Greenhouse gas emissions in Yukon

About GHG emissions

One of the Government of Yukon's four climate change goals is to reduce greenhouse gas (GHG) emissions. Efforts to reduce GHG emissions are also known as "mitigation."

Greenhouse gas emissions are just one of the pollutants driving climate change. The most well-known GHG, carbon dioxide (CO_2), accounts for the majority of human-caused emissions. Because CO_2 lasts for decades to centuries in the earth's atmosphere, lowering CO_2 emissions now will help to reduce long-term negative impacts.

Emissions of short-lived climate pollutants (SLCPs) also contribute to climate change. These include:

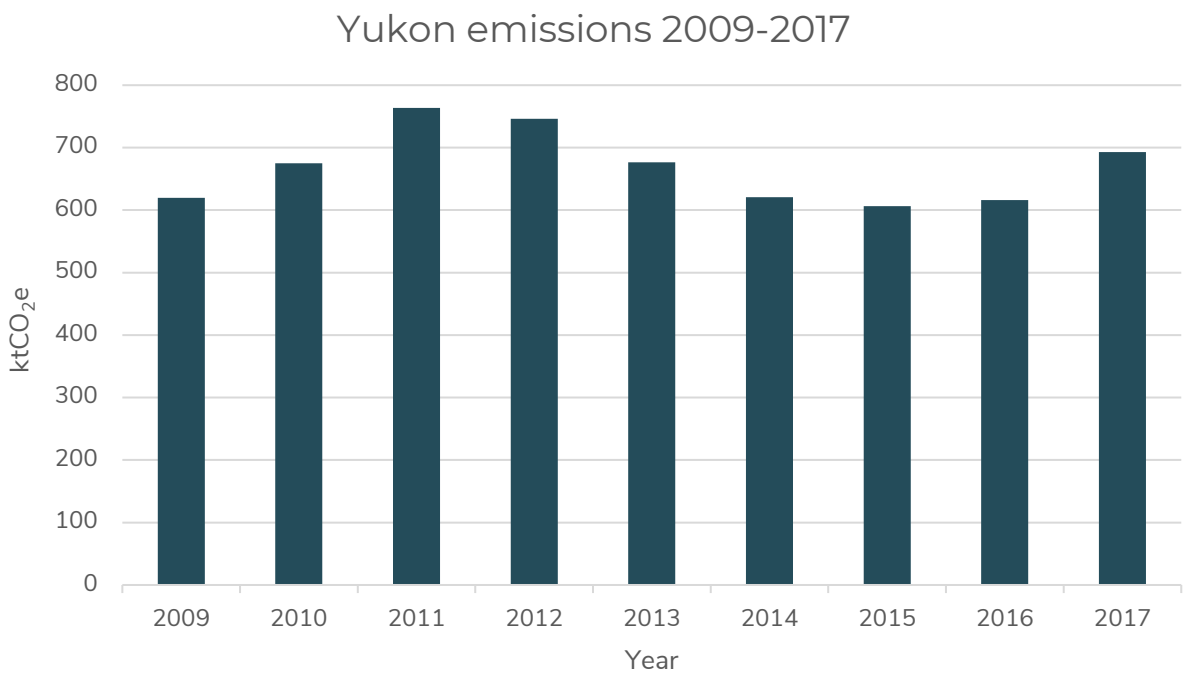
- methane;
- black carbon;
- hydrofluorocarbon; and
- tropospheric ozone.

Short-lived climate pollutants stay in the atmosphere for only a few days to a few decades, but are much more potent than CO_2. For example, methane is 28 times more harmful than CO_2 over a 100-year lifespan, or 84 times more potent over 20 years.

Yukon's GHG emissions

Yukon's GHG emissions have increased by 11.8 per cent between 2009 and 2017. From a peak of 763.8 ktCO_2e in 2011, emissions declined by 9.2 per cent by 2017. Of total emissions in 2017:

- transport accounted for 61 per cent;
- heating accounted for 21 per cent; and
- electricity generation accounted for 3.5 per cent.



Transportation emissions have increased by 14 per cent since 2009. The two biggest sources of transportation emissions are:

- On-road gasoline (increased 10 per cent between 2009 and 2017).
- On-road diesel (increased 16 per cent between 2009 and 2017).

The use of off-road diesel, typically used for industry, has decreased by 32 per cent since the peak in 2011.

Yukon per capita emissions in 2017 were 18 tonnes per person, the same as they were in 2009. Compared to the per capita emissions of the other provinces and territories as reported in the National Inventory Report, Yukon's per capita emissions rank sixth out of 13. Yukon accounts for 0.1 per cent of Canada’s overall greenhouse gas emissions.

	Annual emissions in $KtCO_2e$								
Fuel type group	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**
Aviation Gas/ Jet Fuel	33.9	43.5	56.5	44.5	39.1	42.8	49.4	44.8	46.5
Heating Diesel/Propane	128.0	118.6	137.2	136.8	126.1	123.5	103.8	108.2	146.4
LNG/Diesel for Electricity	17.0	18.6	27.8	18.4	17.3	17.0	18.8	19.1	24.1
Off-road/ Exempt Diesel	81.7	82.1	106.9	115.4	110.1	93.8	61.7	68.5	72.7
Off-road/ Exempt Gasoline	5.6	3.0	1.7	1.4	1.0	0.9	0.9	0.9	0.9
On-road Diesel	170	219	238	239	217	173	193	175	201.5
On-road Gasoline	154	158	160	154	140	142	150	169	171.5
All Other	29.5	32	35.7	36.9	26.2	27.5	28.9	30.8	29.4
TOTAL	619.7	674.8	763.8	746.4	676.8	620.5	572.1	590.0	693.2

Data based on a combination of Yukon fuel tax data collected under the Fuel Oil Tax Act, *and data from the* National Inventory Report.
Yukon's emissions data will be updated annually.

Government of Yukon greenhouse gas emissions

Since 2009, the Government of Yukon has been focused on reducing emissions from our internal operations, which account for about six per cent of total GHG emissions in Yukon.

- Approximately 36 per cent of the Government of Yukon's total GHG emissions come from transportation activity.
- Approximately 56 per cent come from heating Government of Yukon buildings.

GHG data reporting and analysis

Data accuracy is an essential part of tracking and managing greenhouse gas emissions. The Government of Yukon remains committed to ensuring that this is done properly. The ongoing work to improve our inventory and process allows us to remain transparent and accountable for emissions activity and targets. Emissions reports for the Government of Yukon's internal operations (2010 and 2015) are in the process of being verified by an independent third party and will be publically available through The Climate Registry. This ensures that we have accurate and transparent baseline data to compare emission reductions against as we continue to track and report on emissions from internal operations on an annual basis.

Actions to reduce emissions

We've taken actions to reduce GHG emissions in Yukon. These include:

- Building several very high energy efficiency facilities: Tombstone Interpretive Centre, Whitehorse Correctional Centre, Emergency Response Centre, and the new FH Collins High School.
- Implementing the Residential Energy Incentives Program and the Commercial Energy Incentive Program to help home and building owners improve energy performance and reduce energy consumption, costs and emissions.
- Improving hydro capacity through the Mayo B hydro facility and the addition of a third turbine at the Aishihik hydro facility.
- Providing funding and programs for renewable energy projects in Yukon communities.
- Implementing the Independent Power Production Policy to enable independent, non-utility electricity producers to sell electricity to Yukon's public utilities through renewable energy technologies.
- Implementing the Microgeneration Policy to enable individuals and businesses to install electrical generating systems and sell surplus to the grid.
- Implementing the Good Energy Rebate Program.
- Developing community energy plans.

See the Government of Yukon's 2019 draft climate change strategy for more details.

Additional resources

- Draft of Our Clean Future: A Yukon strategy for climate change, energy and a green economy
  Yukon.ca/draft-our-clean-future
- Climate Registry
  theclimateregistry.org
- Linking Mitigation and Adaptation Goals in the Energy Sector: A Case Study Synthesis Report (Ontario Centre for Climate Impacts and Adaptation Resources)
  climateontario.ca/doc/reports/Adaptation-MitigationSynthesisReport-FINAL.pdf

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