

2016 Community Wide GHG Inventory and Methodology Report Executive Summary

Overview

Based on a changing climate and its impacts on the region, the Centre Region Council of Governments intends to develop a climate action and adaptation plan which identifies pragmatic, fiscally responsible actions to consider in order to

- 1) mitigate the region's contribution to greenhouse gas (GHG) emissions and
- 2) adapt to changing climate conditions.

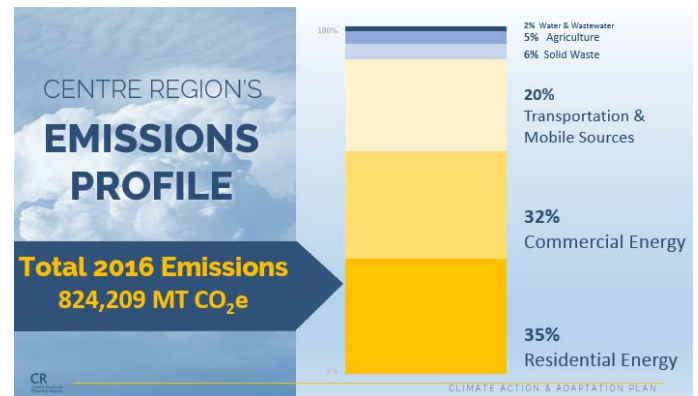
The first step of managing emissions is to complete a greenhouse gas emissions inventory which determines baseline emissions levels and the sources and activities generating emissions in the community. Centre Region COG will rely on the GHG emissions inventory to set emissions reduction targets, identify tangible actions aimed at reducing greenhouse gas emissions, and measure progress toward achieving those targets.

The impacts of a changing climate will have effects on infrastructure, the economy, public health and quality of life for Centre Region residents. Since the beginning of the 20th century, temperatures in Pennsylvania have risen around 2°F and temperatures in the 2000s have been higher than any other historical period (Figure 1).



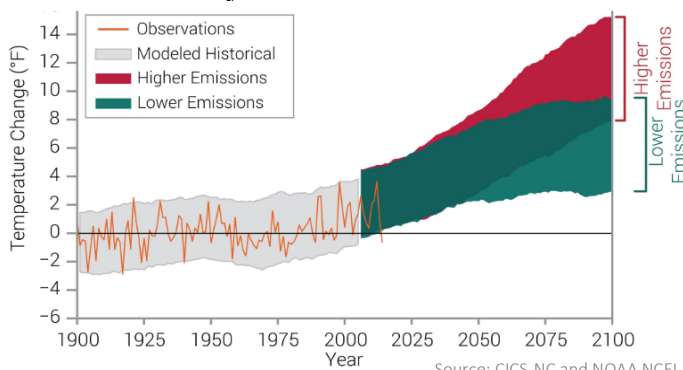
State College has experienced a 70% increase in the number of heavy rain events (precipitation greater than 2 inches) since the 1900s. These rains can cause devastating flooding and damage to infrastructure roads, homes and farms.

Centre Region Community GHG Emissions in 2016



The GHG emissions inventory calculated the GHG emissions for the Centre Region community in 2016 were 824,209 metric tons of carbon dioxide equivalent (MTCO_{2e}). The inventory estimates the greenhouse gas emissions resulting from activities and sources in 2016 for the Centre Region COG community, which includes College, Ferguson, Halfmoon, Harris and Patton Townships and State College Borough. The 824,209 MTCO_{2e} equates to an annual average carbon footprint of 10.21 MTCO_{2e} per person.

Figure 1: Observed & Projected Temperatures in Pennsylvania



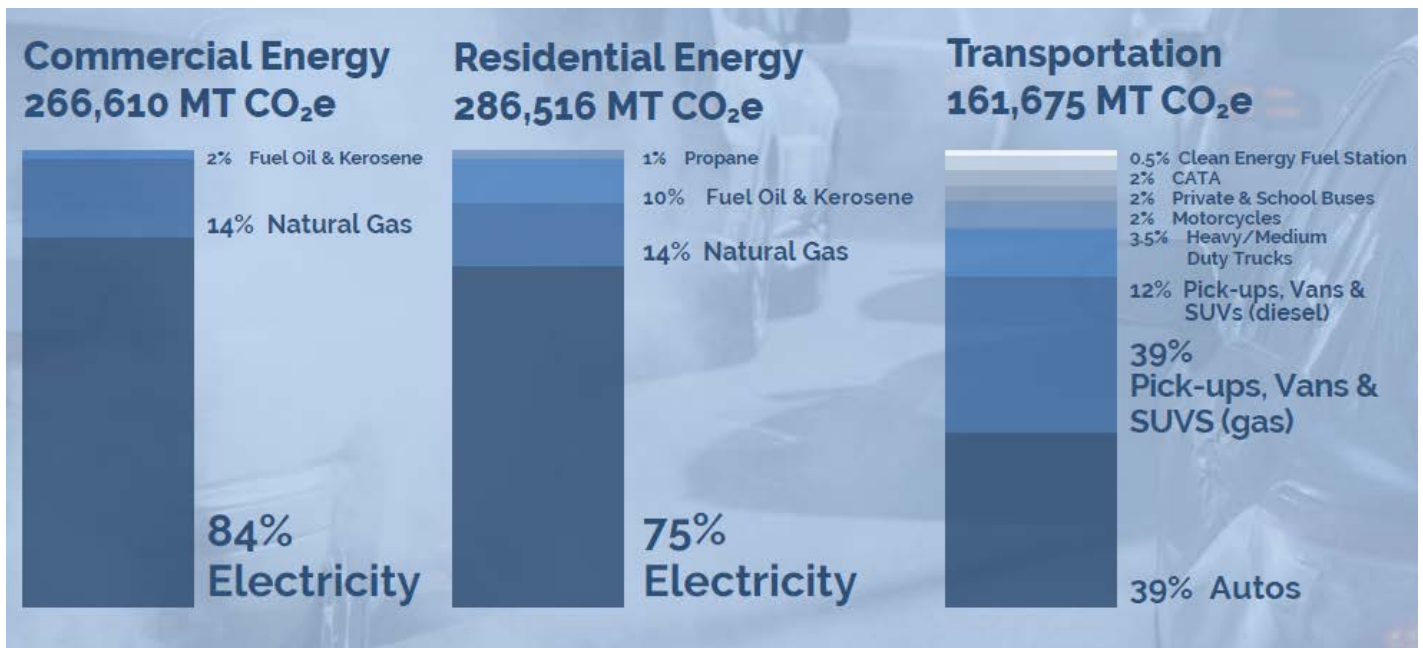


Figure 2: Centre Region Community Activities with largest GHG Emissions in 2016

Residential energy, commercial energy and transportation are the three largest contributors to emissions over which Centre Region COG has significant influence. These will be important activities to focus efforts on in the development of a climate action plan. Figure 2 shows a more detailed breakdown of these activities.

GHG Framework & Methodology

This inventory uses the approach and methods provided by the U.S. Community Protocol for Accounting and Reporting of Greenhouse Gas Emissions, version 1.2 (<http://icleiusa.org/ghg-protocols/>). The Community Protocol was updated by ICLEI in July 2019 and represents a national standard in guidance to help U.S. local governments develop effective community GHG emissions inventories. The Pennsylvania Department of Environmental Protection (DEP) partnered with ICLEI to offer local governments assistance with completing a GHG inventories under ICLEI’s guidance and with the use of ICLEI’s GHG emissions modeling tool, ClearPath. The Centre Region COG is a participating entity in this DEP-ICLEI Local Government Climate Assistance Program.

All emissions presented in this report are represented in metric tons of carbon dioxide equivalent (MTCO₂e). Quantities of individual GHGs are accounted for in the

ICLEI’s ClearPath carbon calculator and include carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O).

Next Steps

This inventory is only the beginning of an on-going process. The next steps are to set an emissions reduction target, and to develop a climate action and adaptation plan. Emissions reduction strategies to consider for the action plan include energy efficiency, renewable energy, vehicle fuel efficiency, alternative transportation, vehicle trip reduction, land use and transit planning, and waste reduction among others.

To achieve significant overall reductions, the Centre Region COG strives to have a bold vision, equitable process, effective implementation, and excellent communication with the public. Active support of key stakeholders and inclusive community engagement will be necessary to design an effective climate action and adaptation plan. It’s vitally important to have collaborations with governmental entities, businesses, community organizations and residents. Through these efforts and others, the Centre Region can achieve additional benefits beyond reducing emissions, including saving money and improving Centre Region’s economic vitality and its quality of life.

