ENERGY PROFILE
Where we get energy and how we use it
FORT RESOLUTION 2018
Population: 531

Energy Sources – 1 Year

- Hydro 13%
- Propane 1%
- Wood (pellets & firewood) 6%
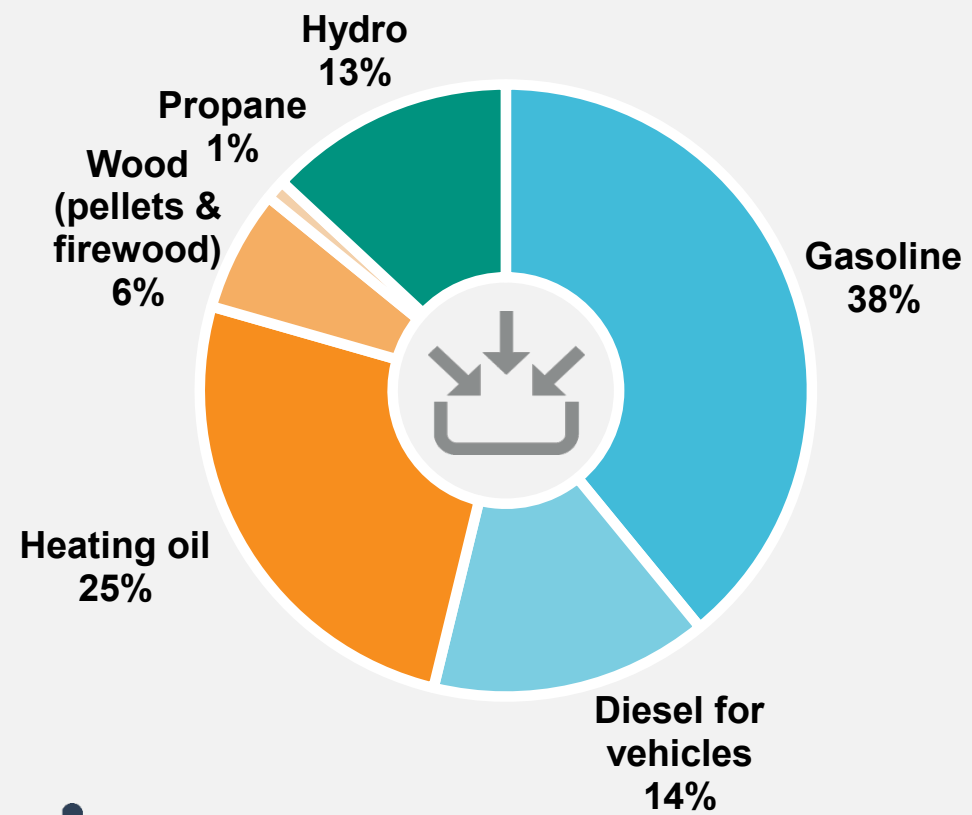- Gasoline 38%
- Diesel for vehicles 14%
- Heating oil 25%

Diesel generator produces electricity and heat
- **30%** electricity
- **70%** waste heat

Energy cost
Total: $2,680,000
Cost per person: $5,000

- **36%** gasoline
- **13%** diesel for vehicles
- **26%** hydro
- **1%** diesel generator
- **20%** heating oil
- **2%** firewood
- **1%** propane
- **1%** wood pellets

Renewable energy
- **19%** of total energy
- **13%** of total from hydro
- **3%** of total from firewood
- **3%** of total from wood pellets

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
4,000 tonnes
7 tonnes/person

- Electricity 3%
- Heat 32%
- Transport 66%
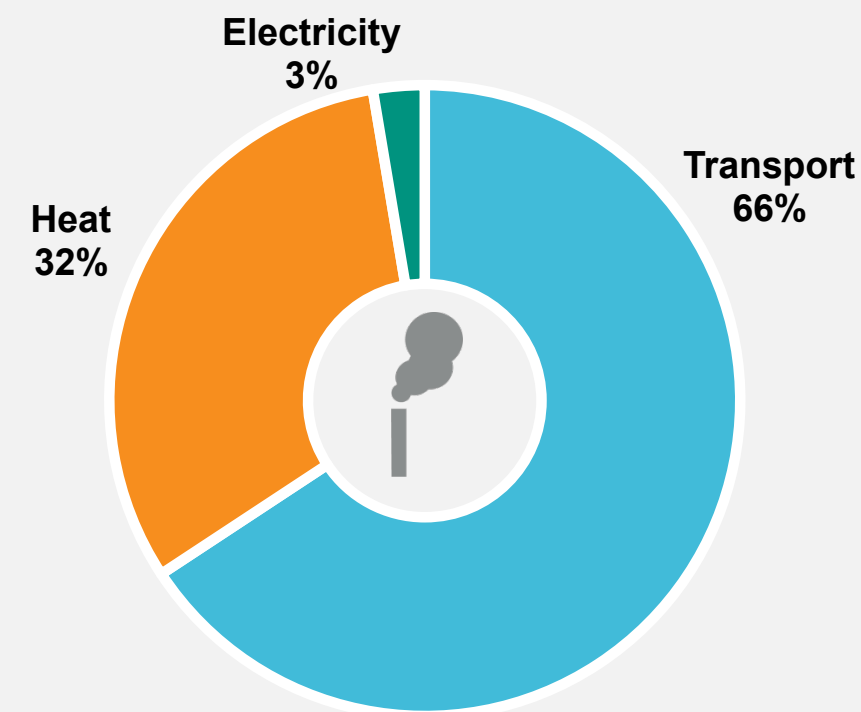
Average tonnes of GHGs per person per year

Fort Resolution	Average NWT community	NWT total*	Canada*	World*
7	11	28	20	5
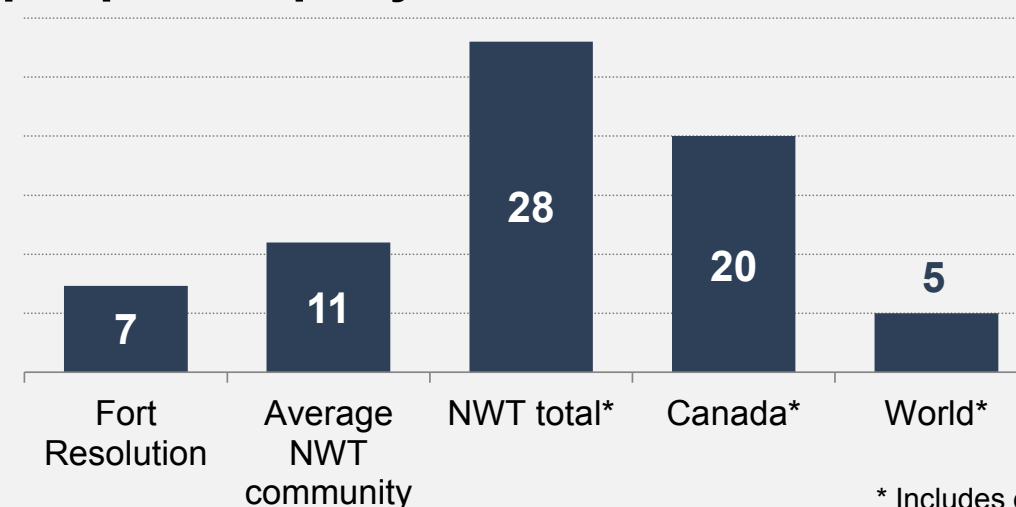
* Includes emissions from industry and commercial transport.

Energy Use – 1 Year

- Electricity 15%
- Transport 53%
- Heat 32%
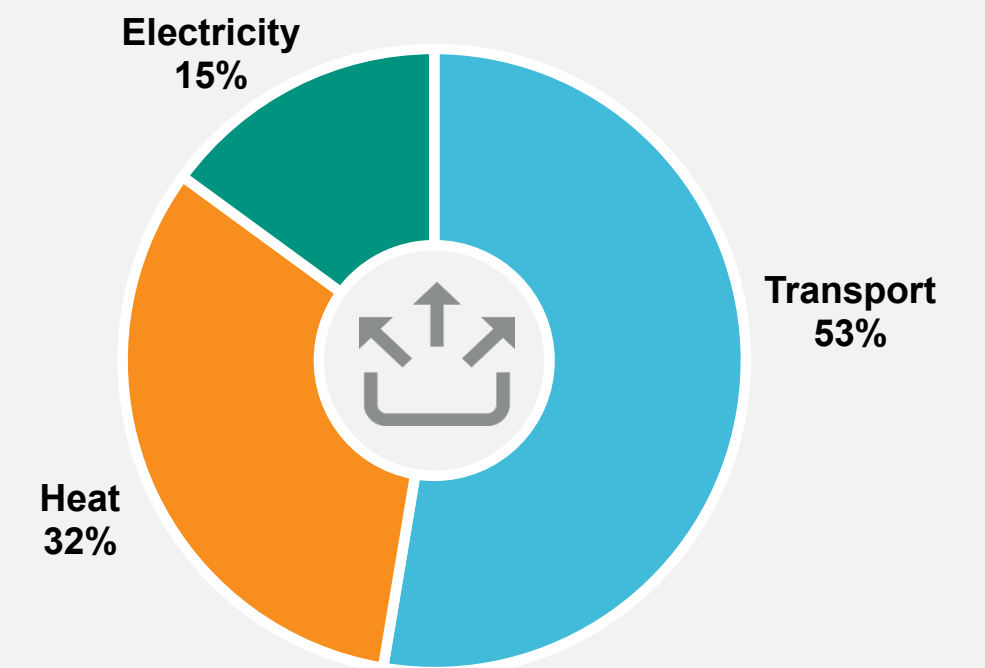
Energy use in homes
- **26%** of total energy use
- **55%** of total electricity
- **76%** of total heating oil
- **100%** of total firewood
- **21%** of total wood pellets

Energy use in other buildings
Store, school, church, office, arena, library, etc.
- **13%** of total energy use
- **45%** of total electricity
- **24%** of total heating oil
- **79%** of total wood pellets
- **100%** of total propane

Transport (local – no air transport)
Cars, trucks, boats, ATVs, skidoos, etc.
- **53%** of total energy use
Fuel purchased in the community.

Waste energy
From electricity production and heating
- **8%** of total energy use

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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

Gasoline
- 38% of total energy
- Cost: $960,000
- Amount: 763,000 Litres
- GHGs: 1,880 tonnes
- Energy: 25,700,000 MJ

Heating oil
- 25% of total energy
- Cost: $547,000
- Amount: 439,000 Litres
- GHGs: 1,180 tonnes
- Energy: 16,900,000 MJ

Diesel for vehicles
- 14% of total energy
- Cost: $343,000
- Amount: 252,000 Litres
- GHGs: 679 tonnes
- Energy: 9,690,000 MJ

Hydro
- 13% of total energy
- Cost: $694,000
- Amount: 2,390,000 kWh
- GHGs: 0 tonnes
- Energy: 8,590,000 MJ

Firewood
- 3% of total energy
- Cost: $50,000
- Amount: 125 Cords
- GHGs: 4 tonnes
- Energy: 2,340,000 MJ

Diesel generator
- 2% of total energy
- Cost: $35,000
- Amount: 38,000 Litres
- GHGs: 103 tonnes
- Energy: 1,470,000 MJ

Wood pellets (commercial)
- 2% of total energy
- Cost: $20,000
- Amount: 77 tonnes
- GHGs: 3 tonnes
- Energy: 1,480,000 MJ

Propane
- 1% of total energy
- Cost: $22,000
- Amount: 26,000 Litres
- GHGs: 41 tonnes
- Energy: 701,000 MJ

Wood pellets (residential)
- 1% of total energy
- Cost: $8,000
- Amount: 22 tonnes
- GHGs: 1 tonne
- Energy: 422,000 MJ

Total community energy use

- **67,300,000 MJ**
- 130,000 MJ/person

Total NWT energy use (2017)

Total: 20 billion MJ/year

Community electricity 10%

Community heating 19%

Industry (heat, electricity, vehicles) 46%

Transport (including air) 25%