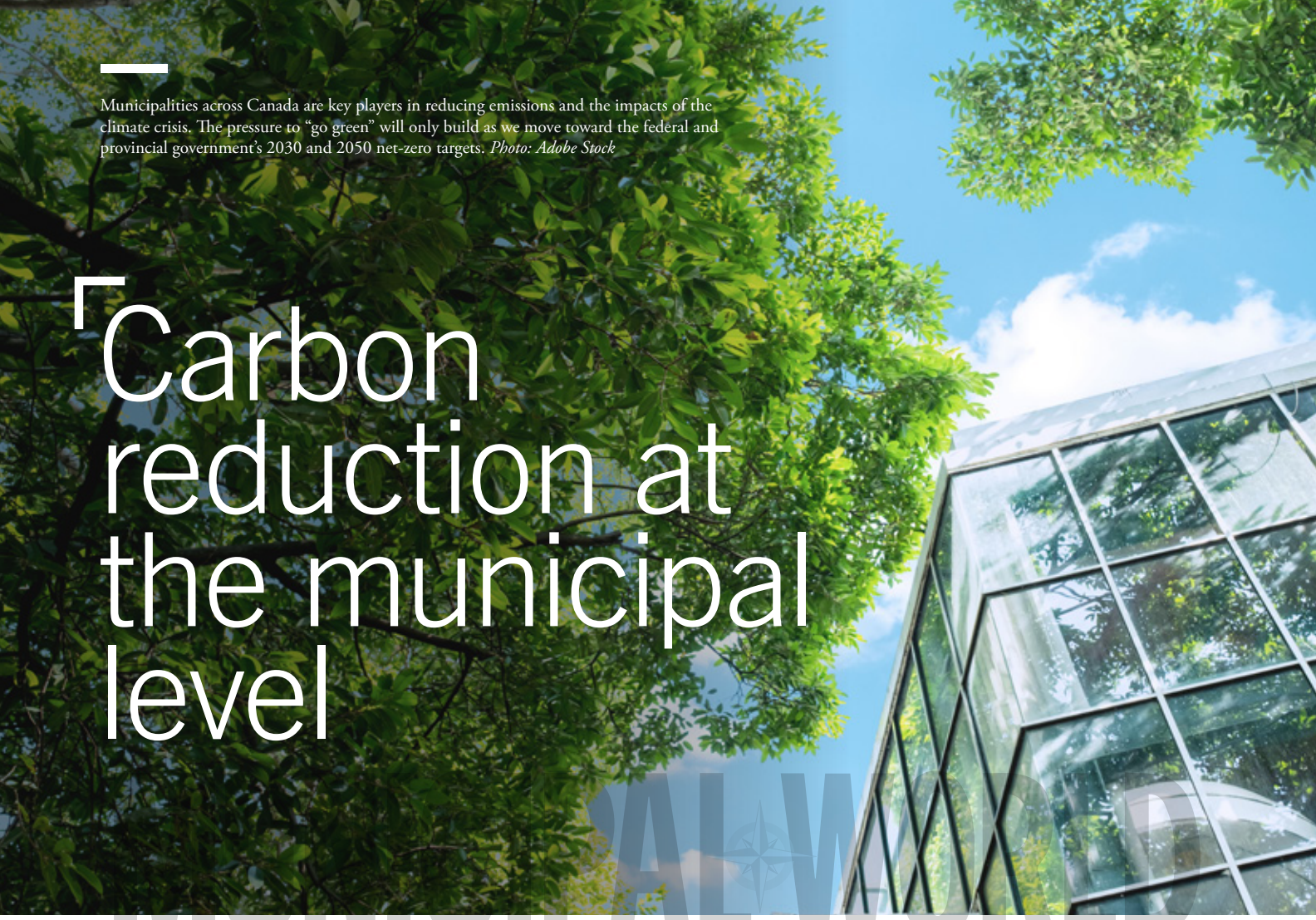

Municipalities across Canada are key players in reducing emissions and the impacts of the climate crisis. The pressure to "go green" will only build as we move toward the federal and provincial government's 2030 and 2050 net-zero targets. *Photo: Adobe Stock*

Carbon reduction at the municipal level

by Aaron Atcheson, Steve O'Melia, and Camy Van Ruitenburg

Everyone has a part to play as the world moves toward 2030 and 2050 – important goal posts for carbon reduction in the fight against climate change under the Paris Agreement.

According to the Federation of Canadian Municipalities, municipalities have influence over 50 per cent of greenhouse gas (GHG) emissions in Canada. Municipalities are well placed to use regular rounds of procurement to "green" what is being purchased.

This is important so that local citizens see the municipality doing their part – or leading, in some cases. But, environmental regulations on municipal purchasing are inevitable.

Provincial and federal governments have been enacting remedial and preventative climate change initiatives aimed at corporations for years now, and municipal regulations are likely not far behind. A forward-looking purchasing strategy that mitigates carbon release numbers will prepare municipalities for these future requirements.

Climate change policies have been adopted by both federal and provincial governments. In 2021, Canada formally announced its intention to exceed Paris Agreement commitments with reductions of 40-45 per cent below 2005 by 2030. Canada continues to phase out traditional coal-fired power plants and embrace renewable energy. It is putting a price on carbon so there is a cost to pollute.

Likewise, the Ontario government recently introduced "Provincial Planning Statement, 2024" (PPS 2024), the updated policy framework that regulates the development and use of land in Ontario.

Policy Framework for a Greener Canada

PPS 2024 applies to all decisions that affect a planning matter made on or after Oct. 20, 2024. It requires planning authorities to reduce GHG emissions and prepare for the impacts of climate change by supporting energy conservation, promoting green infrastructure, and incorporating stormwater management systems. PPS 2024 establishes directions for the protection, enhancement, and restoration of water sources.

The pressure to reduce carbon emissions at the municipal level is only increasing. The following are some of the ways municipalities can ensure their influence over GHG emissions is contributing to a greener Canada.

Vehicle procurement and operation

Transportation is a significant source of emissions. Municipalities can alter their own operations to drastically reduce carbon emissions by:

- considering electric vehicles (EVs), hybrid vehicles, or hydrogen vehicles (especially large passenger vehicles)

- incorporating biodiesel, renewable diesel, or renewable natural gas (RNG) into fleet fuelling
- ensuring right-size vehicles are selected for the task to avoid heavy-duty vehicles burning high levels of fuel to provide unnecessary levels of flexibility
- leasing newer vehicles that include up-to-date fuel saving options, such as automatic shutdown when not in motion
- minimizing additional spending to support traditional vehicles, to anticipate further updates in a fleet
- adopting and enforcing stronger anti-idling policies for municipal vehicles

Water treatment and conservation

Critical infrastructure, such as water treatment systems, determine our vulnerability to climate issues. Municipalities delivering these services should:

- reduce freshwater demand by capturing rainwater for indoor and outdoor non-potable use, such as washing municipal-owned vehicles or landscape irrigation
- assess the need for low-impact development or green stormwater infrastructure to manage the demand on stormwater systems (examples include rain gardens and green roofs)
- consider installing greywater systems in municipal offices and city-owned buildings for toilet flushing
- upgrade wastewater and stormwater management systems to reduce sewage overflow or bypass, especially for combined sewers

Building infrastructure, heating and cooling

We rely on heating and cooling on a day-to-day basis. Therefore, it is essential to our ability to meet net-zero targets. On this front, municipalities can:

- upgrade windows and exterior doors to reduce thermal loss
- upgrade to energy-efficient ventilation in buildings that are regularly occupied
- embrace electricity-based heating, such as heat pumps, capable of generating substantial heat from low-grade sources (e.g., ground water, outdoor air, soil)
- explore low-carbon heating, such as district heating systems fueled by geothermal, wastewater, or solar thermal energy
- consider upgrading heating, ventilation, and air conditioning (HVAC) systems to geothermal heat pumps or thermal air

Building infrastructure, energy supply

Local governments may be limited in their ability to shift energy production methods and emission levels to tackle climate change without significant investment. Even so, municipalities should consider these small-scale but expandable measures to work toward renewable-based energy overtime:

- update exterior lighting to more energy-efficient models on municipal buildings (LED and timer-controlled)
- prioritize the need to undertake deep energy efficiency retrofits
- utilize emissions from landfills as an opportunity to generate RNG either directly from landfills (e.g., gas created by decomposing organic waste) or from organic materials collected and processed in an anaerobic digester
- incorporate solar photovoltaic (PV) panels on municipally owned property to reduce energy costs

Building infrastructure, building materials

Municipalities can avoid future emissions from new buildings and mitigate emissions on current building stock by:

- exploring green construction materials, such as fibre cement, hempcrete, recycled steel, stone, and structural insulated panels
- considering energy performance improvements at the time of major retrofits to existing municipal buildings
- striving to have all municipally owned buildings that are newly constructed or undergo major renovations to be near net-zero by a stated deadline

Waste

Municipally run solid waste landfills are a major source of GHG emissions in Canada. Improved waste management represents an emissions-reduction opportunity for municipalities, since they are one of the few areas under full municipal control. Consider:

- waste diversion opportunities, such as expanded recycling and composting collection

- realigning waste disposal charges to match system cost to encourage waste reduction and help support investment in waste diversion programs
- collecting and refining landfill gas to create RNG
- revisiting the size of bins used for waste collection (using larger bins for recycling and compost encourages landfill diversion)
- incorporating pay-as-you-throw waste receptacles to charge households and businesses for their use of collection services, including frequency and volume of waste produced

Municipal Role in Reducing Emissions

The pressure to "go green" will only build as we move toward the federal and provincial government's 2030 and 2050 net-zero targets.

Municipalities across Canada are key players in reducing emissions and the impacts of the climate crisis. There are practical changes municipalities can make now in their procurement, infrastructure, and corporate operations that will make significant contributions to the goal of a net-zero Canada.

Municipal encouragement of individual environmental efforts is productive but not sufficient – they must lead the way. It is important that municipalities co-ordinate action on a larger scale in order to achieve identifiable positive impacts.

Working together, municipalities can begin to mitigate future environmental harm by acting now. 2030 is less than five years away, and municipalities have an important role to play in reducing carbon emissions.

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