Government of
Northwest Territories

Transportation in the NWT

The NWT transportation system includes 3,873 kilometres of all-season highways, winter roads and access roads, 27 airports, and four ferries/ice crossings. In addition, there is a railway between Alberta and Hay River and a marine transport network that delivers refined petroleum products and cargo from Hay River to nine NWT communities and various industrial sites.

For 2021, the National Inventory Report, Canada's official GHG inventory that is updated annually, indicates that annual GHG emissions in the NWT's transportation sector were 807 kilotons (kt) in total, or 63% of the NWT's annual emissions level of 1,287 kt.

The breakdown of GHG emissions by mode of transportation include:

- Road – 52% (417 kt)
- Off-Road/Mines – 33% (264 kt)
- Aviation – 14% (115 kt)
- Marine – 1% (10 kt)
- Rail – 0% (0.4 kt)

What Getting to Net-Zero Means

When the *2030 Energy Strategy* and *Climate Change Strategic Framework* were released in 2018, the NWT committed to the Pan Canadian Framework GHG reduction target of 30% below 2005 levels by 2030. Since then, the Government of Canada has set more ambitious targets—increasing its 2030 emissions target to 40-45% below 2005 levels and setting a goal of net-zero emissions by 2050.

Canada's new emissions targets impact the NWT and its energy and climate change policies. What will it take to meet these new targets? The Government of the Northwest Territories commissioned Navius Research Inc. to analyze how the NWT could get there.

All emissions scenarios modelled by Navius require significant actions to reduce fossil fuel use for transportation. Practically, the options currently available to reduce transportation emissions in the NWT are focused on on-road and off-road transport. The GNWT does not have jurisdiction over aviation, rail and marine, and the emissions related to rail and marine

transport are quite minor.

The analysis conducted by Navius suggests:

- The electrification of vehicles is a key option for reducing emissions from road transportation. The greatest potential for electrification is in light-duty vehicles such as cars and pickup trucks, with battery-electric vehicles accounting for 57% of light-duty vehicles on the road by 2050.
- Battery-electric vehicles could also become quite prevalent in many medium-duty applications, such as delivery vans and trucks, and could make up 40% of the medium-duty vehicles on the road by 2050.
- If the capital cost for battery-electric vehicles declines faster than anticipated in the future, the share of battery-electric vehicles could account for up to 71% of light-duty vehicles and up to 51% of medium-duty vehicles.
- The effect of extreme cold on electric vehicle battery ranges is a consideration when exploring transport emissions reduction in the NWT.
- Biofuels are another promising option for reducing emissions from vehicles. While ethanol and biodiesel are already widely produced and used in Canada, these biofuels are not suitable for use in the NWT in their pure (i.e., non-blended) form, because they cannot be produced to Arctic grade.
- A more attractive option for decarbonizing liquid fuels is to use "drop-in" fuels such as renewable gasoline and renewable diesel. When commercially available in an Arctic grade, such biofuels will not require any change in the existing fuel distribution system and equipment. In scenarios modelled where the NWT achieves net-zero emissions by 2050, a significant portion of fossil-fuel equipment remains installed and is run mostly on this type of biofuels.