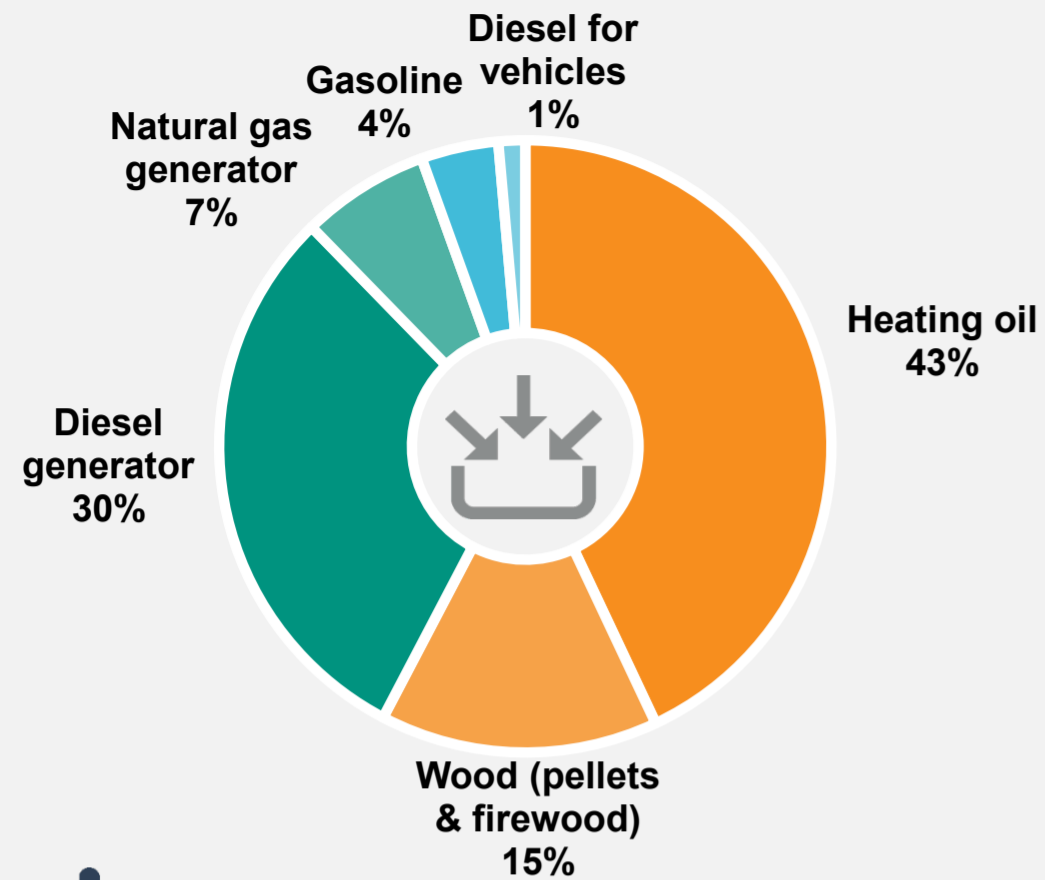


Energy Sources – 1 Year



Diesel generator produces electricity and heat

30% electricity
70% waste heat



Energy cost

Total: \$10,800,000

Cost per person: \$13,400

29% diesel generator **1%** firewood
22% natural gas **0.1%** propane
36% heating oil **4%** gasoline
7% wood pellets **1%** diesel for vehicles



Renewable energy

14% of total energy
12% of total from wood pellets
2% of total from firewood

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

NORMAN WELLS 2018

Population: 804

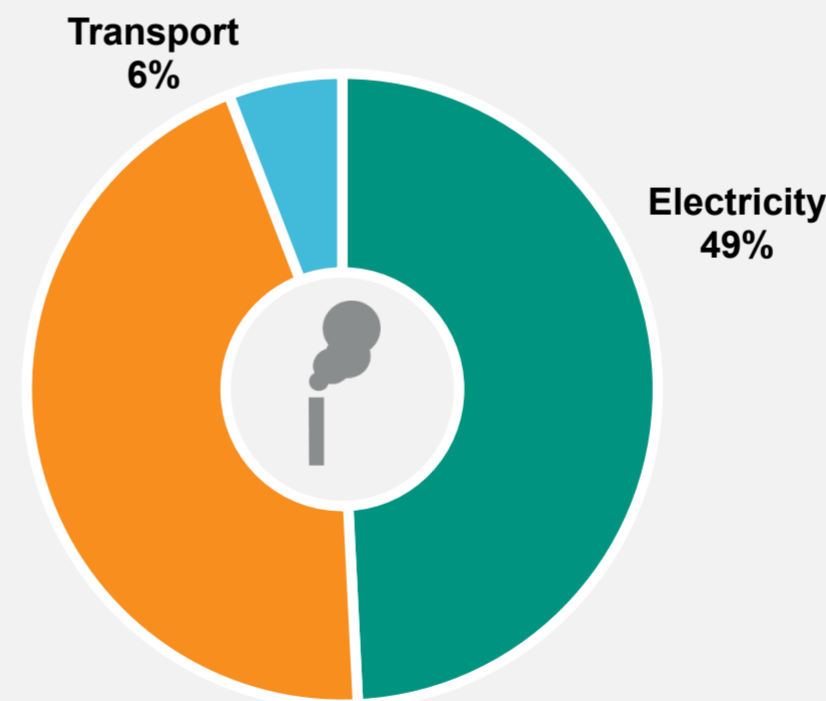


Greenhouse Gas (GHG) Emissions – 1 Year

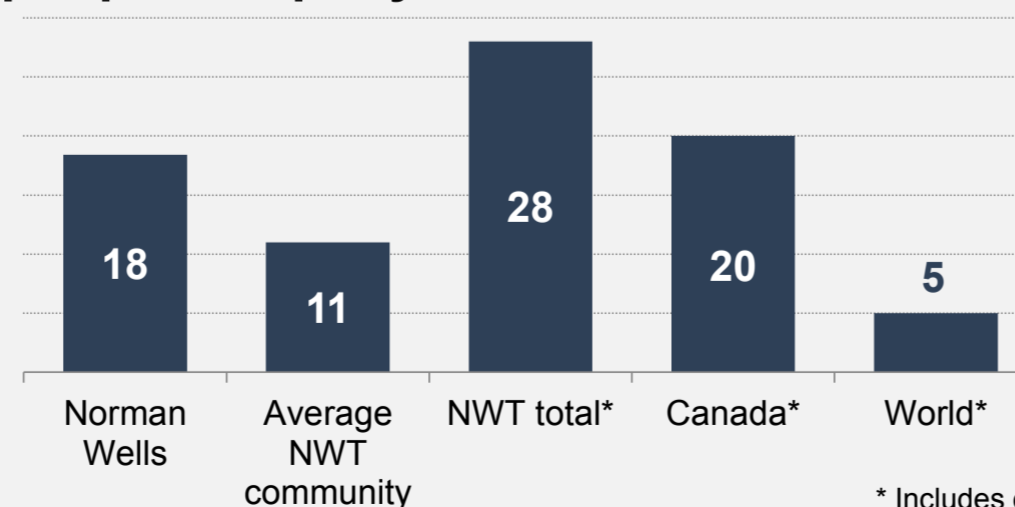
Community total GHG emissions per year

15,000 tonnes

18 tonnes/person

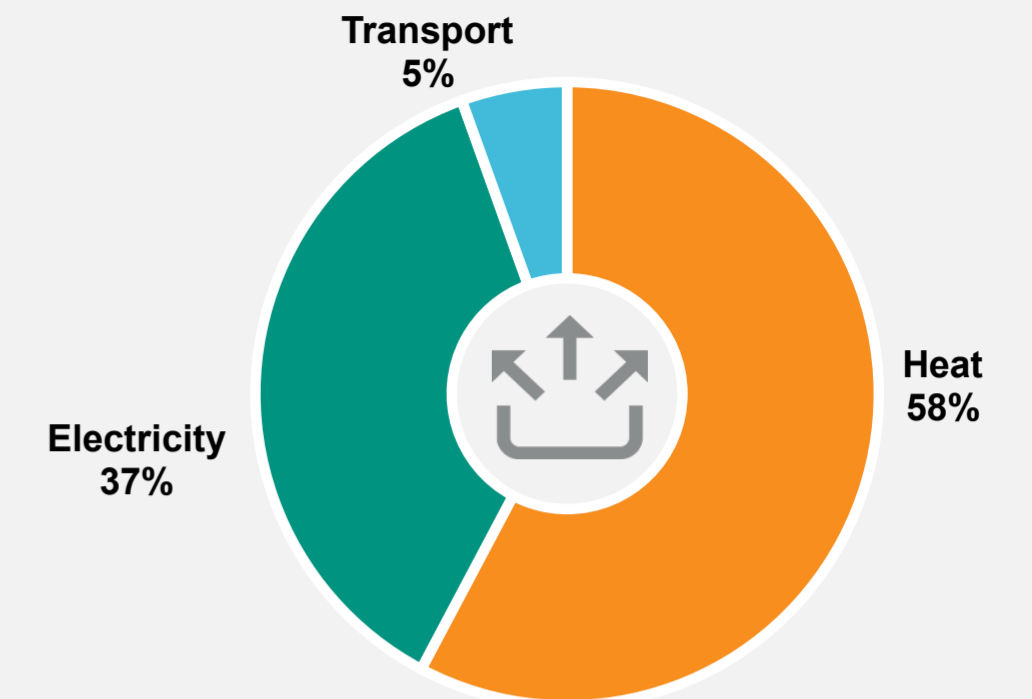


Average tonnes of GHGs per person per year



* Includes emissions from industry and commercial transport.

Energy Use – 1 Year



Energy use in homes

23% of total energy use **100%** of total firewood
30% of total electricity **5%** of total wood pellets
47% of total heating oil



Energy use in other buildings

Store, school, church, office, arena, library, etc.
39% of total energy use **95%** of total wood pellets
70% of total electricity
53% of total heating oil **100%** of total propane



Transport (local – no air transport)

Cars, trucks, boats, ATVs, skidoos, etc.
5% of total energy use
 Fuel purchased in the community.



Waste energy

From electricity production and heating
33% of total energy use

ENERGY PROFILE

NORMAN WELLS 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



Heating oil

- 43% of total energy
- Cost: \$3,890,000
- Amount: 2,440,000 Litres
- GHGs: 6,570 tonnes
- Energy: 93,800,000 MJ



Diesel generator

- 30% of total energy
- Cost: \$3,100,000
- Amount: 1,710,000 Litres
- GHGs: 4,590 tonnes
- Energy: 65,500,000 MJ



Wood pellets (commercial)

- 12% of total energy
- Cost: \$737,000
- Amount: 1,320 tonnes
- GHGs: 45 tonnes
- Energy: 25,300,000



Natural gas generator

- 7% of total energy
- Cost: \$2,320,000
- Amount: 1,450,000 m3
- GHGs: 2,690 tonnes
- Energy: 14,800,000 MJ



Gasoline

- 4% of total energy
- Cost: \$424,000
- Amount: 265,000 Litres
- GHGs: 651 tonnes
- Energy: 8,920,000 MJ



Firewood

- 2% of total energy
- Cost: \$142,000
- Amount: 285 Cords
- GHGs: 10 tonnes
- Energy: 5,320,000 MJ



Diesel for vehicles

- 1% of total energy
- Cost: \$135,000
- Amount: 80,000 Litres
- GHGs: 216 tonnes
- Energy: 3,080,000 MJ



Wood pellets (residential)

- 1% of total energy
- Cost: \$29,000
- Amount: 100 tonnes
- GHGs: 3 tonnes
- Energy: 1,480,000 MJ



Propane

- 0.2% of total energy
- Cost: \$14,000
- Amount: 14,000 Litres
- GHGs: 21 tonnes
- Energy: 363,000 MJ

Total community energy use

- 218,600,000 MJ
- 270,000 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

