TORONTO HYDRO® Corporation

2023 ENVIRONMENTAL PERFORMANCE REPORT

Toronto Hydro's Environmental Performance Report is prepared annually for the City of Toronto, the sole shareholder of Toronto Hydro Corporation. Toronto Hydro is committed to operating in an environmentally responsible manner while also supporting the City's energy, climate change and urban forestry policies, and transition to a low carbon economy. In 2023, Toronto Hydro worked alongside the City and other partners on environmental initiatives that support facilitating decarbonization; actively contributing to the reduction of greenhouse gas (GHG) emissions; minimizing waste; championing renewable energy; and ensuring grid resiliency.

Key Highlights 2023

Reducing GHG Emissions and Environmental Initiatives

- Added the first fully electric bucket truck to Toronto Hydro's fleet
- Achieved a 21% reduction in building emissions compared to baseline year of 2019
- Reduced annual paper consumption by 89% over the past five years (from 2019 to 2023) by employing technology solutions including electronic tailboards, employee communications boards and inspection forms
- Achieved a recycling rate of 91%, surpassing the target by 11%
- Electric vehicles (EVs) and plug-in hybrid electric vehicles (PHEVs) account for 20% of Toronto Hydro's fleet pool. Removed 68 gas-fuelled vehicles, comprising of 19 heavy-duty and 49 light-duty vehicles
- Supported the Toronto Parking Authority (TPA) with the installation of 193 off-street and 50 on-street charging stations around the city
- Introduced a Sustainable Commute Program, designed to empower employees to adopt environmentally friendly commuting options. This initiative includes the installation of additional bike racks, EV charging stations and promotion of carpooling
- Established a permanent Climate Action team and developed programs to support customers with their own climate action initiatives
- Introduced customer connection guides and developer manuals to help customers and general contractors plan updates, installations or replacements of their electricity services, ensuring alignment with electrification needs

System Reliability and Climate Change Adaptation

- Successfully completed a pilot program utilizing satellite imagery to evaluate high-risk zones for tree-related outages, enhancing system reliability through targeted vegetation management efforts
- Installed over 100 network vault structures with network condition monitoring control equipment to detect problems with the associated transformers, including identifying oil leaks and flooding
- Submitted Toronto Hydro's 2025–2029 rate application to the Ontario Energy Board (OEB), which proposes investments to expand, modernize and sustain the foundations of a safe and reliable grid to serve the current and future electricity needs of the homes, businesses and institutions of Toronto

Toronto Hydro conducts its business in a manner that supports the City's net-zero initiatives, minimizes impacts on the environment and embodies the principles of sustainability and continual improvement. The Environmental Performance Report reviews the achievements of 2023 in detail, as well as ongoing initiatives.

Toronto Hydro Corporation

The City of Toronto ("the City") is the sole shareholder of Toronto Hydro Corporation ("THC"). THC is a holding company that wholly owns two subsidiaries: Toronto Hydro-Electric System Limited, which distributes electricity, and Toronto Hydro Energy Services Inc., which provides street lighting and expressway lighting services in the city of Toronto (collectively, "Toronto Hydro" or "the Company"). The City requires the Company to uphold certain objectives and principles set out in the City's Amended and Restated Shareholder Direction (the Shareholder Direction) relating to THC. This report describes how the Company conducts its affairs in accordance with environmentally related objectives set out in the Shareholder Direction.

As Toronto's electricity distribution company, Toronto Hydro understands the importance of sustainability as a core value. In the upcoming years it is expected that there will continue to be increased electrification to reduce GHG emissions in Toronto. Part of Toronto Hydro's transformative role will include facilitating decarbonization, actively contributing to the reduction of GHG emissions, minimizing waste, championing renewable energy and ensuring grid resiliency.

Toronto Hydro has maintained a strong record of environmental performance and has demonstrated dedication to continual improvement, including the regular review and advancement of the Environmental Policy. The Company continues to strive to a be a sustainable electricity leader and has achieved the following for its leadership in Environmental, Social and Governance (ESG) objectives, sustainability and climate change adaptation:

Organization	Achievement
International Organization for Standardization	Completed an external audit confirming effective maintenance of an Environment, Health and Safety (EHS) Management System in accordance with the International Organization for Standardization's (ISO) Environmental Management Systems (ISO14001:2015) and the Standard for Occupational Health and Safety Management Systems (ISO45001:2018). This marks the 11th consecutive year that Toronto Hydro has been certified.
Electricity Canada	Recognized as a Sustainable Electricity Leader™ by Electricity Canada following a comprehensive evaluation.
Building Owners and Managers Association (BOMA) Best	Certified (at three work centres) as meeting the requirements for building environmental standards (BOMA BEST).
Corporate Knights	Ranked 19th overall in Corporate Knights' list of the Best 50 Corporate Citizens in Canada for 2023 and third among electricity transmission and distribution utilities in Canada. This is the sixth time Toronto Hydro has been recognized for its leadership in environment, social and governance (ESG) objectives, sustainability and climate adaptation.
Canada's Clean50	Recognized as a sustainability leader by Canada's 2024 Clean50, in addition to earning a spot on Canada's Clean16 list as a top contributor in the category of Traditional Energy. Toronto Hydro was recognized for leading the development of the utility's Climate Action Plan — the first of its kind by a utility in Canada and a key component of the Company's Utility of the Future strategy.
Canadian Occupational Safety	Received the 2023 5-Star Energy and Resource Companies award, given to companies that demonstrated a strong ESG program, a measurable environmental and social impact, and a consistent health and safety policy.

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Facilitating Decarbonization

Climate Action Plan

The City of Toronto has established an ambitious climate action strategy to reduce GHG emissions within the city to net zero by 2040.[1] Toronto Hydro is a key enabler of this strategy and has similarly committed to achieving net-zero Scope 1 GHG emissions by 2040 within its own operations. Additionally, Toronto Hydro is actively working towards minimizing Scope 2 emissions through direct action and supporting decarbonization by 2040.

As a clean energy leader, Toronto Hydro is committed to bold, practical climate action to support the City's net-zero vision. In 2021, Toronto Hydro developed a Climate Action Plan that supports the City's net-zero 2040 vision and received expanded mandates for climate action from Toronto City Council in July 2022. Since then, Toronto Hydro has turned this mandate into action by executing early climate wins, establishing a permanent Climate Action team, and developing programs to support customers with their own climate action initiatives. The Climate Action Plan has two key focus areas: 1) the Expanded Electricity Distributor, and 2) Climate Advisory Services, both of which are described in the following sections.

Expanded Electricity Distributor

The energy transition will require expanded capacity and capabilities from Toronto Hydro's distribution grid. More local distribution infrastructure may be required to get electricity from where it is generated to where it is needed every instant of every day. Toronto Hydro is actively planning for grid expansion and modernization to enable the energy transition in Toronto.

Toronto Hydro is committed to making it easier and faster to get customers the power they need, while investing in technology to get more use out of existing equipment and build a smarter, more efficient and reliable grid.

Climate Advisory Services

A key focus of Toronto Hydro's Climate Action Plan involves partnering with customers and local cleantech businesses to meaningfully enhance Toronto's collective capacity to achieve net zero. Together with customers, local cleantech companies, governments and stakeholders, Toronto Hydro is committed to delivering significant emissions reductions, stimulating and facilitating the local cleantech economy, and advancing social equity in Toronto.

To achieve these goals, Toronto Hydro established a Climate Action team that works directly with customers — free of charge — to encourage and help them find personalized, sustainable energy solutions tailored to their needs. Toronto Hydro is enabling projects in Toronto that electrify buildings and transportation, build renewable generation capacity and enhance energy efficiency in an effort to accelerate the shift to a sustainable economy.

For more on the Climate Action Plan, refer to Toronto Hydro's **Climate Action Plan Status Report**.

Electric Vehicles (EV)

Vehicles continue to be one of the largest sources of GHG emissions in Toronto, contributing to approximately one-third of GHG emissions in the city. The transition to EVs is one of the primary actions noted in the City's TransformTO Net Zero 2040 Strategy. Toronto Hydro is supporting transportation electrification by helping to increase the availability of EV charging stations for the residents of Toronto, as well as Toronto Hydro employees. Additionally, Toronto Hydro is committed to electrifying its own fleet (refer to the **Fleet Improvements section** for more info).

[1] https://toronto.ca/services-payments/water-environment/environmentally-friendly-city-initiatives/transformto/transformto-climate-action-strategy/

Toronto Hydro is committed to removing barriers to EV ownership for the residents of Toronto. In 2023, Toronto Hydro supported the TPA with the installation of 178 Level 2 and 15 Level 3 off-street EV charging stations. 186 of these stations are now operating, with the remaining seven to be energized in 2024. Toronto Hydro also supported the TPA with its goal to install 50 on-street chargers, which will be operational in 2024.

Toronto Hydro also completed the sale of its on-street and off-street EV chargers to the TPA to operate at part of the City of Toronto's Green P network. These stations make it easier for customers to top up their EV batteries as they move around the city — all at a low cost and with zero emissions. The upgraded stations also improve TPA's monitoring and data collection to gain greater value from each installation and better accommodate preferences.

With the establishment of the Climate Action team, Toronto Hydro seeks to improve customer experience and eliminate barriers for transportation electrification. The Climate Action team is actively working with customers to understand their electrification needs and deliver the expertise and resources required.

Elocity EV Charging Pilot Project

Toronto Hydro is working with a start-up company associated with Toronto Metropolitan University's Centre for Urban Energy. The start-up company, Elocity, has developed a device to transform a typical 240-volt EV charging station into a smart charge station. The device connects to a customer's Wi-Fi account and allows the customer to monitor and control their charging through an app. Toronto Hydro is offering a demand response program that customers can opt in to through the app in exchange for an incentive payment. The program allows Toronto Hydro to schedule charging to reduce the aggregate load on the grid, potentially allowing costly infrastructure upgrades to be deferred. There is a guaranteed duration of charging to provide customers with an assurance that their EVs will be sufficiently charged. The initial phase of the project is to confirm that the technology achieves the desired result. Participant recruitment was completed in 2022, and equipment installation commenced in the same year, continuing into 2024. The pilot project is expected to run for a minimum of two years with a potential for extension.

EV Charging at Toronto Hydro for Employee Use

Toronto Hydro is committed to removing barriers to EV ownership for its employees. As of December 31, 2023, there were 28 charging stations available across Toronto Hydro's four main work centre locations for employee use. While employees are required to pay for use of the chargers, the infrastructure is intended to support employees in the transition to EVs. Additionally, Toronto Hydro has 70 separate, dedicated charging stations for its electrified fleet. For further details, please refer to the **Fleet Improvements section**.

Charging Stations at Toronto Hydro

14 Carlton Street	**10**
71 Rexdale Boulevard	**10**
715 Milner Avenue	**4**
500 Commissioners Street	**4**

Toronto Hydro encourages employees to use EVs and PHEVs when travelling between work centres or attending job sites; there are seven EVs and nine PHEVs between all four work centres for general employee use. Recognizing potential barriers to EV utilization, Toronto Hydro developed an online course to help employees understand how EVs work, learn about the different vehicles at Toronto Hydro and understand the importance of transitioning to EVs. Alongside this optional training, employees are required to complete the Simulated Defensive Driving (SDD) program before operating any Toronto Hydro vehicles.

Solar Connections

As of the end of 2023, Toronto Hydro has connected more than 2,400 solar projects with a total capacity of over 110 MW. The table below summarizes Toronto Hydro's solar connections over the last five years:

		2018	2019	2020	2021	2022	2023
ANNUAL </= 10KW	Connections	261	19	25	49	81	190
	MW	2.2	0.114	0.163	0.381	0.516	1.235
ANNUAL > 10KW	Connections	61	4	11	12	15	15
	MW	9.46	1.215	1.225	2.51	1.557	2.948
ANNUAL TOTAL	Connections	**322**	**23**	**36**	**61**	**96**	**205**
	MW	**11.66**	**1.328**	**1.388**	**2.89**	**2.073**	**4.183**
TOTAL CAPACITY	Connections	1,407	1,426	1,451	1,500	1,581	1,771
	MW	9.67	9.784	9.946	10.327	10.84	12.077
TOTAL CAPACITY	Connections	656	660	671	683	698	713
	MW	92.447	93.662	94.888	97.397	98.954	101.9
		2,063	**2,086**	**2,122**	**2,183**	**2,279**	**2,484**
	MW	**102.12**	**103.45**	**104.83**	**107.72**	**109.8**	

Toronto Hydro has been reviewing its solar and storage connection process with the objectives being to increase transparency and improve the overall customer experience.

Customer Guides and Developer Manuals

In response to the increasing need for electrification, Toronto Hydro introduced a number of **Customer Connection Guides** in 2023. These guides are tailored to aid both customers and general contractors engaged in the planning, installation or replacement of their electricity services. Offering valuable insights, the guides include tips and diagrams that serve as a reference throughout the entire process.

The **Developer Manual**, published by Toronto Hydro in 2023, serves as a comprehensive and sustainable tool for developers seeking to connect to Toronto Hydro services. It offers an overarching view of the Ontario electricity sector structure and outlines Toronto Hydro's connection procedures. The manual equips developers and contractors with essential knowledge for planning and initiating connections, ensuring preparedness throughout the formal connection process.

Toronto Hydro emphasizes grid modernization in the Developer Manual, addressing key topics such as EV charger installations and aligning with the Climate Action Plan. The manual also introduces the City of Toronto's Green Standard, emphasizing the utility's commitment to operating as a utility of the future.

This guide plays a crucial role in enhancing sustainability awareness among developers when planning and designing projects. It encapsulates Toronto Hydro's dedication to ongoing grid modernization efforts and provides valuable insights into the evolving landscape of the electricity sector.

Greenhouse Gas (GHG) Emissions at Toronto Hydro

GHG Inventory

Toronto Hydro's GHG inventory includes Scope 1 and 2 emissions, quantified in accordance with national and provincial GHG reporting guidelines[2] and the GHG Protocol Corporate Accounting and Reporting Standard.[3]

Scope 1	Scope 2	Scope 3
Direct emissions from stationary combustion (natural gas combustion for facilities), mobile combustion (fuel combustion for fleet) and fugitive sources (releases of sulfur hexafluoride (SF_6) and refrigerant gases).	Indirect emissions from the use of purchased electricity (facilities and line losses).	All indirect emissions (not included in Scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions. Scope 3 emissions are currently outside of Toronto Hydro's GHG inventory.

The organizational boundary of this GHG inventory includes all Toronto Hydro-owned and controlled (i.e., leased) facilities, equipment and vehicles. There were no significant changes in 2023 to Toronto Hydro's organizational boundaries.

The emission factors used to calculate GHG emissions are published by Environment and Climate Change Canada[4] and are representative of Ontario's energy supply mix. GHG emissions are measured in tonnes of carbon dioxide equivalent emissions (tCO_2e).

Data Sources

Facilities energy data: Data on energy consumption (electricity and natural gas) is collected from utility providers for every work centre owned and controlled by Toronto Hydro. The specific energy consumption data for each building is entered into a database. The energy billing data for facilities consists of digital files for electricity and bills received from utility companies for natural gas.

GHG emissions from stationary air conditioning and refrigeration equipment (refrigerant leaks) and emissions from propane combustion were deemed immaterial (0.05% of emissions) and are not included.

Fleet fuel data: A similar process to the facilities' energy data collection and assurance is used for the fuel consumption data of the motor vehicle fleet. A database that captures ESG data is populated from various datasets acquired from fuel suppliers and through billing statements.

SF_6 emissions accounting process: Toronto Hydro gathers SF_6 emissions data by tracking the amount of SF_6 used to refill equipment and the amount of SF_6 released from decommissioned and repaired equipment. Toronto Hydro's SF_6 emissions are calculated in accordance with the SF_6 Emission Estimation and Reporting Protocol for Electric Utilities, published by Environment and Climate Change Canada.

Net-Zero Target

In alignment with the City's TransformTO Net Zero Strategy, Toronto Hydro has committed to achieving net-zero Scope 1 emissions within its own operations by 2040. Toronto Hydro is expected to focus on reducing emissions from its facilities, fleet and the use of SF_6 as an insulating gas for electrical equipment. Since 2022,

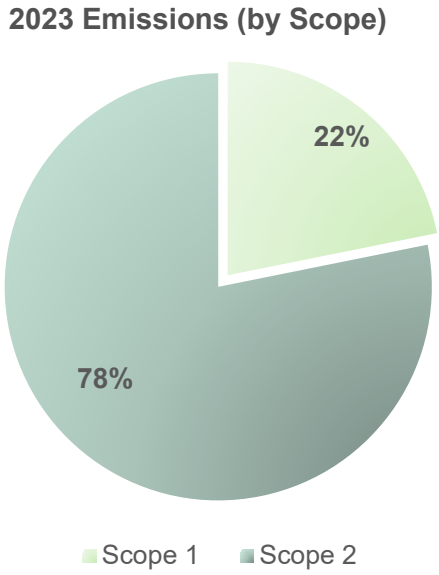
[2] Environment and Climate Change Canada, *Technical Guidance on Reporting Greenhouse Gas Emissions*, available at http://ec.gc.ca; Ontario Ministry of the Environment, Conservation and Parks, *Guideline for Quantification, Reporting and Verification of Greenhouse Gas Emissions*, available at https://ontario.ca/page/ministry-environment-conservation-parks.
[3] *The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard* (World Resources Institute and World Business Council for Sustainable Development), available at https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf
[4] Emission factors published in Environment Canada's *National Inventory Report 1990-2021: Greenhouse Gas Sources and Sinks in Canada*.

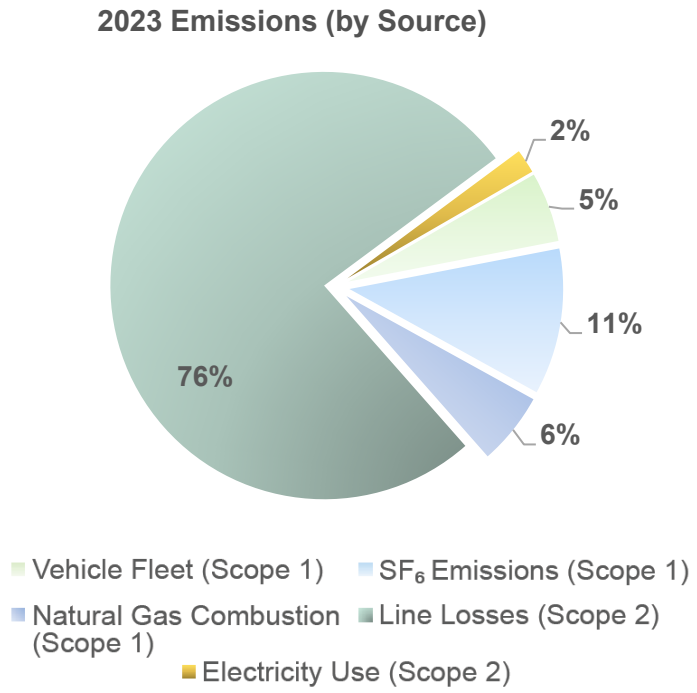
Toronto Hydro has monitored its progress to achieving net-zero GHG emissions by 2040 through two metrics: 1) Building emissions reduction, and 2) Fleet electrification. Dedicated management and steadfast commitment across all corporate levels led to surpassing the targets for each metric in 2023.

Toronto Hydro is also actively working towards minimizing Scope 2 emissions through direct action and supporting decarbonization by 2040.

Results and Analysis for 2023

In 2023, Toronto Hydro's total GHG emissions were 22,681 metric tonnes of carbon dioxide equivalents (tCO_2e). The following figures show the make-up of Toronto Hydro's carbon footprint. In summary, 76% of emissions are from line losses (17,315 tCO_2e), 11% are from SF_6 emissions (2,509 tCO_2e), 8% are from facilities (electricity and natural gas use) (1,656 tCO_2e), and 5% are from fleet emissions (1,201 tCO_2e). Of Toronto Hydro's total emissions in 2023, 22% (4953 tCO_2e) are attributed to Scope 1, while 78% (17,729 tCO_2e) of the emissions are Scope 2.





Toronto Hydro Facilities

Managing building emissions is a critical aspect of Toronto Hydro's plans to achieve net-zero emissions by 2040. In 2023, Toronto Hydro prioritized energy conservation and capital investments to meet annual targets. Building emissions were 14% below the annual target and 16% lower than the emissions recorded in 2022. A significant contributing factor to this achievement is the reduced use of natural gas. Natural gas combustion at Toronto Hydro's facilities has decreased by 31% since 2019 and by 22% since 2022.

With respect to energy conservation, a key driver was leveraging building automation systems (BAS) to optimize heating and cooling schedules, manage air intake in unoccupied rooms, and reduce temperature set points where possible — all in an effort to reduce unnecessary gas and electricity consumption. GHG emission monitoring was improved by the incorporation of sensors that track emissions. This enables the identification of specific areas for strategic planning and action.

Toronto Hydro prioritizes investments in its work centres based on safety, reliability and functional availability to ensure business continuity. When making asset investments, Toronto Hydro evaluates whether repairing or replacing work centre assets presents opportunities to achieve additional goals, such as enhancing resilience

against natural and physical threats (e.g., extreme weather and vandalism) or delivering reductions in GHG emissions. One notable replacement in 2023 was the transition from a natural gas heating, ventilation and air conditioning (HVAC) unit to an electric heat pump at Toronto Hydro's 14 Carlton Street work centre. When comparing the last two months of 2023 to the last two months of the baseline year (2019), this change resulted in a 30% reduction in the building emissions at 14 Carlton. Note that the data has been normalized to account for different weather conditions in 2023 compared to 2019.

Other initiatives from 2023 included:

- Replacing a natural gas unit heater in the warehouse at 715 Milner Avenue
- Reducing propane emissions by removing a Quonset hut at 500 Commissioners Street
- Implementing a monitoring system for GHG emissions by integrating sensors into assets, ensuring emissions stayed within permissible limits
- Enhancing older assets by incorporating sensors, enabling monitoring and control through the BAS. This strategic approach eliminates the need for a complete replacement of older assets with new smart alternatives

Building Owners and Managers Association (BOMA) Best

BOMA BEST considers several initiatives when awarding certifications, and Toronto Hydro strives to maintain them by reducing or eliminating practices that could have a negative impact on the environment. BOMA BEST certification is a nationally recognized voluntary framework for assessing the environmental performance and management of existing buildings of all sizes. The independent third-party certification assesses the policies, programs and procedures in place at a building through document reviews and on-site verification.

- Toronto Hydro's 71 Rexdale Boulevard (David M. Williams Centre) and the 715 Milner Avenue work centres maintain BOMA BEST Gold Certification from BOMA Canada. The construction of these two work centres required the remediation of former industrial sites
- Toronto Hydro's facility at 500 Commissioners St. maintains BOMA BEST silver certification

Fleet Improvements

Toronto Hydro operates a fleet of vehicles that contribute to a range of environmental impacts. The operation of these vehicles inevitably leads to waste, including vehicle fluids and disposal of parts, and the emission of GHGs. As part of its commitment to environmental responsibility, Toronto Hydro remains dedicated to advancing transportation electrification and waste reduction. These endeavours not only benefit Toronto residents by curbing pollution, engine noise and unpleasant odors, but also strive to enhance value for shareholders and ratepayers by extending the useful life of vehicles and reducing repair and maintenance costs.

Anti-Idling Technologies

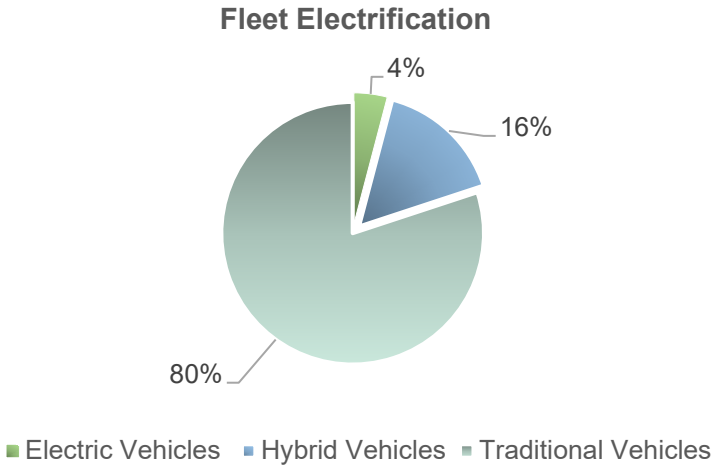
In 2023, Toronto Hydro continued its use of anti-idling technology on its vehicles. The technology functions by shutting the engine off after one minute of idling, in accordance with the City bylaw, and switching to the auxiliary battery power source requiring long-lasting batteries in order to fully optimize the use of the technology. In total, 17% of Toronto Hydro's on-road vehicle fleet (25 cube vans, 21 single bucket trucks, three double bucket trucks and 10 pickup trucks) have been equipped with the Governor to Reduce Idle and Pollution technology (GRIP) since beginning use in 2014. This has led to approximately a 31% decrease in idling time for cube vans compared to those without anti-idling technology.

Toronto Hydro continues to pursue alternate emerging technology to reduce idling time and emissions generated from its fleet vehicles, including an electric power take-off system (ePTO). In a typical bucket truck, the power take-off uses the fossil-fuel-powered engine to pressurize hydraulics for aerial devices and tools and generate power for accessories. The ePTO system uses 14-kilowatt-hour (kWh) lithium-ion batteries to provide

electric power and eliminate the emissions from the fossil-fuel-powered engine. ePTO systems were purchased and installed on five bucket trucks in 2023 and are expected to be put into service in Q1 2024.

Fleet Vehicles

In addition to the anti-idling technologies, Toronto Hydro's fleet currently consists of 15 fully EVs and 58 PHEVs. Toronto Hydro was one of the first utility companies in Ontario to acquire a fully electric bucket truck. To ensure seamless integration and operational readiness, Toronto Hydro is piloting the electric bucket truck in its training yard. The training yard serves as a testing ground for operational equipment and a training hub for staff to learn and hone their skills in a safe environment. Piloting the bucket truck in the training yard allows for the assessment of operational impacts in a controlled environment and supports in the gathering of valuable insights that will support Toronto Hydro's goal of reaching net-zero emissions by 2040.



Toronto Hydro's fleet includes 14 light-duty battery EVs, three hybrid bucket trucks, 20 hybrid minivans, 26 hybrid pickup trucks and nine hybrid SUVs. Toronto Hydro has surpassed its fleet electrification target by 7%, with EVs and PHEVs, now making up 20% of the total fleet. To accommodate the growing electric fleet, Toronto Hydro has installed 22 new chargers at 500 Commissioners Street, 14 new chargers at 715 Milner Avenue, and 12 new chargers at 71 Rexdale Boulevard, totaling 70 charging stations dedicated for fleet vehicles across all work locations.

SF_6 Emissions

Toronto Hydro continues to closely monitor SF_6 emissions. SF_6 is used at Toronto Hydro as an insulating gas for electrical equipment. In 2023, SF_6 emissions were 22% better than the previous year (2022). Despite this positive trend, SF_6 emissions still contribute to 51% of Toronto Hydro's Scope 1 emissions. In recognition of the scale of SF_6 emissions, Toronto Hydro initiated an internal, multi-disciplinary team in 2023 to develop and manage an aligned approach to the elimination of SF_6 emissions. In 2023, the team identified areas for enhancing the inspection process, with a focus on utilizing tools to aid in SF_6 detection. An SF_6 gas detection tool was introduced to identify and address small leaks early. In addition, a pilot program was initiated for completing temporary, ad-hoc repairs.

Line Losses

Multi-year investments to replace obsolete equipment increase the efficiency of the distribution system and contribute to reduced line losses. In 2023, Toronto Hydro's efforts to increase the efficiency of the system contributed to a 24% (191,473 MWh) reduction in line losses compared to 2019. However, total emissions associated with line losses increased in 2023 due to a year-over-year increase in the provincial emission factor.[5]

Waste Reduction

Polychlorinated Biphenyls (PCBs)

Similar to most electrical utilities in Canada, Toronto Hydro owns and operates legacy equipment that has oil containing PCBs. The operation of this equipment is compliant with the current PCB regulations under the

[5] Emission factors published in Environment Canada's *National Inventory Report 1990-2021: Greenhouse Gas Sources and Sinks in Canada*. Table A13-7: Electricity Generation and GHG Emission Details for Ontario Generation Intensity

Canadian Environmental Protection Act, 1999. However, anticipating the forthcoming amendments in legislation set to take effect in 2025, Toronto Hydro has prepared a proactive plan to remove and safely dispose of equipment potentially containing PCBs.

An organized approach to the removal and destruction of equipment and oil at risk of containing PCBs is enabled by proactive inspections of equipment suspected of having oil containing PCBs, testing of oil in equipment for the presence of PCBs and targeted replacement facilitated through capital construction projects. Approximately 9,800 kg of solid materials and 4,000l of liquids containing PCBs were shipped for destruction in 2023. This is greater than the amount of PCB materials shipped for safe destruction in both 2022 (2,500 kg of solid material and 900l of liquid containing PCBs) and 2019 (7,000 kg of solid material and 3,500 l of liquid containing PCBs).

Recycling Rate

The recycling rate is the percentage of total waste generated that is diverted from landfill. Toronto Hydro measures the recycling rate of the waste included in O. Reg. 103/94 Industrial, Commercial and Institutional Source Separation Programs as well as organic materials and electric utility-specific waste, such as concrete and wood utility poles. Thanks to committed employees, effective source separation and reduction efforts led to a recycling rate of 91% in 2023, including a reduction of 200 tonnes of total waste generated compared to 2022. Recycling bins are installed throughout buildings and in the yards at work centres to allow materials such as waste construction materials, coffee cups, plastic bottles, metal cans, plastic shopping bags, paper towels and recyclable plastic material from the field to be diverted from landfill and sent for recycling. Organic containers have also been installed throughout work centres to capture and divert organic materials from the landfill.

Toronto Hydro utilizes an online tool that helps employees determine the proper disposal method for waste and recyclable materials. Employees are able to look up specific items and learn how to dispose of them correctly, thereby maximizing recycling while minimizing contamination. The online tool supports proper disposal of waste and helps reduces the amount of waste that ends up in landfills.

Waste Reduction Week

In 2023, Toronto Hydro actively participated in Waste Reduction Week (October 16–20). This included daily posts on waste-related topics, including: circular economy innovators; responsible use and disposal of textiles; proper disposal of electronic waste; responsible handling of plastic waste; and reducing food waste. These communications prompted employees to reflect on waste reduction and offered practical tips to make changes in both their personal and working lives. The week was intended to promote the theme of “reduce, reuse and recycle” for Toronto Hydro employees and ensure sustainability is top of mind for employees when completing day-to-day tasks.

Paper Consumption

Toronto Hydro has undertaken several initiatives to reduce paper usage, resulting in a significant 91% decrease in annual consumption over the past five years (from 2019 to 2023). This translates to a reduction of approximately 3,064,250 sheets of paper (13,768 kg). An equivalent stack of paper would measure approximately 1,000 feet — more than half the height of the CN Tower, which stands at 1,815 feet.

This reduction has had a substantial environmental impact, leading to a savings of around 39 tCO_2e in associated GHG emissions. Additionally, there are tangible financial benefits, with procurement cost reductions of approximately $21,500. These savings calculations do not include extra costs associated with paper record storage and transportation.

The successful reduction in paper usage throughout 2023 can be attributed to the implementation of electronic tailboards for job planning, electronic tablets for training sessions, virtual reality (VR) training, electronic employee communication boards, and strategically placed TV screens across all facilities. Additionally, Toronto Hydro implemented a flexible work arrangement policy in 2022. When employees are in the office, they print less and prioritize enhanced face-to-face communication, active participation in organizational events, or sharing updates within the company digitally. Toronto Hydro remains committed to these efforts and will continue to explore innovative strategies to further reduce paper consumption in the future.

Employee Involvement

Sustainable Commute Program

In September 2023, Toronto Hydro introduced its Sustainable Commute program, aimed at transforming the way employees commute to work. This initiative is designed to promote healthier and more enjoyable transportation options while gaining insights into how employees commute to work. Recognizing the pivotal role that sustainable workplace commuting plays in reducing GHG emissions, Toronto Hydro has extended its support by offering a range of programs and services to employees at all four of its work centre locations: 14 Carlton, 500 Commissioners, 715 Milner and 71 Rexdale. Key initiatives include:

- **Bike storage facilities:** To promote eco-friendly commuting, secure bike storage is provided at all work centres. This encourages employees to consider cycling as a viable and sustainable option for their daily commute
- **EV charging stations:** Charging stations have been installed for EVs at all work centres. These stations enable employees with electric or hybrid vehicles to conveniently charge their cars while at work, making the transition to cleaner transportation easier. Refer to the Electric Vehicles section for more information
- **Carpooling:** The program encourages carpooling among employees, promoting shared rides as an effective means of reducing the number of vehicles on the road and minimizing emissions

In addition to these efforts, Toronto Hydro conducted an internal survey to better understand employee commuting habits. The survey gathered insights on how frequently employees travel, the distances covered and preferred modes of transportation. This data is expected to provide valuable insights that will help shape and refine the Sustainable Commute program to better serve the needs of Toronto Hydro's dedicated workforce.

Training Programs

Toronto Hydro is committed to engaging employees in improving environmental performance, including increasing their knowledge of various sustainable practices. In 2023, the company introduced two optional training programs: Introduction to ESG and Electric Vehicles at Toronto Hydro. The ESG course provides employees with information on the significance of ESG principles, guiding them on how to integrate sustainability into their daily lives. The EV training program raises awareness about the EVs available for employees to use, including when to use them, how to access the vehicles and the benefits of EVs.

Employee Roadshow

Beyond training programs, Toronto Hydro hosted an in-person roadshow for employees in 2023 — Toronto Hydro's first in-person roadshow since the COVID-19 pandemic. This event provided various departments with a platform to showcase their initiatives and brought attention to sustainability within Toronto Hydro. The roadshow also served as an educational opportunity, focusing on initiatives like promoting the use of EVs, employee charging stations and encouraging employees to consider their commitment to sustainability.

Championing Renewable Energy Options

Battery Energy Storage Systems (BESS)

Toronto Hydro is actively exploring innovative approaches to incorporate energy storage into the distribution system planning. An illustrative instance of this effort is the Toronto Hydro Bulwer battery energy storage project, which was commissioned in 2021. It serves as a noteworthy demonstration of how utility-owned storage systems can effectively complement traditional utility infrastructure. Situated in a decommissioned downtown Toronto Hydro station near Queen Street. and Spadina Avenue, the 2 MW / 2 MWh battery system is strategically designed to prolong the lifespan of existing utility infrastructure by effectively managing peak demand in the area.

This project has provided Toronto Hydro's control centre, engineering and field maintenance crews with firsthand experience in operating a battery storage system. This practical exposure has yielded valuable insights into how battery storage can contribute significant value to the community and the overall distribution system. Such insights are crucial as the electricity distribution industry undergoes transformation in response to technological advancements and evolving policy dynamics. Additionally, with increasing customer demands for solar and battery connections, the knowledge gained from this project is anticipated to play a pivotal role moving forward.

Toronto Hydro remains committed to exploring potential locations where batteries storage systems may deliver value to customers and enhance the overall efficiency of the distribution system.

Solar Energy

Toronto Hydro jointly invested with the City of Toronto in solar photovoltaic projects on City-owned facilities. These projects were divided into three groups (Groups A, B and C) and were developed and implemented between 2013 to 2018.

Group A consists of 10 installations and has an installed capacity of 1 MW. The construction of these projects as completed between 2012 and 2013. In 2023, these projects generated 1,115 MWh and displaced approximately 32 tonnes of carbon dioxide equivalent emissions (tCO_2e).

Group B consists of 10 installations with a combined capacity of 1.5 MW, constructed between 2015 and 2016. These installations generated 1,468 MWh and displaced approximately 41 tCO_2e in 2023. Toronto Hydro has majority ownership of the Group A projects, while the City has majority ownership of the Group B projects (both are split 51% / 49%).

Group C consists of 52 installations with a combined installed capacity of 5.8 MW, completed in 2018. The City owns the majority of the Group C installations, with the exception of two installations at Toronto Hydro-owned facilities: 71 Rexdale Blvd (David M. Williams Centre) and 715 Milner Ave. Toronto Hydro owns 51% of these two installations, each with a 500-kW capacity. The installations at the David M. Williams Centre and 715 Milner generated 681 MWh and 675 MWh, respectively in 2023, and each displaced approximately 19 tCO2e.

Toronto Hydro previously invested in two other renewable generation projects (Better Living Centre Solar and 500 Commissioners Solar), which together have an installed capacity of 500 kW. These projects generated 607 MWh and displaced approximately 17 tCO_2e in 2023.

System Reliability and Climate Change Adaptation

Toronto Hydro is strategically investing to enhance grid strength, resiliency, and ensure the safe, reliable power supply for Torontonians in alignment with the City's infrastructure resiliency objective. Recent extreme weather events, accompanied by growing evidence of the impact of climate change on weather patterns in Toronto have underscored the need to build a resilient system for the long-term. At the same time, technology and innovation are driving a more dynamic system that's transitioning away from the usual patterns of supply and demand, adding additional complexity and urgency to modernizing the grid while preparing for increased electricity demand.

One of the core principles in Toronto Hydro's Environmental Policy is to mitigate the potential adverse effects of climate change on the organization. This is also a requirement of Toronto Hydro's ISO 14001:2015 certification. In 2023, Toronto Hydro continued to collaborate on climate change resilience with the City and other City agencies.

Designing for the Future

Toronto Hydro is committed to design that takes into consideration the challenges posed by climate change and prioritizes environmental efficiencies. Toronto Hydro regularly reviews and updates its design practices to ensure alignment with the evolving landscape of climate change and environmental sustainability. This commitment reflects Toronto Hydro's dedication to building a resilient and environmentally responsible energy infrastructure for the future.

An example of this transition is the shift towards adopting padmount transformers over submersible transformers within Toronto Hydro's electrical distribution system. As part of operating the city's electrical distribution system, Toronto Hydro installs electrical transformers that reduce (or transform) the voltage of electricity from distribution lines to levels that are safe for powering homes and businesses. Padmount transformers are installed above ground, while submersible transformers are installed underground, concealed from ground-level view. Although submersible transformers may be preferred because they are less visible, padmount transformers outperform them in terms of reliability, safety, cost and environmental impact.

Climate change has led to an increase in abnormal weather events, including heavy rainfall. Due to the urban nature of Toronto, heavy rainfall results in runoff, causing rapid rises in water levels in streams and rivers. High water levels put underground equipment at greater risk of potential flooding, which can lead to widespread outages. Additionally, exposure to substances like water runoff mixed with road salt can lead to corrosion of metal components. Between 2017 and 2021, the rate of failures due to corrosion for submersible transformers was approximately four times higher than that of padmount transformers.

Padmount transformers not only enhance system reliability, but also minimizes environmental risks associated with potential oil leaks. In the event of a spill, effects are localized and easily remediated, thereby reducing overall environmental impact.

Given these benefits, Toronto Hydro is expected to move forward with installing padmount transformers in place of submersibles as part of its strategy for building a more resilient grid and mitigating environmental impacts.

Participation in Industry Discussions

Climate Resilience Workshop

Toronto Hydro continues to be a leader in industry discussions about the awareness of climate change impacts in the electricity generation, transmission and distribution sectors. In 2023, Toronto Hydro participated in the interdivisional workshop hosted by the City of Toronto's Climate Resilience team, part of the Environment & Climate Division through the City. The workshop set out a vision, goals and actions to help Toronto survive, adapt and thrive in the face of any challenge, particularly climate change and growing inequities within the city.

Toronto Green Standards (TGS)

Toronto Hydro engaged in discussions with the City on the Toronto Green Standard (TGS), which outlines sustainable design and performance requirements for new private and city-owned developments. Toronto Hydro's collaboration focused on supporting customer developments that align with TGS Revision 4, emphasizing high performance, quality, low emissions and future-proofing. TGS Revision 4 developments are projected to make a substantial impact, contributing to savings exceeding 1 mega tonne of CO_2e cumulative GHG emissions reduction by 2050 — equivalent to removing more than 300,000 cars from the road annually.[6]

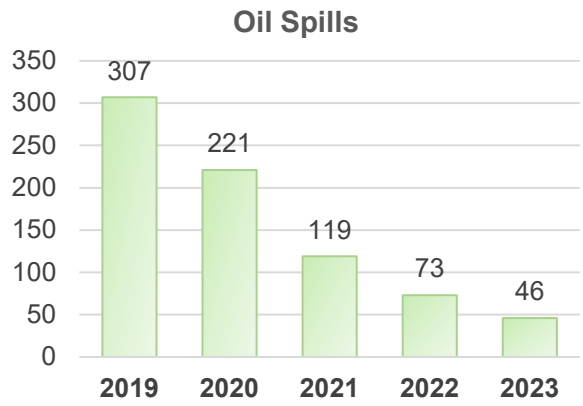
Toronto Hydro's active engagement in these initiatives ensures that design criteria meet Toronto Hydro standards. By fostering collaboration with the City of Toronto and actively participating in these working groups, Toronto Hydro underscores its commitment to the City's vision with sustainability at the forefront.

Energy Security and Supply

Toronto Hydro is strategically investing to enhance grid strength and, resiliency, and to ensure a safe, reliable power supply for Torontonians in alignment with the City's infrastructure resiliency objective. Collaborating with Hydro One, Toronto Hydro works to mitigate the potential impact of high-risk events, safeguarding critical transmission supply points for Central Toronto and supporting key institutions and essential services through sustainable practices.

Preventative and Predictive Maintenance and Repairs

Inspections



Toronto Hydro's preventative and predictive maintenance programs perform critical work to sustain the integrity of the company's systems. Inspections are conducted routinely on an inspection cycle determined by comprehensive asset condition assessments. The information collected through these inspections serves as the basis for Toronto Hydro's strategic plan outlining the removal and placement of transformers. In 2023, the inspection program continued its efficacy by identifying poor conditions and facilitating timely replacements, thus preventing potential catastrophic oil spill events. The success of this program is evident in the significant decrease in the number of oil spills over the past five years, underscoring Toronto Hydro's commitment to maintaining a resilient and reliable infrastructure.

Vegetation Management

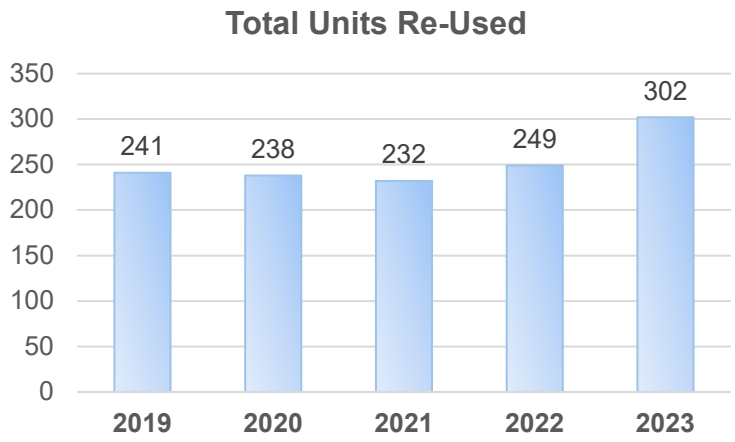
The preventative and predictive management program also includes effective vegetation management for mitigating tree-related interferences. Toronto Hydro's vegetation management program employs arboriculture techniques, carefully designed to provide proper care for trees. In 2023, Toronto Hydro initiated a pilot program,

[6] Toronto Green Standards (TGS)

utilizing satellite imagery to enhance vegetation management efforts. This technology helps create models and identify areas with vegetative encroachment, allowing Toronto Hydro to target and address potential issues. The pilot program was restricted to North York and Etobicoke, with plans for expanding in the future. In 2023, Toronto Hydro pruned approximately 73,300 trees adjacent to distribution lines in a manner that minimizes injury to the trees but helps improve system reliability. Tree pruning is conducted in accordance with the City's Urban Forestry Tree Pruning Guidelines. These vegetation management practices are essential for safeguarding the system against adverse weather conditions, as they involve removing vulnerable sections of the tree canopy that may break during high winds or from the accumulation of ice and snow.

Re-Use Program

Toronto Hydro has a re-use program, which assesses major equipment (e.g., transformers, switches, network protectors) returned from service, identified through inspections or in construction projects, for repair and reintroduction into the system. In 2023, 302 units underwent successful repairs and were seamlessly re-used within the system. This initiative is cost effective and addresses environmental concerns by minimizing the wasteful disposal of equipment that has yet to reach the end of its operational life.



Investing in the Grid

Capital Expenditure Plan

Renewing the grid and replacing aging, deteriorating, obsolete and failing distribution equipment while meeting the needs of a growing city is a capital intensive and complex endeavour. To address these challenges, Toronto Hydro develops and implements capital expenditure plans that outline investment needs and explain how planned investments may achieve outcomes that deliver value to customers.

The Ontario Energy Board (OEB) issued its decision on December 19, 2019 and its rate order on February 20, 2020, both in relation to Toronto Hydro's 2020–2024 rate application filed on August 15, 2018. In its rate application, Toronto Hydro requested approvals to fund capital expenditures over the 2020–2024 period. The 2020–2024 capital plan continues Toronto Hydro's effort to harden the distribution system to make it more resilient when extreme weather hits. The plan resulted in a 17% decrease in the distribution portion of the Delivery Charge of 17% for residential customers in March 2020 and the Toronto Hydro portion of the Delivery Charge is expected to remain below 2019 levels for residential customers until at least 2024. Most rate classes for general service customers also saw a decrease in 2020.

The 2020–2024 capital expenditure plan consists of four main investment categories: system access, system renewal, system service and general plant.

System access: Modifications (including asset relocation) the utility is obligated to provide a customer (including a generator) or group of customers with access to electricity services via the distribution system.

System renewal: The replacement and/or refurbishment of system assets to extend the original serviceable life of the assets and thereby maintain the ability of the distribution system to provide customers with electricity services.

System service: Ensure the utility is able to meet operational objectives while addressing anticipated future customer electricity service requirements. This includes addressing system-wide critical issues such as capacity

and operational constraints, security-of-supply, safety, system reliability and other considerations for the effective operation of the distribution grid.

General plant: Modification, replacements or additions to assets that are not part of the distribution system, including land and buildings, tools and equipment, rolling stock, electronic devices and software used to support day-to-day business and operations activities.

The 2020–2024 capital expenditure plan encompasses 20 distinct programs designed to target each of the four key investment areas. Notably, in 2023, two programs within this plan dedicated to enhancing system service and reliability included: System Enhancements and Network Condition Monitoring and Control.

In 2023, Toronto Hydro continued to pursue system enhancements to optimize the grid and efficiently restore power to customers. These improvements involved the replacement of manual switches with supervisory control and data acquisition (SCADA) enabled switches, adding SCADA enabled feeders and sectionalizing points on feeders, upgrading undersized cables or conductors, piloting auto re-closers and preparing the grid for fault location isolation system restoration (FLISR) models. FLISR models is expected to be integrated into the system to restore service promptly and safely without manual intervention. This program is still in the preliminary phases. In the upcoming years, the focus will be to enable technology and prepare for an automated system. These enhancements focus on efficiently supporting more customers, responding to outages promptly and enhancing overall safety.

As of December 31, 2023, approximately 500 network condition monitoring and control SCADA enabled equipment have been installed in network vaults to monitor equipment and allow for remote operability. This technology has the capability of detecting problems with the associated transformers, including oil levels, as well as identifying issues such as temperature anomalies and flooding. This proactive monitoring approach aids Toronto Hydro in addressing potential failure risks, including oil leaks, before they escalate into catastrophic events. Furthermore, the sensors contribute to a deeper understanding of electrical load, ultimately supporting electrification initiatives

2025–2029 Rate Application

Toronto Hydro's 2025–2029 rate application was submitted to the OEB in 2023, and the successful completion and implementation of the project work plan related to the application is expected to yield long-term results for Toronto Hydro. Specifically, the expected benefits include funding certainty and flexibility to invest in the modernization and renewal of the distribution system and to prepare for growth and electrification driven by the City's TransformTO strategy and other policy, social and economic drivers for the energy transition. However, there is no assurance that the OEB will substantially approve the activities, plans and methodologies set out in the application or the associated revenue requirement related thereto.

Disaster Preparedness

Toronto experiences a wide range of significant climate hazards. Human-caused climate change is expected to increase the number of long-lasting heatwaves and storms, and lead to more extreme cold, wind, ice and rain.[7] The City of Toronto's First Resilience Strategy calls for the City and the critical infrastructure owners operating within Toronto to adapt in the face of these chronic stresses and the acute shocks they bring.[8]

In addition to increasing the physical resiliency of the grid to the impacts of extreme weather events, Toronto Hydro continues to develop its Disaster Preparedness Management program to improve disaster/emergency response outcomes, which include climate-related emergencies. Toronto Hydro integrates Ontario's Incident Management System emergency response methodology into the company's Emergency Response Organization (ERO) framework. All employees at Toronto Hydro are assigned emergency roles, with training

[7] Page 91 of https://toronto.ca/ext/digital_comm/pdfs/resilience-office/toronto-resilience-strategy.pdf
[8] https://toronto.ca/wp-content/uploads/2019/05/97c7-Toronto-Resilience-Strategy-One-Page-Brief.pdf

provided for these roles. The ERO framework is revised and adjusted to reflect the realignment of resources and findings from events and tests.

Toronto Hydro is a member of the City's Emergency Management Program Committee and Emergency Management Working Group. As a member of these groups, Toronto Hydro actively participates in planning and preparing for community-wide response to emergencies impacting the city of Toronto. The groups includes departments, agencies and corporations that play a role in major emergency response within the city.

In 2023, there were no major weather events within the city of Toronto that required emergency response from Toronto Hydro.

Toronto Hydro is committed to prompt and safe restoration of power, and is a founding member of the Ontario Mutual Assistance Group (OnMAG). In April 2023, Toronto Hydro declared a Level Two emergency to address the severe effects of an ice storm in Eastern Ontario that left tens of thousands of residents without power. Toronto Hydro's crews supported Hydro One in the restoration of power to rural customers in the Township of North Dundas, Ontario (located between Kemptville and Winchester). Restoration efforts included transformer replacements, re-stringing of downed wires and tree limb removal.

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