Partners in Project Green

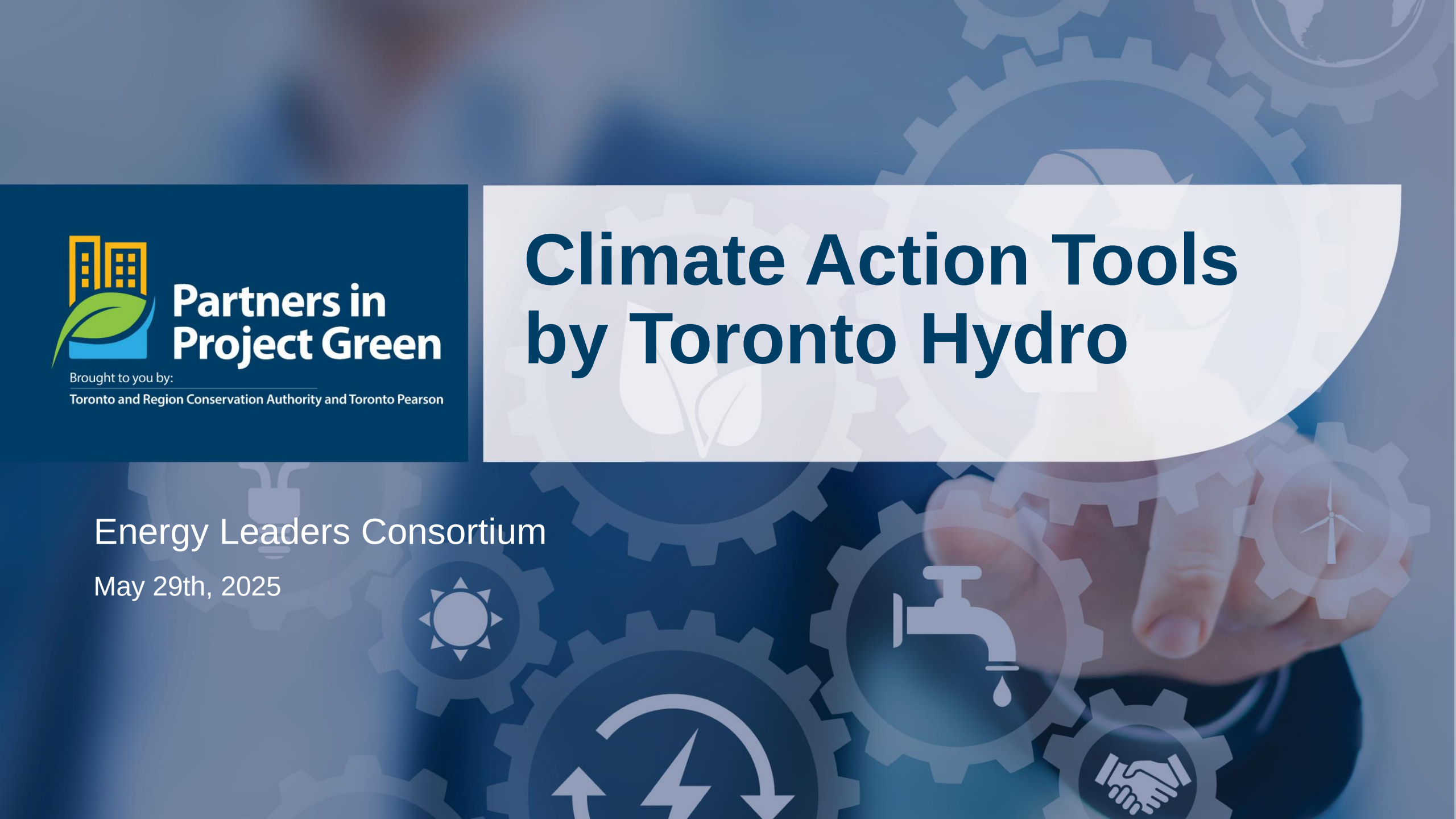
Brought to you by:

Toronto and Region Conservation Authority and Toronto Pearson

Climate Action Tools by Toronto Hydro

Energy Leaders Consortium

May 29th, 2025



Land Acknowledgement

We respectfully acknowledge that we are situated on the Traditional Territories and Treaty Lands, in particular those of the Mississaugas of the Credit First Nation, as well as the Anishinaabe of the Williams Treaty First Nations, the Huron Wendat, the Haudenosaunee, and the Metis Nation.

As stewards of land and water resources within the Greater Toronto Region, Toronto and Region Conservation Authority appreciates and respects the history and diversity of the land and is grateful to have the opportunity to work and meet on this territory.

Additional Resources

Resources

- Native-Land.ca
- Circles for Reconciliation
- EdgeoftheBush.ca
- Text 1-855-917-5263 with your City and Province to learn whose traditional territory you're on
  (standard text messaging rates may apply)

Days of Awareness

- June is celebrated as the National Indigenous History Month in Canada
- June 21st is observed as the National Indigenous Peoples Day

A Collaborative Space for All

Proposed Operative Values for ELC meetings:

1. Balance airtime to hear from as many voices as possible
2. Be curious and challenge our own assumptions and biases
3. Be open to building on each other's suggestions or taking the conversation in another direction

Agenda

Time	Activity
1:00 – 1:10pm	Introduction and Updates from PPG
1:15 – 1:45pm	Presentation by Toronto Hydro
1:45 – 2:00pm	Q/A Session & Discussion

Introduction

Upcoming ELC Sessions & PPG Events

Date	Topic
June 12th, 2025 8:30am - 4:30pm	**PPG Annual Forum 2025** *Stories that matter: Building buy-in for a sustainable future*
June 17th, 2025 10:00am - 1:00pm	**ELC Site visit**: TRCA Head Office *Guided tour of TRCA's New Mass Timber Building*
June 19th, 2025 10:00am - 2:00pm	**Ride and Drive Event** *with Premier Truck and PowerON* *Test drive the Rizon all-electric medium duty truck*
June 24th, 2025 1:00pm - 2:00pm	**Webinar** *Challenges to Reducing Winter Salt Use: Addressing Limited Liability in Ontario*

PPG 2025 Annual Forum

Stories that matter:
Building buy-in for a sustainable future

Join PPG for a full day of discussion, learning and networking with other sustainability leaders.

When: Thursday, June 12th, 2025, from 8:30am – 4:30pm

Where: Centennial College Event Centre, Scarborough

Contact charlotte.hung@trca.ca for more details!

Followed by the **Sustainability Leaders Social**

Grow your network and connect with the PPG community at our free networking event!

Time: 4:45pm - 6:30pm EST (same place!)

Register Today!

Ride and Drive Event with Premier Truck and PowerON

Join PPG for an exciting Ride & Drive event, organized in partnership with PowerON and the Premier Truck Group.

Test drive the Rizon all-electric medium duty truck
and learn from industry experts about fleet electrification!

When: Thursday, June 19th, 2025 10:00 AM to 2:00 PM
Where: Premier Truck Group 7035 Pacific Circle, Mississauga Ontario, L5T 2A8
*Free

Contact Ritika ritika.jain@trca.ca to register

Challenges to Reducing Winter Salt Use: Addressing Limited Liability in Ontario

Ontario lacks a provincial policy or regulation for road salt use which has created liability issues for snow and ice management contractors with municipalities and property owners. Join us for free webinar on the role of government in regulating salt use, issues of liability influencing excess salt use, and what winter contractors are doing to reduce their application rates.

Who should attend:

- Municipal staff involved in transportation, road maintenance, stormwater management, sustainability, or procurement
- ICI professionals, working in facilities management, sustainability, or procurement

When: Tuesday, June 24, 2025, 1:00-2:00 PM

Where: Zoom

Scan for More Info & Registration

Toronto Hydro

Today's Speaker

Michael Pathak
Manager of Large Buildings, Climate Action, Toronto Hydro

Mike has been supporting decarbonization and energy efficiency measures for over 15 years. He has worked on Solar Photovoltaic research, designing net zero homes and small commercial buildings, as well as driving energy efficiency in all building sectors.

Toronto Hydro Large Buildings
Climate Action Services

May 29, 2025

Michael Pathak
Climate Action Manager, Large Buildings

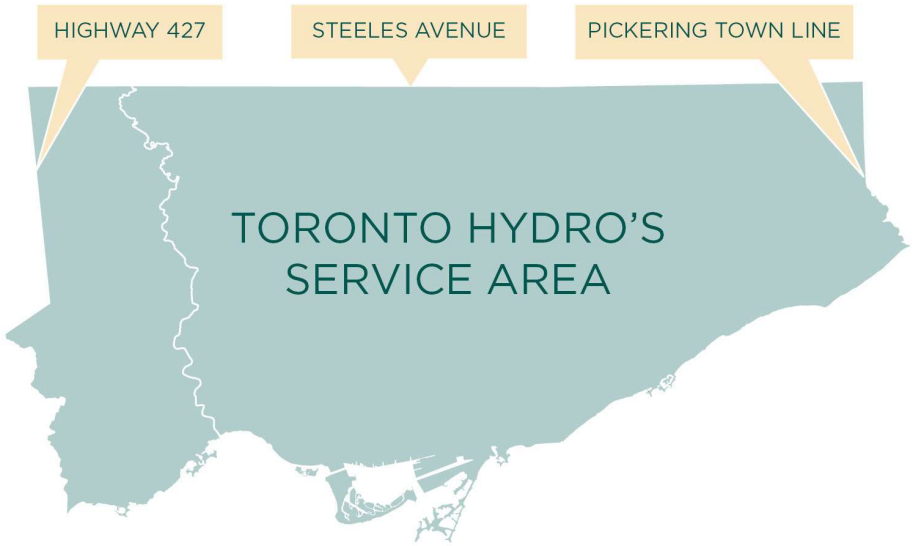
AGENDA

1. Climate Action in Toronto
2. Grid Preparedness
3. City Targets and Objectives
4. Climate Action Services
5. Q&A
6. Appendix

CLIMATE ACTION
OVERVIEW

TORONTO HYDRO
OVERVIEW

- Established in 1911
- Amalgamation of six utilities in 1998
- Owns and operates the electricity distribution system for Canada's largest city
- Owns and operates $7.1 billion of capital assets*
- Distributes approximately 18% of the electricity consumed in Ontario*



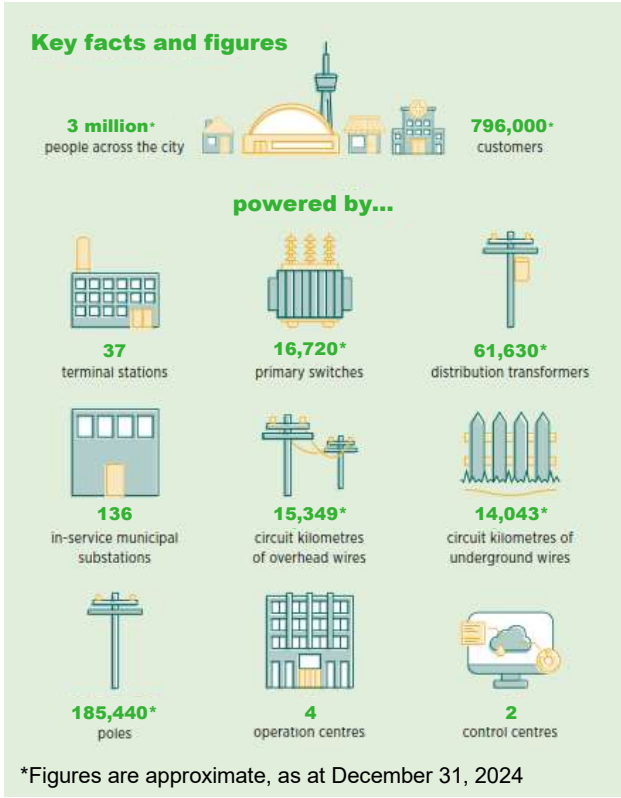
City of Toronto: Population of approximately 3 million (2022)

*As at December 31, 2024

TORONTO HYDRO
OVERVIEW

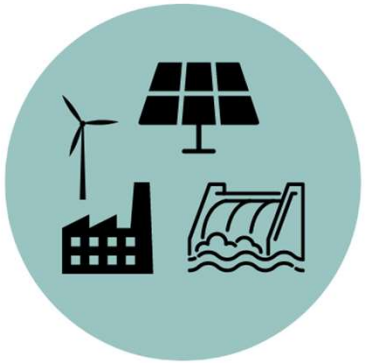
- Toronto Hydro Corporation is a holding company which wholly owns two subsidiaries:
  - **Toronto-Hydro Electric System Limited** distributes electricity
  - **Toronto Hydro Energy Services Inc.** provides streetlighting and expressway lighting services in the city of Toronto

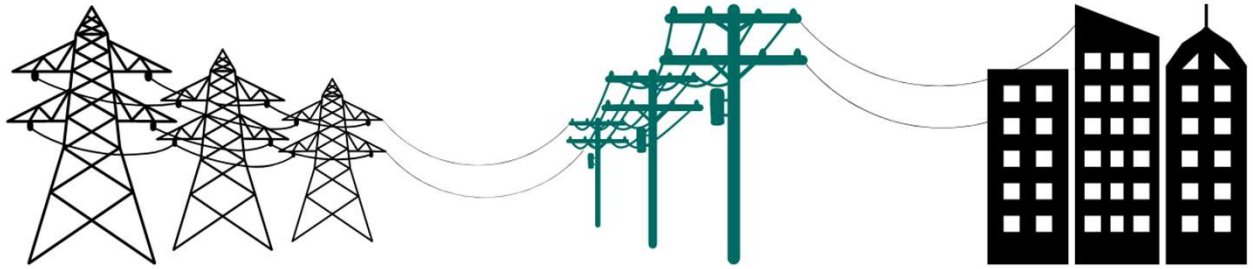
To learn more about our company, including our leadership, governance and sustainability performance, visit torontohydro.com/about-us



*Figures are approximate, as at December 31, 2024

ELECTRICITY SYSTEM





Generation

Generation produces the power we use, including nuclear, hydro, wind and solar.

ONTARIO POWER GENERATION

Transmission

Power travels across transmission grid to Toronto Hydro. The Independent Electricity System Operator (IESO) directs the flow of electricity across transmission lines.

hydro one

ieso
Connecting Today.
Powering Tomorrow.

Distribution

Toronto Hydro owns and operates the wires and equipment that deliver power to homes and buildings.

TORONTO HYDRO®

CLIMATE ACTION AT TORONTO HYDRO

- The Climate Action team supports City of Toronto's TransformTO Net Zero Strategy
  - Strategy outlines how the city will achieve net-zero carbon emissions by 2040
- Toronto Hydro's Climate Action Plan showcases how we will support the City's strategy
- **Our goals:**
  - Make it easier, faster and more affordable for all customers to adopt clean-energy technologies
  - Help cleantech companies grow by promoting their products and services
  - Enable projects that decarbonize transportation and buildings

Climate Action Program

Large Buildings

- Supports businesses with decarbonizing their buildings

Partnerships and Funding

- Supports creating access to funding and helping customers connect with trusted cleantech companies

Transportation

- Supports the adoption of electric vehicles and the installation of electric vehicle chargers

Residential and Small Commercial

- Supports homeowners with electrifying their heating and domestic hot water

GRID PREPAREDNESS

GRID PREPAREDNESS

- Toronto Hydro's 2025–2029 Investment Plan outlines investments required to expand, modernize and sustain the foundations of a safe and reliable grid to serve current and future electricity needs
  - Keeping our grid in good condition
  - Preparing the grid for growth
  - Modernizing our grid and operations
- After years of investment, we have a robust system with available capacity

GRID PREPAREDNESS

- Toronto Hydro has invested $9 billion over the past two decades to ensure we have enough capacity available today to handle customer electrification requests
- Over the next five years, Toronto Hydro will be investing **over $5 billion** in grid expansion, maintenance and improvements—almost **double** the past investment
- The speed of the energy transition will depend on how fast customers adopt electrified technologies, not by how fast the electricity system can expand
- Toronto Hydro is ready for electrification, and ready to help our customers decarbonize their buildings

CITY
TARGETS AND OBJECTIVES

TORONTO EMISSION REDUCTION TARGETS

Toronto's greenhouse gas (GHG) emissions and Council-approved GHG emissions targets, from City of Toronto's 2022 Sector-Based Emissions Inventory

- Citywide emissions have decreased since 1990
- 2022: The most recent data point demonstrating the City's annual emissions under normal conditions
- Toronto will need to reduce emissions by approximately 7 megatonnes of CO_2e to achieve the City's 2030 target of a 65% reduction (from 2022 levels, below 1990 levels)

TORONTO'S ENERGY AND WATER REPORTING BY-LAW

- Building owners in Toronto must submit data to the City of Toronto annually, as part of the Energy and Water Reporting By-law
- Information to report includes:

• Energy use
  • Electricity
  • Natural gas & other fossil fuels
  • District energy
• Water use
	• Building information
	  • Property address
	  • Assessment roll number
	  • Property use type(s), etc.

- **New reporting deadline:** July 2, 2025
- **Reporting tool:** Energy Star Portfolio Manager

WHO NEEDS TO REPORT?

- All building types, but most affected are:
  - Commercial
  - Industrial
  - Institutional
  - Multi-unit residential

Gross floor area	First reporting deadline	Number of buildings	Number of building owners
≥ 50,000 ft²	October 31, 2024	7,500	2,100
≥ 10,000 ft²	July 2, 2026	16,100	5,800

For full details, see the by-law text: Municipal Code Chapter 367, Building Emissions Performance

EMISSIONS PERFORMANCE STANDARDS (EPS)
POLICY LANDSCAPE

North American EPS Policy Landscape

TORONTO

IMT INSTITUTE FOR MARKET TRANSFORMATION

TORONTO'S BUILDING EMISSIONS PERFORMANCE STANDARDS (BEPS)

- **What:** A policy tool that would require building owners to comply with GHG emissions targets, based on building type and size, which would become stricter over time. BEPS would include both the development of a by-law and the enhancement and/or development of policies, programs and resources to support emissions reduction
- **Why:** Existing buildings in Toronto account for 65% of GHG emissions, and voluntary action is not enough to drive the change needed to meet the City's net-zero emissions by 2040 goal. The implementation of BEPS would be one of the most impactful policies to significantly reduce emissions
- **How:** Buildings would need to meet GHG emissions reduction targets set for them, through various retrofit measures. Buildings that do not meet targets would need to take steps over time improve performance
- **When:** BEPS are projected to be presented to City Council for consideration in Q3 2025

More information on the BEPS can be found here: toronto.ca/services-payments/water-environment/net-zero-homes-buildings/emissions-performance-standards/

CLIMATE ACTION
SERVICES

CLIMATE ACTION
CUSTOMER JOURNEY

Customer is engaged via email, event, newsletter, etc.

Help customer get into ENERGY STAR Portfolio Manager (if not already) and discuss the City's reporting requirements

Feasibility Stage

- OPEN Technologies Virtual Decarbonization Audit
- Heating Load Estimator
- Non-Binding Estimate Level 0

Planning Stage

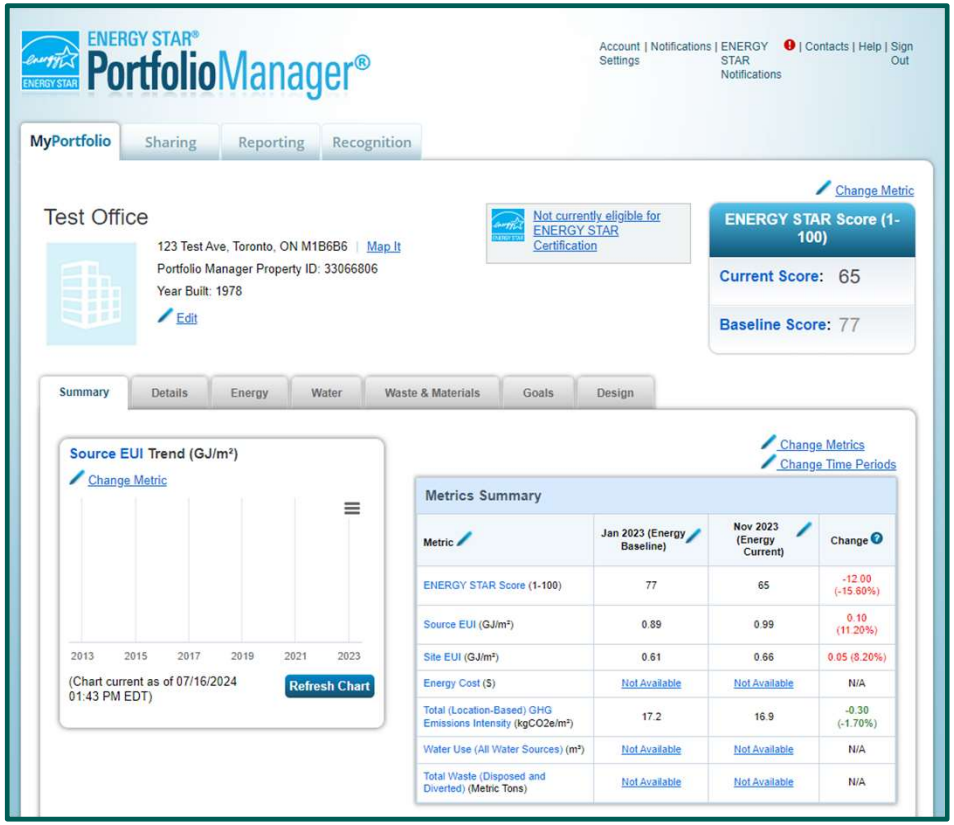
- Walkthrough of customer's building(s)
- Explore energy efficiency and conservation solutions
- Explore decarbonization solutions

Design Stage

- Direct customer to Cleantech Services Directory
- Work with Cleantech Partner
- Submit Save on Energy Application(s)

End

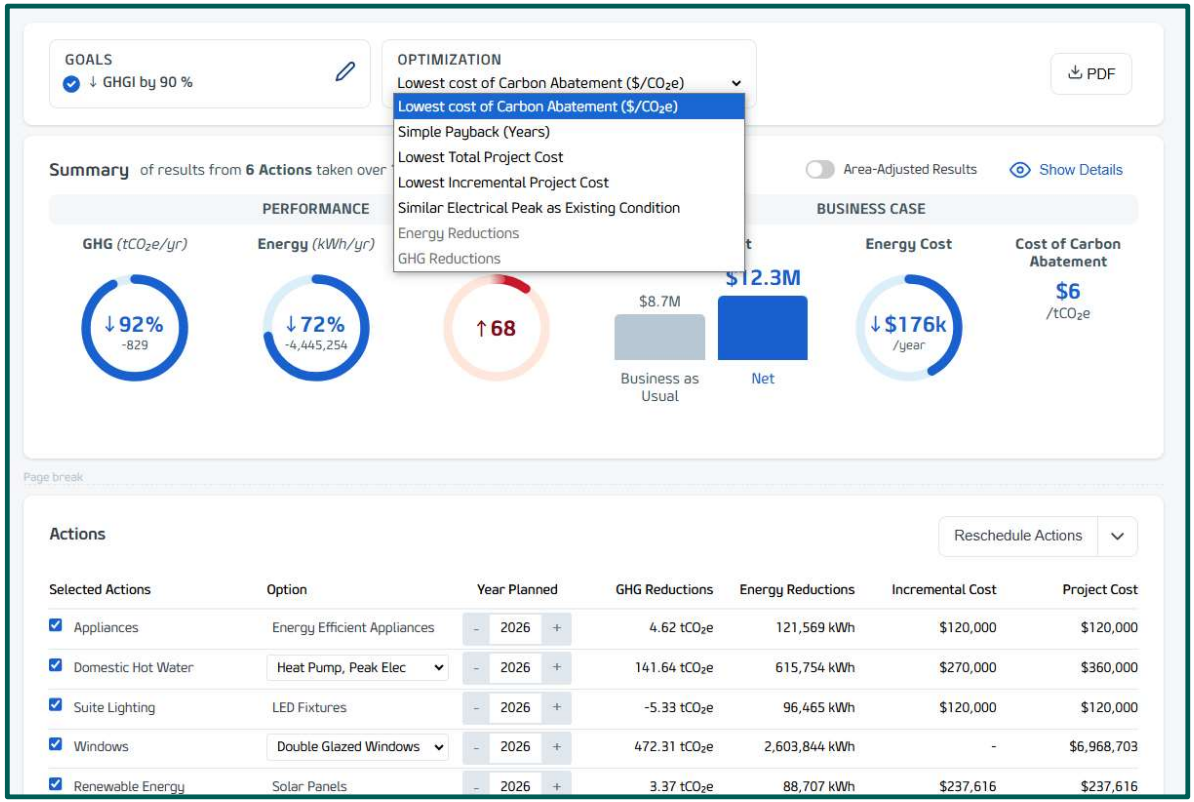
PORTFOLIO MANAGER SUPPORT



- Portfolio Manager is a benchmarking tool
- Benchmarking is the first step to saving energy in a building, allowing customers to measure and compare their building's energy use to another reference point
- Portfolio Manager must also be used when reporting energy and water consumption annually to the City's Energy and Water Reporting By-law
- The Climate Action team can help enter customers' building information into Portfolio Manager

VIRTUAL DECARBONIZATION AUDITS

- Toronto Hydro has procured a virtual auditing tool, created by OPEN Technologies, so customers can dive deeper into their building's energy performance to inform their path to decarbonization
- Following their building's analysis, this tool can provide a decarbonization plan and recommended actions to reduce GHG emissions



HEATING LOAD ESTIMATOR

- Toronto Hydro has developed a heating load estimator to support customers with electrification planning
- The purpose of the estimator is to predict how much additional electrical capacity may be needed to electrify building space heating
- Data inputs for the estimator include historical monthly gas consumption and hourly average electrical power

Building Name	123 Test Street
Gross Heated Floor Area (ft²)	183,140

Steps

1.	Gas	Enter historical natural gas consumption from utility bills or exported data from ENERGY STAR® Portfolio Manager®
2.	Electricity	Enter hourly average historical electrical power (kW, or kWh/h)
3.	Results	Estimate the peak heating load and estimate the increase in peak electrical load when converting to electric heating technologies
	Regression	Modify the regression model. Currently set to CUSTOM Data Range and Automatic Changeover Temperature.
	Weather	Update historical daily temperature records

Season	Occurrence	Peak kW	
Non-Winter	2023-09-06 13:00	780	
Winter	2024-02-27 12:00	691	
	Delta	89	Difference between cooling season and heating season peak demands

Winter = December, January, February.
Non-Winter is all other months.

Month	Occurrence	Peak kW
Jan	2024-01-30 12:00	673
Feb	2024-02-27 12:00	691
Mar	2024-03-12 10:00	664
Apr	2024-04-25 11:00	683
May	2024-05-22 13:00	736
Jun	2022-06-22 12:00	754
Jul	2022-07-20 12:00	752
Aug	2022-08-08 11:00	729
Sep	2023-09-06 13:00	780
Oct	2019-10-01 12:00	722
Nov	2022-11-01 11:00	678
Dec	2022-12-06 14:00	663

HEATING LOAD ESTIMATOR

- The calculator estimates the maximum heating demand for a gas-heated building, and the additional electrical capacity anticipated under different electrification scenarios
- The potential maximum peak increase can be used for a Non-Binding Estimate to assess whether the electrical capacity is currently available to the building
- The results are intended to help customers determine which buildings to retrofit first based on available capacity
- This tool can also help in the decision-making process of which efficient technologies to adopt

Estimated electrical peak increase at 123 Anywhere Street

for Electrification of Space Heating (excluding non-weather thermal uses)

Space heating electrification technology	Heating Equipment COP at -23°C	Input kW at -23°C	Heating Electrification Delta (kW)	Possible maximum peak increase (kW)
Electric resistance or electric boiler	**1.0**	**860 ± 70**	89	**770 ± 70**
Air source heat pump (low efficiency)	1.2	720 ± 60	89	630 ± 60
Air source heat pump (mid efficiency)	1.9	450 ± 40	89	360 ± 40
Air source heat pump (high efficiency)	2.2	390 ± 30	89	300 ± 30
Ground-source heat pump	3.8	227 ± 20	89	138 ± 20
COP for electrified heating ≤ summer peak*	**9.7**	89 ± 8	89	0
Custom COP (User's choice)	1.7	510 ± 40	89	**420 ± 40**

NON-BINDING ESTIMATES

- The Climate Action team also provides support for customers looking to connect clean technologies to Toronto Hydro's grid
- Upon request, Toronto Hydro will provide potential customers with a service connection assessment prior to formal initiation of the Offer to Connect process
- Assessments take into account a potential customer's needs by providing information on proposed load interconnections/scenarios feasible at the time of the request
- A Level 0 NBE now includes high-level costing

Level	Included in Estimate	Estimated Lead Time (Working Days)	Typical Cost Range
Estimate Level 0 (L0)	• Type of system available • Options available to connect to Toronto Hydro System • Supply Arrangement(s) • Legacy system identification • Capacity assessment at supply point (yes/no) • High-level identification of upstream work • High-level cost range • Timeline range	15	No charge*

*Customers requesting General Information (Level 0) may incur a cost depending on the scale and level of work required to facilitate the request.

SITE WALKTHROUGHS

- The Climate Action team can complete a walkthrough/visit of your site (in person or virtually) to meet with you and gather information about your building
- This information can be used for:
  - Energy reporting requirements
  - Identifying electrification opportunities
  - Addressing gaps or areas where energy efficiency can be improved

SAVE ON ENERGY
INCENTIVES

- Retrofit program provides energy-efficiency upgrades to help your business save energy, lower operating costs and maintain a competitive edge
  - Incentives for qualifying heat pumps start at $300 and can range up to $18,000 per unit
- Toronto Hydro can support with Save on Energy applications that have a focus on heat pumps
- Avoided consumption could be used in your decarbonization projects

SAVE ON ENERGY
POWER WHAT'S NEXT

ieso
Connecting Today.
Powering Tomorrow.

Contact Information

climateaction@torontohydro.com

Connect with us

TORONTO HYDRO®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KIITOS
TACK
DEKUJI
ASANTE
ARIGATO
CHOKRANE
SPASIBO
JUSPAXAR
DANKE
MATUR NUWUN
CAM ON BAN
DANK JE
SALAMAT
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APPENDIX

RESOURCES

- City of Toronto Energy & Water Reporting for Buildings
- City of Toronto's TransformTO Net Zero Strategy
- How to Power Up with Toronto Hydro: Developer Manual
- Ontario – Energy & Water Reporting for Large Buildings
- Toronto Hydro Climate Action for Business
- Toronto Hydro Conditions of Service
- Toronto Hydro Electric Vehicle (EV) Charging
- Toronto Hydro Service Connections
- Toronto Hydro's 2025–2029 Investment Plan
- Toronto Hydro's Climate Action Plan

Thank you. Any questions?