SEPTEMBER 18, 2024

Capacity Auction Enhancements

Capacity Auction Team

Today's Discussion

- Stakeholder feedback from July 25, 2024 engagement
- 2024 Capacity Auction Updates
- Summer 2024 Performance Results: Capacity test and emergency activations
- 2025 Capacity Auction Enhancements – Draft High-Level Designs
  - Review of Commitment Management Options
  - Expanding Participation to Wind and Solar
  - Auction Tie-Break *New*
  - Administrative Changes
- Summary and Next Steps

Summary of Stakeholder Feedback: July 2024 Session

July Stakeholder Feedback

- The IESO requested participant feedback following the July stakeholder engagement session and four responses were received
- The IESO's response to stakeholder feedback is posted to the Capacity Auction Enhancements engagement webpage

2024 Enhancement Updates (1/2)

Feedback:

- The timeline to engage stakeholders on enhancements, receive feedback and then obtain IESO approval for an upcoming auction is tight and does not allow for addressing or making corrections to the current set of rules
- The IESO must include the ability to make corrections before moving on to the next year's set
  - This approach would help avoid issues that were experienced with operationalizing the current rules, which has resulted in partial curtailments of physical resources, incorrect issuances, recall of some DR-activation notices and the delay to the release of the summer 2024 test results—leaving no time to discuss any errors, questions or clarifications before the 2024 activities

2024 Enhancement Updates (2/2)

Response: The IESO agrees that new Capacity Auction processes, rules and requirements should be closely monitored following implementation to determine if adjustments must be made to achieve the intended design or correct any issues, and remains open to suggestions and discussion on the 2023 Capacity Auction enhancements and other Capacity Auction processes.

The issues raised by stakeholders cannot be directly attributed to issues with the market rule/manual set that was implemented to enable the 2023 Capacity Auction enhancements or even the enhancements themselves, nor would an extended market rule review timeline prevent any issues from occurring in the future.

Commitment Management: Physical-Virtual Transfers

Feedback: Stakeholders have stated that enabling transfers between physical and virtual resource types would be beneficial, and that the IESO should also consider removing the transfer deadline and allow transfers within the capacity season.

Response: The IESO had previously engaged with stakeholders on in-period obligation transfers and the Capacity Auction team will consider investigating this enhancement as part of the post-2025 enhancements priorities.

Commitment Management: New Dispatchable Loads

Feedback: The submission of two auction deposits to cover two qualification requests poses a considerable barrier, especially if the market participant is only intending to clear one resource.

Response: The deposit rules require an aggregated deposit amount to be provided for all capacity auction resources under a capacity qualification request.

The purpose of this is to establish the creditworthiness of the participant for auction activities and to ensure that the capacity auction participant fulfills any post-auction and forward period obligations.

Commitment Management: Buy-out Charge Review (1/2)

Feedback: Stakeholders are mixed on supporting an increase of the buy-out charge.

- One stakeholder suggests that a buy-out charge should be high enough to incentivize good behavior and discourage gaming but should not be unduly punitive
- Other stakeholders feel that the current buyout level is sufficient and should not be increased as there is an array of reasons for why a buy-out may be required; stakeholders offered other alternatives to avoid use of buy-outs
- Stakeholders note that the buy-out charge assessment that other jurisdictions use, as referenced by the IESO, was inaccurate and is less costly than stated

Commitment Management: Buy-out Charge Review (2/2)

Response:

The IESO agrees that, as with all penalties, it is important to find the right level of penalty to incentivize the desired behaviour while not simultaneously creating an incentive for participants to avoid the penalty through other means.

The IESO maintains that a change to the current buy-out charge is needed to ensure it continues to serve its purpose as a penalty for participants who are unable to fulfill their obligation.

The draft high-level design presented on the following slides includes consideration of this stakeholder feedback.

Expanding Participation: Purpose and Overview

Feedback: Stakeholders are concerned about the inclusion of variable generation (VG) in the Capacity Auction. Given the Capacity Auction's current prices and the other procurement mechanisms available, it seems unlikely that VGs would be re-contracted or built using the Capacity Auction.

Response: This enhancement is in the spirit of this engagement's 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". Previous expansions to resource eligibility in the Capacity Auction have proven to meet this objective statement.

As greater amounts of wind and solar resources approach the end of their contracts, the IESO is considering the inclusion of these resources in the Capacity Auction for several important reasons. This enhancement will serve as a bridging mechanism for existing VGs, allowing them to continue providing system value as they navigate the upcoming procurements as part of the IESO's Resource Adequacy Framework.

2024 Capacity Auction Updates: Amendments, Pre-Auction Period, Settlements and Capacity Tests

2024 Capacity Auction: Amendments and Pre-Auction

- Amendments:
  - IESO Board approved amendments for the 2024 Capacity Auction in August 2024, changes effective September 2024
  - Market manual changes became effective Aug. 9

- Pre-Auction Period:
  - The Pre-Auction Report was published on Aug. 8 with updated target capacity, reference price, maximum auction clearing price and revised virtual zonal limit for the Niagara zone

Settlements and Capacity Test Update

- Summer test assessment results were issued via e-mail
- Settlement charges related to the capacity test were included on the May RCSS-2 statement that was issued on Aug. 15
- For resources that did not pass the capacity test, preliminary performance adjustment factors are displayed in the capacity qualification submission screen in Online IESO based on the submitted ICAP
  - Results are subject to Notice of Disagreement outcomes

Notice of Disagreement (NOD): UCAP Adjustment

- Submit only one NOD for the last trade day of the month
  - CT1318 Capacity Auction Capacity Charge
  - CT1323 In-Period Cleared UCAP Adjustment Charge
- If the outcome of the NOD changes a resource's capacity test result, then this will be reflected in the qualification assessment result

Performance Results:
Summer 2024 Capacity Tests

Capacity Auction Terms

Term	Description
Installed Capacity (ICAP)	A resource's maximum seasonal generation capability, load reduction capability, or import capability
Cleared ICAP	Represents the amount of ICAP proportional to the amount of UCAP that was cleared in the auction and the amount of capacity the resource must deliver in the capacity test
Capacity Obligation / Cleared Unforced Capacity (UCAP)	Amount of capacity that a Capacity Auction participant must make available in the energy market during the availability window
Capped Delivered MWs	Delivered MW values capped at 100% of cleared ICAP, reflecting the amount expected to be delivered through the capacity test
Uncapped Delivered MWs	Delivered MW values with no cap applied to over-delivery

Summer 2024 Capacity Test: Summary (1/2)

- The first self-scheduled capacity testing week took place during the week of May 27-31
- All 81 resources and 1,827.8 MW of total cleared ICAP were tested, representing all Capacity Auction Resources with obligations
- On average over the duration of the test, when delivery is capped at the cleared ICAP of the tested resources, 1,737.8 MW were delivered (95% of cleared ICAP). When delivery is not capped, 1,966 MW was delivered (108% of cleared ICAP).
- Out of the 81 resources that completed the capacity test, 25 (31%) failed

Summer 2024 Capacity Test: Summary (2/2)

- Overall results reflect significant improvement in the capacity test compared to previous years' tests
- Under the previous framework, the IESO was able to conduct tests on approximately 75% of capacity obligation MWs. Under the new framework, 100% of capacity was tested.
- Of the capacity tested in 2023, approximately 78% of the obligation was delivered on average. In summer 2024, an average of 95% of the cleared ICAP was delivered overall.
- These performance results do not reflect any adjustments that may result from the Notice of Disagreement process

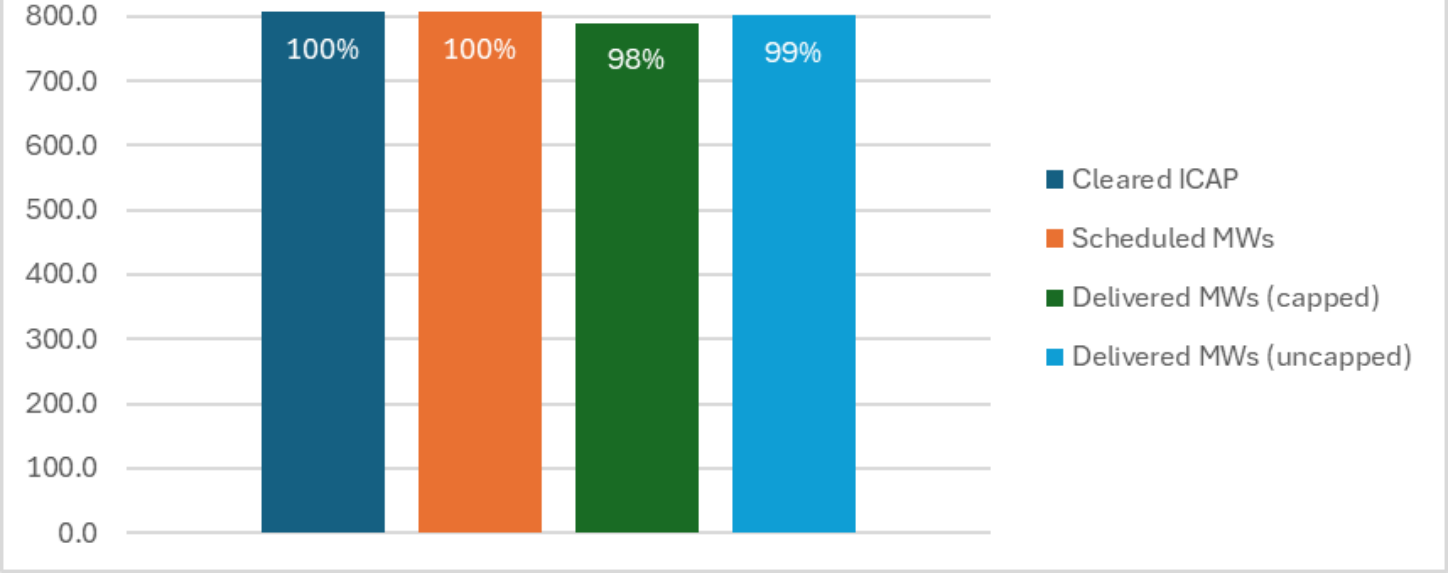
Capacity Generation and Import Resources: Quick Stats

- Delivery averaged over duration of test
- 98% of total cleared ICAP delivered (delivery capped at ICAP)
  - 100% of capacity obligation delivered in the summer 2023 obligation period (delivery capped at obligation)
- 99% of total cleared ICAP delivered (delivery uncapped)
- 71% of capacity generation and import resources passed the test

Capacity Generation and Import Resources: Test Results

For every 100 MW of Generation and Import capacity tested,

~98 MW were delivered in Real-Time (RT)



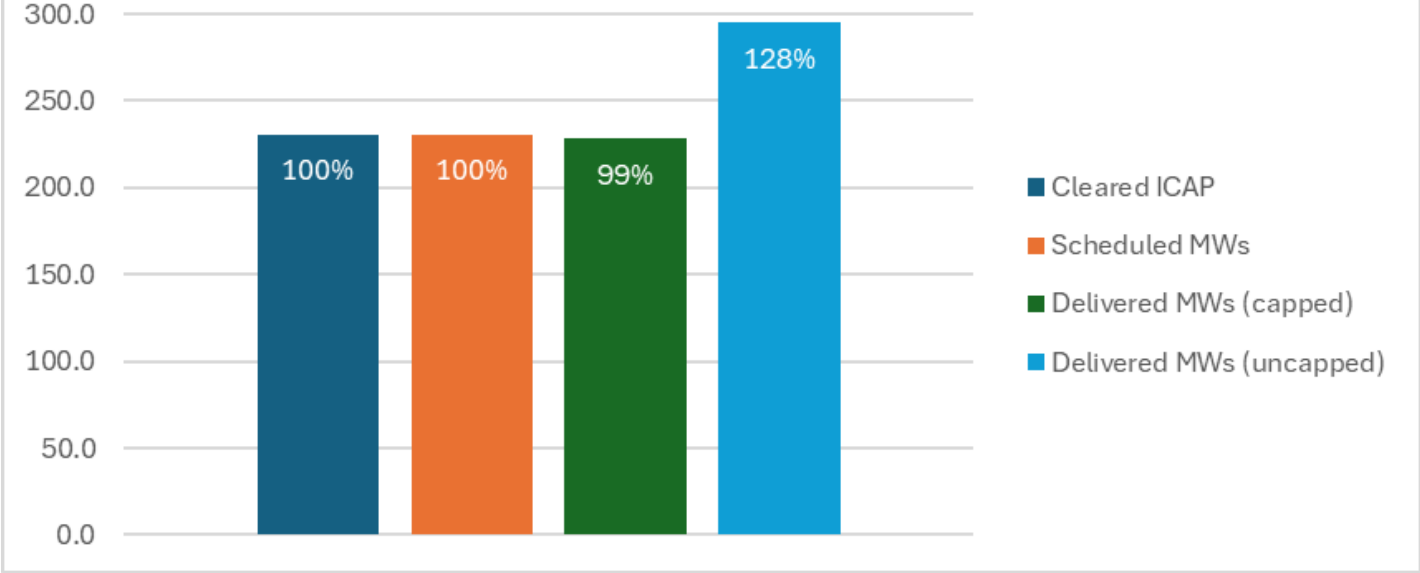
Physical HDR Resources: Quick Stats

- Delivery averaged over duration of test
- 99% of total cleared ICAP delivered (delivery capped at ICAP)
  - 99% of capacity obligation delivered in the summer 2023 obligation period (delivery capped at obligation)
- 128% of total cleared ICAP delivered (delivery uncapped)
- 100% of physical HDR resources passed the test

Physical HDR Resources: Test Results

For every 100 MW of Physical HDR capacity tested,

~99 MW were delivered in Real-Time (RT)



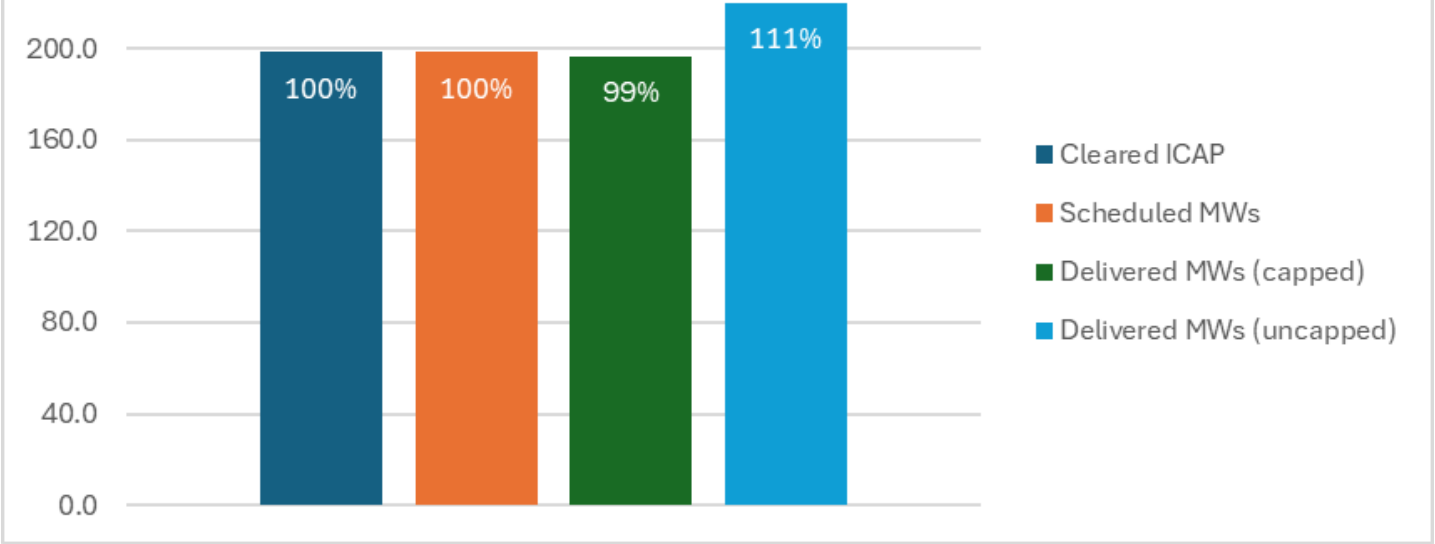
Dispatchable Load Resources: Quick Stats

- Delivery averaged over duration of test
- 99% of total ICAP delivered (delivery capped at ICAP)
  - 66% of capacity obligation delivered in the summer 2023 obligation period (delivery capped at obligation)
- 111% of total ICAP delivered (delivery uncapped)
- 89% of dispatchable load resources passed the test

Dispatchable Load Resources: Test Results

For every 100 MW of Dispatchable Load capacity tested,

~99 MW were delivered in Real-Time (RT)



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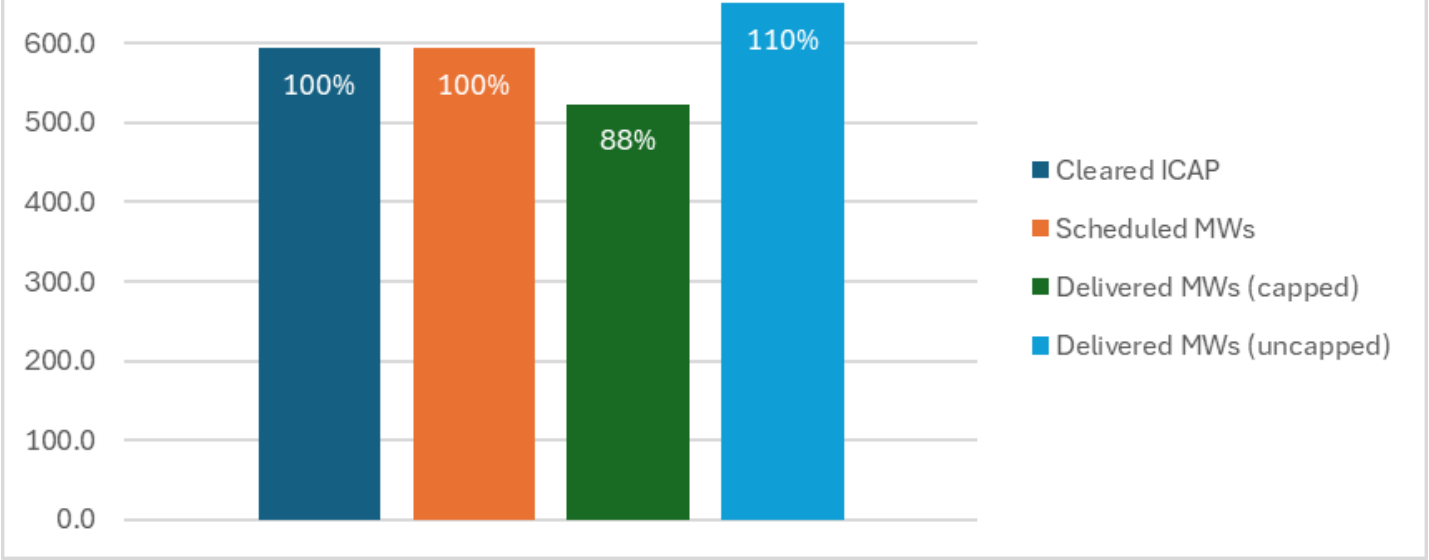
Virtual HDR Resources: Quick Stats

- Delivery averaged over duration of test
- 88% of total cleared ICAP delivered (delivery capped at ICAP)
  - 63% of capacity obligation delivered in the summer 2023 obligation period (delivery capped at obligation)
- 110% of total cleared ICAP delivered (delivery uncapped)
- 59% of virtual HDR resources passed the test

Virtual HDR Resources: Test Results

For every 100 MW of Virtual HDR capacity tested,

~88 MW were delivered in Real-Time (RT)



Summer 2024 Capacity Test Results: Recap

- Overall improvement in capacity test performance under the new testing framework, compared to historical testing results
- Participants experienced minimal issues submitting bids, getting scheduled, delivering to their capacity test requirements and submitting test information to the IESO
- The IESO is encouraged by improvement in capacity test performance, and ability of participants to demonstrate capability of resources
- Demand response resources often delivered beyond the testing requirement to ensure a successful test
- Opportunity for improvement for virtual HDR resource test performance

Performance Results:
Summer 2024 Emergency Activations

Capacity Auction Terms

Term	Description
Installed Capacity (ICAP)	A resource's maximum seasonal generation capability, load reduction capability, or import capability
Cleared ICAP	Represents the amount of ICAP proportional to the amount of UCAP that was cleared in the auction and the amount of capacity the resource must deliver in the capacity test
Capacity Obligation / Cleared Unforced Capacity (UCAP)	Amount of capacity that a Capacity Auction participant must make available in the energy market during the availability window
Capped Delivered MWs	Delivered MW values capped at 100% of bid quantity, reflecting the amount expected to be delivered based on dispatch instructions
Uncapped Delivered MWs	Delivered MW values with no cap applied to over-delivery

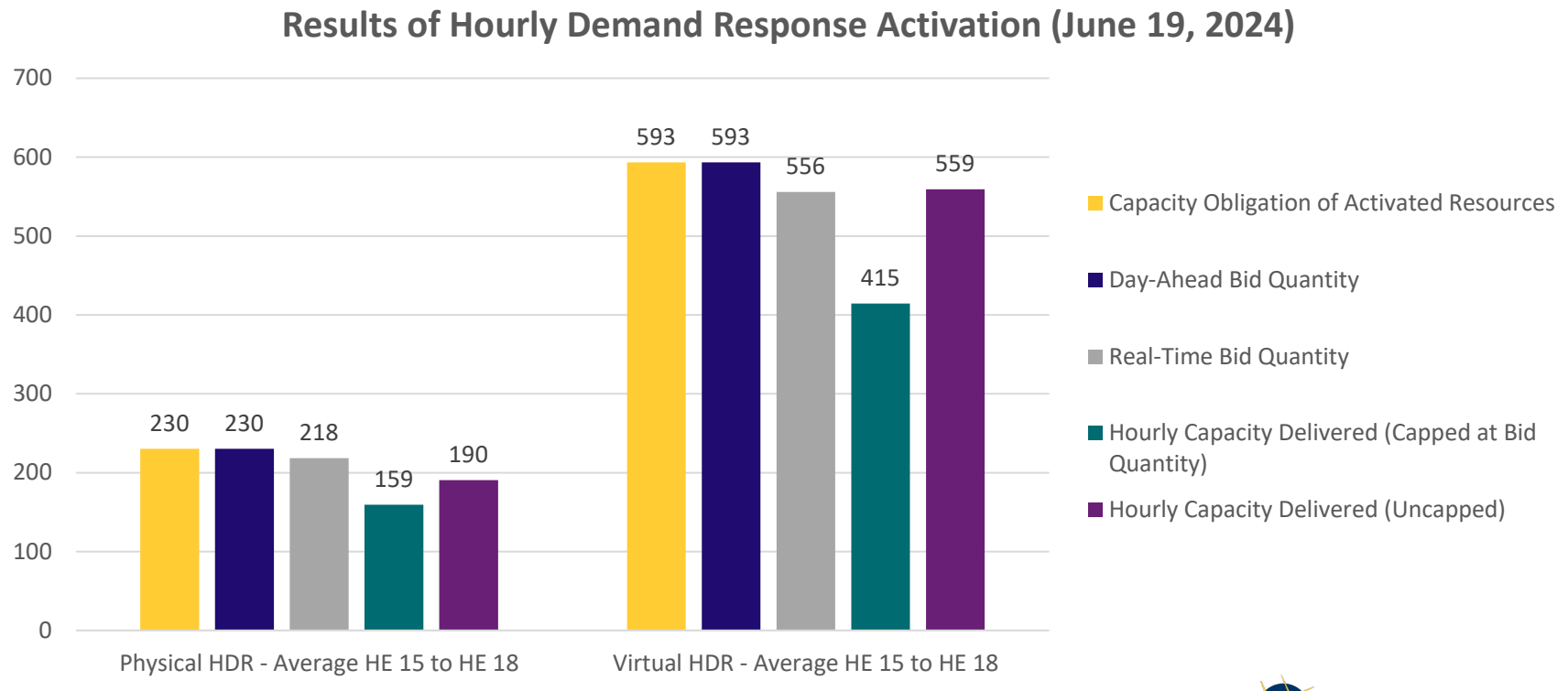
Summer 2024 Emergency Activations Summary

- On June 19 and 20, all HDR resources (824 MW) were activated to help maintain reliability
- On July 15, capacity generators were called upon to provide ~160 MW of capacity
- On June 19 and 20, a significant portion of dispatchable resource capacity acquired through the Capacity Auction was not available

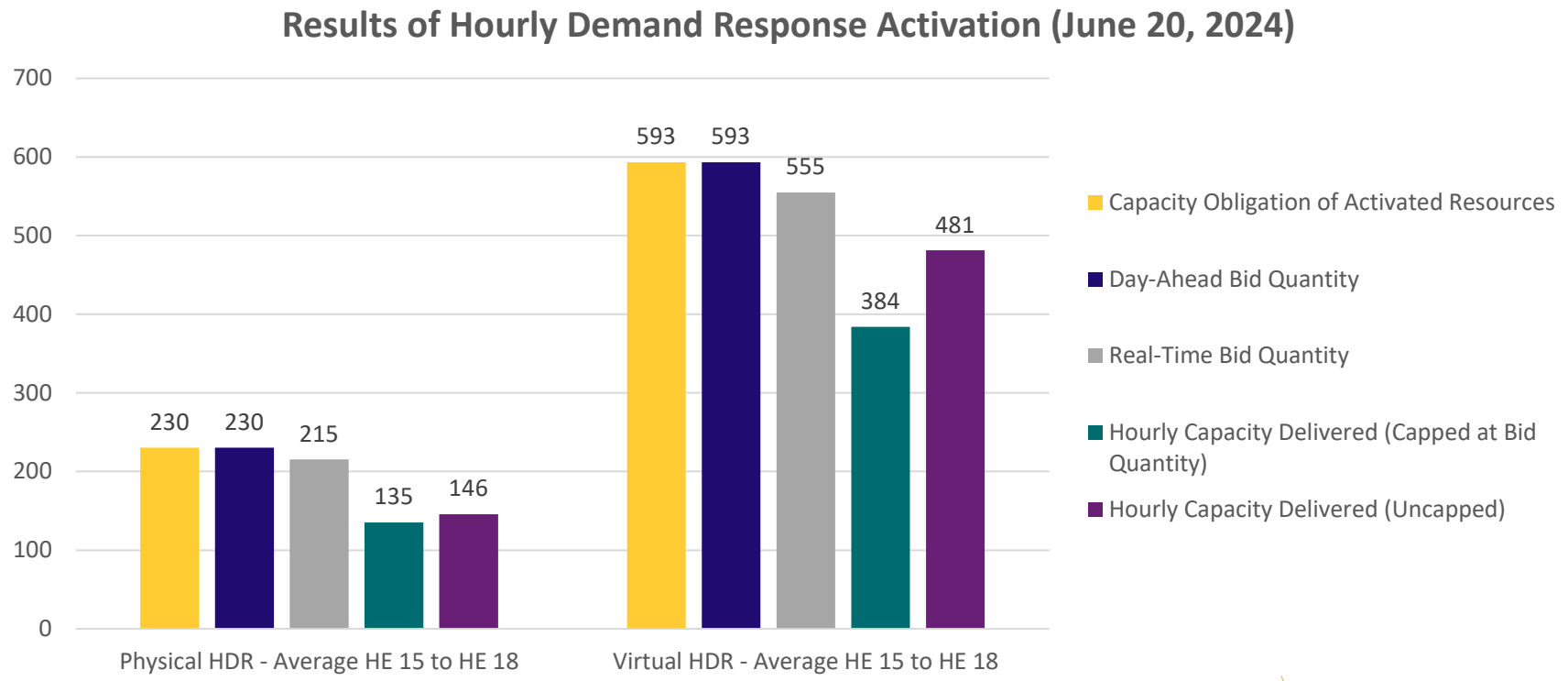
Summer Emergency Activation Summary: HDR Resources

Activation Date	Capped Delivery (MW)	Capped Delivery (%)	Uncapped Delivery (MW)	Uncapped Delivery (%)
June 19, 2024	574 MW	**69.7%**	749 MW	**90.9%**
June 20, 2024	519 MW	**63%**	627 MW	**76.1%**
All 2023 Summer Activations	1641 MW	**73%**	2026 MW	**90%**

June 19 Emergency HDR Activation – Results



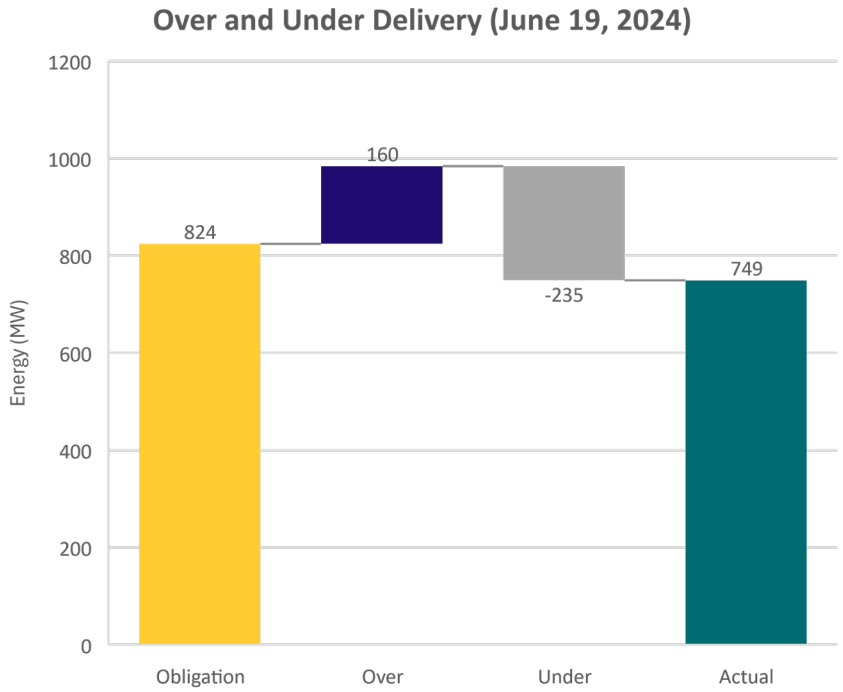
June 20 Emergency HDR Activation – Results

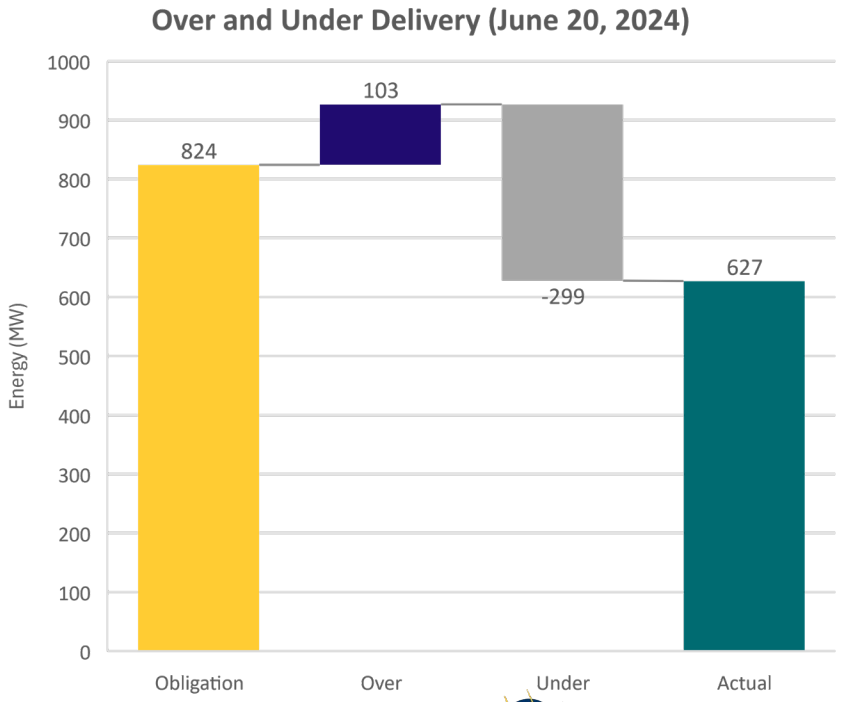


Summer 2024 HDR Emergency Activations: Insights

- The uncapped delivery of HDR resources shows the overall delivery of the HDR fleet as **83.5%** of the activated quantity
- The capped delivery of HDRs provides a better indication of the underlying performance during these emergency events
- Many HDR resources under-delivered relative to their bids and capacity obligations, while a handful of HDR resources over-delivered significantly
- During emergency conditions, when the IESO control room has heightened difficulty maintaining a supply and demand balance, performance according to dispatch is important

Over- and Under-Delivery of HDR Resources





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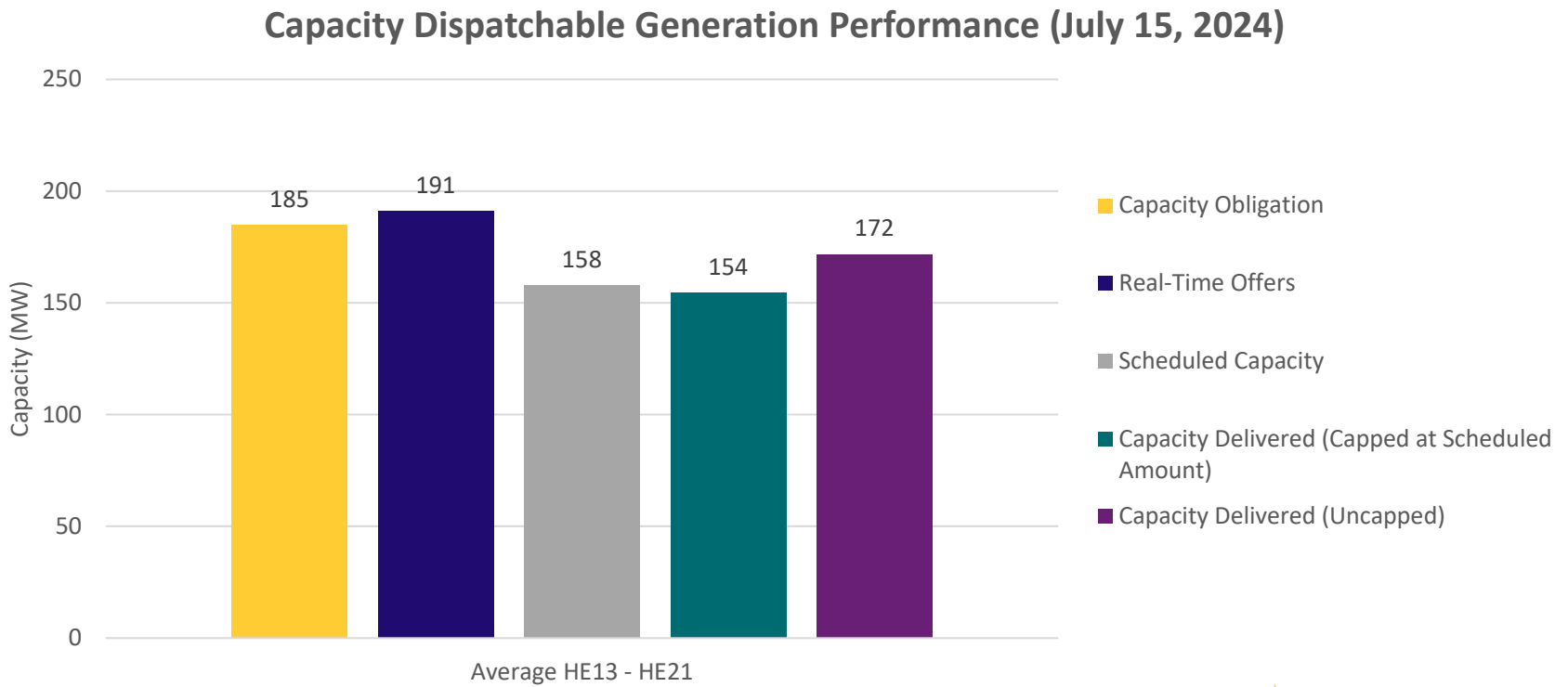
Summer Activations: Capacity Dispatchable Generator

- Three (3) capacity dispatchable generators were constrained online on July 15, 2024 due to high forecast demands
- IESO called on all available dispatchable generators
- ~160 MW of dispatchable generator capacity was constrained online during the availability window

Capacity Dispatchable Generator Summer Activations



Implications of Summer Emergency Activations

- As Ontario continues to operate in a period of tighter supply conditions, capacity auction resources may be called on with greater frequency to help support system reliability
- Availability and performance of Capacity Auction resources is critical to ensure reliability is maintained during these events
- The IESO will continue to monitor performance going forward and engage with participants on this topic under the "Improve Performance" enhancement in advance of the 2026 Capacity Auction on how performance and availability could be improved

2025 Capacity Auction Enhancements

Prioritized Enhancements (2025)

Enhancement (1)	Description	Commentary
Review of Commitment Management Options (Part 1)	Review of tools, systems, processes available to participants to manage commitments	Draft high-level design in the following slides
Expand Participation	Enable additional resource types to participate including wind and solar	Draft high-level design in the following slides
Tie-Break Mechanism *NEW*	Investigate an alternative to the Capacity Auction engine's current tie-break methodology for when two or more capacity auction offers are submitted at the same price for the last available quantity	This is a high priority enhancement for both stakeholders and IESO
Administrative Updates	Standard annual review process to provide clarity on rules and procedures and consider design changes in order to reduce administrative burden	Proposed updates will be provided in November

(1) Comprehensive Demand Curve Review has been re-prioritized to a later year in the work plan

Draft High-Level Design: Commitment Management Options for 2025 Capacity Auction

Commitment Management Options 2025: Intent

- This package aims to minimize unfulfilled commitments by increasing bi-lateral transfer opportunities as well as applying commensurate penalties when commitments cannot be fulfilled
- The next slides outline draft high-level design proposals for the following items:
    1. Physical-virtual obligation transfers (to/from)
    2. Review of deposit and forfeiture rules
    3. Review of current buy-out charge
- This section includes a proposal to formalize a process for the following item; this is not a design proposal as it does not involve any changes to existing rules:
    4. New dispatchable load registration

1. Physical-Virtual Obligation Transfers: Proposal

Change: Enable transfers between physical (generation, storage, import, dispatchable load and physical hourly demand response) and virtual resource types, while still respecting zonal and virtual limits.

This can be achieved by modifying the transfer tool in Online IESO and removing criteria found in *Ch. 7, 18.9.1.3* of the Market Rules that says a capacity obligation transfer shall consist of the same attributes (e.g., physical or virtual), as the capacity transferor's capacity obligation.

Affected area(s): Market Rules, Online IESO (transfer tool)

2. Review of Current Buy-out Charge: Background

- In the July engagement session, the IESO had considered revising the buy-out charge to a penalty amount equivalent to the total availability payments earned over an obligation period
- The IESO's rationale for revising the buy-out charge to this amount was that it represents the value of that capacity obligation to the IESO, in financial terms, and therefore, participants who fail to provide their obligation should receive the penalty for this value
- After considering stakeholder feedback, the IESO has revised the proposed revision to the buy-out charge

2. Review of Current Buy-out Charge: Proposal

Change: Amend the way in which the buy-out charge is calculated by applying a commensurate charge across each month of the obligation period.

Current formula: $CABOC_k^m = 50\% \times \sum^H CBOC_k^m \times CACP_h^z \times (1 - CNPF_{tm})$

Proposed revised formula: $CABOC_k^m = -50\% \times \sum^H CBOC_k^m \times CACP_h^z \times CNPF_{tm}$

Affected area(s): Market Rules, Online IESO (buy-out tool)

Note: Due to the increase of the buy-out charge, the IESO may need to consider an increase to Capacity Auction prudential requirements to cover the risk of a participant defaulting on the buy-out charge.

2. Review of Current Buy-out Charge: Example

Availability Payment

Obligation	Clearing Price	Days	Availability Payment
1 MW	$ 367.41	120	$ 44,089.20

Existing Buy-out Charge

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

Month	Percentage	Buy-out Amount	Clearing Price	NPF	Days	Buy-out Charge
May	50%	1 MW	$367.41	1	20	$ -
June	50%	1 MW	$367.41	1.5	20	-$1,837.05
July	50%	1 MW	$367.41	2	20	-$3,674.10
August	50%	1 MW	$367.41	2	20	-$3,674.10
September	50%	1 MW	$367.41	2	20	-$3,674.10
October	50%	1 MW	$367.41	1	20	$ -
					Total Buy-out	-$12,859.35

2. Review of Current Buy-out Charge: Example (cont.)

Initial Proposed Buy-out Charge Prior to Feedback

$$\boldsymbol{CABOC_k^m} = -100\% \times \sum^H CBOC_k^m \times CACP_h^z$$

Month	Percentage	Buy-out Amount	Clearing Price	NPF	Days	Buy-out Charge
May	-100 %	1 MW	$367.41	N/A	20	-$7,348.20
June	-100 %	1 MW	$367.41	N/A	20	-$7,348.20
July	-100 %	1 MW	$367.41	N/A	20	-$7,348.20
August	-100 %	1 MW	$367.41	N/A	20	-$7,348.20
September	-100 %	1 MW	$367.41	N/A	20	-$7,348.20
October	-100 %	1 MW	$367.41	N/A	20	-$7,348.20
					Total Buy-out	-$44,089.20

Proposed Buy-out Charge

$$\boldsymbol{CABOC_k^m} = -50\% \times \sum^H CBOC_k^m \times CACP_h^z \times CNPF_{tm}$$

Month	Percentage	Buy-out Amount	Clearing Price	NPF	Days	Buy-out Charge
May	-50%	1 MW	$367.41	1	20	-$3,674.1
June	-50%	1 MW	$367.41	1.5	20	-$5,511.15
July	-50%	1 MW	$367.41	2	20	-$7,348.2
August	-50%	1 MW	$367.41	2	20	-$7,348.2
September	-50%	1 MW	$367.41	2	20	-$7,348.2
October	-50%	1 MW	$367.41	1	20	$3,674.1
					Total Buy-out	-$34,903.95

3. Review Deposit and Forfeiture Rules: Proposal

Change: Eliminate the obligation forfeiture process and revise *Chapter 7 18.4.4* of the Market Rules to require the participant to buy-out of their obligation should the applicable eligibility requirements not be met prior to the start of the obligation period.

This will ensure that all instances of unfulfilled obligations are subject to the buy-out charge process.

Affected area(s): Market Rules

4. New Dispatchable Load Registration

Formalize the following process:

At the time of capacity qualification, a participant submits two qualification requests: 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 non-dispatchable load resource into the auction.

If the future dispatchable load resource is registered by the start of the obligation period, the participant would have the option to transfer the obligation over from its existing physical HDR resource (within the transfer window timelines).

The IESO will continue to investigate options to cap the two requests at one deposit.

Affected area(s): Capacity Auction Training Module, Online IESO

Commitment Management Options 2025: Next Steps

- Stakeholders are invited to submit any questions or comments on these high-level design proposals to engagement@ieso.ca by October 2, 2024
- Pending stakeholder feedback, final high-level designs for these four items will be presented at the November stakeholder engagement session
- The IESO expects to continue engaging with stakeholders on various other commitment management option proposals ahead of the 2026 and 2027 Capacity Auctions

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

Overview

- In July, the IESO presented initial design proposals for expanding participation to eligible wind and solar resources (variable generators or VGs)
- After considering the stakeholder feedback following the July session, a draft high-level design (HLD) for a wind and solar participation model is presented in the following slides
- Topics of discussion today will include:
  - Resource Eligibility
  - Capacity Qualification
  - Obligation Periods and Availability Windows
  - Capacity Testing and Performance Adjustment Factor (PAF)
  - Dispatch Testing
  - Settlement

Draft HLD: Resource Eligibility

- Proposed eligibility requirements for wind and solar resources:
  - Existing variable generation (VG) resources (i.e., wind or solar)
  - Qualified capacity of 1 MW or greater, and connected to the IESO-controlled grid
  - 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 will be eligible
    - Resources with RFP submissions in-process (i.e., under review) will be eligible

Draft HLD: Obligation Periods and Availability Windows

- The draft high-level design for obligation periods and availability windows is outlined below
  - Availability windows, obligation periods, and commitment period will remain unchanged for all CAR types, including VGs
  - 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 will remain unchanged for all CAR types, including VGs

Draft HLD: Capacity Qualification (1/2)

- Effective load carrying capability (ELCC) is a well-established methodology to calculate the resource adequacy contributions of variable generation resources. However, it is a more complex, computationally-intensive methodology to execute that is difficult to replicate by a participant.
- The previously proposed UCAP methodology for wind and solar resources is an effective, transparent, and reliable methodology that aligns with the recent MT I RFP (1) and IESO's current system planning practices
- For these reasons, the IESO proposes to use the following methodology for wind and solar resources

(1) This can be found in the MT I RFP – Qualified Capacity Guidance Document

Draft HLD: Capacity Qualification (2/2)

For Capacity Auction eligible VG resources:

UCAP = ICAP x Availability De-Rating Factor x PAF

Where:

Availability De-Rating Factor = Median of [(AQEI + Foregone Energy) / Maximum Active Power Capability] in Top 200 hours of Ontario Demand per season for the last 5 years

Draft HLD: Capacity Testing and PAF (1/3)

- VG resources are not fully dispatchable due to limitations with their renewable fuel source
- IESO variable generation subject matter experts and stakeholders agree that due to their technical limitations, variable generation resources would be unable to complete the capacity test under the current requirements
- The IESO proposes that, in place of a capacity test, VG resources will be required to submit historical settlement data to validate the resource's submitted ICAP at the time of capacity qualification

Draft HLD: Capacity Testing and PAF (2/3)

- This proposal ensures the objective of the capacity test and PAF are achieved – to ensure resources submit reliable ICAP values that they can deliver upon – while also considering the intermittent nature of VG resources
- VG submitted ICAP values will be limited to the historically demonstrated performance in the most recent applicable seasonal obligation period and availability window
  - As a result, all VG resources will have a PAF = 1.0

Draft HLD: Capacity Testing and PAF (3/3)

- Are any of these proposed requirements incompatible with the performance capabilities of VG resources?
  - If so, please indicate which requirements cannot be met and why they are incompatible with VG resources
- The IESO welcomes feedback from stakeholders on the proposal for VG resources to prove their maximum capability using historical performance data

Draft HLD: Dispatch Testing Requirements

- VG resources will 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 dispatched to provide electricity in the IESO's real-time energy market. Given this, dispatch testing is not needed to prove the ability to follow dispatch instructions.

Draft HLD: Settlement

- Settlement charge types currently applicable to capacity generation resources are proposed to also be applicable to eligible VG resources
  - As we move to detailed design work, revisions to existing charge type equations may be required to ensure full compatibility with VG resources
  - Any such revisions will be presented with draft market rule and manual amendments following completion of the high-level design
- No new charge types are proposed for VG resources

Variable Generation Participation Model: Next Steps

- The IESO is proposing to implement these changes as part of the 2025 Capacity Auction Enhancements
- Final HLD for this new resource participation model will be presented at the November stakeholder engagement session
- Stakeholders are invited to submit any questions or comments on these high-level design proposals to engagement@ieso.ca by October 2, 2024

High-Level Design: Auction Tie-Break Mechanism

NEW: Tie Break Mechanism Enhancement

In recent years, stakeholders have consistently urged the IESO to review the Capacity Auction tie-break mechanism and consider improvements to the design, arguing that the current mechanism does not allocate capacity appropriately.

The recently completed Transmission Rights Market Enhancement and Platform Refresh project included implementation of a multi-stage tie-break solution for the IESO's Transmission Rights Auction. This tie-break solution is broadly translatable to the Capacity Auction, the IESO has already engaged with stakeholders on aspects of its design and gained valuable experience implementing this solution. After assessing these factors and in response to consistent stakeholder feedback, the IESO will be re-prioritizing this to be included in the 2025 Capacity Auction Enhancements work plan (previously slated for 2027).

Current Tie-Break Mechanism

A tie-break occurs when two or more capacity auction offers are made at the same price for the last available quantity of capacity. Currently, the capacity auction clearing engine selects the offer that was submitted earlier based on its time stamp.

In some cases, this may result in a single participant clearing all available capacity in a given zone even if multiple participants are tied for the last available quantity of capacity. A more equitable solution would be to break the tie by allocating capacity on a pro-rata basis.

Tie Break Mechanism Proposal

The proposed tie-break solution would award the capacity to the tied bidders using a multi-step solution, described here at a high-level:

1. Award last available capacity to all tied offers proportionally based on the offer quantity, rounded down to the nearest 1 decimal place
2. If capacity remains after step 1, award remaining capacity to tied offers based on the amount of capacity unallocated due to rounding
3. If capacity remains after step 2, rank offers from highest to lowest quantity and award capacity in 0.1 MW increments
4. If capacity remains after step 3, rank offers from earliest to latest based on timestamp and award capacity in 0.1 MW increments

Tie-Break Mechanism Example

Zone A Capacity: 50 MW

Offers are stacked in order from lowest to highest offer price:

Market Participant	Offer Price (C$)	Offer Quantity (MW)
A	18	30
B	20	15
C	**25**	10
D	**25**	20

- Four participants submit 1 offer each, all partial
- Participants C and D submit offers at the same price, and for the last available capacity for Zone A
- Last available capacity to allocate is 5 MW

Tie-Break Mechanism Example Continued

- To break the tie, each participant will be allocated capacity according to their proportional share of the remaining capacity
- Proportional share is determined based on the quantity of the tied offer

Market Participant	Offer Price (C$)	Offer Quantity (MW)
A	18	30
B	20	15
C	**25**	10
D	**25**	20

Tie-Break Mechanism Example: Initial Tie-Break

The highest proportional offer is favoured using the following calculation, with results rounded down to the nearest 1 decimal place:

$$\frac{\text{Participant Offer Quantity}}{\text{Total Offer Quantity of Tied Offers}} \times \text{Remaining Capacity to be Allocated}$$

Participant C: $\frac{10\text{ MW}}{30\text{ MW}} \times 5\text{ MW} = 1.6666666666666667$

Participant D: $\frac{20\text{ MW}}{30\text{ MW}} \times 5\text{ MW} = 3.3333333333333333$

Capacity Allocation
Participant C: 1.6 MW
Participant D: 3.3 MW
Remaining: 0.1 MW

Tie-Break Mechanism Example: Secondary Tie-Break

If there is still capacity unallocated after the initial tie-break, the remaining capacity will be awarded by ranking participant offers based on the highest to lowest amount of capacity that was not allocated due to rounding. Capacity will be allocated in 0.1 MW increments in sequence from highest to lowest ranking. In this example, Participant A receives the remaining 0.1 MW.

Participant A: 1.6666666666666667 - 1.6 = 0.06666666666666667 ranked 1st

Participant B: 3.3333333333333333 - 3.3 = 0.03333333333333333 ranked 2nd

Capacity Allocation:
Participant A: 1.6 + 0.1 = 1.7 MW
Participant B: 3.3 + 0 = 3.3 MW

Tie-Break Mechanism: 3rd and 4th Tie-Break

In this example, no further tie-break was needed after the first and secondary tie-break. However, in the event there is still unallocated capacity, a third and a fourth tie-break is proposed:

- 3rd: Rank the offers highest to lowest according to offer quantity and award capacity in 0.1 increments from highest to lowest ranking
- 4th: Rank the offers based on timestamp and award capacity in 0.1 increments from earliest to latest timestamp

Tie-Break Summary

- This method of breaking ties in capacity auction offers proportionally splits the remaining capacity amongst the tied offers rather than allocating it to a single, earlier timestamp
- This method favours partial offers, since full offers indicate capacity that cannot be provided proportionally
- Multiple layers of tie-break helps to ensure no capacity remains unallocated
- Feedback Questions:
  - Is this method of tie-break more equitable?
  - Does this method solve concerns stakeholders have had with past tie-break results?

Tie-Break Mechanism: Next Steps

- The IESO is proposing to implement this change as part of the 2025 Capacity Auction
- Final design for this new tie-break mechanism will be presented at the November stakeholder engagement session
- Stakeholders are invited to submit any questions or comments on this high-level design proposal to engagement@ieso.ca by October 2, 2024

2025 Administrative Updates

2025 Administrative Updates

- Standard annual review process to provide clarity on rules and procedures and consider design changes in order to reduce administrative burden
- Amendments are made to Market Rules and/or Market Manuals, and may require IT changes

2025 Administrative Updates: Next Steps

- The IESO is proposing to implement administrative changes as part of the 2025 Capacity Auction
- Details on this year's administrative updates will be presented at the November stakeholder engagement session along with a proposed timeline for completing necessary market rule and manual amendments

Summary and Next Steps

Summary

- Summer 2024 capacity test results show improved resource performance compared to performance under previous testing framework
- Emergency activation results show that HDR resources delivered a slightly smaller percentage of expected capacity compared to last year; generators performed well
- High-level designs for the 2025 auction were presented for commitment management options, expanding participation to eligible variable generation resources, and updating the auction tie-break mechanism
  - The tie-break has replaced the comprehensive demand curve review

Next Steps (1/2)

- 2024 Capacity Auction:
  - Last day to complete CAP authorization is Sept. 20 by 04:00 p.m. EST
  - Capacity Qualification
    - Request submission window closes Sept. 27
    - Assessment window is open Sept. 30 – Oct. 22
    - Assessment results will be released Oct. 23
    - Deposit submission window is open Oct. 23 – Nov. 20
- Next engagement session will be November 2024
  - Continue engagement on 2025 enhancements; high-level designs to be finalized
  - Introduce proposed administrative updates

Next Steps (2/2)

- Using the feedback form provided, stakeholders are invited to submit questions and comments by October 2, 2024 on the following items:
  - Summer 2024 capacity testing and emergency activation performance results
  - 2025 Capacity Auction Enhancement updates

Thank You

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