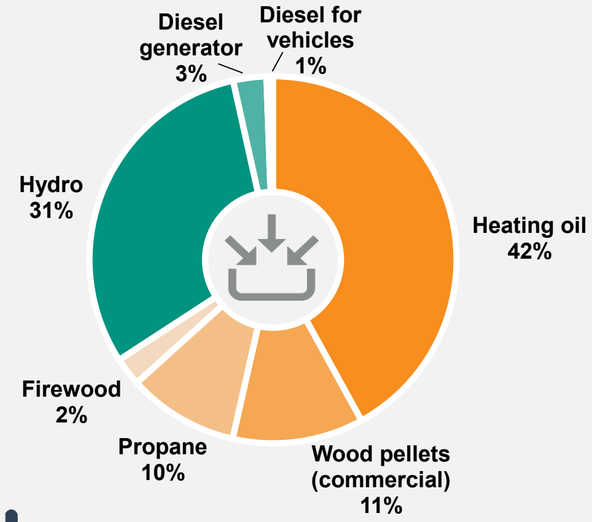
ENERGY PROFILE

Where we get energy and how we use it

DETTAH 2018

Population: 235

Energy Sources – 1 Year



Diesel generator produces electricity and heat

34% electricity

66% waste heat

Energy cost

Total: $617,000

Cost per person: $2,600

65% hydro
2% diesel generator
24% heating oil
5% propane
4% wood pellets
1% firewood
0.4% diesel for vehicles

Renewable energy

45% of total energy
31% of total from hydro
11% of total from wood
2% of total from firewood
0.5% of total from solar PV

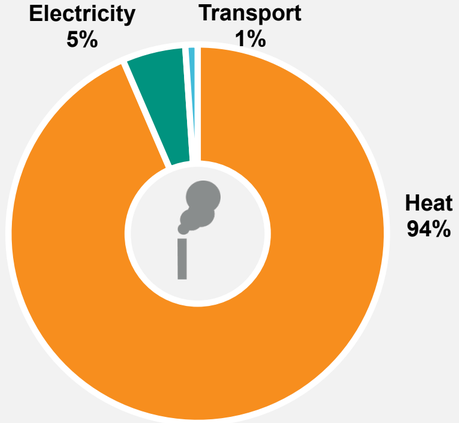
Unless otherwise noted, numbers reflect energy sources purchased or sourced in the community, and do not include industry or commercial transport. Percentages may not add to 100% due to rounding.

Greenhouse Gas (GHG) Emissions – 1 Year

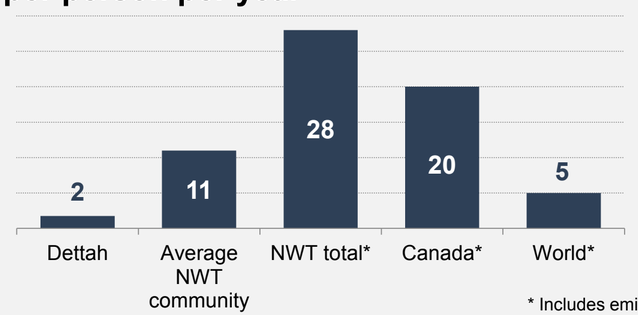
Community total GHG emissions per year

400 tonnes

2 tonnes/person

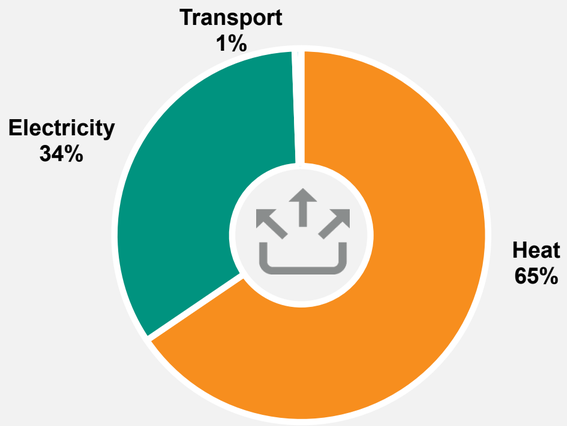


Average tonnes of GHGs per person per year



* Includes emissions from industry and commercial transport.

Energy Use – 1 Year



Energy use in homes

52% of total energy use
64% of total electricity
65% of total heating oil
100% of total propane
100% of total firewood

Energy use in other buildings

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

32% of total energy use
36% of total electricity
35% of total heating oil
100% of total wood pellets

Transport (local – no air transport)

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

1% of total energy use

Fuel purchased in the community.

Waste energy

From electricity production and heating

15% of total energy use

ARCTIC ENERGY ALLIANCE
Revised: September 2020

ENERGY PROFILE
DETTAH 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
- 42% of total energy
- Cost: $146,000
- Amount: 118,000 Litres
- GHGs: 318 tonnes
- Energy: 4,540,000 MJ

Hydro
- 31% of total energy
- Cost: $399,000
- Amount: 922,000 kWh
- GHGs: 0 tonnes
- Energy: 3,320,000 MJ

Wood pellets
- 11% of total energy
- Cost: $21,900
- Amount: 65 tonnes
- GHGs: 2 tonnes
- Energy: 1,250,000 MJ

Propane
- 10% of total energy
- Cost: $30,000
- Amount: 40,000 Litres*
- GHGs: 61 tonnes
- Energy: 1,060,000 MJ

Diesel generator
- 3% of total energy
- Cost: $13,000
- Amount: 8,200 Litres
- GHGs: 22 tonnes
- Energy: 316,000 MJ

Firewood
- 2% of total energy
- Cost: $4,700
- Amount: 10 Cords
- GHGs: 0.5 tonnes
- Energy: 271,000 MJ

Diesel for vehicles
- 1% of total energy
- Cost: $2,200
- Amount: 1,600 Litres
- GHGs: 4 tonnes
- Energy: 61,500 MJ

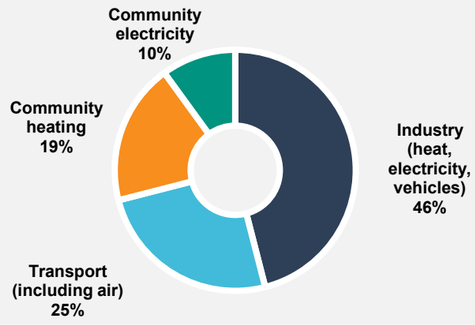
Solar PV
- 0.5% of total energy
- Cost: $0
- Amount: 14,800 kWh
- GHGs: 0 tonnes
- Energy: 53,200 MJ

Community GHG emissions
- Homes: 56%
- Other buildings: 38%
- Transport: 1%
- Diesel generator: 5%

Total community energy use
- **10,900,000 MJ**
- 50,000 MJ/person

Total NWT energy use (2017)

Total: 20 billion MJ/year



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

*Estimated due to lack of data