

LT1 RFP and Additional Mechanisms Engagement



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Agenda

- Overview of LT1 RFP and Additional Mechanisms
- Overview of the Final LT1 RFQ
- LT1 RFP and Expedited Process Contract Design
 - $_{\odot}$ $\,$ Mandatory Requirements and Rated Criteria
 - Capacity Qualification and Revenue Mechanism
 - Term lengths
- Deliverability Test Overview
- Next Steps



Purpose

- Present an overview of the final RFQ and key considerations for the LT1 RFP and Expedited Long-Term Request for Proposals (Expedited Processes/E-LT RFP)
- Seek stakeholder feedback on the proposed procurement and contract design to inform the IESO's report back to the Minister by July 15
- Provide details on the additional revenue support mechanism, the approach to qualifying capacity, and further details on mandatory requirements and rated criteria
- Provide additional information and seek feedback on the proposed deliverability assessment process



Overview of the Long-Term Request for Proposals (LT1 RFP) and Additional Mechanisms



Planned Actions Work Together to Ensure Reliability & Manage Uncertainties



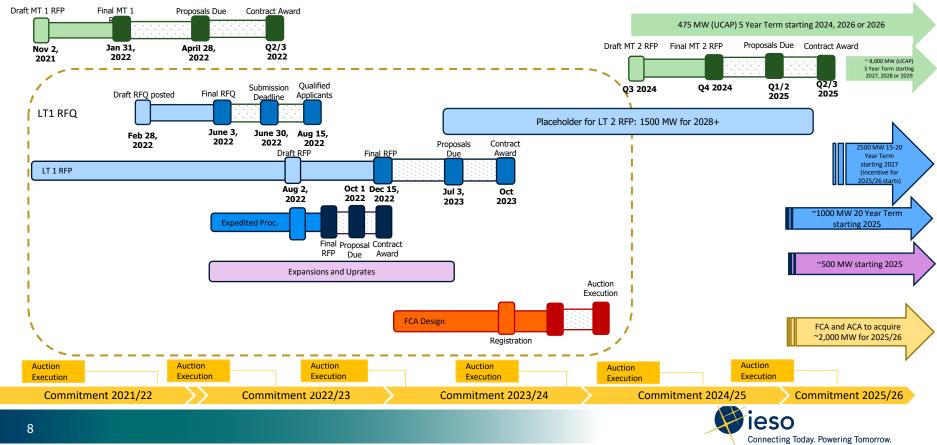


Overview of Proposed Additional Mechanisms





Procurements and Timelines



*All future dates are tentative; 2022 and 2023 timelines are not to scale.

Summary – LT1 RFP and Expedited Process

	LT1 RFP	Expedited Process
Target capacity	2,500 MW of effective capacity with a minimum duration of 4 consecutive hours	${\sim}500$ to ${\sim}1000$ MW of effective capacity with a minimum duration of 4 consecutive hours
Term Start	No later than May 1, 2027	No later than May 1, 2025
Term length	IESO considering potential for 20-year term with potential additional term available for resources able to come online early	Minimum of 22-year base term
Locational considerations	Global need with strong preference for resources in the West and East of FETT zones. Deliverability assessment will be completed to ensure electricity can be delivered when and where it is needed.	Global need with strong preference for resources in the West and East of FETT zones. Deliverability assessment will be completed to ensure electricity can be delivered when and where it is needed.
Eligible Resources	Technology agnostic; new-build resources at greenfield sites or co-located at existing sites able to achieve commercial operation no later than 2027.	Technology agnostic; new-build resources at greenfield sites or co-located at existing sites; achieve commercial operation by 2025.
Qualification	Participation in LT1 RFQ required with a minimum project size of 1MW and maximum size of 600MW	Participation in LT1 RFQ required with a minimum project size of 1MW and maximum size of 600MW

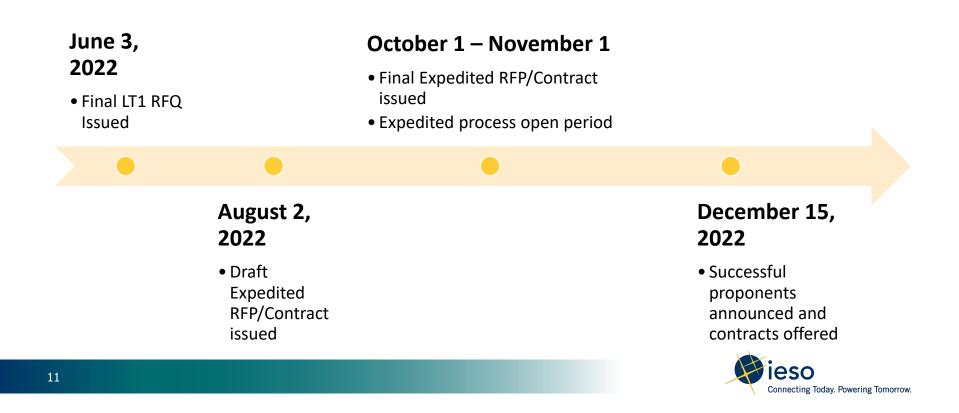


Summary of Additional Acquisition Mechanisms

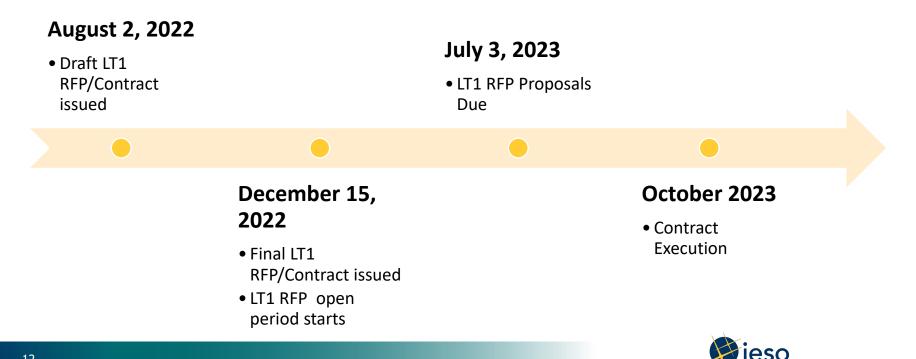
	Upgrades and Expansion	Forward Capacity Auction	
Target capacity	${\sim}500$ to ${\sim}1000$ MW of effective capacity with a minimum duration of 8 consecutive hours	To be determined – Targets for the FCA to be set together with those for the Capacity Auction	
Term Start	No later than May 1, 2025	May 2025	
Term length	New contract or extension of existing contracts. Length of contract/extension dependent on stakeholder feedback	Three summer and/or winter obligation periods	
Locational considerations	Targeted at meeting global need. Deliverability assessment will be completed to ensure electricity can be delivered when and where it is needed.	Zonal	
Eligible Resources	Expansions or uprates to existing resources that are under contract and operating in IESO-administered markets. Expansion or uprate must be the same technology as the existing resource and able to achieve commercial operation in 2025.	Existing and off-contract demand response, generation, storage and capacity import resources	
Qualification	Existing counterparty in good standing with existing contract	Similar requirements to annual capacity auction	



Proposed Expedited Process Timeline



Proposed LT1 RFP Timelines



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Expedited Process and LT1 RFP Linkages

- The IESO is considering allowing for projects that are unsuccessful in the Expedited Process an opportunity to bid into the LT1 RFP. The IESO will need to ensure that the general process ensures fairness and transparency and will outline additional considerations to stakeholders
- Proposals in the Expedited Process will also be assessed in the LT1 RFP deliverability assessment
- If they were deemed to be "deliverable" or "deliverable but competing" as part of the Expedited Process, the expectation is that they will be assessed as "deliverable" or "deliverable but competing" for the LT1 RFP; allowing Proponents to bid into the LT1 RFP if unsuccessful in the evaluation for the Expedited Process



LT1 RFP and Expedited Process: Focus on Capacity

- To ensure that resource adequacy needs are met, the LT1 RFP and Expedited Process will require resources to meet a capacity need with a minimum 4hour energy duration
- The 2022 AAR provides an overview of the IESO's assessment for periods of resource adequacy risk:
 - > 30% of events persist for up to 4 hours
 - > 20% of events persist for more than 4 and up to 8 hours
 - > 25% of events persist for more than 8 and up to 16 hours
 - > 25% of events persist for more than 16 hours
- The LT1 RFP and Expedited Process will incent resources capable of providing more than 4 consecutive hours of energy



LT2 RFP (1)

- As system needs shift from primarily capacity to capacity and energy; with energy needs emerging in the mid to late 2030s, future procurement opportunities will aim to reflect these changing conditions as part of mandatory criteria
- The IESO will aim to align the requirements for the LT2 RFP in order to reflect those future system needs





- The 2022 AAR introduced a second long-term RFP (LT2 RFP) which is anticipated to acquire an additional 1,500 MW of effective capacity by 2030
- The LT2 RFP will aim to meet emerging energy needs, in addition to remaining capacity needs, throughout the 2030s
- The LT2 RFP will revisit the mandatory criteria, including the 4-hour energy duration requirement

The IESO aims to start work on the LT2 RFP process in **2023**, which will provide new-build resources with a longer forward period to come into service by 2030



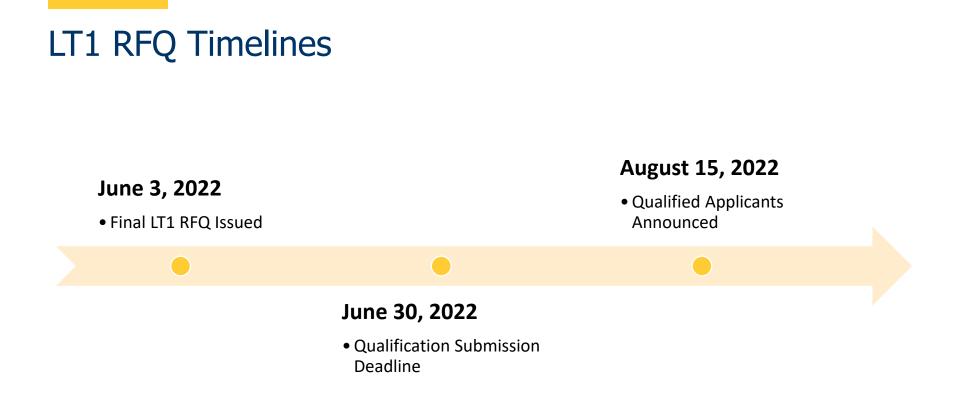
LT1 and LT2 RFP Alignment

- The IESO will leverage lessons learned from the MT I RFP and LT1 RFP in its design of the LT2 RFP, while accounting for the system needs (energy & capacity) in the contract design
- In addition, the IESO will seek to streamline qualification for the LT2 RFP for those already qualified through the LT1 RFQ
- As the IESO moves forward with further acquisition mechanisms with long-term commitments, we will aim to standardize processes and information sharing where applicable while providing clear insight into future opportunities



Overview of the Final LT1 RFQ







Updates on the LT1 RFQ

- As the IESO has previously outlined, there are numerous benefits to utilizing a two stage procurement with an RFQ stage
- The LT1 RFP will be used to qualify applicants for both the LT1 RFP and the Expedited Long-Term Request for Proposals (Expedited Process/ E-LT1 RFP)
- To participate in the Expedited Process, applicants will need to meet all associated RFQ requirements and indicate in the RFQ that they are seeking to qualify for an in-service date of 2025
- The IESO has further updated the RFQ to accommodate the Expedited
 Process and in response to further stakeholder feedback



Summary of Key Changes to the RFQ

RFQ Feedback Theme	Key Changes for Final RFQ
Designated Team Member Definition	 The Designated Team Members definition has been updated to clarify that Designated Team Members may only be directors, officers or employees of the RFQ applicant (i.e. not contractors or consultants). The same individual may be a Designated Team member for more than one RFQ applicant for purposes of determining Qualified Applicants.
Small Scale-Entity Experience Threshold	 The IESO has lowered the quantity of Electricity Generation or storage Facilities required to meet the Small-scale Entity Development Threshold to four (4).
Small Scale Expedited Process	 Eligibility for the Expedited Process in respect to Small-Scale LT1 Projects will be open to RFQ applicants that satisfy both the Small-Scale Team Member Experience and the Small-Scale Entity Development Experience Thresholds. A proposal security of 1.5x the Base Proposal Security will be required.
Communication Protocols	 Prohibited communication will be limited to communications intended to influence the outcome of the RFQ process or undermine the LT1 RFQ.
Evidence of Entity Development Experience	 The IESO has updated 3.3(a)(ii) and 3.3(b)(ii) to clarify the evidence required being <u>only</u> documentation of the commercial operation (or equivalent commissioning documentation) in respect of qualifying projects.

Overview of LT1 RFQ Requirements

Expedited Process	Qualifying for Large- Scale LT1 Projects	Qualifying for Small-Scale LT1 Projects
Meet Large or Small-Scale Team Member Experience Requirements and	Meet Small-Scale (or Large-Scale) Team Member Experience Requirements and	Meet Small-Scale (or Large-Scale) Team Member Experience Requirements and
Meet Large or Small-Scale Entity Development Experience Threshold	Post 1.5X proposal security if unable to demonstrate Large-Scale Entity Development Experience	Meet Small-Scale (or Large-Scale) Entity Development Experience Threshold
Meeting both thresholds above qualifies Applicants for the LT1 RFP, as well	Meet Small-Scale Team Member Experience Requirements and	Meet Small-Scale (or Large-Scale) Team Member Experience Requirements and
	Meet Small-Scale Entity Development Experience Threshold + Post 1.5X proposal security	Post 1.5X proposal security if unable to demonstrate Small-Scale (or Large- Scale) Entity Development Experience



Clarification: Team Member Mandatory Requirements

Large-Scale Team Member Experience	Small-Scale Team Member Experience
At least 2 Designated Team Member	At least 2 Designated Team Member
Experience in Planning, Developing, Financing, Constructing and Operating of at	Experience in Planning, Developing, Financing, Constructing and Operating of at
least 1 Qualifying Large-Scale Project	least 1 Qualifying Small-Scale Project

- In addition to the requirements above, team member experience can be aggregated across multiple Designated Team Members so that, e.g., one employee can have experience in four of the areas and another employee can have experience in the fifth area
- Like for like replacements of Designated Team Members will be possible between the RFQ and RFP stages of the procurements



Options for Non-Qualified Applicants

• Proponents that do not meet the RFQ requirements for the Expedited Process or LT1 RFP could still participate in the procurements by forming a partnership or other commercial arrangement with a Qualified Applicant

Example 1:

- **Proponent A** does not meet Team Member Experience or Entity Development Experience for Large-Scale LT1 Projects
- **Proponent B** meets all entity experience and team member requirements for the largescale procurement and meets the qualification requirements through the LT1 RFQ

If there is mutual benefit to both parties, proponents A and B could form a partnership prior to RFQ submission to become a Qualified Applicant or form a special purpose entity with Proponent B retaining control, as the Qualified Applicant, in order to maintain eligibility to submit project(s) at the RFP stage.



Options for Qualified Applicants

Example 2:

• **Proponent C** meets the Large-Scale Team Member Experience but not the Large-Scale Entity Development Experience

Proponent C could qualify for the LT1 RFP and develop Large-Scale or Small-Scale LT1 Projects, should they post 1.5X LT1 RFP base proposal security.

Proponent C could then form any number of special purpose entities specific to the projects they are proposing and could submit their proposals to the eligible RFPs under the auspices of those special purpose entities should the new special purpose entities continue to meet the Large-Scale Team Member Experience.



Options for Qualification

Example 3:

- **Proponent D** has been the non-controlling partner or shareholder on more than two operating large-scale generation or storage facilities and has team members that can demonstrate this experience. However, their non-controlling role in those projects does not meet large-scale entity development experience.
- **Proponent E** has provided equity and been the controlling partner or shareholder on more than two operating large-scale generation or storage facilities, thus demonstrating entity development experience. However, Proponent E has rebuilt its development team and is unable to demonstrate team member experience.

Proponents D and E could form a partnership at the RFQ stage so that their combined team member and entity development experience satisfies the requirements for the eligible RFP.



Supporting Documentation Required for Section 3.3

- The IESO has modified Sections 3.3(a)(i) and (b)(ii) to only require documentation of the achievement of commercial operation (or equivalent commissioning documentation) in respect of such Qualifying Large-Scale Project or Qualifying Small-Scale Project from the applicable Governmental Authority or electric utility
- Where the RFQ Applicant is not the same Person as the named project entity in respect
 of a qualifying project, the IESO requires both an organizational chart, together with
 evidence of applicable securities holdings reflected in such organizational chart via
 copies of the securities register(s), together with a statutory declaration by an
 authorized representative of the RFQ Applicant
- The IESO reserves the right to request additional corporate records to evidence required Control by the RFQ Applicant or Control Group Member



Prescribed Form: Long-Term Reliability Project Description – LT1 RFQ

- RFQ Applicants seeking to qualify for the LT1 RFP are encouraged, as a part of their Qualification Submissions, to submit a description of as many proposed Long-Term Reliability Projects as possible, however at least 1 form is mandatory
- For proponents wishing to participate in the LT1 RFP, the Long-Term Project Description Prescribed Form will be used for information purposes only and will help the IESO understand the type of resources that could come forward in the RFP, along with the size and location of these potential facilities
- The Projects described may be updated from the RFQ to RFP and additional projects may be proposed at proposal submission



Long-Term Reliability Project Description Form – Expedited Process

- Projects participating in the Expedited Process must be in advanced stages of development
- As such, RFQ Applicants will be asked to identify their interest in the Expedited Process and they must submit a description of **all proposed Long-Term Reliability Projects** for which the RFQ Applicants are seeking qualification to participate in the Expedited Process via the Prescribed Form: Long-Term Reliability Project Description
- Any projects not identified at the RFQ stage will not be eligible at the RFP stage of the Expedited Process



Proposal Security for LT1 RFP & Expedited Process

	LT 1 RFP	Expedited Process
Base Proposal Security – Large- Scale LT1 Project	\$30,000/MW	\$50,000/MW
Base Proposal Security – Small- Scale LT1 Project	\$30,000/MW	\$40,000/MW

Note that Proponents will be subject to 1.5X Proposal Security where the totality of Entity Development Experience Threshold is not met

- These are the proposed proposal security amounts for the LT1 RFP and Expedited Process
- While these amounts are not yet final and are subject to change, the magnitude of security required should provide an indication of the required level of financial commitment required
- Please note that in order to ensure commercial operation is achieved by required deadlines (2025, 2027), the IESO will apply liquidated damages and potentially draw upon proposal security in instances of delay that will be outlined in the contract



LT1 RFP and Expedited Process Mandatory Requirements and Rated Criteria



Mandatory Requirements

Proposals under both the LT1 RFP and the Expedited Process will be evaluated on a pass/fail basis according to the following mandatory requirements:

	LT1 RFP	Expedited Process
Dispatchable/Market Participant Status	 Proponents must declare intent to become dispatchable Market Participant prior to contract term commencement 	
Duration of Service	 Proposed facility must be able to provide at least 4 hours of continuous energy at Proponent's Contract Capacity during Qualified Hours 	
Deliverability Assessment Status	 Proponents to demonstrate attaining " Competing" status via the IESO's delive 	



Mandatory Requirements (2)

	LT1 RFP	Expedited Process	
Site Control and Permitting	 Proposal is able to demonstrate site access via site access declaration and associated documentation 		
Community Engagement	 Proponent must develop and post a Community Engagement Plan Must hold 1 public meeting with each local community in which the project is proposed to be located 		
Indigenous/Municipal Support	 Proponent must obtain a Municipal Council Sup Resolution if the proposed project is to be locate on land under municipal jurisdiction Proponent must obtain a Band Council Resolution the proposed project is to be located "on-reservent Proponent must inform Indigenous communities who may have impacted traditional treaty right Successful proponents in the LT1 RFP will be required to re-confirm support after contract execution. 	the procurement process, as well as the upcoming Ontario municipal on if elections, the IESO recognizes that it we'' will be challenging to meet the requirements outlined for the LT1 RFP. The IESO is still contemplating	



Proposed Rated Criteria

- All Proposals that have passed the Mandatory Requirements stage will have their Rated Criteria evidence evaluated by the IESO, and will be assigned Rated Criteria points
- These Rated Criteria points will equate to a price reduction multiplier to be used for comparison/selection purposes only (no impact on price paid to successful proponents)
- The following slides outline Rated Criteria point categories and proposed point amounts that the IESO is considering for the LT1 RFP and Expedited Process
- The IESO may introduce additional categories for Rated Criteria based on internal assessment



Rated Criteria – Location

Applicable to LT1 RFP and Expedited Process:

If the Proposed Facility is interconnected to a Transmission System or a Distribution System located within the priority zones shown below, it would be awarded applicable Rated Criteria Points for its locational value

Rated Criteria Points	Value	Priority Zones
[5]	High	West Transmission Zones
[3]	Medium	Toronto, Essa, East, Ottawa
[0]	Low	All other locations



Rated Criteria – Duration of Service Applicable to LT1 RFP and Expedited Process:

Proposed Facilities would be awarded applicable Rated Criteria Points for the duration of time they are able to generate electricity

Rated Criteria Points available	Duration of Service
[3]	The Proposed Facility is able, under normal operating conditions, to generate electricity for 8 or more consecutive hours
[2]	The Proposed Facility is able, under normal operating conditions, to generate electricity for 4 to 8 consecutive hours
[0]	The Proposed Facility is able, under normal operating conditions, to generate electricity for 4 hours



Rated Criteria – Indigenous Participation Applicable to LT1 RFP only:

Proposed Facilities would be awarded applicable Rated Criteria Points for their level of Indigenous participation, evaluated based on economic interest. The IESO is continuing to consider options to encourage meaningful engagement and/or partnership formation with Indigenous communities as part of the final Expedited Process design. Proposed values:

Rated Criteria Points available	Indigenous Community Participation
[6]	An Indigenous Community has 50% or more economic interest in the project
[3]	An Indigenous Community has 25% or more, but less than 50% economic
	interest in the project
[1]	An Indigenous Community has 10% or more, but less than 25% economic
	interest in the project
[0]	All other Proposed Facilities



Ranking of Proposals by Evaluated Proposal Price

- Proposals in both the LT1 RFP and Expedited Process would be ranked in order of their Evaluated Proposal Price, with the lowest price receiving the highest priority
- For proposals deemed "Deliverable but Competing" in the deliverability test, the maximum MWs that can be connected at that particular connection point will be taken into account
- The IESO's final Evaluated Proposal Price model will take into account the requirement to levelize prices based on the modifiers that Proponents have bid into their proposal to account for low and high pricing scenarios, in addition to applying rated criteria
- The IESO will finalize its pricing model after commercial approach/ contract considerations are finalized
- Proposal evaluation will also take into account the maximum project size (600 MW) as well as include mechanisms to ensure supplier diversity. This may take the form of a mechanism that limits the number of proposals or MWs for a single Proponent.



LT1 RFP and Expedited Process Contract Design – Capacity Qualification and Revenue Mechanism



Considerations for Qualified Capacity

- As the LT1 RFP and Expedited Process are addressing a capacity need, it is still essential for the IESO to procure capacity which is reliably available when it is required
- Under the MT I RFP, the IESO was qualifying capacity in an unforced capacity (UCAP) basis, for existing facilities where historical forced outage data was available
- Given that the LT1 RFP and Expedited Process will be procuring capacity from new-build resources with no operational record, the IESO is proposing an alternative approach to capacity qualification
- This approach was further informed by stakeholder feedback and lessons learned from the MT I RFP



Proposed Approach – Contract Capacity

It is proposed that proponents provide their own qualified capacity which will in turn form the "contract capacity" for the contract, based on IESO guidance documents on UCAP and additional information.

- The qualified capacity selected should be an estimate of the capacity that the proponent's facility can reliably offer into the market during Qualifying Hours
- Performance obligations in the contract will require that contracted resources bid into the DAM during Qualifying Hours to average to at least the Contract Capacity set by the proponent
- Any shortfall would result in a proportional claw back of the resource's monthly capacity payments with multipliers in effect for high demand months and in some instances may result in an event of default



Contract Design and Revenue Mechanisms

- The LT1 RFP and Expedited Process are intended to meet emerging capacity needs, as such it is anticipate that the LT1 Capacity Contract will primarily pay suppliers for their **capacity** contribution
- At the start of the LT1 RFP engagement, stakeholders informed the IESO that a contract with a 7–10-year term, that pays for capacity on a UCAP only basis would not provide sufficient investor certainty
- Given stakeholder feedback on term-length and uncertainty in the renewed market, as well as global competition, the IESO is considering offering longer term length (20 years) for both the LT1 RFP and Expedited Process; to be paired with a contract that focuses on acquiring a capacity product



Options Explored To Date

 Stakeholders requested that the IESO explore a number of contracting mechanisms employed in other jurisdictions, including the following two that the IESO discussed with stakeholders:

Capacity + Energy hedge

- A capacity based contract that also provides additional energy market revenue certainty
- This could be achieved by proponents bidding in a strike price on a \$/MWh basis for energy market revenues during the contracted availability window

Bundled CFD

- An all-in total cost contract for capacity and energy
- This could be designed so that proponents either submit total revenue requirements on a \$/MW-month basis, or it could be tied to production on a \$/MWh basis



Stakeholder Response

- Although stakeholders were supportive of exploring alternative contracting mechanisms, there was no stakeholder alignment on the two options presented
- **Capacity + Energy hedge:** Questions on how to structure the hedge, given energy market uncertainty; with the need for specific performance obligations increasing contractual complexity
- **Bundled CFD:** Some stakeholders were supportive of this approach, but further questions remained on energy pricing post-MRP as well as concerns on the impacts on energy market operations and efficacy of the mechanism for a capacity procurement



Proposed Contract Design

- The primary need that the LT1 RFP and Expedited Process aim to meet is an emerging capacity need, as such the IESO aims to design a contract that pays resources for their ability to provide a **capacity product**
- However, the IESO acknowledges stakeholder concerns around the uncertainty that surrounds the renewed market and future energy prices
- In response to those concerns, the IESO proposes that the LT1 Contract include a mechanism to modify future fixed contractual capacity payments based on average energy market prices at the time
- This proposed design aims to provide investors with additional certainty, while
 ensuring efficient market participation



Proposed Contract Design (2)

- The proposed contract mechanism takes elements of contract design that the IESO previously explored and is intended to apply to all resources competing in both the LT1 RFP and the Expedited Process
- The LT1 Contract will be a fixed price contract that pays for capacity based on a "pay-as-bid" approach, with an additional option for proponents to increase or decrease their fixed price in response to future energy market price uncertainty
- Given the need to ensure ratepayer value, the IESO will introduce a mechanism in both the LT1 RFP and Expedited Process as part of Proposal Evaluation to remove outlier pricing or to cap bid prices at a reserve price



Capacity Payment Adjustment Mechanism

- The proposed contract design would include a capacity payment adjustment mechanism that will impact fixed payments (for capacity) if average energy market prices (based on locational marginal pricing) are below or above a set threshold
- Proponents will be allowed to bid in a % adjustment to their fixed payment:
 - Capacity payment **top-up** if average energy market prices are less than expected on a quarterly basis
 - Capacity payment claw-back if energy market prices are more than expected on a quarterly basis



How it Works

- Proponents would need to provide two additional values to the IESO, based on their expectations of long-term energy prices
- These values will take the form of a % increase or claw-back to the capacity payment in instances of low energy pricing or high energy pricing. The IESO will establish these thresholds which will form 3 distinct scenarios:

Average pricing scenario No top-up or claw-back for suppliers Pay-as-bid

Low pricing scenario

Supplier receives a % top-up to their fixed payment, should average energy pricing (LMP) for the season in question remain below that threshold

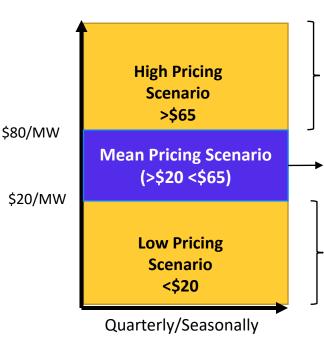
High pricing scenario

Based on IESO analysis, this scenario assumes high average pricing (LMP) over the course of a season; IESO claws back % from fixed payments



Illustrative Example

- Proponent A submits a bid of \$600MW-Business Day to serve as their fixed payment for capacity
- Proponent A submits a Low
 Pricing Scenario Modifier of: +20%
- Proponent A submits a High Pricing Scenario Modifier of: -25%
- Proposal that settlement is made after completion of given season



IESO **claw-back** -25% of Proponent A's **capacity payment** if the average energy market price (LMP) over a season is in the high pricing scenario

- Mean pricing scenario, no top up or claw-back; pay-as-bid
- IESO **tops up** proponent A's capacity payment by 20% if the average energy market price (LMP) over a season is in the low pricing scenario



Evaluated Proposal Price

- The IESO will develop a pricing model to determine evaluated proposal prices, based on the Rated Criteria a Proponent is able to attain, as well as a formula to levelize bid prices based on the % modifiers in the low and highpricing scenarios
- Levelizing proposal prices based on submitted values will allow the IESO to account for differentiated values submitted by proponents for the low and high pricing scenarios; this will allow the IESO to effectively compare proposals prices
- Proponents will be able to review the pricing model and will have access to assumptions, where applicable



LT1 RFP and Expedited Process Term Lengths



LT1 RFP and Expedited Process Term Length

- In response to stakeholder feedback on the importance of term length to support investment, the IESO is considering a revised term length for the LT1 RFP
- The term the IESO is considering for the LT1 RFP is 20 years, with terms ending in 2047
- Considerations for the Expedited Process have also been modified, taking into account the importance of term length, while also considering additional incentives for resources able to enter service by the commercial operation date (May 1, 2025)



LT1 RFP and Expedited Process Term Length (2)

Procurement	Proposed Commercial Operation Date (COD)	Term and Incentive Under Consideration	Contract Term End Under Consideration
LT1 RFP	May 1, 2027	20 Years	April 30, 2047*
LT1 RFP	<may 1,="" 2027<="" td=""><td> 20 Years + additional term for commercial operation any time prior to May 1, 2027 For example, Commercial Operation achieved on May 1, 2026 would provide a 21 year term </td><td>April 30, 2047*</td></may>	 20 Years + additional term for commercial operation any time prior to May 1, 2027 For example, Commercial Operation achieved on May 1, 2026 would provide a 21 year term 	April 30, 2047*
Expedited Process	May 1, 2025	22 Years Resources able to achieve commercial operation by May 1, 2025 will be eligible for a contract payment multiplier in 2025 and 2026. Further details in subsequent slides.	April 30, 2047*



Proposed Expedited Process Term Length and Incentive

- Resources participating in the Expedited Process that are able to achieve commercial operation by May 1, 2025 will be eligible for a contract payment multiplier in 2025 and 2026
- The IESO is considering introducing a payment multiplier that will decline for each month by which the commercial operation date is missed, until May 1, 2026 at which point the multiplier will no longer be offered
- Liquidated damages may further apply in instances where commercial operation is not achieved in time

Commercial Operation		
≤ May 1, 2025	nth	
≤ June 1, 2025	o E	
≤ July 1, 2025	each month	
≤ August 1, 2025		
≤ September 1, 2025	Proposed multiplier decreases	
≤ October 1, 2025	decr	
≤ November 1, 2025	ier o	
≤ December 1, 2025	ltipl	
≤ January 1, 2026	mu	
≤ February 1, 2026	sed	
≤ March 1, 2026	odc	
≤ April 1, 2026	Pre	
≤ May 1, 2026		



Deliverability Test Overview



Deliverability

- The IESO's proposed deliverability test will aim to ensure that electricity produced by successful resources in the LT1 RFP, Expedited Process and Upgrades and Expansions process can be delivered to where it is needed on the grid when it is needed
- The IESO will conduct the deliverability assessment ahead of proposal submission for these three acquisition mechanisms
- The deliverability test is not a substitute for the connection assessments processes that are required by the IESO, Transmitters and Local Distribution Companies (LDCs), after contract award
- Those parties that have already started those connection assessment processes will not be viewed more favourably than those that have not, and all are reminded that after contract award, these processes are still required



Deliverability Test Overview (1)

The test will provide one of three answers:

- **Deliverable:** No deliverability concerns
- Not Deliverable: Deliverability concerns on distribution and/or transmission systems; projects with a "not deliverable" result will not be eligible for the RFP stage
- Deliverable but Competing: Multiple resources interested in the same deliverability path in distribution and/or transmission systems, where the total combined capacity is higher than the path's capability. For these projects, proposal evaluation will consider this additional constraint imposed by the distribution and/or transmission system

Note: The deliverability test will only provide one of the three answers above and will not include information on what project size or upgrades are required to be deliverable.



Deliverability Test Overview (2)

- The deliverability test for transmission connected projects will be carried out by the IESO and the test for distribution system connected projects will be carried out by the IESO with support from LDCs
- The results from the deliverability test will remain valid for each of the Upgrades and Expansions, Expedited Process and the LT1 RFP proposal review processes
- If necessary, an additional test may be carried out during proposal review for projects deemed to be "Deliverable but Competing"
 - Proposals will be retested in sequence based on their Evaluated Proposal Price



Deliverability Test Overview (3)

- At a high level the test will be carried out as follows:
 - Base cases will be prepared that models the peak demand conditions that the IESO is aiming to supply with the resources that are being procured
 - In the base cases, assumptions will be made on the levels of imports from neighbouring jurisdictions, output from existing generation, demand level and transmission projects that will be in-service
 - Proposed projects that utilize the same delivery paths will be assessed together.
 Depending on the results of the assessment, they may be "Deliverable", "Deliverable but Competing" or "Not Deliverable"
- The specifics of how this test will be carried out will be described in more detail in a guidance document issued by end of June



Information Required for the Deliverability Test

- Resource type or types (if hybrid) and nameplate capacity for each project
 - For upgrades to existing facilities, the increase in seasonal registered maximum capability

Transmission Connected (TX)	Distribution Connected (DX)
GPS data for the proposed point of connection to the IESO controlled grid Transmission station name (for directly connecting to a transformer station (TS) or switching station (SS))	 GPS data for the proposed point of connection to the distribution system and the name of distribution system feeder and the associated TS or DS Name of upstream transmission connected TS or DS, if not connecting to a TS or DS that is directly connected to the IESO controlled-grid
This information can be obtained from the connecting transmitter. Transmitters will not be able to provide guidance on connection availability/ deliverability. That is the purpose of the IESO's deliverability test	This information can be obtained from the connecting LDC

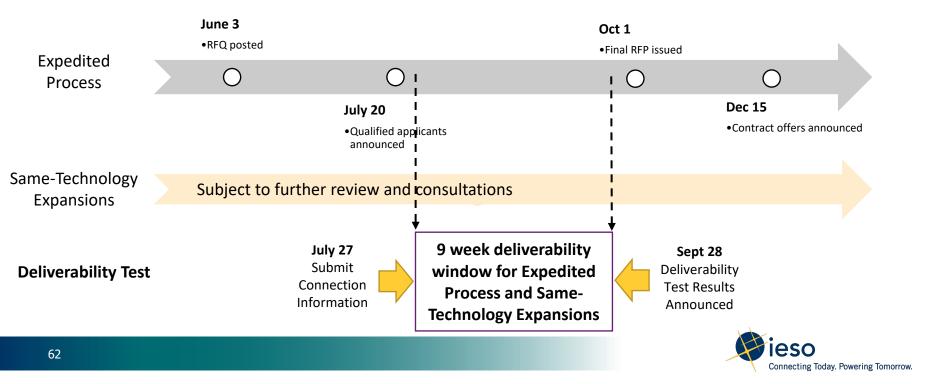


Options on Connection Information

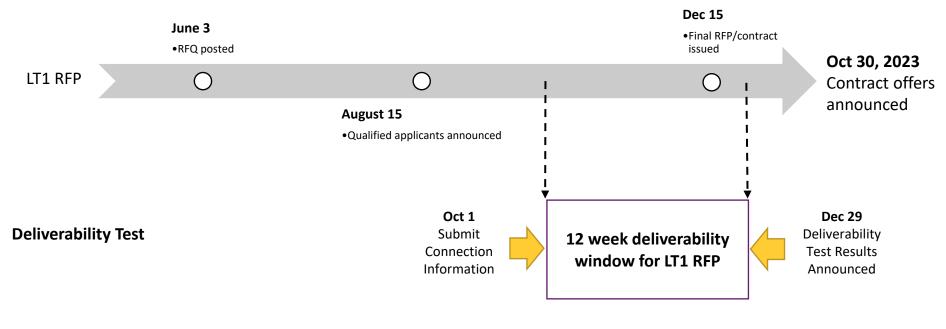
- Applicants can submit a combination of up to 3 project sizes and connection points for each project at a specific site
- For example, one of the following combination options may be selected for a specific project:
 - One project size with three connection points
 - One connection point with three project sizes
 - One connection point with two project sizes, plus another connection point with one additional project size
- Applicants will be asked to indicate the priority sequence among the three combinations for the test
- The IESO will try to provide answers to all combinations, but, if time does not permit, we may stop once a "deliverable" result is obtained



Expedited Process and Same Technology Expansions Deliverability Test Timelines



LT1 RFP Deliverability Test Timeline





Expedited Process Considerations

- Parties participating in the Expedited Process are required to submit a Prescribed Form: Long-Term Reliability Project Description for ALL projects they intend to submit as part of the RFP stage
- While the prescribed form requests some connection information, the IESO will allow for revised connection information and size to be submitted as part of the connection information for the deliverability test, as long as all other criteria for the project in question (site location, technology) remain the same as what was submitted at the RFQ stage
- Any project **not** submitted at the RFQ stage of the Expedited Process will **not** be eligible at the RFP stage



LT1 RFP/Expedited Process Considerations

- Only those projects deemed "deliverable" or "deliverable but competing" through the deliverability testing process will be eligible to participate in the RFP stage of the LT1 RFP and Expedited Process
- For clarity, the proposal submitted must include one of the 3 connection combinations that were deemed "deliverable" or "deliverable but competing"; no further modifications to project size or connection information will be allowed after the deliverability test, beyond the proponent's choice of one of those 3 options
- The IESO will contemplate a process where Proposals deemed "undeliverable" under the Expedited Process may be modified and submitted into the LT1 RFP deliverability test and if applicable, the LT1 RFP



Deliverability Test vs. Connection Assessments (TX)

- Transmission connection assessments will include System Impact Assessments (SIA) carried out by the IESO and Customer Impact Assessments (CIA-TX) carried out by a transmitter
- Applicants for the Expedited Process or LT1 RFP should only apply for transmission connection assessment after obtaining a contract as a successful bidder
- A deliverability assessment explores whether or not the electricity produced by the proposed project can be delivered to where it is needed on the grid when it is needed. It is the technical test that is carried out to determine if a contract should be awarded.



Deliverability Test vs. Connection Assessments (TX) (2)

- On the other hand, the connection assessment looks at the equipment being connected and verifies it meets the market rule requirements and the manner in which the facility was connected would not result in an adverse impact on reliability.
- A connection assessment is not concerned with whether or not the electricity can be delivered, because when it can't be delivered the assumption in the connection assessment is that the generator will be constrained off. This is the reason that a project that has already obtained an SIA and a CIA-TX will not be deemed to be "deliverable" without going through the deliverability test
- A completed SIA does not reserve connection capacity



Deliverability Test and Connection Assessments (DX)

- Distribution connection assessments will include a Connection Impact Assessment (CIA-DX) carried out by an LDC
- Applicants for the Expedited Process or LT1 RFP should only apply for a CIA-DX after obtaining a contract as a successful bidder
 - Additional considerations for those applying for CIA-DX are outlined on the next slide
- A project that has already obtained a CIA-DX will not be deemed to be "deliverable" without going through the deliverability test
- A distribution connected project ≥ 10 MW also requires a System Impact Assessment (SIA) and Customer Impact Assessment (CIA-TX)



New Connection Assessment Applications

- In order to manage IESO and LDC interconnection workloads and to ensure the maximum amount of connection capacity is available for successful projects, the IESO is considering restricting new SIA and CIA-DX applications under these procurements
- For proponents participating in the Upgrades and Expansions process or the Expedited Process: no restriction
- For the LT1 RFP: restricted until after contract announcements for the Upgrades and Expansions process or the Expedited Process
- For LT2: restricted until after LT2 contract announcements



Preferred Locations and Guidance Document

- By mid-June, the following information will be provided to aid proponents in preparing their connection information for the deliverability test:
 - Preferred connection locations on the circuits west of Chatham
 - Circuits that should be avoided. (The information provided will be based on information available at time of publishing, thus it will not be a complete list.)
- In addition to the information provided, the IESO will publish a Deliverability Test Guidance Document to provide stakeholders with the methodology and assumptions that will be used in the deliverability test
- This document will be available no later than the end of June



Next Steps



Next Steps

- The IESO is requesting stakeholder feedback on the information presented by June 20, 2022
- The IESO will be reporting back to the government on feedback received and design considerations in July 2022
- Feedback and policy direction will be incorporated into draft procurement documents (Expedited Process and LT1 RFP) to be issued in the summer and fall
- Additional information on the deliverability test process and locational considerations will be provided by June 30, 2022



Same Technology Expansions: Optimizing Existing Contracted Assets



Purpose

- Discuss the drivers and need for a process to enable same technology expansions at existing contracted facilities in the Resource Adequacy Framework
- Understanding the different types of upgrades/expansions and whether/how they impact existing contracts
- Outline a conceptual framework to enable facility upgrades and new generation expansions respectively
- Seek feedback to inform report back to Minister and design



Optimizing Existing Contracted Assets

- It is prudent to offer a separate, streamlined process to incent costeffective capacity from existing contracted assets with longer energy duration characteristics.
- Optimizing capacity from existing facilities through a targeted competitive call is an important component of the IESO's strategy to support an adequate, cost-effective and reliable supply and meet emerging needs.



Drivers for Same-Technology Expansions

- Emerging system needs identified starting in 2025
- Procurements recognize known risk associated with greenfield project development (supply chains, permitting and related approvals)
- Importance of supply mix diversity is key and the need for longer duration generation to meet a greater share of resource adequacy risk events was identified in 2022 AAR
 - 20% of events persist for more than 4 and up to 8 hours
 - 25% of events persist for more than 8 and up to 16 hours



Other Considerations

- In designing this process, the IESO will need to account for:
- The degree of interaction between the upgrade/expansion with existing facility operations and contract
- The unique facility types, contract structures and terms
- Interdependencies with other procurements (including Expedited and Long-Term RFPs)
- Energy duration requirements to meet a different tranche of resource adequacy risks



Interest in Same Technology Expansions

- The IESO issued a confidential questionnaire to the sector as part of the LT I RFP engagement to seek feedback on resources that could meet a 2025/26 in-service date.
- Subsequent to this questionnaire, a number of proponents have reached out with a variety of uprate/upgrades and expansion ideas related to their existing contracted facility.



Potential Same-Technology Optimization Opportunities

Stakeholders identified a number of different 'kinds' of sametechnology optimization opportunities :

- Some involve upgrades to or replacements of facility equipment that would increase the operating capability of the existing contracted facility.
- Others involve expansions through installation of new, separately metered, registered and operated generation on the same site as the existing contracted facility (with little interaction with the existing contract or facility operation)

Process will need to account for these different 'buckets' to provide an effective framework for each



Facility Upgrades v. On-Site Expansions

The IESO is considering whether the facility upgrades and the on-site expansions should be a single process or whether they need to be treated as different processes

Facility Upgrades

 Any upgrades to <u>existing</u> <u>contracted facility</u> resulting in an increase in performance and MW output (e.g. equipment additions or uprates, and efficiency enhancements)

On-Site Expansions

 New, <u>separately metered</u>, <u>registered and operated</u> generation units (such as a new turbine installed on-site but not part of existing facility)



Eligibility Requirements

- Facilities with existing contracts
- Any new capacity must be dispatchable with load-following capability (with a minimum of **8 hours** of energy duration) to meet resource adequacy needs identified in the AAR
- In-service date by May 1, 2025
- Must participate in the same Deliverability Assessment as Expedited
 Procurement



Procurement Process: Optimizing Existing Assets

Overview:

Targeted competitive call to contract counterparties for new capacity from:

- Eligibility limited to facility upgrades to existing contracted facility that provide incremental capacity
- Procurement would request contract counterparties to bid revisions to specific parameters of existing contract
- IESO is open to considering term length to be one of those parameters
- Deliverability process completed together with the Expedited procurement



Optional Bid Parameters

Contract extensions are still under consideration, but the IESO is considering that participants could submit the following options:

- Option #1 bid cost of incremental capacity based on remaining contract term
- Option #2 bid cost of incremental capacity based on contract term extending to 2035
- IESO is interested to hear from stakeholders whether other options should be considered
- For clarity, this process will not be an opportunity to re-negotiate the existing contract



On-Site Expansions

- The IESO wants to ensure competition and is considering if these expansions could be bid into the Expedited Process or the LT1 RFP process as they are separately registered, metered and operated
- Alternatively, the IESO is looking for input on the interdependencies to the existing contract facility and whether on-site expansions should be part of the facility upgrade process



Feedback

- The IESO is seeking feedback on the overall framework by June 20
- Are the descriptions of the different kinds of upgrades/expansions clear-and reflective of the options?
- What are the interdependencies between the existing contract, any upgrades and on-site expansions that need to be considered?
- Are any interdependencies are missing/not fully captured here?
- What are the considerations for participating in the Expedited Process or LT1 RFP?
- What other key considerations/risks need to be included to help ensure this initiative is successful?



JUNE 9, 2022

Forward Capacity Auction

Mike Risavy – Senior Manager, Market & System Adequacy



Agenda

- Background and Potential Benefits
- Forward Capacity Auction Objectives
- Early Design Features and Comparison to Annual Capacity Auction
- Potential Design Features Discussion
- Potential Forward Capacity Auction Timeline
- Stakeholder Feedback and Next Steps



Background and Potential Benefits



Background

As outlined in the 2022 Annual Acquisition Report (AAR), significant capacity needs emerge beginning in 2025.

The IESO will look to address these needs using supplemental acquisition mechanisms to work alongside existing acquisition mechanisms.

One of the supplemental acquisition mechanisms under consideration is a Forward Capacity Auction (FCA), which would leverage the existing annual Capacity Auction (ACA) design, but introduce a longer forward period and a <u>three-year commitment period</u>.



Stakeholder Input on FCA

Today's focus is to discuss and gather feedback on stakeholder interest in the potential use of the FCA to secure unmet capacity needs in the 2024 to 2027 period.

Indications of stakeholder interest and input on potential design features for the FCA will be used to inform recommendations on the use of this optional mechanism in the Resource Adequacy Framework in the IESO's report to the Minister of Energy due by July 15.



Forward Capacity Auction – Potential Benefits

Greater Investment Certainty - With a longer forward period and a <u>three-year commitment period</u>, the proposed FCA could provide greater investment and revenue certainty

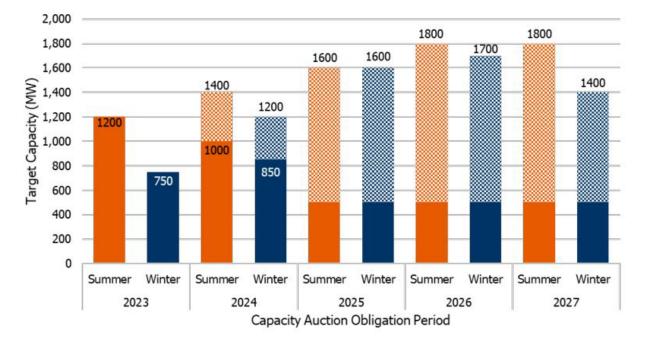
Secure Incremental Capacity - Potential to secure additional capacity incremental to what the ACA alone may procure

Pilot Opportunity - An FCA offers a unique opportunity to pilot auction enhancements that could be considered for future ACAs

Additional Commitment Opportunity - Could serve as a competitive revenue opportunity for capacity suppliers who may not secure commitments through other acquisition mechanisms



2022 Annual Acquisition Report Capacity Auction Targets



Summer Firm Guidance Summer Forward Guidance Winter Firm Guidance Winter Forward Guidance



Forward Capacity Auction Objectives



Forward Capacity Auction Objectives

- 1. Design the FCA as a more attractive investment opportunity through longer terms and forward periods, to secure capacity from existing resources internal and external to Ontario
- 2. Work in conjunction with the ACA to secure capacity needs further in advance of 2025/26 when they are expected to appear
- Pilot potential enhancements and gather learnings for the continued evolution of the Capacity Auction and Resource Adequacy Framework



Early Design Features & Comparison to Annual Auction



Early Design Features

The FCA would be a **contract-based** pilot expected to work with the ACA to secure short-term capacity needs. Because of the use of a contract to outline participants' commitments, the FCA would be administered outside of the market rules/manuals.

Some of these key differences between the FCA and ACA and early design features are included in the following slides to begin discussion with stakeholders on how a Forward Capacity Auction could secure additional capacity over the 2024-2027 time period.



Comparison of Forward and Annual Auctions <u>Forward Capacity Auction</u> <u>Annual Capacity Auction</u>

- 3-year commitment period of summer and/or winter obligations
- Longer forward period
- Participation and settlement details outlined in a contract
- Capacity qualification applies to 3-year commitment period
- Potential new resource types eligible: variable, self-scheduling and co-located hybrid resources
- Opportunity to pilot new auction enhancements and gather learnings

- 1-year commitment period of summer and/or winter obligation periods
- Participation and settlement details outlined in the IESO market rules and manuals
- Capacity qualification applies to 1-year commitment period
- Annual, stable revenue opportunity
- Potential new resource types eligible: variable, self-scheduling and co-located hybrid resources



Early Design Features - Forward & Commitment Periods

The IESO has considered the timing of the auction and commitment periods and sees value in sequencing it after other IESO procurements. We expect to run the FCA in late 2023 or early 2024 for a three-year commitment period that runs from summer 2025 to winter 2027-28. If the auction is run in Jan./Feb. 2024, this would mean a forward period of at least 15 months.



Early Design Features – Eligible Resource Types

Eligibility for the FCA will align with the ACA: existing and off-contract demand response, generation, storage and capacity import resources.

The IESO is considering expanding eligibility to variable generation, selfscheduling and co-located hybrid resources for the FCA and ACA.

Is expanding eligibility to variable generation, self-scheduling and co-located hybrid facilities in the FCA and ACA a priority for stakeholders?



Early Design Features – Capacity Qualification

The FCA would procure qualified capacity on a UCAP basis. Capacity qualification would determine seasonal UCAP values that could be submitted into the auction for the 3-year summer and/or winter commitments, following the prevailing qualification process used in the ACA.

Performance would still be assessed throughout the obligation periods, including any potential application of non-performance charges and performance de-rates.



Early Design Features - Obligation

The 'availability' obligation under the FCA would be identical to the ACA – an energy market must-offer requirement of the cleared resources' capability, or at least equal to or above the cleared Unforced Capacity (UCAP) amount (obligation amount), on business days during the same availability window hours for the summer and winter obligation periods.

Like the ACA, the FCA would focus on acquiring capacity only.



Early Design Features – Pre-auction and Auction Activities

Pre-auction and auction activities would be similar to the ACA process and primarily be completed through Online IESO.

A notable difference is that FCA participants would likely be required to post some form of performance security at the registration stage in place of, or in addition to, the Capacity Auction deposit.



Early Design Features – Auction Parameters and Results

A separate demand curve and pre-auction report with a target capacity specific to the FCA would be published in advance.

IESO is currently scoping a review of the demand curve, which applies to both the ACA and FCA.

The IESO would use the existing auction engine to optimize and clear FCA offers for the 3-year commitment period. The auction engine will determine an FCA auction clearing price for the winter and summer obligation periods, as well as the resulting resources that cleared and their obligations.



Early Design Features – Post-auction Process

Based on FCA results, cleared resources would receive a contract from the IESO to outline their obligation and settlement details including their availability payment structure based on the clearing prices and cleared amounts, among other provisions.

Other post-auction activities would likely resemble the ACA process.

Much of the FCA would be administered outside of the market rules and manuals due to the proposed one-off, contract-based nature of the auction. Participants will still be subject to the market rules and manuals for all market participation activities that are not specific to the FCA (similar to other IESO capacity contracts).



Early Design Features – Performance Assessment

Performance assessment in the FCA will be based on the principles used to develop the ACA performance assessment framework:

- Improve performance of Capacity Auction resources
- Assess performance as fairly and accurately as possible while accounting for differences in participation models
- Ensure alignment between capacity qualification and performance assessment



Early Design Features – Performance Assessment

Modifications may need to be made to reflect the fundamental design differences of the FCA, including potentially different clearing prices, longer commitment periods, etc.

Performance assessment details, including non-performance charges, will be outlined in participants' contracts or program rules as opposed to the IESO market rules and manuals.

Stakeholders are encouraged to submit feedback and suggestions on how the performance assessment framework may need to be modified to reflect these design differences.



Potential Design Features Discussion



Potential Design Features Discussion

The IESO is seeking stakeholder feedback on potential features that could be considered for the design of the FCA that would:

- Attract more participation
- Promote better resource performance
- Contribute to meeting reliability needs
- Ensure FCA participation doesn't conflict with or hinder ACA participation
- Offer potential enhancements that could be piloted and considered for future ACAs



Potential Design Features – Stakeholder Suggestions

- Is expanding eligibility to variable generation, self-scheduling and colocated hybrid facilities in the FCA and ACA a priority for stakeholders?
- Feedback and suggestions is welcome on how the performance assessment framework may need to be modified to reflect FCA design differences



Potential Design Features – Stakeholder Suggestions

In addition to requests for stakeholder suggestions on expanding eligibility and the performance assessment framework, what other design features should be considered to increase the attractiveness of a Forward Capacity Auction as part of IESO's suite of acquisition mechanisms? For example:

- Auction timing, including forward and commitment period length
- Capacity participation models, including capacity qualification
- Performance assessment framework and associated penalties/charges
- Payment structures, performance incentives, etc.



Potential FCA Timeline



Potential FCA Timeline

<u>June 9, 2022</u>

FCA early design features and discussion of potential design features

June 20, 2022

Stakeholder feedback on June 9 engagement materials due

<u>July 15, 2022</u>

Due date for IESO's report to the Minister of Energy on the potential use of this optional mechanism in the Resource Adequacy Framework

<u>Q3 2022</u>

FCA next steps and a discussion with stakeholders about potential future auction enhancements



Stakeholder Feedback and Next Steps





Please submit stakeholder feedback using the feedback form to <u>engagement@ieso.ca</u> by June 20, 2022. The shortened feedback period allows feedback to be included in the report to the IESO's Board of Directors and Ministry of Energy by July 15.

IESO will consider stakeholder feedback and post responses prior to the next engagement session.

