REPORT FOR ACTION

TransformTO Net Zero Strategy: 2024 Annual Report on Implementation Progress

Date: May 28, 2025
To: Infrastructure and Environment Committee
From: Executive Director, Environment, Climate and Forestry Division
Wards: All

SUMMARY

This report provides an update on the City's progress to the end of 2024 on implementing the TransformTO Net Zero Strategy (NZS) and Short-term Implementation Plan (STIP, 2022-25). Development of the NZS, STIP and annual updates are a City Corporate-wide effort coordinated by Environment, Climate and Forestry (ECF).

In 2021, City Council adopted the NZS and the ambitious climate target of net zero greenhouse gas (GHG) emissions community-wide in Toronto by 2040 and asked for annual progress reports that track implementation towards achieving the net zero target.

The City of Toronto has direct control over approximately five percent of GHG emissions community-wide in Toronto and has demonstrated strong leadership in its corporate investments and operations. Addressing the remaining 95 percent of emissions will require collaborative approaches from the City, other orders of government, the private sector and individuals.

Four critical steps were identified as necessary to reach net zero (2024.IE12.3):

Step 1 - Demonstrate carbon accountability locally and globally by establishing a carbon budget: Work on this step in 2024 culminated with Toronto's first Carbon Budget in 2025. The 2025 Carbon Budget prioritized 31 new or enhanced climate projects in the City's 2025 financial budget which are projected to reduce emissions by 65,858 tonnes CO_2e in 2025, increasing to 244,615 tonnes CO_2e per year once fully implemented.

Step 2 - Accelerate rapid and significant reduction in fossil (natural) gas use in buildings: To improve affordability for homeowners, the Home Energy Loan Program (HELP) supported more than 250 energy-efficient renovation projects in 2024. Several programs reduce natural gas use in commercial buildings: the Deep Retrofit Challenge, Navigation and Support Services, Green Will Initiative and the Energy Retrofit Loan. For

new buildings, to date the City has certified 110 projects as meeting Tier 2 of the Toronto Green Standard, targeting higher performance and lower emissions.

Step 3 - Increase access to low carbon transportation options, including walking, biking, public transit and electric vehicles: New critical infrastructure in 2024 included 4.5 km of new sidewalks and approximately 26.7 km of bikeways, with an additional 25 km of bikeway installations and upgrades under construction as of December 2024. To reduce emissions and improve local air quality, the TTC increased its fleet of hybrid electric buses by 336 buses and added 16 battery-electric buses (e-Buses). Partnerships to expand the public EV charging network for private vehicles are underway.

Step 4 - Increase local renewable energy to contribute to a carbon-free grid: City and partner projects to enable innovative energy technologies include wastewater heat recovery at Toronto Western Hospital and Exhibition Place, beneficial use of biogas and landfill gas and the first geo-exchange field installation at the Etobicoke Civic Centre Precinct. A partnership with Waterfront Toronto studied deep geothermal systems to provide zero-carbon heating for Port Lands developments, and solar energy partnerships with Toronto Hydro advanced Toronto's energy independence objectives.

In addition to the critical steps, detailed progress updates on individual implementation actions found in the STIP (2022-25), all of which provide practical actions towards achieving the four critical steps, can be found in Attachment 1.

Overall, by the end of 2024, the City continued to move forward in achieving City Council's climate goals. In some areas, the City of Toronto continues to demonstrate leadership among world municipalities, while in other areas the City moves forward but faces significant policy and implementation challenges. Key emission sources, such as fossil (natural) gas in buildings for space and water heating, and gasoline and diesel fuel use in vehicles, continue to require an expansion of approaches to reduce emissions and meet our targets.

The next NZS Action Plan, outlining the actions the City will take over 2026-30 as the second set of actions that move toward City Council's climate goals for Toronto, will be brought forward for City Council consideration in Q4 2025. This second set of actions will be closely aligned with the upcoming report on Building Emissions Performance Standards (BEPS), which will present an implementation pathway for BEPS and supporting programs. The pathway chosen through BEPS will have the most material effect on the pace at which Toronto can move toward its climate goals.

RECOMMENDATIONS

The Executive Director, Environment, Climate and Forestry recommends that:

1. City Council receive this report for information.

FINANCIAL IMPACT

There is no additional financial impact to the approved 2025 Operating and Capital budgets for the Environment, Climate and Forestry (ECF) Division.

There is no financial impact relating to Annual TransformTO Net Zero Strategy: 2024 Annual Report on Implementation Progress.

The Chief Financial Officer and Treasurer has been advised of the financial impacts associated with this report and agrees with the financial impact information statement.

EQUITY IMPACT

The annual reporting on progress provided in this report does not present significant equity impacts.

However, it should be acknowledged that not everyone experiences the impacts of climate change or the benefits of emission reduction and climate adaptation measures equally. The most vulnerable people, including those who are marginalized, have lower incomes, and those who are Black, Indigenous or belong to equity-deserving groups, tend to contribute less in terms of emissions and tend to have the least ability to change the amount of emissions they produce. However, when severe weather occurs, such as extreme heat and flooding, they have the least ability to be resilient.

Through various education programs and targeted incentive offerings, the City aims to provide a more equitable approach to services that benefit those who need them most.

Climate initiatives need to be undertaken in a way that avoids unintended consequences that exacerbate inequities. The City actively considers equity in the design and implementation of its climate-related programs, and aims to make participation in activities to address climate change more accessible. Examples include initiatives that support those with low to moderate incomes through supporting active and sustainable modes of transportation, such as walking, cycling and taking public transit; protecting the most vulnerable road users (pedestrians, cyclists, seniors and people with disabilities); and refocusing the Home Energy Loan Program to better include low to moderate income households.

DECISION HISTORY

Annual reports on progress in implementing the TransformTO Net Zero Strategy have been adopted by City Council for the years 2022 and 2023.
https://secure.toronto.ca/council/agenda-item.do?item=2023.IE3.3
https://secure.toronto.ca/council/agenda-item.do?item=2024.IE12.3

On December 15, 2021, Council endorsed the Transform TO Net Zero Strategy and adopted the target of net zero greenhouse gas emissions in Toronto community-wide by 2040. City Council also endorsed the TransformTO Short-Term Implementation Plan (2022-2025).

https://secure.toronto.ca/council/agenda-item.do?item=2021.IE26.16

COMMENTS

Introduction

Shortly after declaring a climate emergency, in 2021 City Council endorsed the Transform TO Net Zero Strategy (NZS) and adopted the target of net zero GHG emissions in Toronto, community-wide by 2040. The NZS highlighted critical steps for success in achieving the City's ambitious climate goals. To translate what the critical steps look like as "climate action", Council also endorsed the TransformTO Short-Term Implementation Plan (2022-2025) which outlined specific actions that the City of Toronto would initiate.

To further support action implementation, the NZS Accountability and Management Framework was adopted by City Council in May 2022 to provide a mechanism for corporate-wide and community input into policies and plans being developed or implemented over the STIP's timeframe (2022.IE29.10). The external Climate Advisory Group, and annual reports on implementation progress, are important pieces to ensure accountability and transparency.

Update on Progress - Report Contents

This report begins with key findings of the City's most recent sector-based GHG emissions inventory as an overall metric of progress. The report then focuses on the critical steps for success in meeting the City's net zero emissions ambition. Detailed progress updates to the end of 2024 on each of the actions from the Short-term Implementation Plan (2022-2025) can be found in Attachment 1. Progress updates on Council directions related to adoption of the TransformTO Net Zero Strategy in 2021 can be found in Attachment 2. Finally, Attachment 3 contains a specific report back requested by City Council (2025.IE19.2, Part 1) for the Executive Director, ECF, and the General Manager, Fleet Services, to report fleet idling performance through the Annual TransformTO Net Zero Progress and Accountability Report.

Sector-Based Emissions Inventory (SBEI)

The Sector-Based Emissions Inventory (SBEI) is the City of Toronto’s main tool for measuring community-wide and corporate-wide progress towards net zero. Emissions are estimated according to the Global Protocol for Community-Scale Greenhouse Gas Emission Inventories, an internationally recognized methodology. The most recent inventory (2022) indicates that community-wide emissions increased slightly over the total emissions reported in 2021 from 14.8 megatonnes (MT) to 15.5 MT. The use of fossil (natural) gas in buildings and homes continues to be the primary source of GHGs emitted in Toronto, followed by the use of gasoline and diesel in cars and trucks.

With the current pace of emissions reductions, the City is unlikely to meet its 2025 emissions target. To meet the 2025 target, a 2.1 MT CO_2e reduction in annual emissions would be required and emissions in Toronto are not being reduced at this pace. Reaching Toronto's future emissions targets (65 per cent reduction from 1990 levels by 2030, and net zero emissions by 2040) would require substantial alignment of actions across all levels of government, the private sector and individuals.

Community-wide, buildings remained the primary source of GHG emissions in Toronto in 2022, accounting for 56 per cent of community-wide emissions. The largest source of these emissions is fossil (natural) gas heating in residential buildings. Transportation sector emissions continued to be the second largest source of GHG emissions in Toronto, accounting for 35 per cent of community-wide emissions in 2022. These emissions are mostly attributable to gasoline used in passenger cars and trucks. The waste sector, primarily landfills, was the third largest source of Toronto's GHG emissions in the inventory, accounting for roughly nine per cent of community-wide emissions in 2022.

The City of Toronto, as a corporation, has direct control over approximately five percent of GHG emissions community-wide in Toronto. Future GHG inventories showing dramatic declines in GHG emissions may still be possible, but only with very close collaboration and substantial additional action across all orders of government, the private sector and communities.

Critical Steps to Meet City Council's Climate Goals

The vision of TransformTO is a future Toronto that is healthy, prosperous, equitable and resilient, and has net zero emissions by 2040. The City has identified four critical steps that must be met by the City, other orders of government, the private sector and individuals, in order to achieve this vision. Progress to the end of 2024 on these critical steps is outlined below.

Critical step 1: Demonstrate carbon accountability locally and globally by establishing a carbon budget

Given the urgent need for accelerated climate action, the City adopted a rigorous approach to satisfy Critical step 1. In May 2023, City Council adopted the report, *Carbon Accountability: Institutionalizing governance, a Carbon Budget and an Offset Credits Policy* (2023.IE3.4) thus codifying within Toronto Municipal Code Chapter 669, *Climate Change Goals and Governance*, the Net Zero targets and goals and outlining a carbon budget process and reporting schedule. This made Toronto one of few cities in the world to formally embed climate accountability into its budget process—with commitments tracked, evaluated, and treated as obligations, not options.

In 2024, Toronto's first Carbon Budget was launched as part of the 2025 City's financial budget and prioritized 31 new or enhanced climate projects. These projects provided the first set of information on how specific projects would get Toronto closer to its climate goals. Although establishing the process for the carbon budget was completed in 2024, the work of the budget occurs annually through the City budget process.

Report back on 2025 Budget impact

As is required in Toronto Municipal Code Chapter 669 (§ 669-2.3F), the Carbon Budget process includes a report back on the impact of the Mayor's adopted budget, and that information is provided here. Work to develop the 2025 Carbon Budget occurred throughout 2024, and it included refinement of the previous year's process. As a result, 112 climate actions were proposed by 16 City Divisions, Agencies, and Corporations, with 54 advancing to a higher stage of assessment. Thirty-six climate actions were deemed high priority, of which 31 were included in the 2025 Staff Prepared Capital and Operating Budget.

These actions are expected to reduce emissions by 65,858 tonnes CO_2e in 2025, increasing to 244,615 tonnes CO_2e per year once fully implemented. These reductions are additional to the ongoing impact of baseline actions from the 2024 Budget, which are projected to cut emissions by 94,867 tonnes CO_2e in 2025, reaching 118,494 tonnes CO_2e annually at full implementation.

In total, the 2025 Budget is expected to reduce emissions by 160,725 tonnes CO_2e, with the majority of reductions coming from City corporate buildings and transportation. Achieving these reductions required a $1.95 billion capital investment and $78.47 million in operating expenses for 2025. No changes were made between the Staff-proposed budget and the approved Mayor’s budget.

Critical step 2: Accelerate rapid and significant reduction in fossil (natural) gas use in buildings

Buildings

Building heating and hot water heating are the most significant source of GHG emissions in Toronto, accounting for 56% of total community-wide emissions in Toronto, due to the use of fossil (natural) gas.

Buildings Emissions Performance Standards (BEPS) and building retrofits:

BEPS are intended to drive the scale and depth of emission reductions in existing buildings through standards setting and program support, including access to incentives. City Council's Infrastructure and Environment Committee considered BEPS development most recently in July 2024, in the *Building Emissions Performance Standards - Design Principles and Development Plan* report (2024.IE15.4).

A report on the proposed BEPS By-law, support programs and resources and implementation plan will be brought forward for City Council consideration in Q4 2025. The report will propose a Building Emissions Performance Standards By-law which will outline GHG emissions targets for building types and sizes covered by mandatory targets and associated compliance periods, as well as the overall timeline for the phased implementation of BEPS. This will provide building owners with ample lead time

to identify the right path forward before they are required to comply. The BEPS report will also detail support policies, programs and resources.

In 2024, ECF supported more than 250 energy-efficient, net-zero renovation projects through the Home Energy Loan Program (HELP) which issued over $5.5 million in loans. ECF continued to deliver retrofit-support programs including the Deep Retrofit Challenge (DRC), Navigation & Support Services, Green Will Initiative (GWI) and the Energy Retrofit Loan (ERL). Further work included the first year of Energy and Water Reporting for buildings in Toronto (50,000 square feet and above) which saw almost 3,500 buildings reporting. It also included a $2.7 million NRCan-funded project to accelerate the adoption and implementation of higher tiers of the national model energy codes.

Toronto Green Standard:

The Toronto Green Standard (TGS) is in its 15th year and sets out sustainable design and performance requirements for new private and City-owned developments. Initially developed with Version 1 in 2010, Version 4 came into effect May 1, 2022 for new planning applications. The Standard consists of tiers of performance with Tier 1 being mandatory, applied through the planning approval process. Tiers 2 and 3 are voluntary with stretch targets and incentives. The next update of the TGS is planned to go to City Council this year and will be informed by a study jointly managed between City Planning and ECF.

In 2024, 18 new buildings were certified as having met Tier 2 levels of the TGS and 46 new projects were enrolled into the Development Charge Refund program under TGS v3, targeting Tier 2 levels or higher. To date 110 projects have been certified as having met Tier 2 levels of the TGS, and an average of 13 per cent of new development projects participate in the TGS Development Charge Refund program targeting higher performance, lower emissions new construction.

City of Toronto (Corporate) buildings:

In July 2021, City Council adopted the Net Zero Carbon Plan developed by Corporate Real Estate Management (CREM). This Plan provides a road map to achieve net zero emissions in City buildings.

In 2024, CREM continued to deliver new construction projects to TGS standards. The latest standards for City buildings include net zero considerations among other environmentally beneficial requirements. Effective 2022, City Agencies', Corporations' and Division-owned facilities are required to be designed and built to Net Zero emissions under the TGS.

Advocacy and partnerships to reduce fossil (natural) gas use

In 2024, the City continued to advocate at the federal and provincial level on proposed policy that would have a direct impact on building energy as well as existing subsidies for fossil (natural) gas infrastructure.

In 2024, the City submitted comments on proposed changes to the National Model Codes, including the National Building Code of Canada. To create a more level playing field for electricity and fossil (natural) gas as a building heating source, in April, 2024 the City provided testimony and a written submission on Bill 165 – the Keeping Energy Costs Down Act, that would override the Ontario Energy Board decision requiring the cost of natural gas infrastructure to be paid upfront. In June 2024 City Council adopted the report, *Impact of Bill 165 and Gas Utility Use of Public Property in Toronto* (2024.IE14.9). In addition, City staff are working closely with Toronto Hydro's Climate Action team on opportunities for collaboration and coordination on the development and delivery of building decarbonization programs and initiatives.

Critical step 3: Increase access to low carbon transportation options, including walking, biking, public transit and electric vehicles

The transportation sector is the second highest source of GHG emissions in Toronto, and a key local source of air pollutants that impact health. Measures to reduce transportation emissions include walking, cycling, public transit and using electric vehicles (EVs) instead of traditional fossil gasoline or diesel vehicles.

Safe infrastructure to support active transportation (walking and cycling)

Active transportation, such as walking or cycling, including the use of electric bikes (e-bikes), provides many benefits including improved air quality and better cardiovascular and mental health. In 2024, the City constructed 4.5 km of new sidewalks through the Missing Sidewalk program. Approximately 26.7 km of bikeways were constructed, with an additional 25 km of bikeway installations and upgrades under construction as of December 2024. In June 2024, the City launched a road safety campaign targeted to drivers to draw awareness to driving carefully around vulnerable road users, which include cyclists.

In November 2024, the Province passed *Bill 212 – Reducing Gridlock, Saving you Time Act, 2024*, which stated that municipalities must obtain the Minister of Transportation's approval before constructing bicycle lanes under certain circumstances, and require the removal of specific bicycle lanes in the City of Toronto. The City continues to discuss next steps with the Province while also continuing to assess the impacts on the City's existing cycling infrastructure and future plans.

In May 2024, the Bike Share Toronto app was launched providing enhanced features including route planning, cycle path maps, and streamlined purchase options. By the end of 2025, Bike Share Toronto stations will be available in all 25 wards in the city. An additional 82 Bike Share Toronto docking stations were installed in 2024, bringing the total number to 838 docking stations, inclusive of 70 solar stations and 12 e-stations that have charging capacity for e-bikes. The network now has 9,350 bikes in its system, which includes 1,863 e-bikes. The number of Bike Share Toronto memberships increased by approximately 5,000 since 2023 to 40,460 memberships.

In 2024, the City's Fleet Services Division continued efforts to reach zero emissions by expanding the City's fleet of vehicles to include 155 bicycles utilized by staff of City Divisions, Agencies, and Corporations to perform their work.

Public transit

For Toronto's transit system to reach net zero GHG emissions, the TTC has worked to make operations more sustainable, particularly by continuing to electrify the fleet of approximately 2,000 buses. This process is well underway and is guided by a series of plans, reports, and programs.

TTC's subways and streetcars are powered by electricity and are already zero emissions. In 2024, the TTC received delivery of 336 hybrid electric buses, an increase from the 243 the TTC received in 2023, and received 16 battery-electric buses (e-Buses). The TTC plans to grow the fleet to 400 e-Buses, which is projected to make up 20 per cent of the TTC’s entire bus fleet.

Supporting the electrification of the TTC’s bus fleet, the TTC installed 41 charge points and continues to install over 200 additional charge points at different garages in advance of the new electric vehicle deliveries. The increased electricity demand is being supported by a new energy management system that is being deployed throughout the TTC with support from PowerON, a subsidiary of the Ontario Power Generation, to oversee installation, operation, and maintenance of the TTC’s bus charging system.

The TTC is pilot testing the adoption of five battery electric paratransit vehicles in its Wheel-Trans fleet. TTC decommissioned the last diesel Wheel-Trans bus in 2023, as part of a transition from diesel to gasoline, and this change resulted in a 25 per cent reduction in GHG emissions associated with the Wheel-Trans fleet in 2024 (from the 2017 baseline).

In addition, the TTC has identified and established 130 Green Zones in areas near bus stops, subway stations, TTC facilities, and anywhere TTC customers, the public, or TTC workers spend considerable amounts of time. Within the Green Zones, diesel engines are turned off, reducing both air and noise pollution. In these areas, TTC hybrid-electric buses run with the diesel engine completely off, improving local air quality. The TTC plans to continue to expand the number of Green Zones.

To improve access, building on the success of free rides for children 12 years old and under, in 2024 the TTC implemented free transit for grades 7-12 student field trips taking place on Mondays and Fridays between 9 a.m. and 3 p.m.

Fuel switching to electric vehicles (EVs)

Sixty-six per cent of Toronto's transportation emissions come from passenger vehicles, which are the personal vehicles that Toronto residents own and use. Transitioning from internal combustion engine vehicles (gasoline and diesel fuel) to EVs significantly reduces tailpipe emissions of GHGs and air pollutants that impact health, though switching to EVs does not reduce congestion on the roadways. The City, along with other levels of government and the private sector will need to take a more proactive role in encouraging EV adoption to achieve the TransformTO goal: by 2030, 30 per cent of registered vehicles in Toronto are electric.

City Fleet vehicle conversions:

The City of Toronto's Fleet Services Division manages vehicles used for City operations and is actively taking measures to ensure City staff minimize tailpipe emissions. GHG emissions from the City's fleet vehicles have declined by an estimated 43.5 per cent from 1990 levels, which is approaching the target of a 45% reduction by 2025. This has been achieved by the utilization of zero emission vehicles, such as bikes and EVs replacing gas or diesel vehicles, an EV charging network of 345 charge ports for City vehicles at more than 100 City locations, and telematics devices that provide useful information to improve vehicle utilization, reduce fuel consumption and emissions, and enhance safety.

EV public infrastructure development and status update on Council-directed actions:

Though the City of Toronto continues to be a strong proponent of the transition to EVs, the City is reliant on provincial and federal funding initiatives and policies, to grow the public EV charging network and incentivize residents to invest in EVs. The City and its many service delivery partners continue to influence EV adoption through policies and infrastructure development. The City is working with the Toronto Parking Authority (TPA) to continue to grow the network of public EV chargers in Green P parking lots and on residential streets. The City, in partnership with Toronto Hydro, are working to support EV adoption by accelerating the roll-out of EV chargers and other infrastructure.

Continued work to support the vehicle-for-hire sector transition to zero-emission vehicles by 2030 is in progress with additional supports and resources allocated to expanding the network of public and private EV charging infrastructure.

As part of the October 9th, 2024 Council decision on *Approach to Public Electric Vehicle (EV) Charging to 2030* (2024.IE16.5), several recommendations were provided along with a requirement for ECF to report back on the status of those actions as part of the NZS Annual Report. Following the adoption of the report, the approved governance approach that established ECF as having strategic oversight of public EV charging, with implementation and charger operations being managed by the Toronto Parking Authority (TPA), was put into effect. To further support the on-going development of a public strategy, a coordinated approach across City divisions, agencies and corporations was required, leading to the creation of the following:

- City Asset Delivery Group: Senior executive members from ECF, TPA, Transportation Services (TS), Toronto Hydro (TH), Fleet Services Division (FSD), and TTC convened in December 2024 to discuss governance and next steps related to public EV charging;
- EV Charging Delivery Group: A sub-working group of staff members from ECF, TPA, TH, FSD, and TTC reconvened in January 2025 and meets monthly to collaborate on EV initiatives, identify opportunities for public EV charging, discuss lessons learned, and look at bulk procurement opportunities; and
- City and TPA EV Operations Working Group: This working group was formed in January 2025, and meets weekly to align operations on branding, payment and wayfinding. This group shares information on EV parking and charging priorities to better inform investments in public charging infrastructure.

The report on public EV charging (2024.IE16.5) also requires ECF to propose an initial three-year city-wide EV charging installation and funding plan by the fourth quarter of 2025. This work is well underway and on track, and will be informed by several actions including:

- Exploration of Transportation Innovation Zones with Transportation Services for EV pilots;
- Jurisdictional review of options for adjacent landowners to put publicly accessible, privately owned, building-connected chargers at the curb at no cost to the City; and
- Engagement with The Atmospheric Fund (TAF) on a complementary EV action plan that factors in broad stakeholder outreach and opportunities for affordable charging on public (non-City) and privately owned assets.

Working with ECF, TH has established a dedicated team of Customer Connection Associates to guide customers through all types of connection processes. On public properties, the TPA has also provided their annual public EV charging work plan, which has been incorporated in the 2025 capital budget process.

Critical step 4: Increase local renewable energy to contribute to a carbon-free grid

Toronto is dependent on having a resilient and sufficient source of electricity to power the City's energy transition and achieve TransformTO's vision. As the City does not have decision-making power over centralized electricity generation, the City's approach to this critical step has been working to enable renewable energy resources, engaging in long-term energy planning processes, and advocating to the other orders of government.

Renewable energy

Through leadership in solar, storage, district energy, and thermal energy projects, the City is reducing barriers and accelerating adoption of clean technologies across municipal operations and the broader community.

Displacing the future need for natural gas by using waste heat from wastewater:

Wastewater Energy Projects capture thermal energy from wastewater to heat and cool buildings. In 2022, City Council authorized Toronto Water to approve up to nine Noventa Energy projects, in addition to their pilot underway at Toronto Western Hospital. Construction of the Toronto Western Hospital wastewater energy project is near completion and the project unveiling is expected for the summer 2025. The energy will be used to heat and cool the hospital’s buildings, reducing the hospital’s natural gas use by an estimated 90 per cent, equal to about 8,400 tonnes of CO_2 output annually. In addition, the Wastewater Energy Transfer (WET) system at Exhibition Place is in the detailed design phase.

Renewable natural gas:

The City is continuing to implement its renewable natural gas (RNG) strategy for the beneficial use of biogas and landfill gas and advancing work to increase organic waste processing capacity, which will provide an additional opportunity to generate RNG. The production of RNG from biogas and landfill gas has the environmental benefit of closing the carbon loop by capturing the gas produced (as opposed to flaring/burning it), upgrading the gas to pipeline quality RNG, and then using it to displace a fossil fuel with renewable fuel.

District energy:

Renewable District Energy involves developing low-carbon thermal networks, such as the installing the first geothermal district energy system at the Etobicoke Civic Centre (ECC) Precinct. The Civic Centre and the first housing site are currently under construction. The City continues to explore new sites including but not limited to the Port Lands development area for the integration of thermal energy technologies and renewable energy resources into infrastructure planning activities. In addition, ECF has partnered with Waterfront Toronto to study and explore deep geothermal systems to provide zero-carbon heating for Port Lands developments.

Supporting increased adoption of solar technology:

The City's SolarTO program supports residents, businesses, and institutions in adopting solar and storage, offering tools such as the rooftop solar potential map and streamlining processes for easier installation. The Solar Potential Map was updated with the latest LiDAR (Light Detection and Ranging) data to provide more accurate and up-to-date assessments of existing roofs, reflecting changes in Toronto's building landscape since the previous 2018 data.

Toronto Hydro has taken steps to streamline solar adoption by reducing interconnection costs by $1,000 for mid-sized systems, deploying solar-ready meters to minimize delays and investing in grid upgrades to address short circuit capacity constraints. ECF will continue to work with Toronto Hydro on additional improvements. ECF is also working with City Planning to address zoning barriers to solar adoption. Community engagement on barriers is underway.

Leading by example on its own buildings, the City combines solar photovoltaic (PV) projects with re-roofing and parking lot resurfacing on City facilities.

Integrated Regional Resource Plan for Toronto

Given the importance of a resilient and sufficient future supply of electricity to meet Toronto's climate goals, the City is actively engaged with agencies who are undertaking long-term energy planning for the Toronto region. The Integrated Regional Resource Plan (IRRP) for Toronto is currently being developed jointly by the Independent Electricity System Operator (IESO), Hydro One Networks and Toronto Hydro, with input from the City of Toronto. The IRRP assesses demand for electricity in the region and how this can be managed over the next 25 years.

In support of this process, City staff (with partners Toronto Hydro, Hydro One, and Enwave) are also evaluating opportunities for distributed renewable energy resources and low carbon thermal networks in the Port Lands development area to inform the IRRP.

In June, 2024 (2024.MM19.9) City Council requested the IESO to work with the City of Toronto and Toronto Hydro to align the IRRP for Toronto's electricity system, and broader energy system planning and procurement, with the City's 2040 target of net zero GHG emissions by:

- phasing out gas-fired electricity generation at the Portlands Energy Centre by 2035, except in extreme, exceptional and emergency circumstances totalling less than 88 hours per year;
- rapidly increasing local renewable energy generation and storage, and maximizing cost-effective energy efficiency;
- empowering Toronto Hydro to act as Toronto's electric Distribution System Operator to support development, integration, and utilization of distributed energy resources; and
- supporting a transformed electricity system that supplies Toronto with sufficient reliable, affordable, low-carbon electricity to meet present and future needs, including population growth and the electrification of buildings and transport.

Advocacy on reducing future emissions from Ontario's electricity system

City Council continues to advocate for the federal and provincial governments to reduce fossil fuel use for electricity generation. GHG emissions per unit of electricity delivered by the provincial electricity grid are increasing, and this trend is forecasted to continue due to increased use of fossil (natural) gas in electricity generation. In 2024 the City continued to advocate to the federal Government regarding the Clean Electricity Regulations to address this source of emissions.

City Council has also articulated its desire to reduce or eliminate the burning of fossil (natural) gas at the Portlands Energy Centre in Toronto. Most recently, in April and December 2024, staff conveyed City Council's request (2024.MM17.9) that the Minister of Environment, Conservation and Parks elevate Atura Power's proposal to expand the capacity of the Portlands Energy Centre by 50 megawatts to a comprehensive environmental assessment.

Conclusion and Next Steps

In 2024, the City continued to move toward City Council's vision of an equitable, healthy, prosperous, resilient and net zero GHG Toronto. An examination of the NZS critical steps shows that in some areas, the City of Toronto is providing leadership among world municipalities, and in other areas the City is navigating significant challenges.

The City of Toronto has direct control over approximately five per cent of GHG emissions in Toronto and has influence over some additional emissions. Achieving a net

zero GHG Toronto requires leadership and collaboration from the City, other orders of government, the private sector and individuals.

The path chosen for implementation of Building Emissions Performance Standards in Toronto will materially affect the pace at which Toronto moves toward its climate goals. Similarly, the pace at which policies, services and infrastructure from all levels of government increase preference for cycling, walking, transit and EVs, will determine how quickly GHG and air pollutant emissions from transportation decline.

The next progress report on implementation of the NZS Short-term Implementation Plan (2022-25) will be brought forward in 2026, and will cover implementation over this four-year period.

In Q4 2025, the next NZS Action Plan, outlining the actions the City will take over 2026-30 to move toward City Council's vision for a net zero, healthy, prosperous Toronto, will be brought forward for City Council consideration. It will be aligned with another key report to City Council in Q4 2025 detailing staff's recommended implementation pathway for Building Emission Performance Standards and supporting programs. A further report on the City's approach to climate resilience is anticipated in winter 2025/26.

CONTACT

Alice Xu
Director, Policy, Planning and Program Enablement
Environment, Climate and Forestry Division
Tel: 416-392-2085
Email: alice.xu@toronto.ca

James Nowlan
Executive Director
Environment, Climate and Forestry Division
Tel: 416-392-6064
Email: james.nowlan@toronto.ca

SIGNATURE

James Nowlan
Executive Director, Environment, Climate and Forestry

ATTACHMENTS

Attachment 1. Summary of implementation progress to the end of 2024 on actions from the Short-term Implementation Plan 2022-2025 of the TransformTO Net Zero Strategy

Attachment 2. Summary of implementation progress to the end of 2024 responding to City Council directions on the TransformTO Net Zero Strategy

Attachment 3. Fleet vehicle idling performance information from Fleet Services Division