



POLICY

CLIMATE & ENVIRONMENTAL RESILIENCE

MAY 14, 2021

The City of Calgary must take bold action in its commitment to building a more resilient city, and that includes implementing clear environmental targets to reduce local greenhouse gas (GHG) emissions and adapt to our changing climate.

Calgarians today are growing up in a very different world than previous generations. Their experience of 'normal' includes natural and other disasters that are increasing in both frequency and severity. In recent years, Alberta has seen record damage from flooding, hailstorms, and wildfires. These disasters have caused well over \$10 billion in insured losses related to homes, businesses, and public infrastructure. For so many of our neighbours, memories are still raw from the 2013 floods and the hailstorm of 2020.

In large part, climate change caused by human activity is to blame for these natural disasters.

As municipalities have direct or indirect control over nearly half of Canada's GHG emissions, Calgary must do its part to mitigate climate change by reducing these emissions with a plan that is more ambitious than the present city-wide GHG reduction target of 80 per cent below 2005 levels by 2050.

Calgary must instead work to achieve net zero city-wide GHG emissions by 2050, and net zero GHG emissions from municipally-owned buildings and vehicles by 2035.

Because Calgarians have made a significant investment in making this city their home, they deserve a high quality of life and low cost of living within carbon-conscious communities. We must attract global investment from businesses and organizations that share this vision. Current and prospective Calgarians should have the ability to live a low carbon life without leaving our city.

We must remain focused on achieving emissions reductions by retrofitting existing buildings, supporting electric vehicle adoption, and greening electricity generation. This reflects the fact that nearly 2/3 of Calgary's emissions come from energy use in buildings, with the remaining 1/3 coming from the transportation sector. In terms of energy, electricity usage in Calgary accounts for 42% of GHG emissions, primarily due to natural gas-based power generation. Natural gas accounts for 24% of emissions, primarily from heating buildings. As with most emissions reduction strategies, these measures will require robust collaboration with provincial and federal governments.

Enhancing flood protection and promoting durable construction materials are two more measures that assist us in addressing climate change. These measures respond to the most costly disasters experienced in Calgary to date, as well as those expected to occur in the future. By reducing the costs of climate disasters, we move closer to the goals of being a resilient city.

MITIGATING THE EFFECTS OF CLIMATE CHANGE

Buildings

To facilitate retrofits of existing buildings, municipal governments can establish a Property Assessed Clean Energy (PACE) financing program. This program enables residential and non-residential property owners to invest in energy efficiency retrofits of their buildings, thus reducing demands for energy, assisting with reducing Calgary's GHG emissions, and lowering energy costs.

Under a PACE program, buildings' energy efficiency is assessed and improvements are carried out by qualified contractors. The costs of these improvements are added to an owner's property tax bill and may be repaid over a period of years with options for penalty-free repayment. PACE financing is tied to a property, so responsibility for repayment is transferable between owners.

Transportation

Gas and diesel used by vehicles represents 34% of Calgary's carbon footprint. Reducing vehicle emissions will assist with mitigating climate change as well as improve air quality. As the costs of electric vehicles continue to fall, a primary barrier to their adoption is lack of available charging infrastructure.

To facilitate increased transition towards electric vehicles, the City of Calgary must support the creation of 15 to 20 additional DC Fast Charge hubs spread out across the city. This would allow for most residents to access these stations within a 10 minute drive, similar to plans adopted by the City of Vancouver. These stations are capable of charging a vehicle to at least 80% of battery within 15 to 60 minutes. The cost to construct 15 to 20 DC Fast Charge hubs, each with four plug-ins, is likely to cost between \$3-8 million. Partnerships with the private sector and green investors, as well as grants from other orders of government, are recommended sources of funding for this infrastructure.

In addition to supporting adoption of private electric vehicles, we must electrify the municipal fleet of transit and other vehicles to meet a more ambitious target of net zero emissions from municipally-owned assets by 2035.

Low-carbon electricity

ENMAX generates and distributes electricity to the vast majority of households in Calgary. Currently, 86% of electricity is generated through natural gas and 14% through renewable sources such as wind. Though the City of Calgary lacks direct, regulatory jurisdiction over its electrical grid, its ownership of ENMAX provides a unique opportunity to influence GHG emissions from electricity generation.

It's important for City Council as ENMAX's shareholder to request alignment between both organizations' climate goals, requesting ENMAX to also achieve net zero GHG emissions from electricity generation by 2050. This provides ENMAX sufficient time to plan for the future, aligns with federal climate plans, and includes flexibility by allowing for the use of offset tools such as carbon capture, utilization, and storage.

Other electrical generators in Alberta, including TransAlta and Capital Power, have already committed to net zero emissions by 2050. In part, these commitments are made possible by substantial decreases in the costs of wind and solar power generation over the last decade.

ADAPTING TO A CHANGING CLIMATE

Flood protection

Since the floods of 2013, Calgary has made substantial progress on educating citizens and safeguarding property from flooding.

Though physical flood barriers and berms may be appropriate in many areas of the city, they are only one flood mitigation tool and may not be helpful in all communities. Upstream flood mitigation on the Bow River, similar to the Springbank Off-Stream Reservoir on the Elbow River, is also crucial for protecting our community. As the provincial government continues to assess options for a Bow River Reservoir, the City of Calgary must continue advocating for the best interests of Calgarians by supporting this vital project.

We must also take action to reduce impermeable surfaces - such as traditional paved parking lots - which cause increased stormwater run-off. Stormwater run-off increases flood risk by directing water horizontally across surfaces, where it may pool and damage structures. Managing run-off often requires expensive infrastructure. Though the 2009 Municipal Development Plan set a 60-year target of 10-20% impermeable surfaces, this figure increased to 44% by 2018. Calgary must take steps to reverse this trend by collaborating with private sector developers and piloting innovative permeable surface materials at City-owned facilities. We must also implement better incentives for low-impact development tools like green roofs.

Promoting durable building materials

During the hailstorm of 2020, over \$1 billion in damage occurred, primarily in northeast Calgary communities. Though the municipality lacks direct control over building standards, we must consider introducing programs that encourage durable building materials, such as siding that can withstand intense hail. The City of Calgary must also demonstrate leadership through use of durable materials within its own facilities.