

Energy Efficiency Auction Pilot Draft Detailed Design

Public Webinar

March 23, 2020

Overview – Auction Pilot

- The IESO is developing a project to pilot using an auction mechanism to procure **peak demand reductions** from energy efficiency (EE) and non-dispatchable load-shifting resources (*EE capacity*)
 - Please refer to Appendix A The EE Capacity Product regarding peak demand definition
- The objective is to generate practical learnings to inform long-term options for enabling EE to compete to meet system needs through an appropriate market-based mechanism
- The auction is proposed to take place in September 2020 for capacity delivery starting in June 2022/November 2022
- Budget of \$5M sourced from the IESO's Grid Innovation Fund
- Final high-level design posted on [engagement page](#) on February 28, 2020
- Italicized terms are defined terms in the detailed design

Today's webinar

- Summarize stakeholder feedback on the draft high-level design and changes/clarifications to final high-level design
- Describe structure of the draft detailed design
- Walk through auction participation process start-to-finish, highlighting draft requirements and particular areas where IESO is seeking feedback
- Q&A

High-Level Design (HLD) feedback

- IESO received approx. 100 individual pieces of external feedback from 13 stakeholders on the draft Energy Efficiency Auction Pilot high-level design
- Feedback themes focused on:
 - The auction price cap
 - Requirement for facility-level meter data
 - Clarifying eligibility of specific measures
 - The length of the maximum capacity annualization period
 - Sufficiency of the budget and capacity limit to meet the pilot's stated objectives
- The IESO's detailed [response to feedback document](#) has been posted to the [EE Auction Pilot engagement page](#)

Changes to high-level design

Design element	Draft HLD	Final HLD
Auction price cap	\$500/kW _{WINTER/SUMMER}	\$1000/kW _{WINTER/SUMMER}
Maximum capacity annualization period*	4 years	10 years
Maximum resource size	6.5 MW	3.25 MW and \$1.25M offer price
Resource eligibility	NA	Clarifies no new construction projects
Commitment period length	2 years with 4 seasonal obligation periods	1 year with 2 seasonal obligation periods
Forward period	Winter: 13 months Summer: 18 months	Summer: 20 months Winter: 25 months

*The maximum Effective Useful Life that IESO will use to annualize offer prices (e.g. \$400/kW offer price for an 8-year persisting resource becomes \$50/kW)

Detailed design structure

- The draft detailed design is composed of a core design document (developed from the high-level design) and a number of appendices:
 - Participant Agreement
 - M&V Procedures
 - [Deemed] Measure Reference Manual
 - Templates for enrolling EE resources, submitting auction offers, and reporting

PRE-AUCTION PERIOD

Step 1: EE capacity enrollment

- Prospective *pilot auction participants* submit information to verify participant and resource eligibility for the auction
- To verify participant eligibility participant provides:
 - Articles of Incorporation
 - Most recent audited financial statement (no more than three years old)
 - Signed Participation Agreement confirming neither insolvent nor an individual

Step 1: EE capacity enrollment (cont'd)

- To verify resource eligibility, participant provides completed EE resource plan which states proposed measures, expected EE capacity, claimed measure effective useful life, proposed M&V approach, and planned facilities*
 - See Appendix D EE Resource Plan Template
 - Where participants are seeking the IESO to recognize deemed savings for a measure not listed in the Measure Reference Manual, participants will also provide a substantiation sheet as described in the M&V Procedures
- When: July 2-August 12, 2020 (auction period minus 40 calendar days)

*Where facilities are TBD, participants will provide information on recruitment and delivery strategy

Step 2: IESO confirms EE capacity enrollment

- IESO reviews the enrollment package and confirms:
 - Participant eligibility
 - Resource eligibility
 - Enrolled EE capacity (i.e. the maximum EE capacity that can be offered with respect to the resource)
 - Effective useful life (which will be a weighted average for multiple measures)
- When: by September 11, 2020 (auction period minus calendar 10 days)

AUCTION PERIOD

Step 3: Offer submission

- *Pilot auction participants will complete an Auction Offer identifying the enrolled EE resource and stating \$/kW price and quantity offered for each obligation period*
 - See Appendix G Auction Offer Template for prescribed template
- Submitted as email attachment to eeauctionpilot@ieso.ca
 - IESO will respond with confirmation of receipt
- Up to five different offers can be submitted with respect to a single resource with minimum EE capacity quantity difference of 10 kW
 - Example: \$400/kW for 100 kW, \$390/kW for 150 kW...

Step 3: Offer submission (cont'd)

- Auction participants can identify offers as “contingent”
 - I.e. an offer for summer obligation period is only valid if a paired offer for the winter obligation period is also accepted, and vice versa
- When: September 21-22, 2020

Step 4: Offer validation

- IESO will perform QA/QC checks to confirm that:
 - Offered EE capacity is with respect to an enrolled EE resource (i.e. accepted by IESO in Step 2)
 - Offered EE capacity and claimed effective useful life do not exceed that confirmed in enrollment process
 - Offered EE capacity respects minimum and maximum resource size limits, auction price cap, etc.

Step 5: Auction clearing

- IESO will enter offers into the auction engine and run auction for both *obligation periods*
- In comparing offers, the auction engine considers annualized *EE capacity* cost
 - I.e. \$/kW offer price divided by the effective useful life (up to 10 years) of the respective resource
- The auction engine seeks to procure as much *EE capacity* as possible at least cost on annualized basis
 - Objective function is to minimize procurement cost subject to fixed constraints on budget and the maximum quantity of capacity the auction can procure and a variable constraint on securing a minimum quantity of *EE capacity*
 - The variable constraint is initially set at 26 MW with no more than 13 MW per obligation period. If no feasible solution is found (i.e. impossible to procure that much capacity with the available budget), the auction engine runs iteratively decreasing the minimum quantity constraint in 10 kW decrements until a feasible solution is found

Step 5: Auction clearing (cont'd)

- As the auction approaches budget and/or maximum capacity limits, it is possible that a higher \$/kW price resource may be accepted over a lower \$/kW price where accepting the lower \$/kW price (but larger total cost or capacity) resource would violate the fixed constraints
 - Example: There is \$80,000 of budget remaining for the *winter* obligation period. The next two lowest-cost offers (based on annualized offer price) are shown below. While Acme #1 is cheaper than EE Corp, accepting this offer would exceed the budget limit, so the auction engine passes over the Acme #1 offer and accepts the EE Corp offer

Resource	EE Capacity Quantity	Offer Price	EUL	Annualized Offer Price	Total Cost
Acme #1	370 kW	\$246/kW	2 years	\$123/kW-year	\$91,020
EE Corp	100 kW	\$450/kW	3 years	\$150/kW-year	\$45,000

Step 5: Auction clearing (cont'd)

- Tie-breaking: in the event that multiple auction participants submit offers at the same price for the last available quantity, the auction engine will select the last accepted offer randomly
- When: September 23-October 6, 2020

Step 5: Post-Auction Report

- Once the auction has been cleared, the IESO will publish a public report that includes:
 - The amount of EE capacity cleared by each seasonal obligation period;
 - Number of pilot auction participants in each obligation period;
 - Lowest, highest, and weighted average accepted offer price by obligation period; and
 - List of pilot auction participants that secured EE capacity obligations, including quantity of cleared EE capacity by obligation period and high-level description of their EE resource (to be provided by the participant)
- When: by October 6, 2020

FORWARD PERIOD

Step 6: Contracting

- For successful auction participants, IESO appends a schedule to the Participant Agreement (provided during the enrollment process) stating details of cleared EE capacity offer, countersigns, and returns the executed agreement
- Successful pilot auction participants become EE capacity providers
- When: October 2020

Step 7: Online IESO

- EE capacity providers, who are not already registered market or program participants, will be required to register in Online IESO as program participants with the role “EE Delivery Agent” to facilitate settlement of EE capacity payments
- IESO will providing training materials to familiarize *EE capacity providers* with Online IESO
- When: Prior to start of first obligation period

Step 8: EE Resource Plan update

- At approximate midpoint of forward period, EE capacity providers will be obliged to provide a concise update on the state of EE resource development and identify any major risks to delivery of their EE capacity obligation
 - See Appendix E EE Resource Plan Update Template
- When:
 - Summer-only and both season resources: April 16, 2021
 - Winter-only resources: October 15, 2021

Step 9: EE Resource Plan and M&V Plan

- EE capacity providers will be required to submit:
 - An EE resource report confirming measures and facilities contributing to the resource (see Appendix E EE Resource Report Template)
 - An M&V plan in alignment with the M&V Procedures
- When:
 - Summer-only and both season resources: by April 1, 2022
 - Winter-only resources: by September 1, 2022

Note: M&V Procedures

M&V Category	EE capacity Thresholds	M&V Procedures
Basic	Measure is less than or equal to 50 kW	Deemed EE Capacity with EE Auction Pilot Measure Reference Manual or IESO-accepted Measure Substantiation Sheet IPMVP Protocol Option A, B, C
Enhanced	Measure is greater than 50 kW	IPMVP Protocol Option A, B, C

Note: Amendments to EE Resource Plan

- Prior to submitting the EE Resource Report and M&V Plan, EE capacity providers may request to replace the measure(s) stated in a resource's EE Resource Plan or add additional measure(s)
- Replacement measures must have an effective useful life equal or greater to the effective useful life of the original measures stated in the EE Resource Plan or ten years
- Additional measures must have an effective useful life equal or greater to the weighted average effective useful life of the original measure stated in the EE Resource Plan or ten years

Step 10: IESO review of M&V Plan

- IESO reviews M&V plan to confirm meets M&V Procedures requirements or, where necessary, identifies deficiencies that must be remedied
- When:
 - Summer-only and both season resources: by May 31, 2022
 - Winter-only resources: by October 31, 2022

COMMITMENT PERIOD

Step 11: EE Capacity delivery

- The measures constituting an EE resource must be fully installed/implemented on the first day of the first obligation period or the capacity provider risks non-performance charges
- When:
 - Summer obligation period June 1, 2022 – August 31, 2022
 - Winter obligation period November 1, 2022 – February 28, 2023

Step 12: M&V Reporting

- After the conclusion of each applicable obligation period, EE capacity providers provide an M&V report (as described in M&V Procedures) for each resource in alignment with the approved M&V plans
- When:
 - For summer obligation period: October 30, 2022
 - For winter obligation period: April 29, 2023

Step 13: M&V Report Review

- IESO will review each M&V report and confirm the delivered EE capacity payment due.
- Where an EE resource delivered less than its full EE capacity obligation, the payment will be reduced by the difference between the obligated capacity and the delivered capacity, multiplied by twice the resource's accepted offer price
 - Example: Resource 3 has a 150 kW summer obligation and accepted offer price of \$330/kW. If it fully performs it will receive a payment of \$49,950. If it only delivers 140 kW it will be penalized \$6,600 and receive a payment of \$43,350
- When: within 60 days of receipt of M&V report

Step 14: Facility Meter Data Submission

- EE capacity providers will be required to provide hourly or sub-hourly meter data for each facility contributing to a resource for a period of time before and after measure implementation
- For EE resources with only one obligation period (i.e. just winter or just summer), IESO will require meter data for the period six months preceding implementation of the first measure to the latter of six months following implementation of the last measure or to the end of the obligation period

Step 14: Facility Meter Data Submission (Cont'd)

- For EE resources with capacity obligations for both obligation periods (i.e. both winter and summer), IESO will require meter data for the period six months preceding implementation of the first measure to the end of the last obligation period

Step 15: EE capacity payment invoice submission

- EE auction participants will upload an invoice for EE capacity payment via the CDMIS portal in Online IESO
- When: following confirmation of IESO acceptance of M&V report and provision of facility meter data

Step 16: Invoice settlement

- IESO will confirm the invoice value matches the EE capacity payment due and that facility meter data has been received for the relevant facilities, and then approve the invoice
- EE auction participants will receive settlement via electronic funds schedule in accordance with the Physical Market Settlement Schedule

Note: Winter and Summer EE Resources

- Steps 12, 13, 15, and 16 will be repeated after each obligation period for resources with both a summer and winter EE capacity obligation

Next steps: stakeholder feedback

- The IESO is requesting feedback on the draft detailed design, including the proposed resource participant agreement terms, M&V procedures, and timeline
 - Are any requirements or processes unclear?
 - Do the proposed dates present any challenges? If so, please indicate why and propose an alternative and rationale.
 - Do any of the Participant Agreement terms present an undue barrier to participation? If so, please indicate why and propose an alternative and rationale.
 - Does the requirement for auction participants to provide audited financial statements present an undue barrier to participation? If so, please indicate why and propose an alternative and rationale.

Next steps: stakeholder feedback (cont'd)

- Responses can be sent to engagement@ieso.ca until April 13, 2020. Please use the feedback form that can be found under the March 23 entry on the [Energy Efficiency Auction Pilot engagement page](#)
- Feedback will be considered in order to refine the detailed design

Q&A

APPENDICES

Appendix A: EE capacity product

- IESO is seeking up to 13 MW of **incremental** permanent reductions in demand from EE resources during specific hours during two seasonal obligation periods

Obligation Period	Days	Hours
Winter	November 1 – February 28 non-holiday weekdays	Hour Ending 17-21 (4:00 pm – 9:00 pm EST)
Summer	June 1 – August 31 non-holiday weekdays	Hour Ending 13-21 (12:00 pm – 9:00 pm EST)