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Information Session: 2022 Annual Acquisition Report (AAR)

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Agenda

- Opening Remarks from Leonard Kula, Chief Operating Officer and Vice-President
- Summary of the 2022 AAR
 - Needs Assessment
 - Planned Actions
- Possible solutions to address 2025/2026 capacity needs
- Next steps



Summary of 2022 AAR

The AAR develops a suite of solutions to address previously identified needs

Process

1. Identify Needs



Vehicle

Annual Planning Outlook, quarterly Reliability Outlooks, Transmission Plans

2. Identify and Assess Potential Solutions*

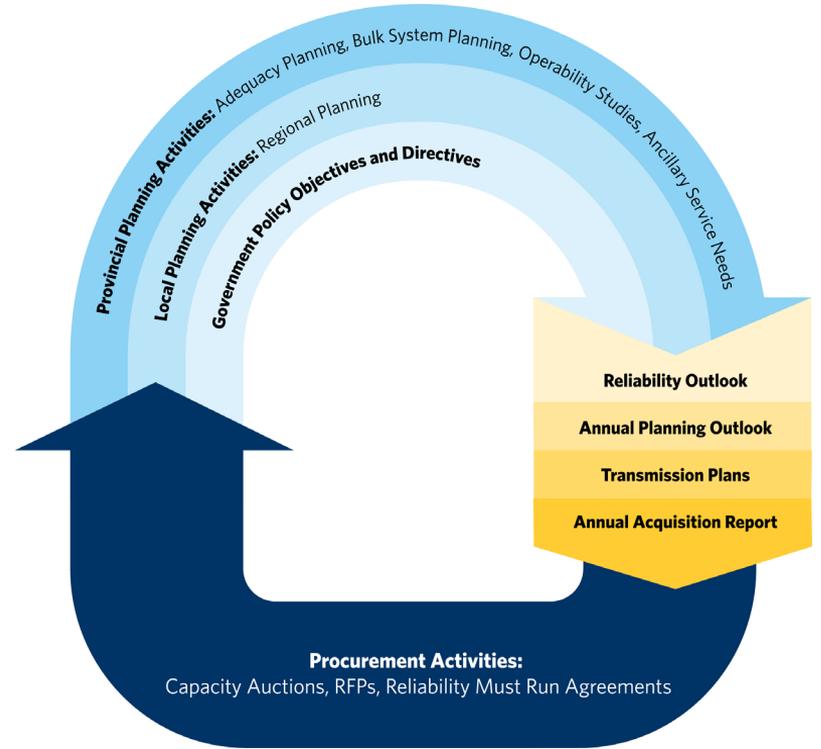


Annual Acquisition Report (AAR)

3. Implement Solutions*



Procurement Engagement and Documents



*The Resource Adequacy Framework provides a suite of tools that can be leveraged to address needs

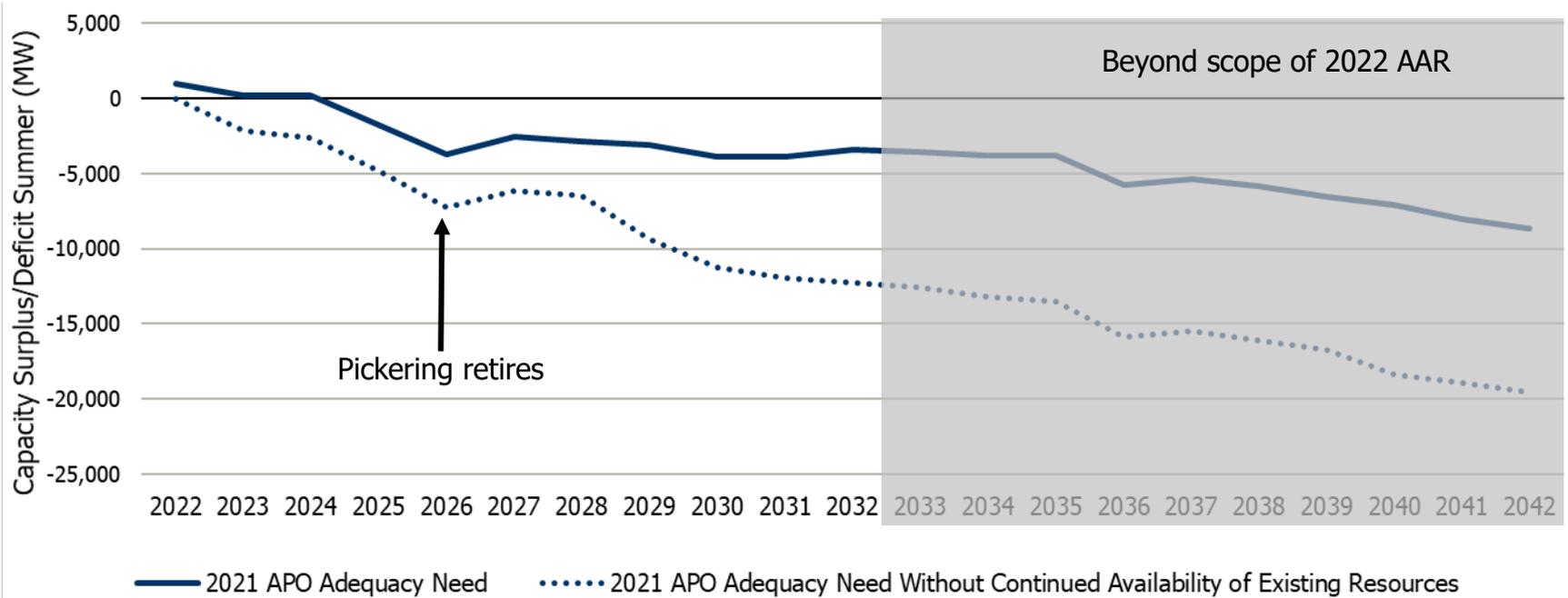
The AAR develops actions for a range of reliability needs

The 2022 AAR focuses on the following needs identified in the APO:

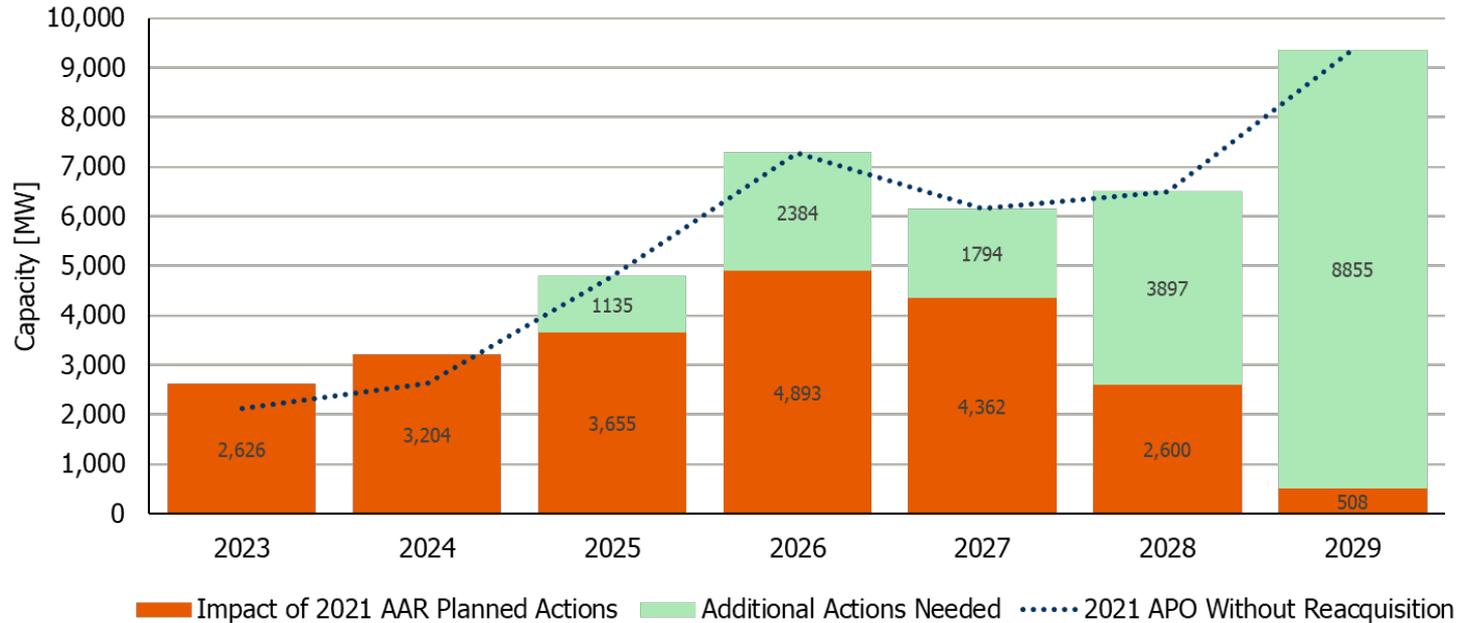
1. **Resource Adequacy:** The AAR addresses capacity needs and signals long-term energy needs where resource adequacy risk periods are sustained for multiple hours. Additional information on the duration of resource adequacy risk periods and the associated times of day is included.
2. **Locational Needs:** The AAR reinforces messages from the APO about specific locational needs to address both transmission security and resource adequacy.

It also highlights the importance of **operability** and **resilience** in ensuring a reliable power system.

Capacity is the most significant and pressing reliability need in the next decade



The 2022 AAR builds off the 2021 APO, AAR and recent policy decisions



Planned actions are informed by demand-side uncertainties

Demand-side Uncertainties

- A slower exodus from the pandemic and/or supply chain uncertainties can cause delays in most demand drivers applied in the 2021 APO reference case
- Emerging transformation of the economy driven by climate change, decarbonization and electrification, as well as potential economic development and policy stimulus can increase demand higher than the 2021 APO reference case

Planned actions are informed by sector and supply-side uncertainties

Sector Uncertainties

- Development timelines, permitting and consultation requirements
- Construction risks, including impacts of supply chain challenges
- Project development and financing

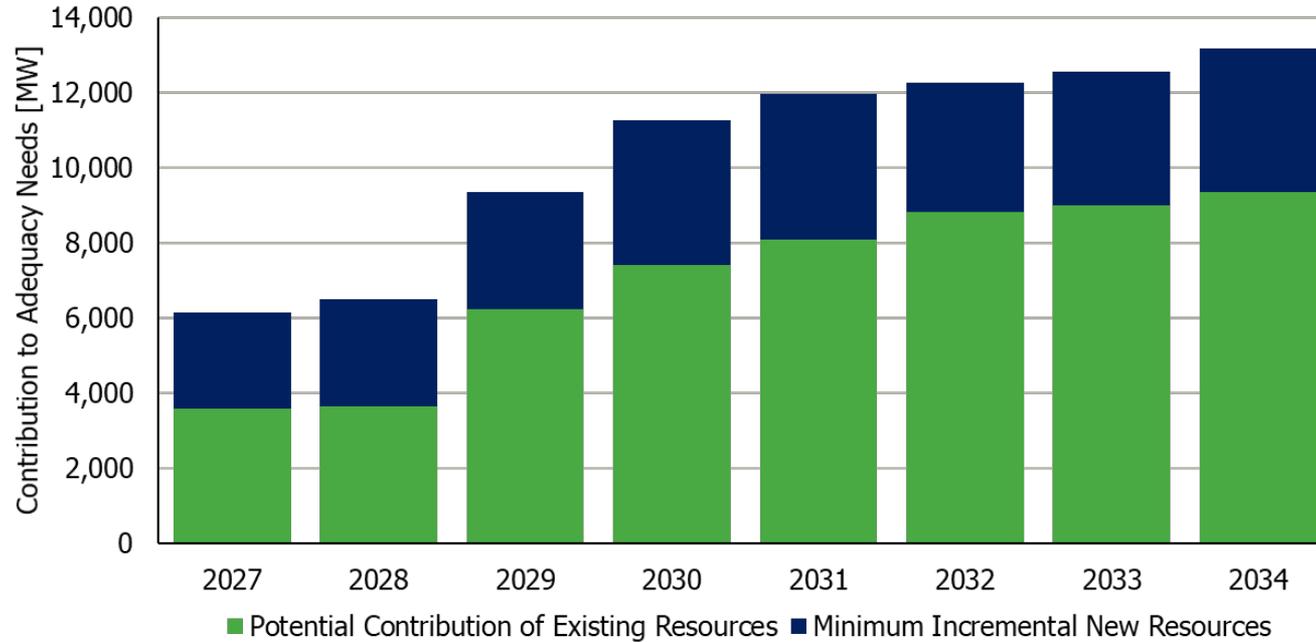
Supply Side Uncertainties

- Potential Policy Decisions – re-contracting biomass facilities, unsolicited proposals, opportunities for new and existing hydro
- Availability of nuclear resources
- Aging infrastructure
- Availability of firm and non-firm imports
- Emerging technologies

As the electricity sector transforms, capacity and energy needs grow towards the end of this decade

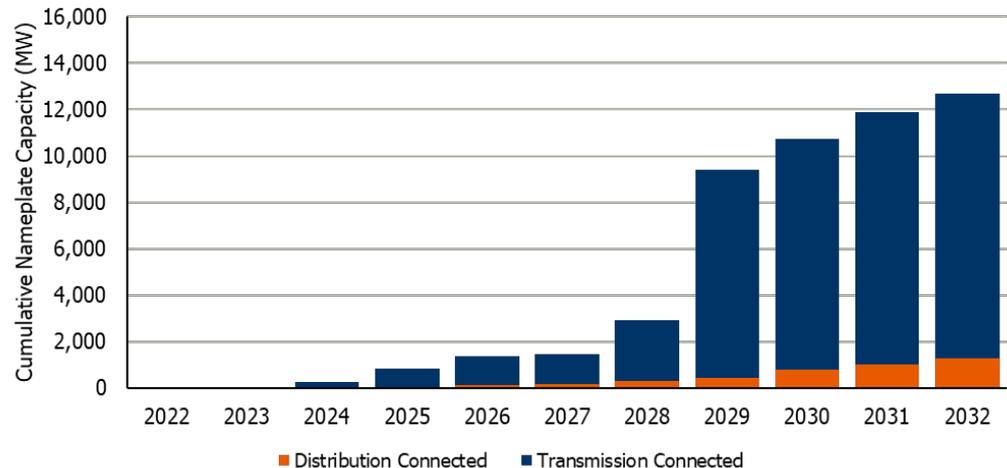
- **Post 2027:** Capacity and energy needs grow, requiring both existing and new supply to meet needs
- **Leading into 2027:** A portion of capacity needs identified in the 2021 APO are expected to be met through the 2021 AAR planned actions, recent policy decisions, and use of options discussed in the 2021 AAR. As we prepare for a period of growth, additional actions are needed to address the totality of needs in 2025 and 2026
- **Immediate Needs:** Capacity needs identified in the 2021 APO for the years up to and including 2024 are expected to be met through the planned actions identified in the 2021 AAR.

Actions for 2027+ aim to maintain existing supply and incent new supply through competitive mechanisms



Maintaining supply using cadenced medium-term Commitments

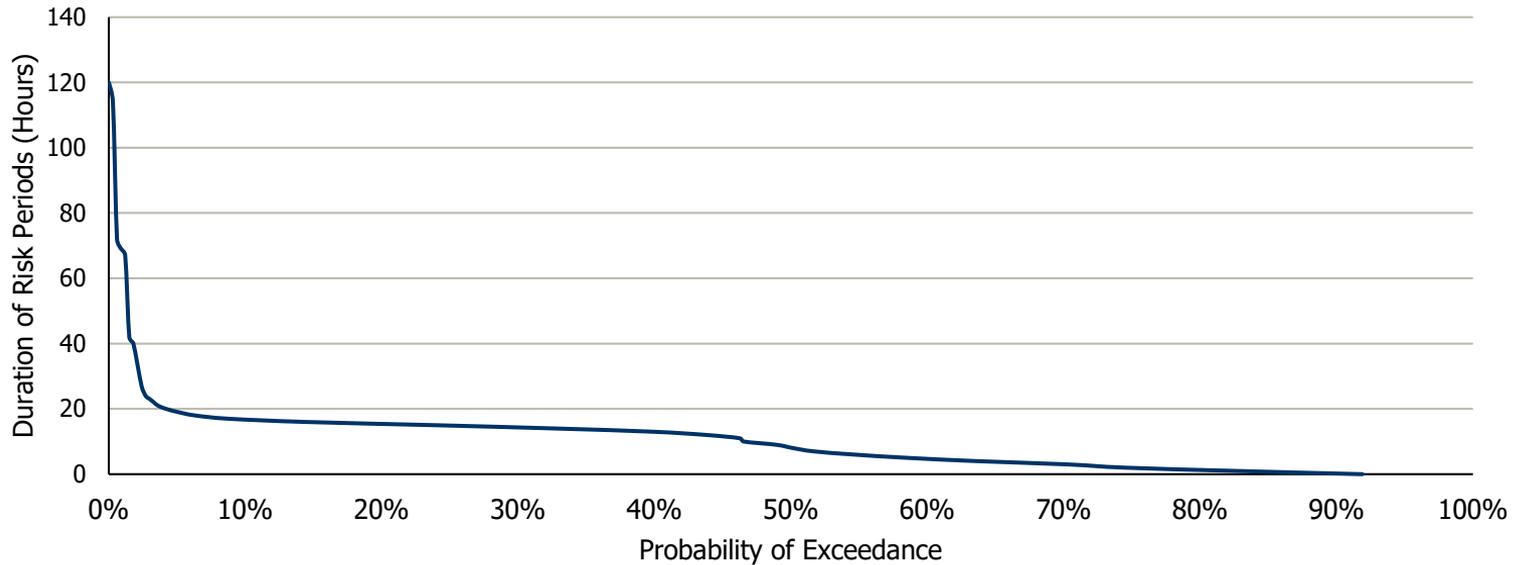
- Execute the second medium-term RFP in 2024 for a five-year term with a core delivery period of 2029-2032
- Medium-Term II RFP will continue to evolve based on system needs, and lessons learned from the Medium-Term I RFP and the first Long-Term RFQ/RFP
- Participation is anticipated to be expanded starting with Medium-Term II RFP



Incenting new supply using long-term commitments

- The **first long-term RFP** will secure an anticipated **2,500 MW** of qualified capacity for delivery by 2027 (or earlier)
- Long-Term I RFP design considerations, which are aligned with reliability needs include:
 - Ability to reach commercial operation by May 1, 2027
 - Ability to participate in the IESO-Administered Energy Market
 - Ability to inject energy or reduce load for a continuous period of time
 - Location, deliverability and the ability to improve operability of the grid
- The IESO intends to launch a **second long-term RFP** which will provide potential proponents more time to prepare for delivery
- It is anticipated to acquire an additional **1,500 MW** by 2030. Timing and final target are dependent on the outcomes of previous procurements

Incremental resources that can deliver energy for a continuous period of time are needed



Addressing Needs Prior to 2027

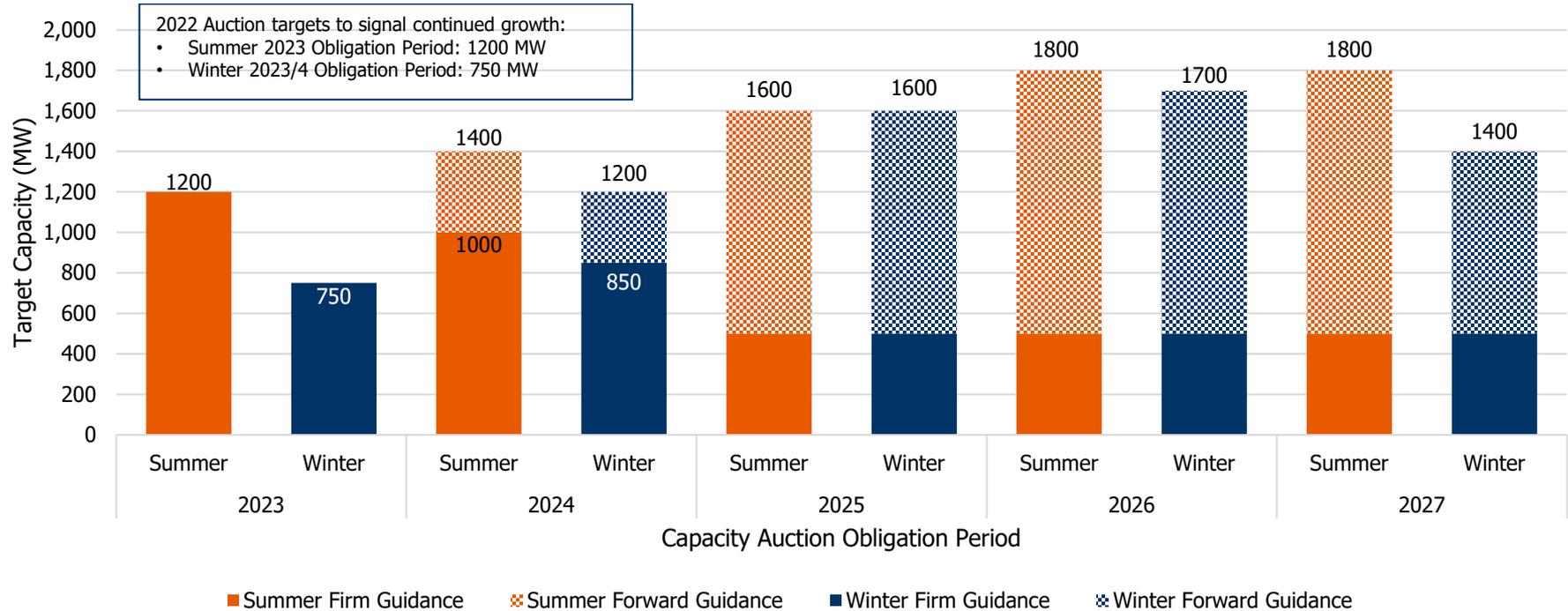
Planned Actions Underway

- Executing the Medium-Term I RFP to acquire capacity from existing resources
- Exercising the existing Hydro Quebec Capacity Sharing Agreement in 2026
- Acquiring incremental capacity by growing the annual capacity auction
- Including an early operation incentive under Long-Term I RFP to incent resources able to meet in-service dates in 2025/26

Proposed Actions to be Explored

- Adjusting nuclear outage schedules
- Additional energy efficiency
- Additional mechanisms to work alongside acquisition mechanisms already underway
 - Expedited procurement
 - Same technology expansions
 - Forward capacity auction

The capacity auction will continue to grow and play an important role in securing capacity



Actions work together to ensure reliability & manage uncertainties

2022
-
2024

Solutions are in place to meet needs as a result of efforts already underway.

2025
-
2026

Supply needs increase following Pickering retirement. The IESO will work with sector participants and communities this summer to confirm options to best meet these needs.

2027
+

Longer-term electricity demand continues to grow requiring new supply solutions beyond what is already planned.

SOLUTIONS

Short
Term

- Increase annual capacity auction target

Medium
Term

- Five-year contracts with existing resources (MT I RFP)

Long
Term

- Contracts with generators to meet local reliability needs or policy needs

- Increase annual capacity auction target
- Capacity Sharing Agreement with Quebec

- Multi-year capacity auction
- Five-year contracts with existing resources (MT I RFP)

- New energy efficiency programs
- Expansion of existing facilities
- Expedite new facilities

- Capacity auction target adjusted based on need

- Five-year contracts/expansions and upgrades (MT II RFP)

- New capacity, including new facilities (LT RFPs)



Acquisition Mechanisms to Meet 2025/2026 Capacity Needs

Meeting Emerging Needs in 2025/2026

- Based on increased demand, the retirement of Pickering Nuclear Generating Station and expiring contracts, the needs emerging in 2025/2026 will require action beyond what was projected last year
- The additional acquisition mechanisms proposed by the IESO for stakeholder feedback are informed by both the emerging system needs and stakeholder feedback on potential projects that could be deployed
- The IESO will work with stakeholders to explore whether and how to execute these options

LT1 RFP Engagement Questionnaire

- Following the February 8 Long-Term RFP (LT1 RFP) engagement session, the IESO issued a questionnaire to stakeholders, seeking confidential feedback on resources that have the potential to **provide new or incremental capacity to the IESO-Administered Markets as early as 2025**
- The IESO has so far received responses from 18 stakeholders, identifying potential projects from a wide array of technologies
 - A number of respondents indicated that projects had completed some pre-feasibility/development work, which could enable them to enter service in 2025/2026
 - Others identified that they had not commenced any pre-feasibility/development work, making their projects less likely to meet early in-service dates

Based on responses to the questionnaire the IESO has concluded that additional tailored acquisition approaches are warranted.

Overview of Proposed Additional Mechanisms

Forward Capacity Auction

- An additional auction in 2023 that would commit capacity for a **three-year period** from 2024 to 2026

Same Technology Expansions

- Expansions or updates to **existing resources** that can provide firm capacity as their primary product

Expedited Procurement

- Use LT1 RFP design, include an expedited procurement stream for **new-build resources** for in-service as early as 2025

Forward Capacity Auction

- The IESO proposes to utilize the existing annual capacity auction framework to run a one-off additional forward capacity auction in 2023 that would secure capacity for a three-year period from 2024 to 2026
 - The longer forward and commitment periods could provide greater investment certainty to potential participants to attract additional supply
- The IESO would continue to execute the annual capacity auction for those commitment years to continue serving as a complementary short-term balancing mechanism
- In order to develop the process, the IESO is seeking feedback on a number of initial design considerations:
 - Expanded participation and eligibility for resources
 - Demand curve parameters
 - Interactions with the annual capacity auction including target capacities
 - Input into the design of longer commitment periods
 - Are there other business/engagement/participation considerations associated with longer forward periods?

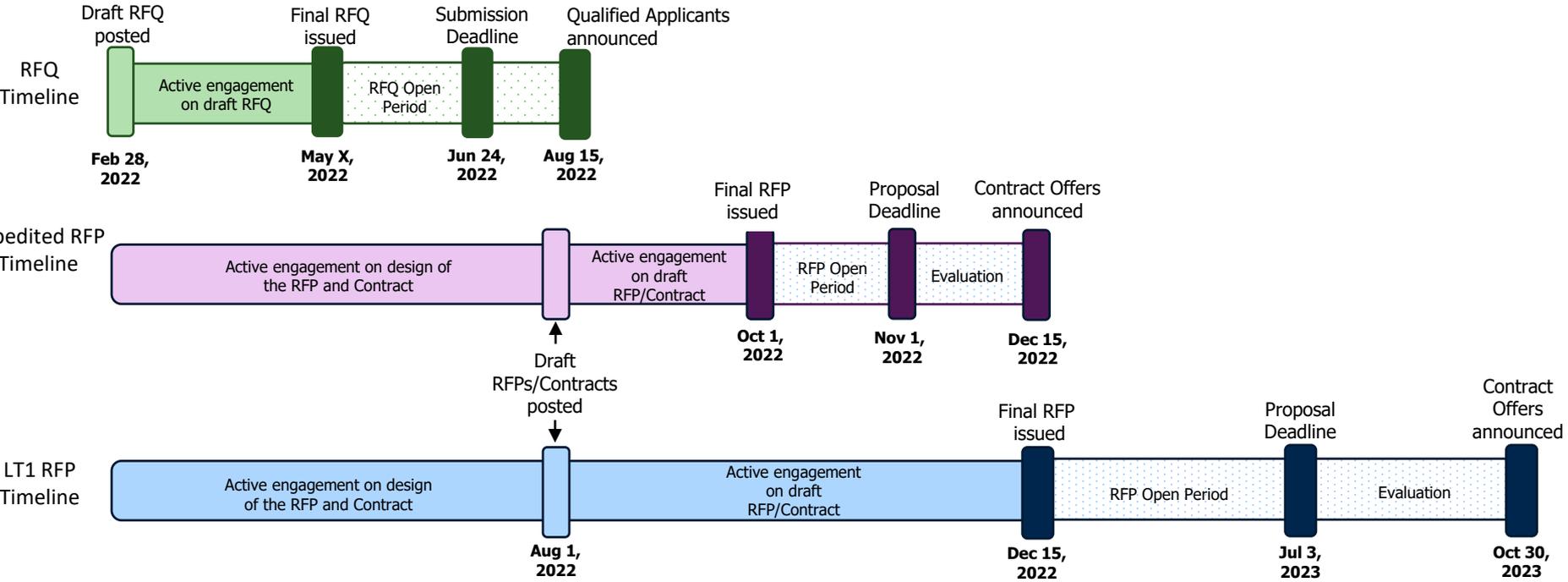
Same Technology Expansions

- The feedback from the LT1 RFP Questionnaire indicated that a number of existing facilities may be interested in adding incremental capacity at their existing sites, through uprates or expansions
- A separate streamlined process could be developed to acquire incremental capacity from existing facilities
- The process would value firm capacity as the primary product to be acquired, and target those resources able to expand or uprate
- In order to develop the process, the IESO is seeking feedback on a number of design considerations:
 - What procurement/negotiation timelines (i.e., contract execution) and forward period would be required to support a 2025 in-service date?
 - Is there any other external support (e.g., from the IESO) that would be needed to help proponents meet expedited development timelines?
 - What considerations should be given for community engagement and/or indigenous participation?

Expedited Procurement

- The expedited procurement stream for new-build resources could provide an option for resources to enter service as early as 2025
- It will require a balancing of incentives to encourage participation, with more significant performance security/obligations to ensure commercial operation is achieved in time and 2025 needs are met
- The IESO is seeking feedback on the potential for an expedited process to ensure such a process would sufficiently incentivize resources that are able to enter service as early as 2025, in addition to a number of design considerations:
 - What incentives are sufficient to encourage expedited project development to meet the 2025 needs (e.g., term length, pricing adders, reduced RFP requirements)?
 - What procurement timelines (i.e., contract execution) and forward period would be required to support a 2025 in-service date?
 - Is there any other external support (e.g., from the IESO) that would be needed to help proponents meet expedited development timelines?
 - What considerations should be given for community engagement and/or Indigenous participation?

Expedited and LT RFP Procurement Timelines*



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

Additional Acquisition Mechanism Comparison

	Forward Capacity Auction	Expedited Procurement	Same Technology Expansions
Commitment Period Length	Three years	Minimum 15 years	TBD
Delivery Year(s)	2024-2026	Starting in 2025	Starting in 2025
Capacity Product	Seasonal unforced capacity (UCAP), 4-hour energy delivery requirement	Seasonal unforced capacity (UCAP), minimum 4-hour energy delivery requirement	Seasonal unforced capacity (UCAP), minimum 4-hour energy delivery requirement
Eligible Resources	All existing resources currently eligible for annual auction (DR, generation, storage, imports). Opportunities to expand eligibility to other resource types, including variable generation, co-located hybrid, self-scheduling	All new-build resources eligible	Existing resources only
Key Inter-dependent Acquisition Mechanisms	Existing annual capacity auction	Long-term 1 RFP	Auctions, Medium and Long-term RFPs

Next Steps

- **April 20:** LT1 RFP Engagement Session to discuss the following:
 - Opportunity for additional discussion on AAR
 - Discussion on the 2025/26 solutions and input on stakeholder and community engagement
 - Update on LT RFP design considerations and engagement plan
- Feedback on the proposed additional mechanisms includes:
 - Whether these are the right mechanisms to support in-service dates of 2025/26?
 - Are the proposed timelines for the expedited process achievable?
- Feedback on the above questions, as well as any of the questions throughout this presentation, are being requested by: **April 27**

Discussion and Q&A

Thank you for participating!

If you have any questions on the information presented today, please contact the IESO at engagement@ieso.ca

Thank You

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