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Informed Energy and Climate Planning Programs Incentive Programs - Energy Efficiency

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Introductions and housekeeping

- CIET introduction
- Housekeeping items (acknowledgements, recording, chat, questions etc..)
- Presenter introductions
- Agenda

Introduction

Emily Thorn Corthay, MASc., P.Eng, CEM, CMVP, Founder and CEO of Thorn Associates

20-year career in industrial decarbonization and energy management, she has assisted her clients in achieving over $100M in implemented energy savings and reduction in over 500,000 tonnes of CO_2e, acting as project manager, technical reviewer, and energy/sustainability engineer for over 80 energy & decarbonization projects in 15+ countries.

Robert Storey, P.Eng., CEM Energy Engineer, Associate at Thorn Associates

30 years of project and operations experience, specializing in energy since 2001, ISO 50001, codes and standards, over 300 Save on Energy projects with Toronto Hydro, client projects under the former Industrial Accelerator and Northern Industrial Electricity Rate programs.

Information session objectives and agenda

Provide overview of current (and upcoming) Ontario and federal incentive and tax credit programs for large power users offered by:

- Ontario Independent Electricity System Operator (IESO)
- Ontario Ministry of the Environment, Conservation and Parks (MECP)
- Ontario Ministry of Northern Development (MND)
- Environment and Climate Change Canada (ECCC)
- Natural Resources Canada (NRCan)
- Innovation, Science and Economic Development Canada (ISED)
- Canada Infrastructure Bank* (CIB)
- Canada Revenue Agency (CRA)

*Financing only, repayable

Ontario 2021-2024 CDM Framework overview

Established through ministerial directive, the 2021-2024 Conservation and Demand Management (CDM) Framework:

- Is focused on cost-effectively meeting Ontario's electricity system and customer needs with a $1B CDM budget
- Targets provincial peak demand reductions of 725 MW, electricity savings of 3.8 TWh, and leverages CDM to address regional/local electricity system needs as a cost-effective alternative to traditional transmission and distribution infrastructure
- Is based on CDM programs centrally delivered by the IESO under the Save on Energy brand to highest-need customers: commercial, institutional, industrial, on-reserve First Nations communities, and low-income residential

IESO Save on Energy Programs for Large Power Users

- Retrofit Program
- Strategic Energy Management Program
- Existing Building Commissioning Program
- Energy Performance Program
- Industrial Energy Efficiency Program

Retrofit Program – eligible projects

Types of projects

- Projects that provide sustainable, measurable and verifiable reductions in peak electricity demand and electricity consumption
- Incentives include custom rates and predefined rates for prescriptive equipment upgrades.

Example technologies

- Upgraded lighting controls
- HVAC equipment replacement and redesign
- Industrial process upgrades
- Variable-speed drive installations
- Lighting incentives are now available through the Save on Energy Instant Discounts program

Retrofit Program – incentive funding

- **Prescriptive Stream Incentives:** pre-defined incentives for typical equipment upgrades
- **Custom Stream Incentives:** $1,200/kW or $0.13/kWh for upgrades based on actual operating conditions, typically for larger and more complex projects
- Regional adders in some regions, up to 2X the regular incentives
- Refer to SaveOnEnergy.ca/Retrofit for a complete list of eligible projects
- **Instant Discounts Program:** point-of-sale incentives for LED lamps and fixtures SaveOnEnergy.ca/InstantDiscounts

Strategic Energy Management (SEM) Program

- Helps organizations benefit from improved energy performance with knowledge, expertise and training in energy management
- Offers cohort-based learning and incentives for energy savings and management tools to set organizations up for success
- **Incentive:** $0.02/kWh of eligible electricity savings and up to $5,000 for energy management tools

Learn more at SaveOnEnergy.ca/SEM

SEM Program – key benefits

- **Increased profitability**: reduce your operating costs and extend the life of your equipment
- **Increased employee productivity and customer satisfaction**: your employees and customers will benefit from your enhanced energy performance
- **Reduced environmental impact**: meet your carbon reduction and GHG emissions goals, and position your organization as a sustainability leader
- **Invest in your staff**: set your team up to become the next generation of energy management leaders

SEM Program – cohort model

Program offers organizations a two-year, cohort-based learning model to small groups of professionals across Ontario, learning through shared experiences

- Foundational cohorts for those organizations in the early stages of energy management
- Advanced cohorts for organizations with higher levels of energy management experience

Launched sector cohorts

- Automotive
- Industrial
- Universities and campuses
- Hospitals
- Mid-sized manufacturing

Planned cohorts

- Municipalities
- Retail/commercial
- Mixed sector

SEM Program – eligibility

Participants must:

- Be a commercial, institutional, or industrial customer
- Have a minimum annual consumption of at least 3,000,000 kWh
- Have up to five facilities connected to the IESO controlled electrical grid can be combined to meet this requirement

SEM Program – participant commitments

Organizations participating in the SEM program are required to do the following:

- Identify an energy management team, and designate an energy champion to lead the team
- Identify an executive sponsor
- Participate regularly in cohort activities
- Complete an energy management assessment or an "ISO-50001 Ready" assessment
- Set up energy goals and targets and maintain a project registry

Please refer to the Program Requirements at SaveOnEnergy.ca/SEM

Existing Building Commissioning (EBCx) Program

Provides incentives to hire experts to:

- Undertake building recommissioning
- Train participants to implement best practices to reduce energy wastage and enhance comfort

Pay-for-performance incentives for savings achieved

Learn more at SaveOnEnergy.ca/EBCx

EBCx Program – eligibility

Participants must:

- Have a minimum of 12 months of consecutive energy data
- Have a minimum 750,000 kWh consumption per year, not including energy consumed by industrial and manufacturing processes
- Have baseline models meeting the minimum standards
- Not have undertaken a commissioning exercise in the last two years
- Not be participating in an accreditation system that requires EBCx as a pre-requisite
- Be connected to, or behind the meter of, an electricity customer connected to the IESO-controlled grid or a distribution system
- Meet any other eligibility requirements as outlined in the M&V Guidelines

EBCx Program – types of eligible measures

- Occupant behavioural measures
- Set point and scheduling optimization
- Air and water balancing
- Other operational and maintenance changes
- Equipment repairs and minor replacements

EBCx Program – how does the program work?

Investigation Phase

- Investigation report prepared by commissioning provider (CP)
- **Incentive:** up to $0.06/square foot, capped at 75 percent of cost paid by participant to CP or $50,000 (per facility)

Implementation Phase

- Implement recommended energy-efficiency measures
- **Incentive:** $0.03/kWh of confirmed energy savings, capped at 30 percent of facility's annual electricity consumption (kWh) or $50,000, whichever is less

Persistence Phase

- CP training to maintain systems
- **Incentive:** At end of 12 months, $0.03/kWh of confirmed savings, capped at 30 percent of facility's annual kWh consumption or $50,000, whichever is less

Energy Performance Program (EPP)

- Holistic approach to energy savings: operational + behaviour + capital
- Savings determined by comparing annual metered consumption to baseline energy model
- Data normalized for weather and significant building operations, e.g., occupancy, production, COVID-19
- **New tiered incentive rates:** $0.15kWh on-peak, $0.04/kWh off-peak
- Optional upfront incentive payment

Learn more at https://saveonenergy.ca/EPP

EPP – eligibility

EPP participants must:

- Be owners and/or operators of commercial, institutional, or industrial facilities located in Ontario with General Service (Non-residential electrical service) >50kW; no longer a 1,500,000 kWh minimum
- Have at least 12 months of recent contiguous hourly interval meter data for each facility
- Commit to participate for three years and commit to realize a minimum of 5 percent energy savings per facility in the first two years

Three years of annual pay-for-performance incentives are available for applications approved by December 31, 2024

Industrial Energy Efficiency Program (IEEP)

- Incentives of up to $5M for large, complex industrial process upgrades and system optimization measures
- Must be connected to the IESO-controlled grid or distribution system
- Third-party participants at large industrial customer facilities also eligible
- Industrial process defined as “extraction, growth, refinement, process, production, manufacture, or preparation of materials”

Learn more at

SaveOnEnergy.ca/IEEP

IEEP – incentives

- IEEP offers overall funding of nearly $80M to qualifying industrial participants over competitive rounds of funding
- The applicant will propose the incentive amount needed to implement the project, and will be expected to demonstrate the amount is necessary to meet internal financial requirements
- The maximum incentive per project is $5M
- The incentive is capped at 75 percent of final eligible project costs, after subtracting any third-party contributions
- Projects must be completed within three years of contracting, or by December 31, 2026 (whichever is earlier)

IEEP – eligibility criteria for projects

- Must deliver a minimum electricity savings of 2,000 MWh/yr and minimum 15 percent reduction of the electrical energy use within the project boundary defined by the applicant
- May include multiple sub-projects, at multiple facilities, where the overall project is bound by the minimum savings requirements
- Sub-projects must each produce a minimum savings of 500 MWh/yr.
- Proposed technologies should be commercially available according to Technology Readiness Level (TRL) 9, defined by Innovation, Science and Economic Development Canada as "actual technology proven through successful deployment in an operational setting"

IEEP – application period & project evaluation

- **<u>Round 4 closed at the end of June 2024</u>**
- Applications scored and ranked based on:
  - Project proposal (35 points)
  - Proposed savings (25 points)
  - Ratepayer investment (40 points)

IEEP – Measurement and Verification (M&V) plan

- Applicants must submit an M&V plan for their project(s) describing how the electricity savings will be measured
- The M&V plan must adhere to the International Performance Measurement and Verification Protocol EVO 10000-1:2016 (or later)
- The plan will require baseline measurements before the project is implemented
- The M&V plan must be approved by the IESO in advance and will form part of the participant agreement

IESO Save on Energy – 2025 and beyond

For 2025 and beyond, the IESO is working on enhancements including:

- A funding framework that potentially looks beyond a four-year timeframe
- Options for demand flexibility and distributed energy resources
- Enhance involvement of local distribution companies (LDCs)
- Enhanced electricity and natural gas program coordination

IESO Grid Innovation Fund (GIF)

- Invests in specific projects, not companies, that validate the performance and business case of promising new technologies, practices, and services
- Since 2005, the GIF (and its predecessor funds) has provided financial support for more than 200 innovative energy projects across the province
- The GIF periodically issues targeted idea calls or accepts applications through open calls to capture the most promising ideas from the market
- Projects as a whole must target Technology Readiness Levels (TRL) of 7 (full scale prototype under limited conditions) or higher
- Learn more at ieso.ca/Get-Involved/Innovation/Grid-Innovation-Fund/Overview

IESO GIF – eligibility, application period and incentives

Project Eligibility: the GIF is issuing a targeted call in 2024 for innovative projects focused on Electrification and Demand Management under two streams:

- Electric Vehicle (EV) including light, medium, heavy-duty vehicles and rail transit (Minimum funding application size is $1.0M)
- Space and water heating across all sectors, and ventilation and cooling for non-residential weather-sensitive loads
- **Incentives:** total GIF budget of $9.5M for the 2024 Call
  - Maximum limit of $4.75M of funding from the IESO per project
  - IESO contribution funding must not exceed 50 percent of total project value
- **Application Period:** May 27, 2024 to July 21, 2024

Ministry of the Environment, Conservation and Parks - Emissions Performance Program (EPP)

The EPP is a non-competitive program funded by compliance payments collected through the Emissions Performance Standards (EPS) regulation (Ontario Regulation 241/19).

The EPP will fund 2 types of projects to reduce greenhouse gas (GHG) emissions at eligible industrial facilities:

- capital projects
- study-based projects

Ministry of the Environment, Conservation and Parks - Emissions Performance Program (EPP)

Eligible facilities for the EPP:

- are registered in the Emissions Performance Standards (EPS) Program
- have purchased Excess Emissions Units
- do not generate electricity as their primary industrial activity

Ministry of the Environment, Conservation and Parks - Emissions Performance Program (EPP)

Examples of project activities that are eligible for EPP funding include :

- stationary equipment retrofits for energy efficiency and fuel switching
- mobile equipment retrofits for energy efficiency and fuel switching
- building envelope upgrades (insulation, windows, doors)
- heat recovery
- industrial process changes
- carbon capture and storage
- clean electricity and low-carbon fuel production for own use

Ministry of Northern Development – Northern Energy Advantage Program (NEAP)

Supports Northern Ontario's largest industrial electricity consumers with competitive, stable and predictable price rates.

Eligibility:

- Facilities must purchase electricity from the IESO or local distribution company and must consume annual minimum of 50,000 MWh of electricity per year
- Must submit a detailed energy management plan and reports

Learn more at ontario.ca/page/northern-energy-advantage-program

Ministry of Northern Development – Northern Energy Advantage Program (NEAP)

- As of June 2024, there are 21 Northern Ontario companies representing 28 facilities participating in the program
- Current Program Rules are effective for the five-year period from April 1, 2022 to March 31, 2027
- Mostly participants are from mining, forestry and manufacturing sectors (includes steelmaking) but others considered
- **Incentive:** $0.02 per kWh, individual rebates are capped at 2017 to 2020 average consumption levels, but former $20M cap is removed.
- **Application Period:** currently accepting applications

Environment and Climate Change Canada (ECCC) - Decarbonization Incentive Program (DIP)

- The DIP is managed by ECCC and funded by proceeds collected from the Output-Based Pricing System (OBPS)
- The DIP incentivizes long-term decarbonization of Canada's industrial sectors and support Canada's greenhouse gas (GHG) emissions reduction goals
- New OBPS payment collection has been superseded by Ontario provincial programs, but OBPS funds received from previous Ontario contributions (2019-2021) have only been partially distributed
- The second intake of the DIP closed as of October 12, 2023
- If any Ontario share of OBPS is remaining, there may be another DIP intake for Ontario applicants (to be determined)

Innovation, Science and Economic Development Canada - Strategic Innovation Fund (SIF)

The SIF covers all sectors of the economy and is offered with the goal of supporting the Canadian innovation network.

Incentive: Minimum SIF contribution amount is $10M for a project with at least $20M in total eligible supported costs.

The "Net Zero Accelerator Initiative" has been identified as a priority area for new applications

- Decarbonization of large emitters
- Industrial transformation
- Clean technology and battery ecosystem development

Innovation, Science and Economic Development Canada - Strategic Innovation Fund (SIF)

Application Process: may be initiated or submitted year-round:

- Step 1: consultations
- Step 2: statement of interest
- Step 3: full application and signing of the contribution agreement
- Step 4: implementation and monitoring

Types of Funding: the amount of funding is unique to each project and depends on a number of factors, including:

- Overall cost of your project
- Total level of government assistance
- May include repayable and non-repayable amounts

Natural Resources Canada (NRCan) - Green Industrial Facilities and Manufacturing Program (GIFMP)

Launched in 2022, NRCan's GIFMP offers cost-shared financial support for a comprehensive suite of energy efficiency measures to be completed by March 2027 and is being delivered through two separate tracks:

1. Energy Efficiency Solutions Track for provincial-territorial programs (on hold)
2. Industrial Facility Track to fill gaps across regions, sectors etc.
    - **Incentive:** up to 50 percent of eligible implementation costs to a maximum of $10M per proposal, minimum contribution is $40,000 per proposal
    - Multiple facilities per proposal, or multiple proposals per entity
    - **Application Period:** accepting applications from July 8 to August 30, 2024

Natural Resources Canada - Green Industrial Facilities and Manufacturing Program (GIFMP)

Eligible Projects:

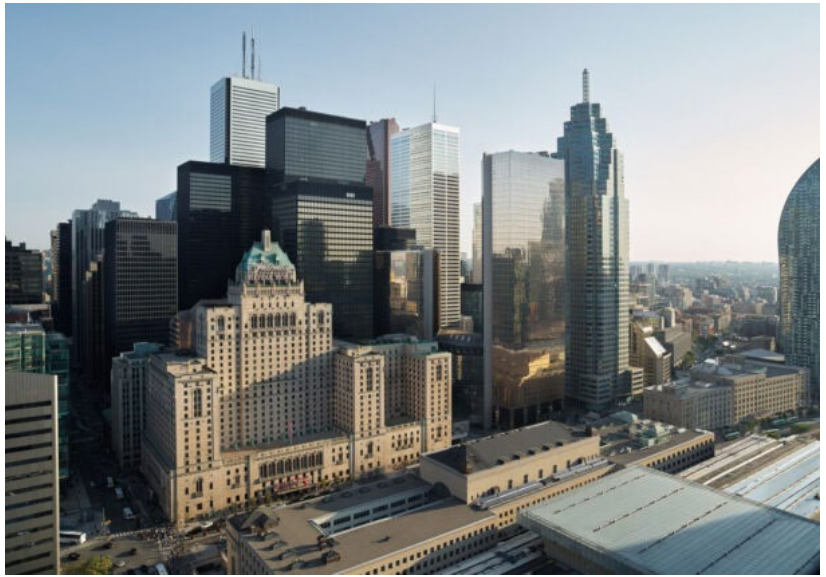
- Invest in Energy Efficiency Retrofits
- Implement Energy Management Systems
- Conduct Energy Assessments & Audits
- Develop and Train Energy Management Practitioners
- Hire or Retain Energy Managers

Canada Infrastructure Bank - Building Retrofits Initiative

The Building Retrofits Initiative (BRI) Provides attractive financing* to reduce investment barriers and decarbonize buildings for:

- Government facilities, Indigenous communities, schools, hospitals, and universities, infrastructure, transit facilities, street and highway lighting
- Commercial, industrial, and multi-unit residential buildings, (REITs), retail chains, corporations, etc.

*BRI does not provide grants, financing is repayable



Canada Infrastructure Bank - Charging and Hydrogen Refuelling Infrastructure Initiative

The Charging and Hydrogen Refuelling Infrastructure Initiative (CHRI) provides financing* to the private sector to:

- Accelerate the private sector's rollout of large-scale ZEV chargers and hydrogen refuelling stations
- Share in charging and refuelling infrastructure cost risk by aligning repayment with actual use levels

*CIB does not provide grants, financing is repayable

Canada Revenue Agency – Investment Tax Credits (ITC)

Scientific Research and Experimental Development (SR&ED) ITC: Energy and GHG related projects with significant research or experimental content may qualify

Carbon Capture, Utilization and Storage (CCUS) ITC: Up to 60% ITC on capture equipment, 37.5% on qualified carbon transportation, storage or usage equipment.

Clean Technology ITC: 30% of the capital cost of clean technology property

Clean Hydrogen ITC: 15% to 40% ITC for investments in clean hydrogen production

Clean Technology Manufacturing ITC: 30% of the capital cost to produce clean technologies

Proposed / Pending ITCs: Clean Electricity ITC and Electric Vehicle Supply Chain ITC

Canada Revenue Agency - Accelerated Investment Incentive

- Canada Revenue Agency provides an enhanced first-year tax deduction for clean energy equipment, the Accelerated Investment Incentive
- Enhanced capital cost allowance for full expensing of capital costs of specified clean energy generation equipment. (Class 43.1 and 43.2)
- Includes cogeneration, thermal waste electrical generation equipment, solar heating, heat recovery equipment, electric vehicle charging equipment, electrical energy storage equipment and more
- Also allows for accelerated depreciation if applicable

Stay connected with tools and resources

- Virtual one-on-one coaching: post-webinar support intake form for tailored support for organizations to manage energy resources effectively.
- Monthly bulletin: sign up to receive monthly training updates on all Save on Energy training and support new tools and resources.
- Live training calendar: visit this page to easily register for upcoming events and workshops.
- Training and support webpage: visit this page to access all training and support materials.

Appendices

- Acronyms
- Federal - Emissions Reduction Advancement Program
- Retrofit Program – regional adders, HVAC
- Retrofit measures – manufacturing and other equipment
- Instant Discounts Program
- SEM Program – cohort learning
- EPP – Recent and upcoming EPP Portal enhancements
- IEEP – eligibility criteria for participants and facilities
- MECP - EPS Proceeds

Acronyms (in order of appearance)

- Ontario Independent Electricity System Operator (IESO)
- Conservation and Demand Management (CDM)
- Strategic Energy Management (SEM)
- Existing Building Commissioning (EBCx)
- Commissioning Provider (CP)
- Energy Performance Program (EPP)
- Industrial Energy Efficiency Program (IEEP)
- Technology Readiness Level (TRL)
- Measurement and Verification (M&V)

Acronyms cont'd

- Grid Innovation Fund (GIF)
- Electric vehicle (EV)
- Ontario Ministry of Environment, Conservation and Parks (MECP)
- Emissions Performance Program (EPP)
- Emissions Performance Standard (EPS)
- Northern Energy Advantage Program (NEAP)
- Environment and Climate Change Canada (ECCC)
- Decarbonization Incentive Program (DIP)
- Output-Based Pricing System (OBPS)

Acronyms cont'd

- Greenhouse gas (GHG)
- Strategic Innovation Fund (SIF)
- Natural Resources Canada (NRCan)
- Green Industrial Facilities and Manufacturing Program (GIFMP)
- Building Retrofits Initiative (BRI)
- Charging and Hydrogen Refuelling Infrastructure Initiative (CHRI)
- Investment Tax Credits (ITC)
- Scientific Research and Experimental Development (SR&ED)
- Carbon Capture, Utilization and Storage (CCUS)
- Emissions Reduction Advancement Program (ERAP)

Federal - Emissions Reduction Advancement Program

- Emissions Reduction Advancement Program (ERAP) is a new industry funded program to support GHG reduction projects
- ERAP is an alternate compliance option under the Clean Fuel Regulations. Fuel suppliers subject to the Regulations can satisfy up to 10% of their annual reduction requirement under the Regulations.
- Fuel suppliers may contribute to the ERAP starting on January 1, 2024
- Depending on the ERAP contributions received, funds to emissions reduction projects are expected to be allocated beginning in 2025
- More details will be available later in 2024

Retrofit Program – regional adders

- In certain areas of Ontario where electricity constraints exist, the IESO introduced regional adders to further encourage uptake in the Retrofit Program
- Prescriptive measures are eligible for **double the incentive** in specific targeted areas
- The adders will be available until December 31, 2024

Retrofit Program – regional adders continued

To be eligible for regional adders, facilities undertaking retrofits must be located in the target areas:

- Niagara region
- Kingston area
- Southern Huron Perth
- Pembroke area
- Kenora
- Waubaushene
- Barrie/Muskoka
- Elmira
- Peterborough/Belleville

Postal codes for each eligible target area are available on the Save on Energy website

Retrofit measures – HVAC

- Rooftop units
- Chillers
- Heat pumps
- Fan motors
- HVAC controls
- Demand control ventilation
- Refer to SaveOnEnergy.ca/Retrofit for a complete list.

Retrofit measures – manufacturing and other equipment

- Agriculture
- Compressed air
- Injection molding machines
- Process chillers
- Other process upgrades
- Motors
- VFDs
- Refer to SaveOnEnergy.ca/Retrofit for a complete list.

Instant Discounts Program

- Incentives are paid directly to distributors, enabling them to offer instant point-of-sale discounts to their customers on energy-efficient lighting
- No paperwork to apply for the program on the part of contractors, consultants, or end users
- Eliminate wait times and application processing, resulting in a streamlined customer experience
- A location map of participating distributors is available on the program website

Learn more at SaveOnEnergy.ca/InstantDiscounts

SEM Program – cohort learning

The cohort learning model includes:

- Facilitated peer learning opportunities, including regular webinars and other collaborative events
- Dedicated support, including one-on-one coaching
- Online energy management resources, including case studies, etc..

EPP – Recent and upcoming EPP Portal enhancements

Recent EPP new portal features include:

- User-friendly central portal for ease of application
- EPP team management
- Automation of baseline energy models

The following enhancements to the portal are planned:

- automated annual savings reports and incentive calculations
- automated interim savings calculations so you can see the results of your energy savings activities
- facility performance monitoring through data analytics and visualization
- individual and portfolio savings analysis
- integration with Green Button

EPP – how to apply

- Email us at info@energyperformanceprogram.ca
- Call us at 1-888-852-2440

IEEP – eligibility criteria for participants and facilities

- Non-residential customers with ownership of, or operational authority over, industrial facilities in which projects are implemented; or
- Third-parties who have authority to install and operate projects at facilities on behalf of the owners or operators of the facilities
- Facilities must be connected to, or behind the meter of another electricity consumer connected, either directly or indirectly, to the IESO-controlled grid or a distribution system

Thank you!

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