



# Capacity Auction 2 Webinar

## March 21, 2021 Draft Design

**March 12, 2020**

# Purpose and Overview

- Clarify the status of the approved rules from the December 2019 and the June 2020 auctions
  - Versioning Strategy
- March 2021 - Draft Design
  - IESO Response to Feedback from the January 23 Webinar
  - Discussion on the March 2021 Auction
- Next steps

# Auction Designation for Future Auctions

- IESO will adapt basic number methodology for future capacity auctions
  - Versioning Strategy
  - March 2021 - Draft Design
    - IESO Response to Feedback from the January 23 Webinar
    - Discussion on the March 2021 Auction
  - Next steps

**NOTE:** CA#3 is expected to be executed later in 2021 for 2023/2024 obligation.

# Auction Rules Update

- On January 23, the OEB issued a decision to lift the stay of the operation of the capacity auction market rule amendments
  - Market Rules and Manuals were republished on IESO webpage
  - There is no impact to the December 2019 DR Auction participants

# Auction Rules Update (continued)

- Additional features will be enabled as part of the May 2020 DR Commitment Period with rules and manuals published on April 23 to capture:
  - Out-of-Market Payments for HDR resources (emergency and test activations),
  - HDR testing update, and
  - Metering updates to data submission requirements.

# Versioning Strategy Overview

- For the completed Dec 2019 demand response auction, the applicable rules and manuals are in effect at the start of the commitment period (i.e. May 1, 2020)
- For future auctions, the change in rule-auction applicability will begin in advance of Capacity Auction 2 (June 2020) auction as described in Chapter 7, Section 18.1A:

# Versioning Strategy Overview (continued)

- The applicable version of market rules and manuals related to capacity auctions will be the rules and manuals in effect at a 'point-in-time'
- For the capacity auction, the applicable rules and manuals are those in effect at the start of the auction period
- A non-exhaustive list of hypothetical examples are provided in the following slides for illustration purposes from the Capacity Auction 1

# Versioning Strategy: Charge Types and Equations

## Examples:

1. Charge types 1316-1320 relate to capacity obligations, and so specifically concern participation in the Capacity Auction. They are subject to the point-in-time rule.
2. Charge Type 136 ("Real time export Failure Charge") is applicable to all export resources in the energy market, regardless of position in the Capacity Auction:

# Versioning Strategy: Charge Types and Equations (continued)

- It is **not** subject to the point-in-time rule
- If changes are made to this charge type, those changes will apply to participants immediately

# Versioning Strategy: Contributor Management Requirements

Market Manual 12 stipulates that virtual HDR contributors must submit contributor data on a monthly basis.

3. Charge types 1316-1320 relate to capacity obligations, and so specifically concern participation in the Capacity Auction. They are subject to the point-in-time rule.
  - If these provisions change, participants would be subject to the point-in-time requirements.

# Versioning Strategy: Testing Requirements

## Example:

Market Manual 12 stipulates that if participants follow sufficient dispatch instructions in the energy market, they may not be tested.

4. Dispatch instructions are applicable to all resources in the energy market, regardless of position in the Capacity Auction.
  - If the definition of dispatch instructions (ch. 11) or the way dispatch instructions are delivered changes (e.g. Market Manual 4.3), the previous definition **is not** locked in as point-in-time.

# Versioning Strategy: Testing Requirements (continued)

5. Charges associated with failing a capacity auction related test (MR ch.9, s.4.7J), specifically concern participation in the Capacity Auction.
  - If changes are made to those charges, they are subject to the versioning strategy and are point-in-time.



## MARCH 2021 CAPACITY AUCTION (PREVIOUSLY DECEMBER 2020)

# Capacity Auction 2 Timing Change

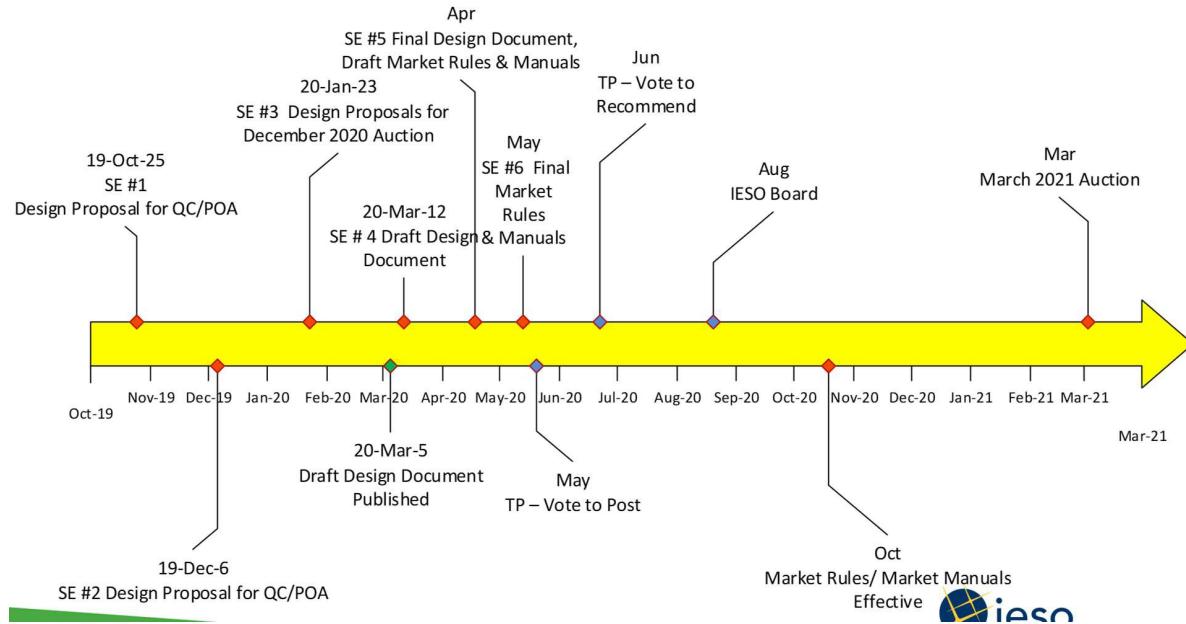
- The December 2020 Capacity Auction has been deferred to take place in March 2021
- This shift will allow sufficient time to execute new pre-auction activities and enable other features from engagement initiatives (i.e. DRWG and Load Activation/Payments) to be incorporated into the March 2021 auction market rules and manuals

# Capacity Auction 2 Timing Change (continued)

- Delaying the auction to March 2021 auction allows for time to execute two key design features:
  - Capacity Qualification
  - Market Power Mitigation
- The market rules effective date and obligation periods remain unchanged:
  - Summer – May 1, 2022 to October 31, 2022
  - Winter – November 1, 2022 to April 30, 2023

# Timeline: Capacity Auction 2

## Capacity Auction Stakeholder Engagement Schedule – March 2021 Auction





## STAKEHOLDER FEEDBACK FROM DESIGN ENGAGEMENT SESSIONS

# Stakeholder Feedback Session 1

## Feedback:

- The IESO received general support for the following design changes:
  - Multiple Offers
  - Contingent Offers
  - Removal of the Dispatch Charges

## Response:

The IESO will continue to develop and implement these changes for Capacity Auction 2.

# Stakeholder Feedback Session 2

## Feedback:

The IESO should consider the interaction with the DRWG 2020 work plan and 2021 auction.

## Response:

The IESO recognizes the value of the DR activities and will seek to implement the priority work plan items, discussed at the February 25 DRWG, in time for the March 2021 auction.

# Stakeholder Feedback Session 3

## Feedback:

- A participant noted they do not support the addition of Non-Performance Factors (NPF) on the capacity charge for the following reasons:
  - May result in double the capacity charge for testing
  - May want to consider the extent of the failure when applying NPF to capacity charge

# Stakeholder Feedback Session 3 (continued)

## Response:

The IESO will apply an NPF on the capacity charge as the IESO planning assessments continue to show that adequacy risks within an obligation period may vary from month to month.

Also, the use of non-performance factors in charges are intended to reflect these risks and benefit participants who over-deliver during certain months.

# Stakeholder Feedback Session 4

## Feedback:

A participant suggested considering an increase of 200 MW import limit.

## Response:

The IESO may reassess the global import limit allowance number for the Capacity Auction 2 balanced.

# Stakeholder Feedback Session 5

## Feedback:

The IESO should consider increasing the amount of lead time given when testing of resource backed imports.

## Response:

The IESO will establish testing notices and capacity assessments based on technology type. It will be similar to internal generators plus import scheduling protocol times.

# Stakeholder Feedback Session 5 (continued)

- For example, quick-start units will receive two hours notice whereas other generators may receive the notice based on their start-up time.

# Stakeholder Feedback Session 6: Capacity Qualification for HDR Resources

## Feedback

The IESO heard that some form of forced outage rate should also apply based on demand response test activation results.

## IESO Response

Historical forced outage rates may not be an appropriate parameter to be used to qualify DR resources.

# Stakeholder Feedback Session 6: Capacity Qualification for HDR Resources

The IESO, however, has reviewed the qualification methodologies across various resource types, and is proposing a method for qualifying the dispatchable loads participating in the capacity auction.

More details are provided in the Design document.

# Stakeholder Feedback Session 7

## Participant Question:

A participant asked if the capacity imports will clear at the eventual zonal capacity auction clearing price, or will a separate clearing price apply based on the offers that constrained the external interface limit?

## IESO Response:

Interties pricing will not be adjusted. Resources will be priced consistent with the electrical zone where they are connected. This may change in future auction designs.

# CAPACITY AUCTION 2

## DRAFT DESIGN

# Design Document

- The draft Capacity Auction 2 (March 2021) key decisions are seen in blue text boxes within the draft design document
- The majority of the design decisions which have been previously confirmed by a stakeholder have not changed
- Feedback on the design document is due March 26, 2020

# Auction Overview and Timelines



## CHANGES IN PRE-AUCTION PERIOD

# Pre-Auction Period Activities

## Pre-Auction Report:

- Includes MPM Data, Zonal Constraints, capacity qualification data, new reference price and maximum auction clearing price

## Capacity Qualification Request:

- Identify capacity auction resources along with the Capacity Auction Control Entity and additional qualification information

# Pre-Auction Period Activities (continued)

## Capacity Qualification Request:

- The IESO will assess the qualified capacity for each capacity auction resource by obligation period
- Methodology varies by type of resource
- Participants submit a deposit on the amount of qualified capacity they are willing to offer into the auction

# Pre-Auction Period Activities (...and continued)

## Market Power Mitigation Process:

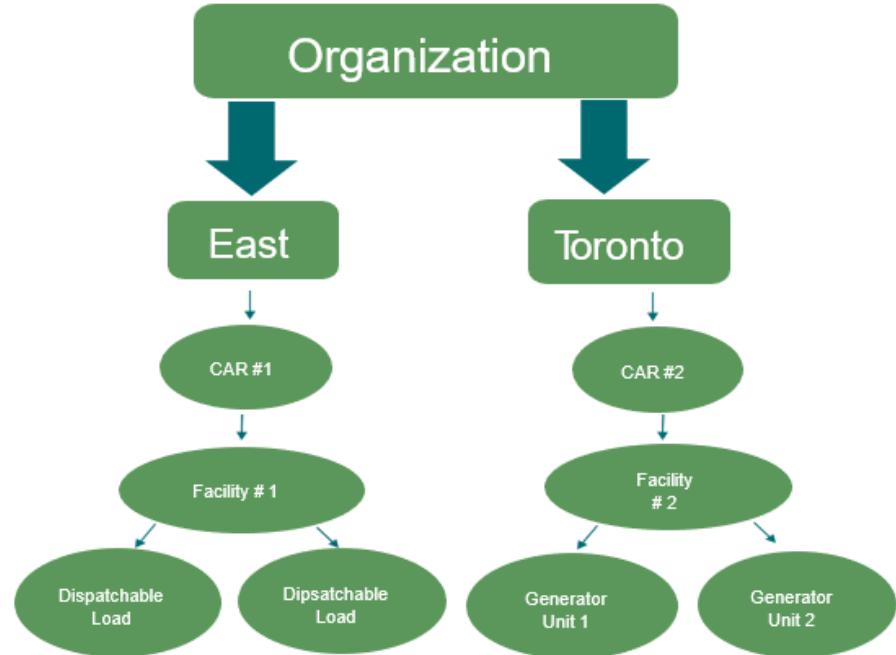
- One-firm Pivotal Supplier Test
  - Based on Capacity Auction Control Entity data
- Offer Caps
  - Default Offer Cap
  - Resource-specific Offer Cap

# Capacity Qualification

## Participants may identify a CAR with multiple resources

### Consolidation Rules

- Must be located at the same facility
- Must have same bid/offer type
- Must be same CAR type (import, generator, storage or demand response)



# Capacity Qualification Demand Response – Hourly Demand Response

## CAP Submission

- Identify resource (if existing) or a placeholder (zone, baseline type)
- Self-qualify by providing their anticipated capacity

## IESO Assessment

- Accept their capacity as the 'qualified capacity'
- This methodology may adapt to changes from the DRWG for future capacity auctions

This design may be impacted by outcomes of the 2020 DRWG workplan.

# Capacity Qualification Demand Response – Dispatchable Loads

## CAP Submission

- Identify resource(s) (if existing) or a placeholder (zone, baseline type)

## IESO Assessment

- Consider up to 1 year of historical dispatchable energy market bids
- Filter for hours coincident with the four consecutive hours of highest Ontario grid demand within the qualification window\*, from each business day
- Use the average amount from these hours to determine final qualified capacity

\*Qualification window will be the same as the availability window (business days HE13-21 summer and HE17-21 winter).

# Capacity Qualification

## Capacity Generation Resources: Dispatchable Thermal

### CAP Submission

- Identify resource(s)
- Provide consent to use latest form 1230 or resubmit temperature derating curve data

### IESO Assessment

- Determine the ICAP based on the temperature adjusted Maximum Continuous Rating (MCR) using the average temperature in the highest risk month of the obligation period for each zone (shown in pre-auction report)
- Reduce this value by the resource specific 5 year or fleet average  $EFOR_d$

## Capacity Qualification

### Capacity Generation Resources: Dispatchable Thermal (continued)

#### Scenario:

In winter, based on IESO's specified temperature in the applicable zone, generator A's temperature-adjusted MCR (i.e. ICAP) is 100 MW. Its 5-year outage rate is 15%.

#### Assessment:

Seasonal MCR (ICAP) in winter = 100 MW

Qualified Capacity (UCAP) =  $100 \text{ MW} * (1 - 0.15) = 85 \text{ MW}$

# Capacity Qualification

## Generation Resources: Self-Scheduling (plus dispatchable hydro)

### CAP Submission

- Identify resource(s)
- Provide consent to use latest form 1230 or resubmit temperature derating curve data

### IESO Assessment

- Consider up to 5 years of historical production (Amount of Quantity Injected)
- Filter for hours coincident with the four consecutive hours of highest Ontario grid demand within the qualification window\*, from each business day
- Determine the average production hours

\*Qualification window will be the same as the availability window (business days HE13-21 summer and HE17-21 winter).

New stakeholder to be identified.

# Capacity Qualification Generation Resources: Self-Scheduling (plus dispatchable hydro) – continued

Day	Hour	Demand	Production	Filtered
T	13	18673	27	
T	14	20578	30	
T	15	21778	33	
T	16	23691	34	34
T	17	24115	33	33
T	18	24143	34	34
T	19	24345	33	33
T	20	22048	33	
T	21	22642	34	
W	13	17249	34	
W	14	18555	34	
W	15	19775	32	
W	16	21194	27	
W	17	21392	26	
W	18	21475	27	27
W	19	22138	27	27
W	20	22642	27	27
W	21	22934	26	26

Average production = 30.1 MW

Self-scheduled QC= 30.1 MW

# Capacity Storage Resources

## Dispatchable Storage

### CAP Submission

- Identify resource(s)

### IESO Assessment

- ICAP is the temperature adjusted Maximum Power Rating
- Energy Rating is the temperature adjusted amount of energy that can be produced in a single discharge
- The temperature used will be selected by the IESO
- EFOR<sub>d</sub> of 5% will be used

# Capacity Storage Resources

## Dispatchable Storage (continued)

Battery	Energy Rating (MWh)	Energy Rating/4hrs (MW)	ICAP (MW)	min (ICAP, Energy Rating/4hrs)	UCAP (MW)
A	40	10	10	10	9.5
B	40	10	15	10	9.5
C	60	15	10	10	9.5

# Capacity Qualification Generator-Backed Capacity Import Resources

## CAP Submission

- Identify interface
- Provide historic production and outage data as applicable
- Data may be verified by the balancing authority

## IESO Assessment

- Use the same assessment as similar Ontario resource type

# Market Power Mitigation

## Exemptions:

- Small Fish Threshold, New Resources and Imports

## 1-firm Pivotal Supplier Test:

- Based on Capacity Auction Control Entity data
  - Zonal 1-firm Pivotal Supplier Test (Single-zone and Zone group)
  - System-wide 1-firm Pivotal Supplier Test

## Offer Caps:

- Default Offer Cap (established by the IESO) or
- Resource-Specific Offer Cap (requested by the CAP)

# Capacity Auction Control Entity - Update

- As a reminder, the market power mitigation exemptions and 1-Firm firm Pivotal Supplier Test will be based on the total MW of capacity controlled by the Capacity Auction Control Entity (CACE)
- In Dec 2019 stakeholder engagement, the IESO stated that there can only be one CACE registered by the CAP for each Capacity Auction Resource (CAR)

## Capacity Auction Control Entity – Update (continued)

- After further design assessment, the IESO recognized that for each CAR there may be instances where there will be more than one CACE identified, under the proposed Capacity Auction Control Entity definition
- Therefore, the IESO will be requesting information on all applicable CACE for each CAR during the Capacity Qualification process

# Resource-Specific Offer Cap

- To account for resource-specific costs that are higher than the Default Offer Cap, a CAP can submit a Resource-Specific Offer Cap request for each of its CAR for IESO review. Applicable types of resource-specific offer caps are:
  - Generation
  - Energy-only no capacity obligation
  - Export
  - Mothball
  - Deregistration

# Resource-Specific Offer Cap (continued)

- Demand response
- Resource-Specific Offer Cap must be requested during the pre-auction period and will be calculated for each Obligation Period and, if applicable, for contingent offer configuration, separately

# Resource-Specific Offer Cap – Next Steps

- Design document provides detailed description of available types of Resource-Specific Offer Caps, and the methodology that IESO will use for calculation
- The IESO is currently developing detailed cost collection workbooks and lists of acceptable supporting documentations that will form the Resource-Specific Offer Cap request package

# Resource-Specific Offer Cap – Next Steps (continued)

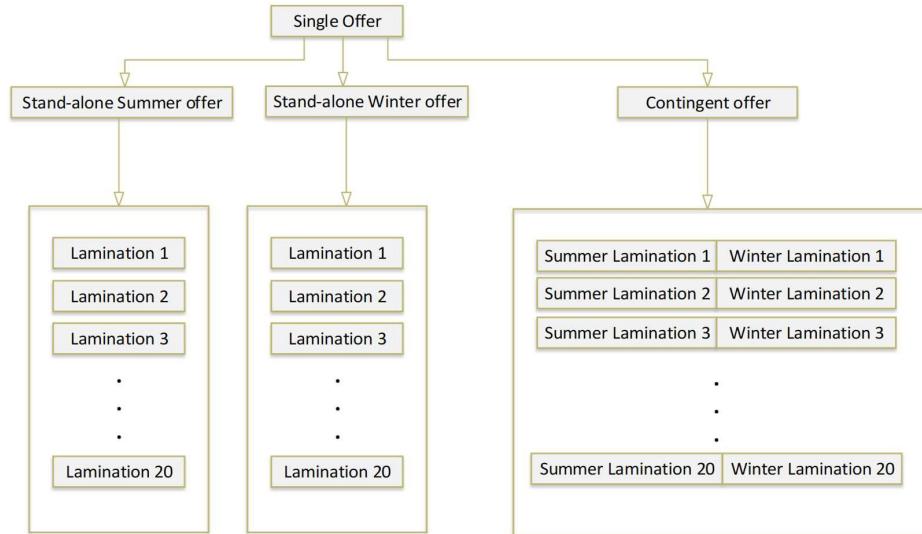
- Where applicable, these workbooks will include further breakdown and detail of cost categories necessary for Resource-Specific Offer Caps calculation (e.g. for opportunity costs or for avoidable fixed O&M costs components)
- The IESO will also conduct market participant training on the completion and submission of the cost collection workbooks

# CHANGES TO AUCTION OFFER SUBMISSION

# Offer Submission

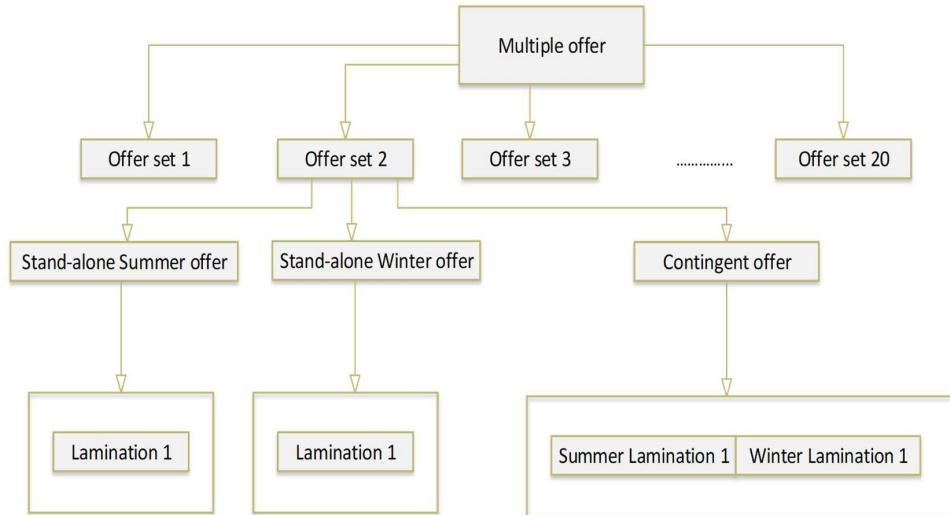
- Two primary formats of offer submission
  - Single offer submission
  - Multiple offer submission
- For each format, a participant may choose to submit a stand-alone seasonal offer(s) and/or contingent seasonal offer set
- See illustrations on next two slides

# Single Offer Format



- Contingent offers are linked at each lamination (i.e. summer lamination 3 only clears if winter lamination 3 can also clear)
- Each offer can include up to 20 laminations

# Multiple Offer Format



- All offers must be submitted in full (i.e. no partial flag allowed)
- Contingent laminations must be in full
- Each offer can only contain one lamination

# Rules for Offer Submission

- Single Offer Format
  - Prices must be submitted in increasing order as quantity increase with each lamination
  - The maximum quantity submitted through stand-alone and contingent offers must be equal for the same season and same CAR
  - Participants may not submit stand-alone and contingent offers that are identical (same laminations for both stand-alone and contingent) for both seasons

# Rules for Offer Submission (continued)

- Multiple Offer Format
- Prices across multiple offer sets for the same season cannot be the same
- Same as above, stand-alone and contingent offers must not be identical within the same offer set

# Contingent Offer Allocation Limit

- Contingent offers remove the risk for CAPs in clearing only in one season
- To keep this feature to be used for this intended purpose, the IESO proposes the following allocation limit on a per lamination basis

$$0.4 \leq \frac{\text{Summer Offer Price}}{\text{Summer Offer Price} + \text{Winter Offer Price}} \leq 0.6$$

## Contingent Offer Allocation Limit (continued)

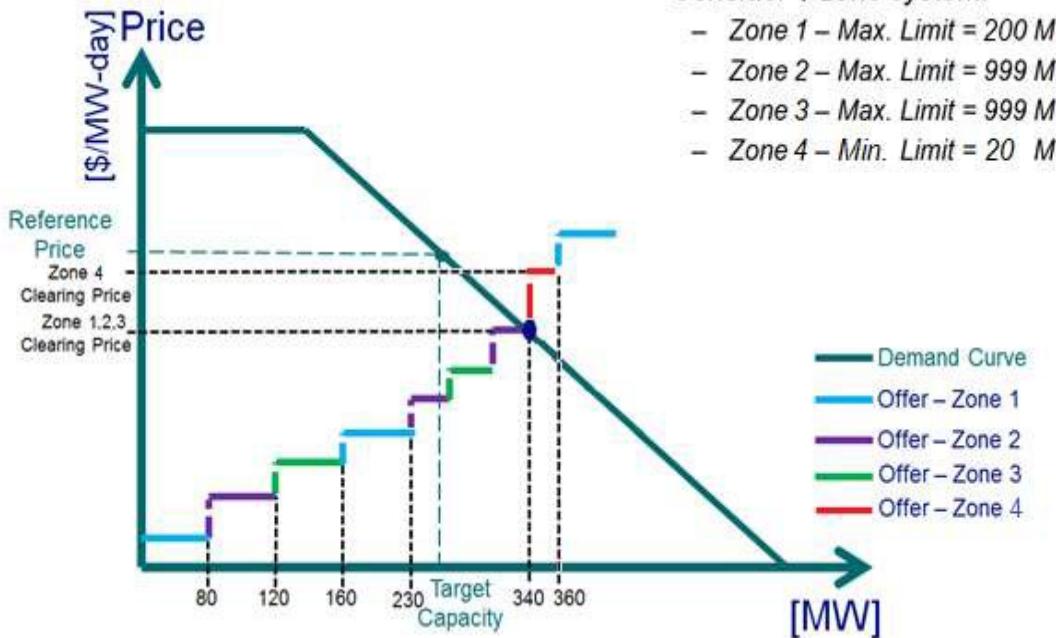
- Spread amount based on historical auction clearing prices and offer price data
- Prevents opportunities to misuse this feature for price manipulation and gaming scenarios

# AUCTION MECHANICS

# Zonal Minimum Price Setting

- Offers may be accepted beyond the demand curve to satisfy a zonal minimum requirement
- The clearing price of that zone may be higher than the Ontario-wide auction clearing price
- If the capacity requirement was satisfied by offers priced lower than the Ontario-wide auction clearing price, then the zone will also get the overall Ontario price

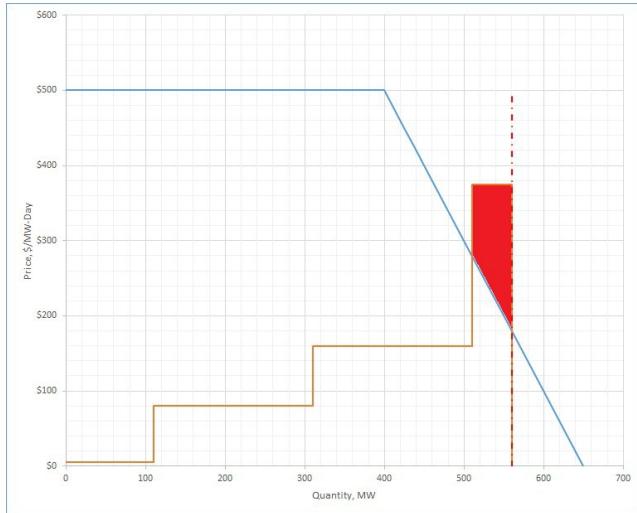
# Zonal Minimum Price Setting



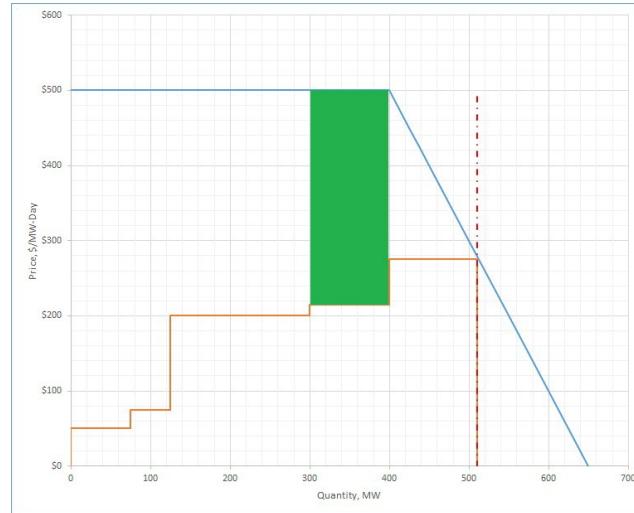
# Contingent Offer Clearing

- Contingent offers may be accepted beyond the demand curve for the purpose of maximizing the combined social welfare between the two seasons
- In these cases, the price of the zone will not be set by the offer that falls beyond the demand curve due to its linkage to the other season
- The zonal price will be set by the offer that meets or falls under the demand curve

# Contingent Offer Clearing (continued)



Summer



Winter

# Contingent Offer Price Clearing

- Participants will be paid at least their annual total offer amount over the year
  - $\Sigma$ Sum & Win (Offer MW x Offer Price x Number of Business days)
- In most cases, participants will be paid the respective zonal prices
- In some scenarios that the zonal clearing prices do not provide participants with their total annual offer amount, the tool will use their offer price to set the price of the secured obligation

## FORWARD PERIOD ACTIVITIES

# Capacity Market Participant Authorization

- All participants must become a capacity market participant
- Energy Traders registered with the IESO may be eligible to provide Generator-backed imports in the Capacity Auction

# Capacity Obligation Transfers

- There are additional complexities with the introduction of inter-zonal obligation transfers and capacity obligation acquired through contingent offers
  - Inter-zonal obligation transfers may be limited depending on the zone a participant is transferring from and to (see examples in next slides)
  - Contingent obligations are acquired due to the offers in both seasons, so therefore the resultant obligation is considered linked

# Capacity Obligation Transfers (Max)

Category	From	To	Permissible? Transfers	Comments
Max Limit	Congested	Uncongested		Lower obligation price from the original congested zone will remain even after the transfer
	Uncongested	Uncongested		Usual rules apply
	Uncongested	Congested		
	Uncongested	Uncongested (in auction)	only if...	Only allowed if the "to" zone will not hit the maximum limit as a result of the transfer
	Uncongested	Congested (room opened up from another transfer/buy out)		Obligation will have the original price from the "from" zone

# Capacity Obligation Transfers (Min)

Category	From	To	Permissible? Transfers	Comments
Min Limit	Binding	Non-binding		
	Non-binding	Non-binding	only if...	Only allowed if the "from" zone does not drop below the minimum requirement as a result of the transfer
	Non-binding	Binding		The obligation being transferred will keep its original price and not get the higher price in that zone
	Non-binding	Non-binding (in auction)		Usual rules apply

# More About Capacity Obligation Transfers

- Participants who transfer MWs out of a particular zone will not be allowed to transfer MWs back into the same zone for the applicable season
- Capacity obligations acquired through contingent auction offers will not be allowed to be transferred
  - If a participant cannot provide the capacity, the entire obligation must be bought out in full including both seasons

# Buyouts of Contingent Obligations

Category	Scenario	Comments
Contingent obligations who received the Ontario-wide system clearing prices	Buyout before or during the summer obligation	Winter contingent obligation will be bought out as well
Contingent obligations who received the Ontario-wide system clearing prices	Buyout during winter obligation period	No impact from summer obligation as obligation was paid same as everyone else
Contingent obligations with offer price as obligation price (summer offer price higher than zonal clearing price)	Buyout before or during the summer obligation	Winter contingent obligation will be bought out as well. The difference in the obligation price and zonal clearing price in the summer will be recollected.
Contingent obligations with offer price as obligation price (summer offer price higher than zonal clearing price)	Buyout during winter obligation period	The difference in the obligation price and zonal clearing price in the summer will be recollected. Difference in winter will be forgone.

# Buyouts of Contingent Obligations (continued)

Category	Scenario	Comments
Contingent obligations with offer price as obligation price (winter offer price higher than zonal clearing price)	Buyout before or during the summer obligation	Winter contingent obligation will be bought out as well. Difference in the zonal clearing price and obligation price will be forgone.
Contingent obligations with offer price as obligation price (winter offer price higher than zonal clearing price)	Buyout during winter obligation period	The difference in the obligation price and zonal clearing price in the winter will be recollected. Summer difference remains forgone.

# CHANGES TO PERFORMANCE ASSESSMENT

# Testing and Assessment of Capacity Charge

Capacity Charge	Pass / Fail Criteria
Assessment 1: If the bid/offer/schedule is equal to or greater than the Capacity Obligation	The participant will be expected to deliver the bid, offered, or scheduled amount (capped at 115% of capacity obligation) in order to be deemed a pass for the test activation.
Assessment 2: If the bid/offer/schedule is less than the Capacity Obligation	<p>In order to be deemed a pass for the test activation, the following requirements must be satisfied:</p> <ol style="list-style-type: none"><li data-bbox="802 597 1800 716">1. Have an outage submitted to the IESO of at least the amount equal to the delta between the bid, offered, or scheduled and their capacity obligation.</li><li data-bbox="802 722 1704 797">2. Successfully delivered on the bid, offered, or scheduled amount.</li></ol>

# Capacity Obligation True Up

- True Up will be calculated each hour a resource offers in excess of their obligation
- Will be paid at the end of the obligation period
- For the purposes of the true-up calculations, offers in excess of the obligation will be capped at 15% of the capacity obligation per hour
- The IESO believes a 15% cap is necessary to incentivize resources with a smaller capacity obligation relative to their maximum capability to make their capacity obligation available across the entire obligation period

# Capacity Obligation True Up (continued)

Example: An organization that has an obligation of 10MW @ 200 \$/MW-day

- A CAR fails to offer in one hour of the availability window during February
- CMP will receive availability charge of  $(10)*(200/5)*2 = \$800.00$  for that hour during settlement for February

# Capacity Obligation True Up (...and continued)

- Assuming that the CAR is able to offer 11.5MW or greater capacity in the energy market during March, for each hour that it offers 11.5MW or greater, it will receive  $(11.5 - 10)*(200/5)*1.5 = \$90$  in availability charge true-up
- The true-up, up to a maximum amount of \$800.00, will be paid at the end of the obligation period

# Next Steps

- Stakeholders to review and comment on the draft CA#2 (March 2021) Capacity Auction design document
- Participants are asked to submit feedback by March 26
- A feedback form is available and should be submitted to [engagement@ieso.ca](mailto:engagement@ieso.ca)
- IESO will respond to feedback at the April 15 engagement session

# Thank You

[ieso.ca](http://ieso.ca)

1.888.448.7777

[customer.relations@ieso.ca](mailto:customer.relations@ieso.ca)

[engagement@ieso.ca](mailto:engagement@ieso.ca)



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