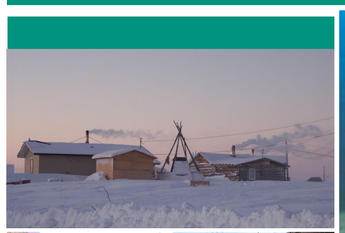
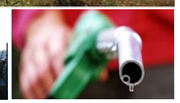
ENERGY PROFILE

Where we get energy and how we use it

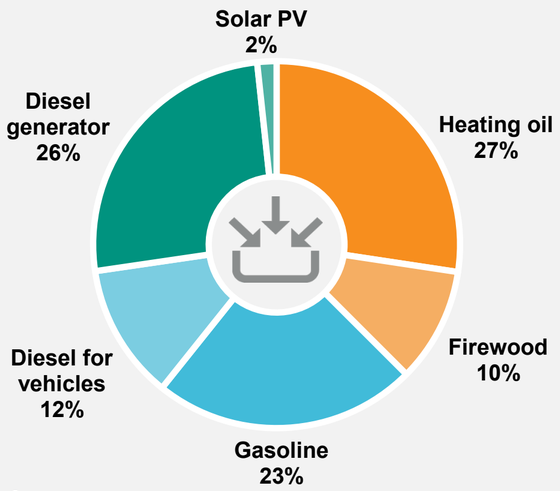
COLVILLE LAKE 2018

Population: 144





Energy Sources – 1 Year



Diesel generator produces electricity and heat

24% electricity

76% waste heat

Energy cost

Total: $1,550,000

Cost per person: $10,800

50% diesel generator

18% heating oil

8% firewood

17% gasoline

8% diesel for vehicles

Renewable energy

12% of total energy

10% of total from firewood

2% of total from solar PV

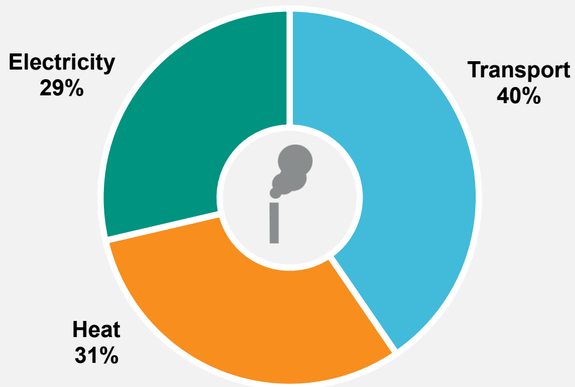
Unless otherwise noted, numbers reflect energy sources purchased or sourced in the community, and do not include industry or commercial transport. Percentages may not add to 100% due to rounding.

Greenhouse Gas (GHG) Emissions – 1 Year

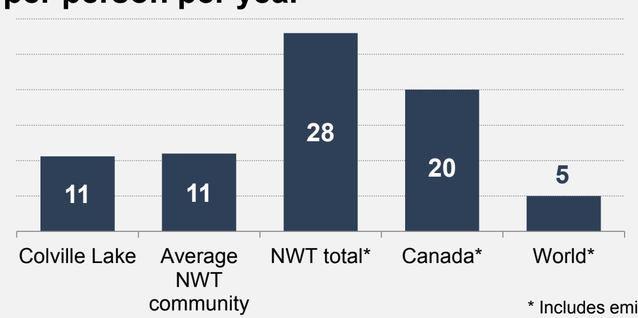
Community total GHG emissions per year

1,500 tonnes

11 tonnes/person

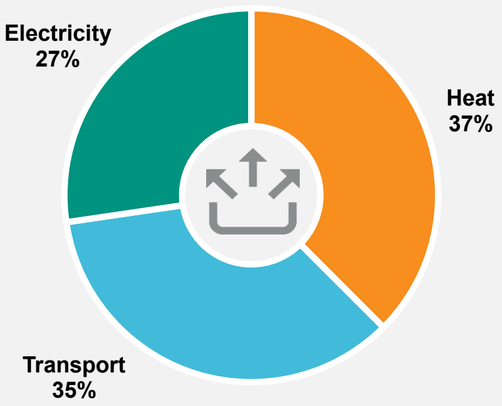


Average tonnes of GHGs per person per year



* Includes emissions from industry and commercial transport.

Energy Use – 1 Year



Energy use in homes

16% of total energy use

46% of total electricity

26% of total heating oil

100% of total firewood

Energy use in other buildings

Store, school, church, office, arena, library, etc.

21% of total energy use

54% of total electricity

74% of total heating oil

Transport (local – no air transport)

Cars, trucks, boats, ATVs, skidoos, etc.

35% of total energy use

Fuel purchased in the community.

Waste energy

From electricity production and heating

28% of total energy use

ARCTIC ENERGY ALLIANCE
Revised: September 2020

ENERGY PROFILE
COLVILLE LAKE 2018

EXTRA INFO

What's a megajoule (MJ)?

A joule is a unit of energy. A megajoule is 1 million joules.

Some examples:

- 1 BBQ propane tank = 500 MJ
- 1 kWh = 3.6 MJ
- 1 L of heating oil = 38.4 MJ
- 1 L of propane = 26.6 MJ
- 1 tonne of wood pellets = 19,200 MJ
- 1 cord of wood = 18,700 MJ

What's waste energy?

When fuels are burned, some of their energy is released as heat that can't be used. The amount of energy that an appliance or device can use is called its efficiency. For example:

Diesel generators can usually only convert 25–35% of the diesel's energy to electricity, while 65–75% is released as heat.

Furnaces, boilers, wood stoves and other heating applicances can use anywhere from 70% to more than 95% of the heat they produce. The rest is released up the chimney.

Energy sources

Heating oil
- 27% of total energy
- Cost: $281,000
- Amount: 174,000 Litres
- GHGs: 470 tonnes
- Energy: 6,700,000 MJ

Diesel generator
- 26% of total energy
- Cost: $772,000
- Amount: 163,000 Litres
- GHGs: 440 tonnes
- Energy: 6,200,000 MJ

Gasoline
- 23% of total energy
- Cost: $259,000
- Amount: 168,000 Litres
- GHGs: 410 tonnes
- Energy: 5,700,000 MJ

Diesel for vehicles
- 12% of total energy
- Cost: $122,000
- Amount: 76,000 Litres
- GHGs: 200 tonnes
- Energy: 2,900,000 MJ

Firewood
- 10% of total energy
- Cost: $119,000
- Amount: 132 Cords
- GHGs: 4 tonnes
- Energy: 2,500,000 MJ

Solar PV
- 1.7% of total energy
- Cost: $0
- Amount: 115,000 kWh
- GHGs: 0 tonnes
- Energy: 414,000 MJ

Community GHG emissions
- Homes: 14%
- Other buildings: 17%
- Transport: 40%
- Diesel generator: 29%

Total community energy use
- **24,400,000 MJ**
- 170,000 MJ/person

The AEA has tried to ensure our data is as accurate as possible, but there could be mistakes.
If something seems incorrect, please contact us to let us know.

References

Energy source and use data: Private suppliers and utilities, and the Government of the Northwest Territories Bureau of Statistics and Department of Infrastructure.

GHG emissions data: https://www.cer-rec.gc.ca/nrg/ntgrtd/mrkt/nrgsstmprfls/nt-eng.html
https://ourworldindata.org/grapher/co-emissions-per-capita?tab=chart&country=AUS+CAN+USA+OWID_WRL

Total NWT energy use (2017)

Total: 20 billion MJ/year