

Greenhouse Gas Emission Trends

The City of Edmonton monitors greenhouse gas (GHG) emission trends primarily in two ways: 1) emissions from the community; and 2) emissions from the City of Edmonton corporation. The City of Edmonton's corporate emissions make up about two per cent of the total emissions within the community.

The City does not measure greenhouse gas emissions with sensors or monitoring equipment. Instead, Administration uses a standardized calculation and different data sources, such as utility providers, to calculate the amount of greenhouse gas emissions in the community. Edmonton does not currently have real-time emissions information. For example, 2021 emissions are not calculated until the second quarter of 2022. Greenhouse gas emission monitoring, modeling and tools are continuously improving. There are significant advancements with satellite measurement, advanced telematics, and artificial intelligence that could provide Administration with better GHG emission tools.

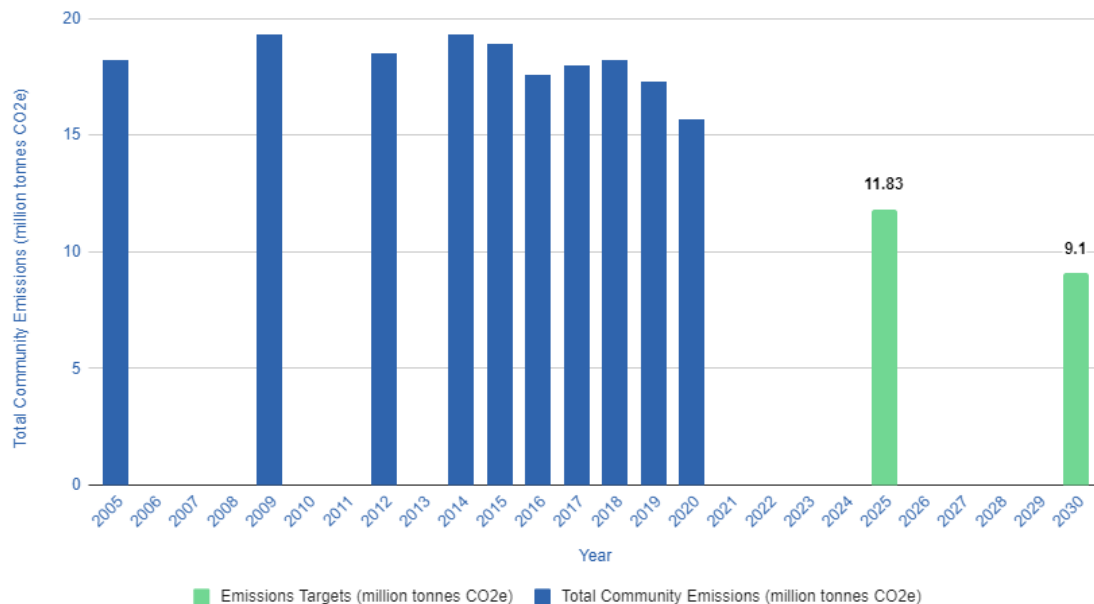
Targets

There are two types of carbon neutrality targets: 1) targets for the community and; 2) targets for the corporation. The timing for these targets differ. The Energy Transition Strategy calls for a carbon neutral community by 2050 and a carbon neutral corporation by 2040. The target of becoming a carbon neutral corporation is a decade ahead of the community's target, as a way for the City of Edmonton demonstrate climate solution leadership.

Community Emission Trends

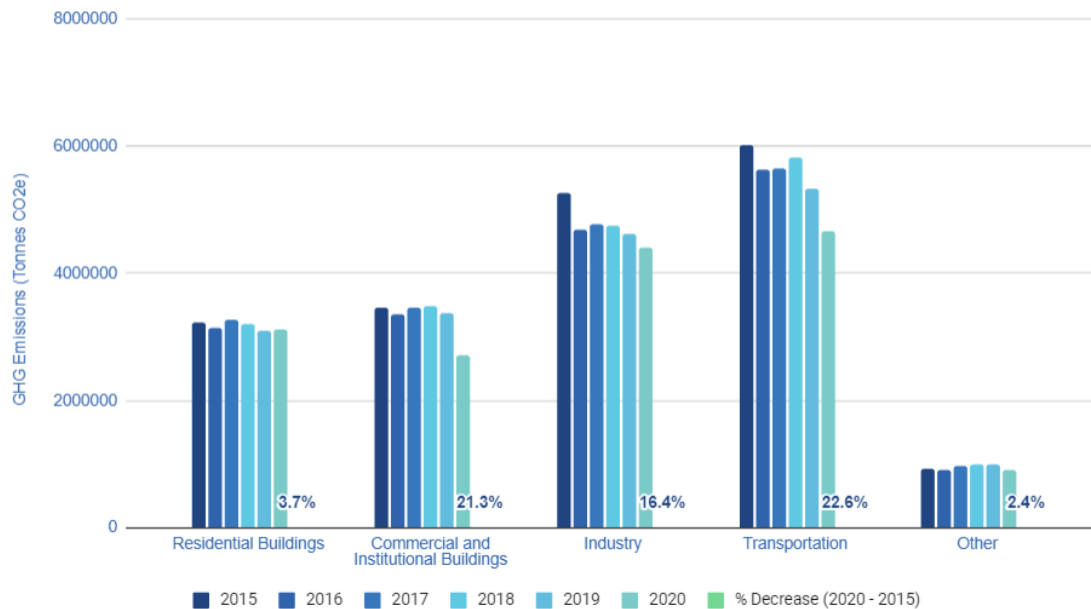
Edmonton has targets to reduce emissions 35 per cent by 2025, 50 per cent by 2030 and to become a carbon neutral community by 2050. Edmonton measures progress against a 2005 baseline year of 18.2 million tonnes of carbon dioxide equivalent (tCO₂e). Edmonton's community greenhouse gas emissions measures the amount of GHG emissions from the following sources: buildings (37.6 per cent of total emissions), transportation on and off road (33.1 per cent of total emissions), industry including manufacturing and construction (23.5 per cent of total emissions), other sources including community waste, fugitive emissions, and agriculture, forestry and other land use (5.8 per cent of total emissions).

Edmonton Community GHG Emissions and Targets



In 2020, the community's total GHG emissions were 15.7 million tCO₂e (15.0 tonnes per person). Community emissions in 2020 were 13.5 per cent below Edmonton's 2005 baseline year and a 9.3 per cent reduction from 2019. It is important to note that the reductions observed in 2020 are primarily due to reductions in energy use in commercial/institutional buildings and transportation sectors. Both sectors were impacted by the COVID-19 pandemic. As societies begin to emerge from the COVID-19 pandemic, these reductions are not expected to be sustained. Some projections indicate that GHG emissions may even increase during this recovery. Additionally, it takes several years of sustained emissions reduction to establish a trend.

Edmonton Community GHG Emissions by Reporting Sector



While continued and accelerated action will be required to establish an ongoing emissions reduction trend, current City of Edmonton programs and actions are contributing to emissions reductions. This includes the extension of the LRT network; deploying 40 electric buses into service and the purchase of an additional 20 more electric buses; protected bike lanes in the downtown core; curbside electric charging stations; residential solar rebates; solar installed on City facilities; Blatchford redevelopment; rebates for energy efficiency including the Home Energy Retrofit Accelerator and the Building Energy Retrofit Accelerator, and the launch of the pilot Clean Energy Improvement Program.

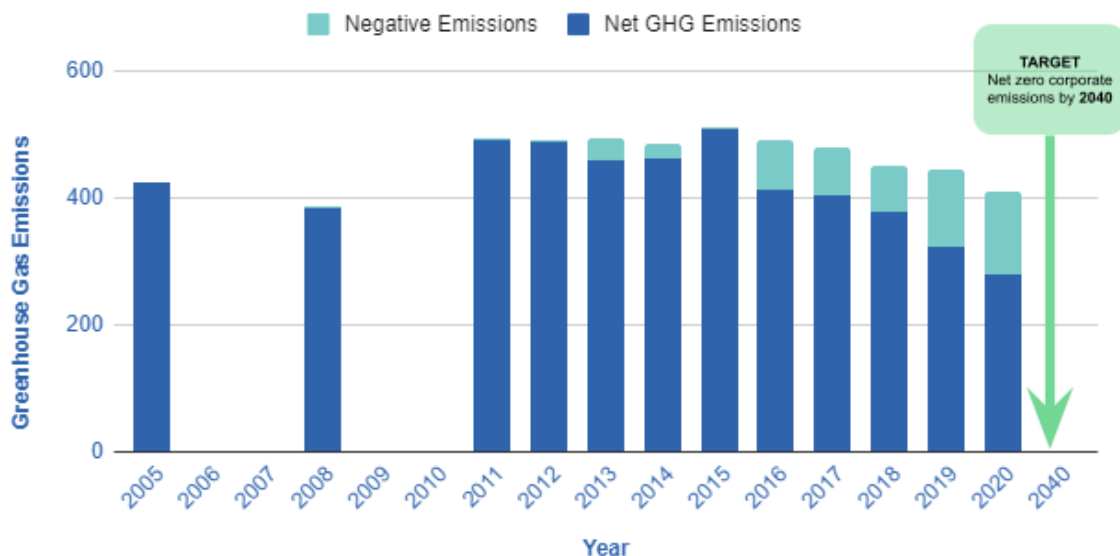
Carbon Neutral Corporation Progress

The City of Edmonton has a goal of becoming a carbon neutral corporation by 2040. The four transformative pathways outlined in the Energy Transition Strategy, stand on a foundation where the City of Edmonton demonstrates Climate Solution Leadership in decision making, actions and advocacy. City of Edmonton corporate emissions measures the amount of GHG emissions from the services provided and infrastructure maintained including City buildings and other facilities (45.7 per cent of total emissions), transit fleet (18.1 per cent of total emissions), waste management facilities and landfills (17.8 per cent of total emissions) streetlights and traffic signals (10.4 per cent of total emissions), and vehicle fleet (8.0 per cent of total emissions). The measure also includes an estimate of the reduction in GHG

emissions generated by trees the City plants and maintains and the emissions saved by the City's purchase of renewable energy credits. The City of Edmonton's corporate emissions make up about two per cent of the total emissions within the community.

Annual Corporate Emissions

1,000 Tonnes (carbon dioxide equivalent)



In 2020, the City's total corporate GHG emissions were 408 thousand tonnes of carbon dioxide equivalent (tCO2e) and net GHG emissions were 278 thousand tCO2e. Net GHG emissions is the overall balance of emissions produced and emissions removed from the atmosphere (through carbon storage from the urban forest) or emissions avoided by purchasing renewable energy certificates. In 2020, net corporate emissions were 33.3 per cent below Edmonton's 2005 baseline year and a 14.4 per cent reduction from 2019 levels.

The City's net GHG emissions have been decreasing over the last five years. These reductions have come from various areas. Emissions from buildings have decreased 14 per cent over the last five years due to reductions in energy use and retrofits. Additionally, 330 kW of installed solar PV capacity was added to City owned buildings and facilities. Vehicle fleet emissions have remained relatively unchanged, with only a two per cent reduction. However, Transit fleet emissions have reduced by approximately 28 per cent between 2015-2020. The City deployed its first 40 battery electric buses into service (the single largest purchase of electric buses in Canadian history), and has an additional 20 electric buses coming online in 2022. This, combined with reduced services during the COVID-19 pandemic, has resulted in the

Attachment 3

reductions. Additionally, corporate emissions have been offset by the purchase of renewable energy certificates, resulting in a 31 per cent reduction, and planting over 2.6 million trees between 2015-2020, resulting in a less than one per cent reduction.

Edmonton Corporate GHG Emissions by Reporting Sector

