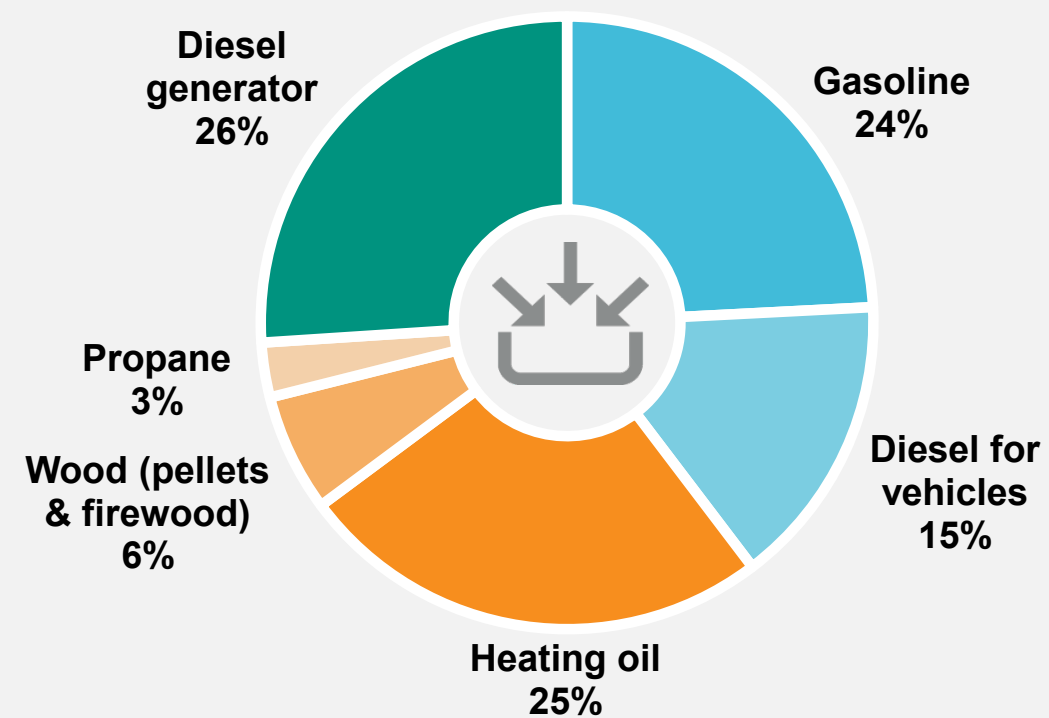


Energy Sources – 1 Year



Diesel generator produces electricity and heat

32% electricity
68% waste heat



Energy cost

Total: \$13,600,000

Cost per person: \$10,800

45% diesel generator **2%** propane
21% gasoline **1%** firewood
13% diesel for vehicles **1%** wood pellets
17% heating oil



Renewable energy

6% of total energy
3% of total from firewood
3% of total from wood pellets
0.2% 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.

ENERGY PROFILE

Where we get energy and how we use it

FORT SIMPSON 2018

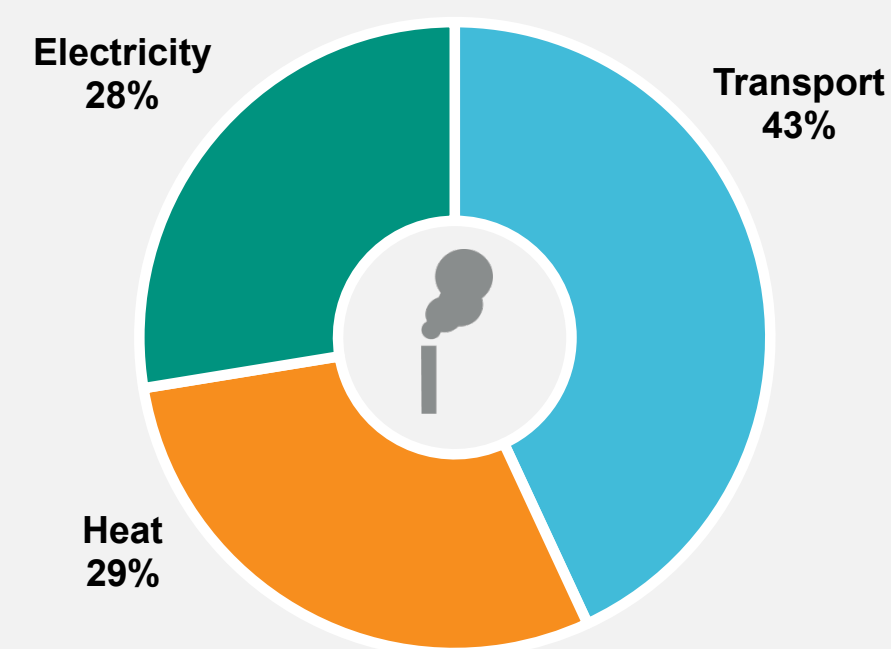
Population: 1,254



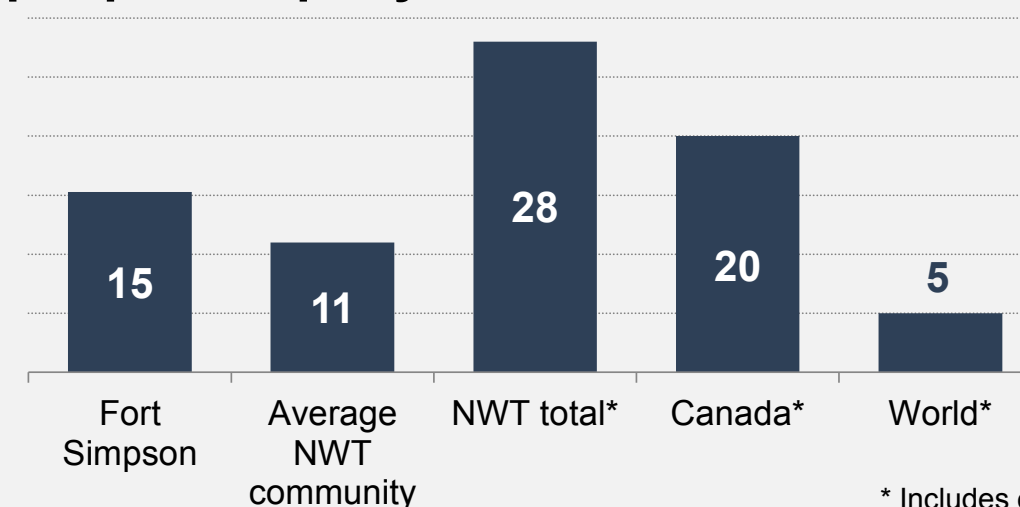
Greenhouse Gas (GHG) Emissions – 1 Year

Community total GHG emissions per year

19,000 tonnes
15 tonnes/person

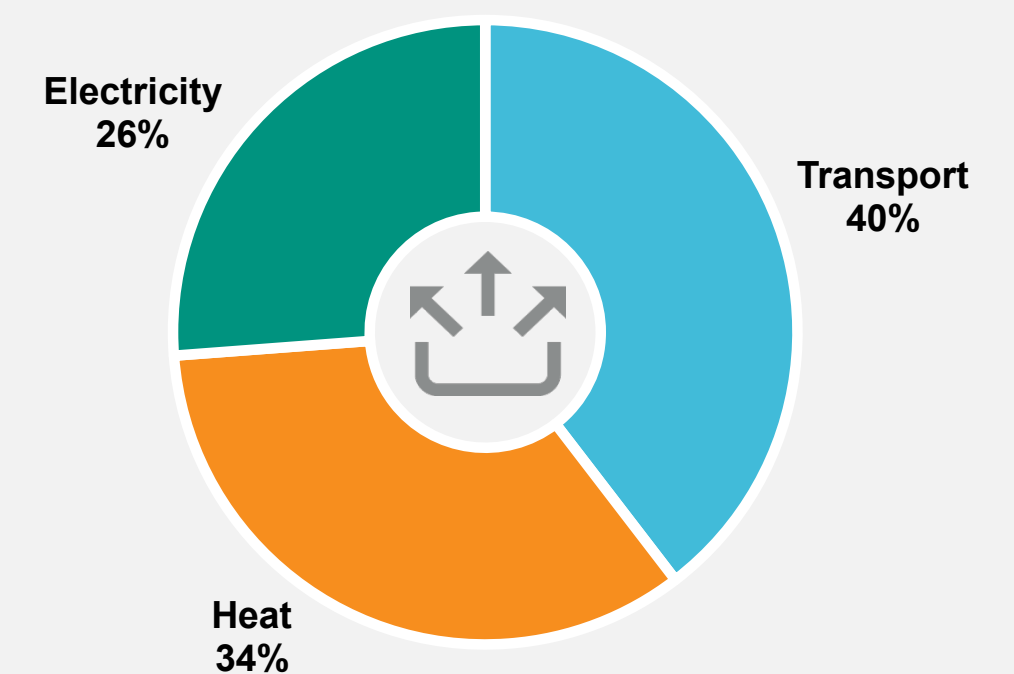


Average tonnes of GHGs per person per year



* Includes emissions from industry and commercial transport.

Energy Use – 1 Year



Energy use in homes

18% of total energy use **100%** of total firewood
42% of total electricity **80%** of total propane
49% of total heating oil **28%** of total wood pellets



Energy use in other buildings

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

17% of total energy use
58% of total electricity
51% of total heating oil
20% of total propane
72% of total wood pellets



Transport (local – no air transport)

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

40% of total energy use

Fuel purchased in the community.

Waste energy

From electricity production and heating

25% of total energy use



ENERGY PROFILE

FORT SIMPSON 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 appliances can use anywhere from 70% to more than 95% of the heat they produce. The rest is released up the chimney.

Energy sources



Diesel generator

- 26% of total energy
- Cost: \$6,060,000
- Amount: 1,960,000 Litres
- GHGs: 5,270 tonnes
- Energy: 75,300,000 MJ



Heating oil

- 25% of total energy
- Cost: \$2,290,000
- Amount: 1,900,000 Litres
- GHGs: 5,100 tonnes
- Energy: 72,800,000 MJ



Gasoline

- 24% of total energy
- Cost: \$2,880,000
- Amount: 2,080,000 Litres
- GHGs: 5,110 tonnes
- Energy: 70,000,000 MJ



Diesel for vehicles

- 15% of total energy
- Cost: \$1,770,000
- Amount: 1,170,000 Litres
- GHGs: 3,140 tonnes
- Energy: 44,800,000 MJ



Propane

- 3% of total energy
- Cost: \$258,000
- Amount: 314,000 Litres
- GHGs: 483 tonnes
- Energy: 8,340,000 MJ



Firewood

- 3% of total energy
- Cost: \$155,000
- Amount: 517 Cords
- GHGs: 17 tonnes
- Energy: 9,680,000 MJ



Wood pellets (commercial)

- 2% of total energy
- Cost: \$102,000
- Amount: 311 tonnes
- GHGs: 11 tonnes
- Energy: 5,970,000 MJ



Wood pellets (residential)

- 1% of total energy
- Cost: \$42,000
- Amount: 126 tonnes
- GHGs: 4 tonnes
- Energy: 2,420,000 MJ



Solar PV

- 0.2% of total energy
- Cost: \$0
- Amount: 178,000 kWh
- GHGs: 0 tonnes
- Energy: 639,000 MJ

Total community energy use

- 289,900,000 MJ
- 230,000 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/nrgsstmpfrls/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

