- Discuss a high-level design for expanding participation to eligible wind and solar resources (variable generators or VGs) in the Capacity Auction
- The IESO will look for stakeholder input and engagement to ensure the participation model for eligible Capacity Auction VG resources is implemented in a way that is equitable and competitive with other CAR types while recognizing the unique characteristics of these resources
- Topics of discussion today include:
  - Resource Eligibility
  - Capacity Qualification
  - Obligation Periods and Availability Windows
  - Capacity Testing and PAF Delivered MWs
  - Dispatch Testing
  - Settlement

High-Level Design: Capacity Auction Participation Model for Wind and Solar Resources

Resource Eligibility

- Existing variable generation (VG) resources (i.e., wind or solar)
- Installed capacity of 1 MW or greater, and directly connected to the IESO-controlled grid
  - Is there a desire from stakeholders to investigate expanding this participation opportunity to distribution-connected variable generation resources?
- Not under contract with the IESO or the Ontario Electricity Financial Corporation (OEFC) for any portion of the obligation period
  - Successful RFP proponents that are still in the RFP forward period can be eligible
  - Resources with RFP submissions in-process (i.e., under review) can be eligible

Capacity Qualification (1/2)

- The IESO proposes that capacity qualification can be aligned with the methodology used in the IESO's recent MT1 procurement
  - This can be found in the MT I RFP – Qualified Capacity Guidance Document
- The UCAP formula for wind and solar resources as used in the MT1 procurement is shown on the following slide:

Capacity Qualification (2/2)

For wind and solar:

UCAP (MW) = ICAP (MW) x Availability De-Rating Factor

UCAP (MW) = ICAP (MW) x Median of [AQEI (MWh) + Foregone Energy (MWh) / Maximum Active Power capability (MW)] in Top 200 hours of Ontario demand per season for the last 5 years

- Note that the PAF is not applicable to the MT1 procurement, and as such, is not included in the formulas above
- Is there any part of the MT1 methodology shown that stakeholders believe should be changed/enhanced for use in the Capacity Auction?
- Does this accurately represent the resource adequacy contributions wind and solar resources provide to the system at times of peak?

Obligation Periods and Availability Windows

- The IESO proposes that the Capacity Auction's availability windows, obligation periods, and commitment period can remain unchanged for all CAR types
- The IESO proposes that the requirements to submit dispatch data as set out in MM9.2 and MM4.2 and the requirement to follow dispatch instructions as set out in MM4.3 can remain unchanged for all CAR types

Capacity Testing – Requirements and Assessment (1/2)

The IESO is considering the compatibility of the existing capacity auction capacity test requirements for eligible VG resources and proposes the following:

- Eligible VG resources would be required to complete a capacity auction capacity test once per obligation period.
- Eligible VG resources can complete this test activation during the capacity testing week, along with all other capacity resources. Is this reasonable for VG resources?
- If the capacity testing week is not compatible with eligible VGs, the IESO may consider these resources completing the capacity test in the first two months of the obligation period.

Capacity Testing – Requirements and Assessment (2/2)

The IESO is considering the compatibility of the existing capacity auction capacity test requirements for eligible VG resources and proposes the following:

- To complete the test activation, eligible VG resources successfully schedule themselves into the energy market for four consecutive hours
- To pass the test, eligible VG resources supply, on average for each hour of their consecutive four-hour test duration, at least the resource-specific % of cleared ICAP

Capacity Testing – Discussion and Feedback

- Are any of these requirements incompatible with the performance capabilities of VG resources?
- Please indicate which requirements cannot be met and why they are incompatible with VG resources
- The IESO also welcomes suggestions from stakeholders on alternative testing requirements that are feasible for VG resources to prove their maximum capability

PAF Delivered MWs

- Final design decisions for capacity testing would necessarily inform how the PAF Delivered MW values are determined for eligible VG resources
- The IESO proposes to revisit this topic as part of the detailed design discussions

Dispatch Testing – Requirements and Assessment

- The IESO proposes that Capacity Auction eligible variable generation resources may not be required to complete dispatch testing
  - Currently, VG resources only receive dispatch instructions to reduce supply
  - A reduction in supply is not primarily related to the assurance that a VG resource will follow dispatch instructions related to its capacity obligation
  - Like imports, VG resources are activated regularly in the energy market, as such, dispatch testing may not be needed to prove the ability to follow dispatch instructions

Settlement

- The IESO proposes that settlement charge types applicable to capacity auction generation resources can also be applicable to eligible VG resources
- No new charge types are contemplated for VG resources
- Would eligible VG resources require different settlement treatment from what is currently applicable to capacity auction generation resources?

Summary and Next Steps

Summary

- Winter 2023-2024 tests results included significant test failures and under-delivery compared to obligation amounts. The new testing framework is expected to mitigate these issues moving forward.
- Summer 2024 aggregated test results will be presented in September.
- Commitment management options were discussed for the 2025 auction. Other options will be introduced ahead of the 2026 and 2027 capacity auctions.
- Expanding participation to eligible VG resources is currently targeted for 2025.
- Discussion on the comprehensive demand curve review will begin in a later engagement session.

Next Steps (1/2)

- Market rule amendments: IESO Board approval in August 2024, changes effective September 2024
- Market manual changes will take effect in early August 2024
- Pre-Auction Report will be published on August 8, 2024
- Next engagement session will be September 2024
  - Continue engagement on 2025 enhancements
  - Summer 2024 Capacity Testing Update

Next Steps (2/2)

- Using the feedback form provided, stakeholders are invited to submit questions and comments by August 8, 2024 on the following items:
  - Winter 2023-2024 testing results
  - Summer 2024 testing
  - 2024 enhancement updates
  - 2025 enhancement updates
    - Commitment Management Flexibility
    - Expanding Participation

Reminder: E-Learning Module and Upcoming Q&A Sessions

- E-Learning modules covering all periods of the capacity auction are now available to prospective and existing participants in preparation for the upcoming 2025 Capacity Auction.
- IESO will also be holding two Q&A sessions to discuss any questions that may arise while completing the eLearning modules. Please use **one** of the links below to register:
  - Q&A Session #1 (July 24, 2024) - Registration Link
  - Q&A Session #2 (July 31, 2024) - Registration Link

Thank You

ieso.ca

1.888.448.7777

customer.relations@ieso.ca

engagement@ieso.ca

@IESO_Tweets

linkedin.com/company/IESO

ieso
Connecting Today. Powering Tomorrow.