JUNE, 2025

2025-2036 Electricity Demand Side Management Framework – Commercial HVAC DR Program

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Welcome and Introduction

- This engagement is conducted according to the IESO Engagement Principles
- Today's session will be recorded and available for viewing online
- All documents associated with this engagement can be found on the Electricity Demand Side Management (eDSM) Framework page

Participation

- For questions and comments click on the “Raise hand” icon (hand symbol) at the top of the application window. This will indicate to the host you would like to speak
- To unmute audio, click on the microphone icon at the top of the application window
- Audio should be muted when not asking a question
- Connection issues contact engagement@ieso.ca or Microsoft Office Support

Territory Acknowledgement

The IESO acknowledges the land we are delivering today's webinar from is the traditional territory of many nations including the Mississaugas of the Credit, the Anishnabeg, the Chippewa, the Haudenosaunee and the Wendat peoples and is now home to many diverse First Nations, Inuit and Métis peoples. We also acknowledge that Toronto is covered by Treaty 13 with the Mississaugas of the Credit First Nation.

As we have attendees from across Ontario, the IESO would also like to acknowledge all of the traditional territories across the province, which includes those of the Algonquin, Anishnawbe, Cree, Oji-Cree, Huron-Wendat, Haudenosaunee and Métis peoples.

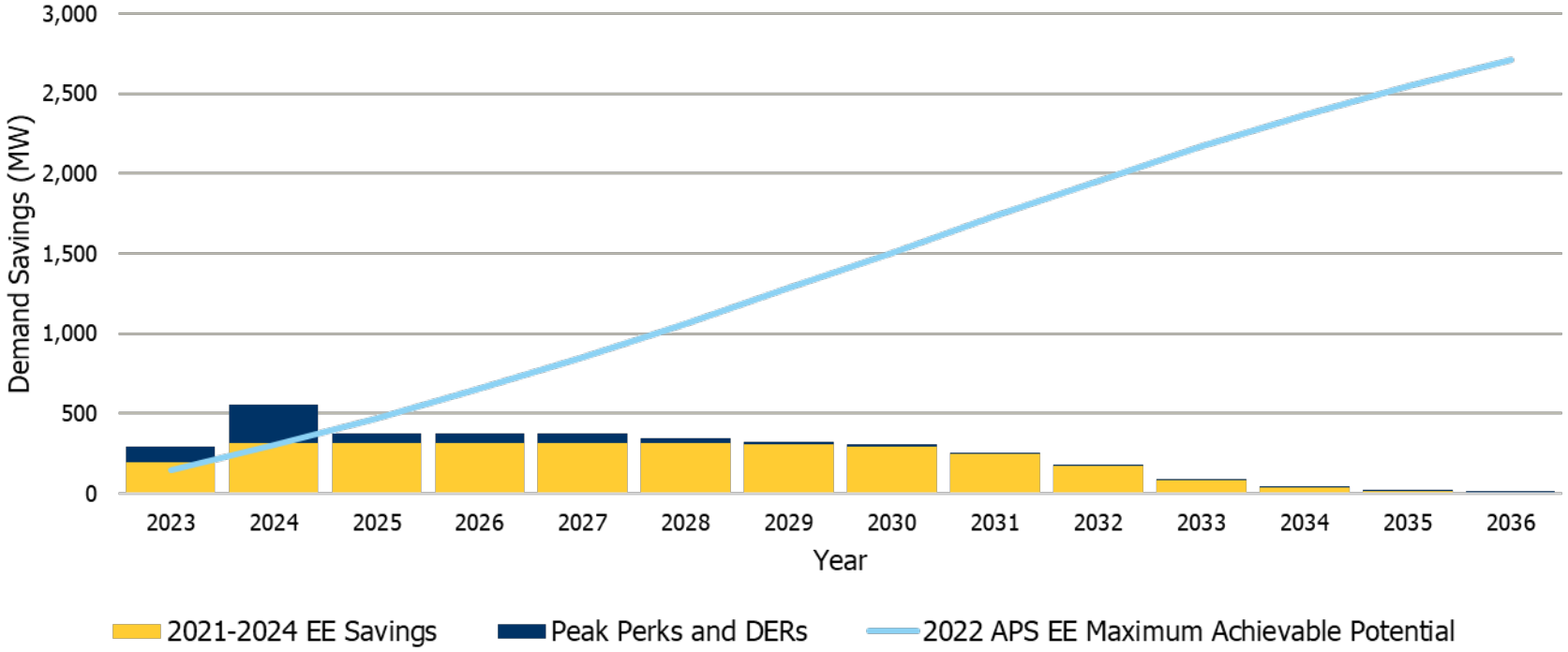
Today's Discussion

- Background
- Overview of 2025-2036 eDSM framework
- Overview of Commercial HVAC DR Program
- Discuss proposed design elements for the Commercial HVAC DR Program
- Next steps and upcoming opportunities for feedback

Background

- Electricity demand in Ontario is expected to grow more rapidly in the coming decades than in the recent past, because of both economic development and electrification of many sectors of the economy.
- Electricity demand-side management (eDSM) offers one of the lowest cost resources to address system needs, as it reduces the need for investment in new supply resources and supports grid reliability into the future.
- The IESO is continuing to lead the way in energy-efficiency programming in North America through a $10.9 billion, 12-year funding commitment from the Ontario government that began in January 2025.

Electricity Savings Potential



eDSM Program Plan - Business

- All core Save on Energy programs for business customers are continuing in 2025: Retrofit, Instant Discounts, Existing Building Commissioning, Energy Performance, Strategic Energy Management, Industrial Energy Efficiency and the Small Business program
- Enhancements are planned over the term of the plan, such as the addition of a rooftop solar PV measure to Retrofit in January, regular updates of incentive amounts, and program requirements as needed to address market conditions and customer feedback
- Local initiatives that drive greater uptake in transmission constrained areas are continuing

Overview of Commercial HVAC DR Program

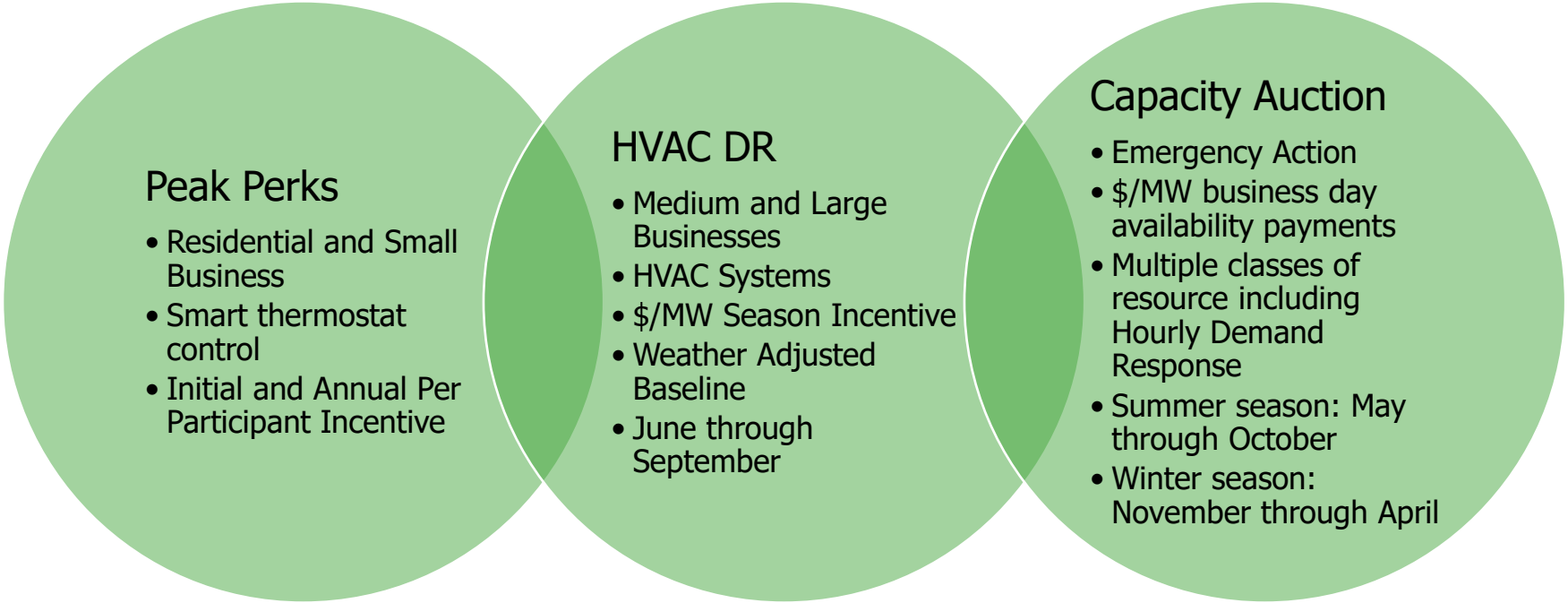
Context

- As Ontario transitions towards a more dynamic and resilient electricity grid, demand side management programs play a critical role in ensuring grid reliability, reducing peak demand, and supporting the integration of renewable energy.
- The IESO has identified, as part of its eDSM Plan, demand response (DR) as a key element within its Save on Energy programs to address system constraints and optimize electricity usage.
- HVAC loads in the commercial sector, presents a significant opportunity for demand response. Large commercial buildings, including offices, retail spaces, and institutional facilities, account for a substantial portion of Ontario's peak demand, largely driven by HVAC loads during summer cooling season.

Objectives for the New Commercial HVAC DR Program

1. **Peak demand reduction** by lowering peak demand during summer months through curtailment of HVAC loads in commercial facilities
2. **Grid reliability support** by providing flexible demand response resources during critical periods
3. **Incremental DR opportunity** by identifying and leveraging resources not captured by capacity auction to enhance demand response capabilities
4. **Participant engagement** by engaging with a diverse range of commercial facilities to maximize program impact
5. **Technology integration** by promoting the adoption of advanced HVAC control technologies
6. **Scalability** by allowing future expansions to additional sectors, measures if successful.

DR Programs


Peak Perks
• Residential and Small Business
• Smart thermostat control
• Initial and Annual Per Participant Incentive
HVAC DR
• Medium and Large Businesses
• HVAC Systems
• $/MW Season Incentive
• Weather Adjusted Baseline
• June through September
Capacity Auction
• Emergency Action
• $/MW business day availability payments
• Multiple classes of resource including Hourly Demand Response
• Summer season: May through October
• Winter season: November through April

Program Overview

- The Save on Energy Commercial HVAC Demand Response Program, the "Program", is a new province-wide demand side management program targeting HVAC loads for the commercial sector in Ontario.
- The Program aims to tap into resources that are not suitable for the capacity auction (Resources with capacity value during times of system peak but are not available during the entire capacity auction commitment period/season, i.e. shoulder months).
- The Program targets to curtail 100 MW in 2026 increasing to 230 MW in 2027. Primarily targeting commercial and institutional facilities (e.g. large retailers, office buildings, shopping centers, universities, municipal premises and other commercial businesses).

Program Overview - Continued

- The Program is targeting to start registering participants in 2026 to be available for operation beginning in June 2026.
- The Program aims to activate several demand response (DR) events during the availability window, which is set between June 1 to September 30, for a duration of up to 3 hours, on business days only.
- The Program targets aggregated HVAC DR loads from participants that meet enrollment eligibility criteria, which includes a minimum aggregated curtailment requirement, and information on participants' HVAC DR contributions.
- In return, the Program will incentivize participants through a standard payment structure based on the $/average MW-season curtailed.

Proposed design elements for the Commercial HVAC DR Program

Commercial HVAC DR – Key Roles

Program Delivery Agent

- Program oversight
- Aggregator registration & enrollment
- Program eligibility and compliance
- Set reporting requirements
- Communication
- Data management & verification
- Events notification management & coordination with participants
- Settlements & incentive payments with aggregators

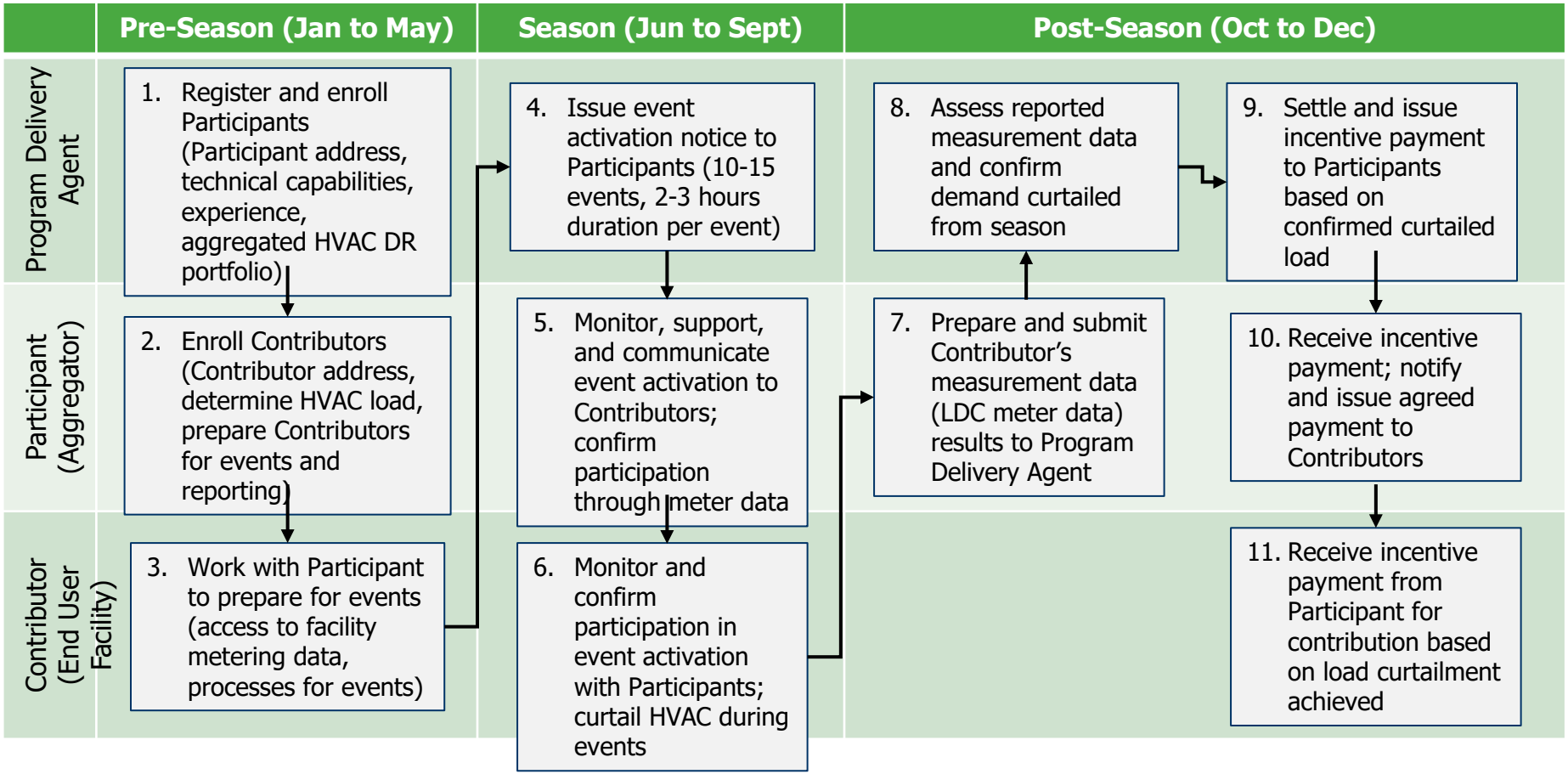
Program Participants (Aggregators)

- Register in program
- Facility enrollment
- Event notification management & coordination with contributors
- Monitoring
- Feedback
- Receive incentives
- Events data reporting
- Contributors support and coaching

Program Contributors (End Use Facility)

- Program participation through a registered aggregator
- Participate in minimum number of events
- Monitoring performance
- Facilitate meter data to aggregators
- Work with aggregators to determine HVAC load DR contribution

Commercial HVAC DR – Participation Model



Capacity Auction vs HVAC DR

Parameter	Capacity Auction	HVAC DR
Pricing	Auction based/clearing price $/MW- business day	Set Offer $/MW – season, informed by CA clearing price for 4 months (Jun to Sept)
Season	Summer (May 1 – Oct 31) Winter (Nov 1 – Apr 30)	Summer (Jun 1 to Sept 30)
Frequency/Duration	Emergency Action / energy market schedule (up to 4 hrs.), within 1pm to 9pm	10-15 events per season, 2-3hrs in 4-hour window, within 3pm to 7pm
Payments	Monthly – availability payment Non-Performance charges	End of season, based on events performance/weather adjusted
Term of Agreement	1 year/1 or 2 seasons (summer/winter)	1 year/season (summer)
DR load requirements	Min 1MW (can be aggregated)	Min 1MW (can be aggregated)
Max Capacity	Qualified capacity (Virtual, zonal and import limits respected)	No Max Capacity, program targets 230 MW of potential DR by 2027 (zonal limits under consideration)
Resource Type	Generation, Imports, Storage, Demand Response (both transmission-connected and BTM)	BTM HVAC DR only
Baseline Methodology	Most recent high 15 of 20 measurements and an in-day adjustment factor	Informed by Capacity Auction Methodology, weather adjusted.

Feedback - Design for the New Commercial HVAC DR Program

Program Enrollment

Proposed approach

- Enrollment of Program Participants through the submission of aggregated HVAC DR loads (min of 1MW of DR)
- Program Participants (load aggregators) act as the intermediaries between the end use participants and Program Delivery Agent
- Program Participants to submit a portfolio of contributors, demonstrating facility readiness to participate effectively in the Program

Question: How can we best ensure that facilities demonstrate their readiness for effective participation, particularly regarding the potential HVAC DR capacity, operational parameters, and metering readiness. What additional factors should be considered?

- ○ Peak Demand Reduction
- ○ Grid reliability
- ✓ Incremental opportunity
- ✓ Participant engagement
- ○ Technology Integration
- ✓ Scalability

Feedback - Design for the New Commercial HVAC DR Program

Incentive Structure

Proposed approach

- A standard capacity payment $/MW-season

- Paid to Program Participants
- Incentive payments carried out post season
- Capacity auction clearing price to inform $/KW
- Incentive = ($/MW-season) x (seasonal average demand reduction)

Question: What is your perspective on the proposed standard payment incentive structure and payment timelines, do you see challenges or opportunities with this approach?

- ○ Peak Demand Reduction
- ○ Grid reliability
- ✓ Incremental opportunity
- ✓ Participant engagement
- ✓ Technology Integration
- ○ Scalability

Feedback - Design for the New Commercial HVAC DR Program

Eligibility Requirement – Program Participants (Load Aggregators)

Proposed approach

- A legally registered business entity within the Province of Ontario
- Able to aggregate a minimum HVAC DR load capacity (e.g. 1MW or more) across enrolled facilities to participate in HVAC DR events
- Demonstrate ability to provide HVAC participation status, and overall facility electricity consumption through metering and telemetry infrastructure capable of measuring and verifying demand reductions in near real-time of post event
- Have system in place to collect, store and transmit DR event performance data to program Delivery Agent

Question: What would be a reasonable minimum DR threshold for the Program to consider, what other eligibility elements should be considered?

- ○ Peak Demand Reduction
- ○ Grid reliability
- ○ Incremental opportunity
- ✓ Participant engagement
- ○ Technology Integration
- ✓ Scalability

Feedback - Design for the New Commercial HVAC DR Program

Eligibility Requirement – Program Contributors (End Use Facilities)

Proposed approach

- A single or multiple facilities located within the Province of Ontario and connected to the IESO-Controlled Grid or a Distribution System, that is not a contributor for the Capacity Auction
- Have direct access to or control over HVAC systems, either through a BAS, EMS or manual procedures
- Non-residential customers with HVAC systems that can be curtailed or adjusted during DR events
- Must not have received any other financial incentives from any other DR program or DR initiative funded by the IESO or the Government of Ontario

Question: Are there any additional factors or considerations we should take into account?

- ○ Peak Demand Reduction
- ○ Grid reliability
- ○ Incremental opportunity
- ✓ Participant engagement
- ○ Technology Integration
- ✓ Scalability

Feedback - Design for the New Commercial HVAC DR Program

Events Parameters

Proposed approach	
- Season	- June 1st to September 30th
- Number of events	- Several events (10 to 15) on business days only
- Duration of events	- 2-3 hours within a 4-hr. window, between 3-7 pm
- Notification of events	- Sent no later than 12pm on the day of the event
- Events Trigger	- Based on grid needs/electricity market signals

Question: Are there any additional factors or considerations we should take into account? Is the notification period adequate, or would a different notification period better suit your needs?

- ✓ Peak Demand Reduction
- ✓ Grid reliability
- ○ Incremental opportunity
- ○ Participant engagement
- ✓ Technology Integration
- ○ Scalability

Feedback - Design for the New Commercial HVAC DR Program

Performance Parameters

Proposed approach

- Performance Measurement
- Baseline Methodology

- Seasonal average of hourly demand reduction during events.
- Informed by Capacity Auction baseline methodology, weather adjusted baseline

Question: Are there any additional factors or considerations we should take into account? Would using the Capacity Auction baseline methodology with a weather adjustment factor pose any concerns?

- ✓ Peak Demand Reduction
- ✓ Grid reliability
- ○ Incremental opportunity
- ○ Participant engagement
- ○ Technology Integration
- ○ Scalability

Next Steps

Summary of Key Activities

Activity	Timeline
Gather Informal Marketplace Feedback	Ongoing
Stakeholder Engagement – June Engagement Days	Jun 24, 2025
Stakeholder Feedback, Written Feedback Due	Jul 8, 2025
IESO Response to Stakeholder Feedback	Jul 29, 2025
Consultations – External - LDCs - Potential load aggregators - C&I customers - Property managers	Ongoing through to Aug 2025
Program Delivery Vendor RFP	Issue: Aug/Sept 2025
Program Rules	Issue: Oct 2025 (prior to Auction)
Finalization and Program Readiness	Jan – Apr 2026
Commercial HVAC DR Launches	April – May 2026

Next Steps

- All documents associated with this engagement can be found on the Electricity Demand Side Management (eDSM) Framework webpage
- If you have any questions on the information shared today, please contact IESO Engagement at engagement@ieso.ca
- **Reminder:** Written stakeholder feedback is due Jul 8, 2025

Thank You

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