Wondering about your energy options for space heating?

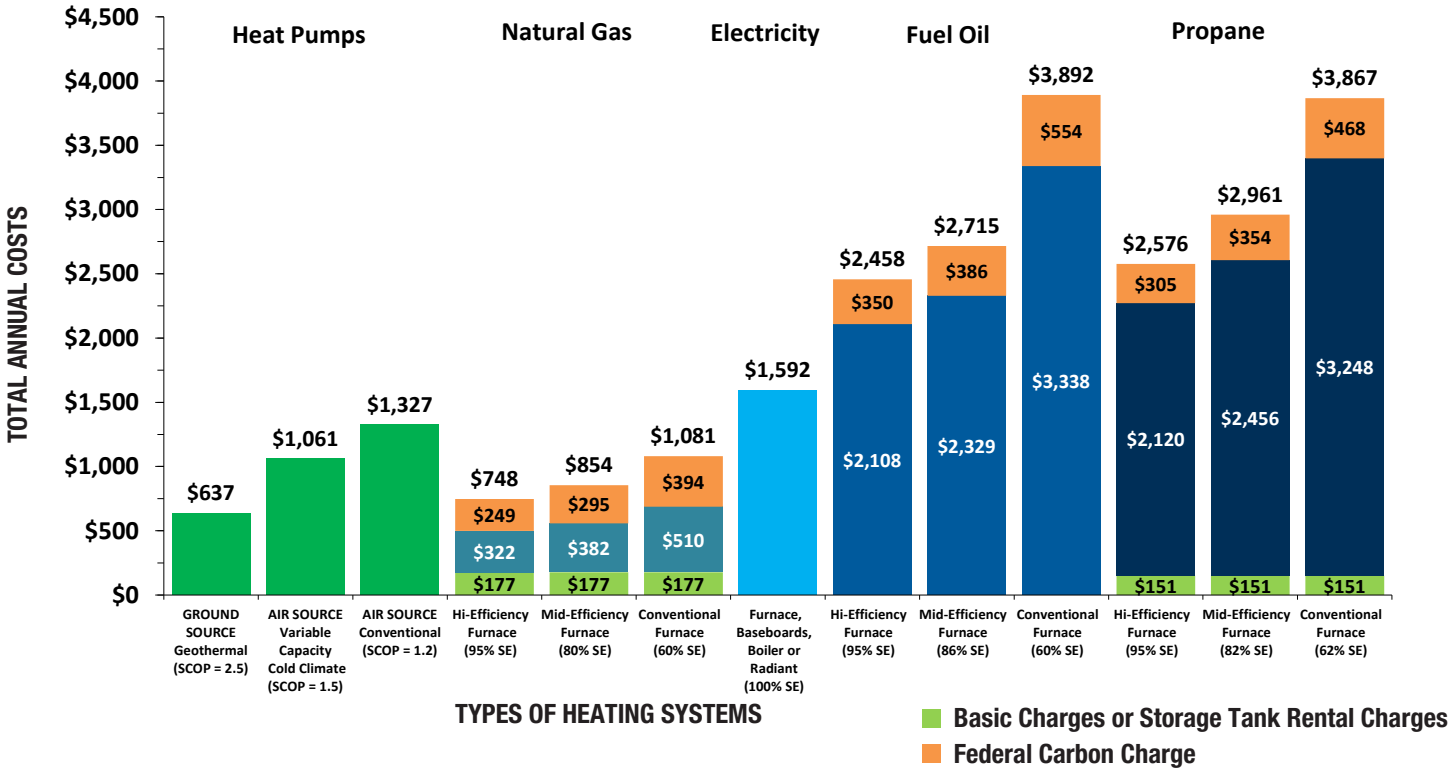
1

The chart below shows an example of space heating costs based on an average single family residence, at rates in effect February 1, 2025.

1. Consult the charts to identify the costs of your current space heating system.
2. Review the annual energy costs of other systems to see how your costs compare.
3. Consult the accompanying notes on pages 2, 3 and 4 for guidance if you are thinking of switching space heating systems or building a new home.
4. Visit **hydro.mb.ca/heating** and use the online calculator to get a customized estimate for your specific home's annual and total lifetime space heating costs based on different heating systems and energy sources.

Annual Space Heating Costs

(Average single family residence)



Energy rates

as of February 1, 2025

Natural gas: **$0.19750**/cubic metre

Electricity: **$0.09587**/kilowatt-hour

Fuel oil: **$1.290**/litre

Propane: **$0.860**/litre

Annual basic natural gas charge: **$177**

Annual propane tank rental: **$151**

Federal carbon charge: **$80**/per tonne of greenhouse gas produced

Space heating annual costs shown in the chart above are based on "point-in-time" prices as noted.

The annual space heating costs presented in the chart exclude the cost of converting to a different heating system, which may be significant.

See page 3 if you are thinking of changing your heating system.

Depending on your supplier, propane and fuel oil prices can fluctuate on a daily basis.

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Annual cost estimates

2

The space heating costs shown in the charts are based on the amount of energy required to heat the average single-detached home that is served by Manitoba Hydro. The average single-detached home on Manitoba Hydro's system requires approximately 60 Gigajoules (output) of energy for space heating. Your space heating costs may differ due to a variety of factors, such as weather, heating equipment, insulation levels, air tightness, lifestyle, and energy rates paid. If you think your space heating usage is higher or lower than the average shown here, please factor up or down the operating costs of the various heating systems shown in the chart. The costs shown are relative, illustrative and for general comparison purposes only.

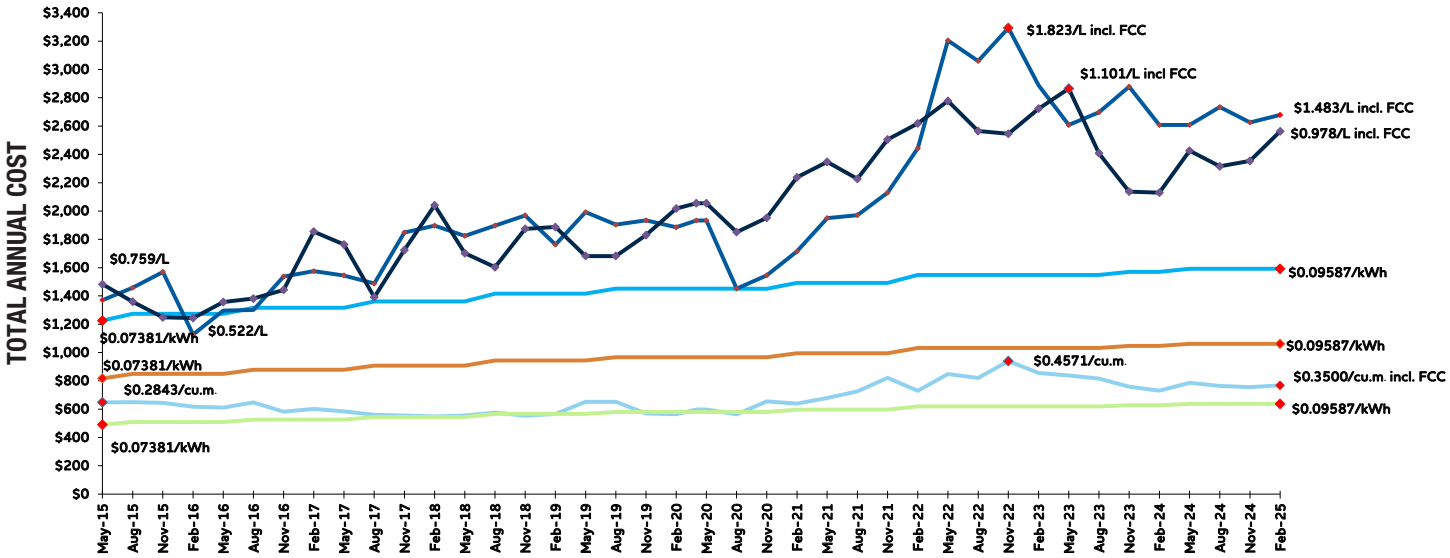
The charts on the first page present annual costs as if all energy rates remained fixed for the coming year at the rates in effect on February 1, 2025.

Your actual annual energy costs will vary. Natural gas rates change four times per year, electricity rates typically change on an annual basis and depending on your supplier, propane and oil rates can change daily. With Manitoba Hydro's Quarterly Rate Service, the price you pay is the same price we pay for natural gas in the marketplace.

The gas commodity rate changes every 3 months and is currently $0.0667 per cubic metre. If you buy Gas Commodity on a Fixed Rate Service contract from Manitoba Hydro or an independent gas marketer, you will continue to pay Manitoba Hydro for Basic and Delivery charges. The figure of $0.19750 per cubic metre of natural gas that we've used in the charts is known as a "re-bundled" effective rate. It includes charges for Gas Commodity and Delivery on Manitoba Hydro's Quarterly Rate Service.

The chart below shows a 10 year history of annual operating costs of various energy sources and space heating systems. The chart also shows the minimum and maximum energy prices for a given point in time by energy source over the 10 year period. The energy prices shown are provided as reference points to show the relationship between the energy price at a given time and the annual operating costs of a specific heating system.

Example Space Heating 10-year Cost History



Natural Gas (@ 95% efficiency including basic monthly charges)

Electricity

Fuel Oil (@ 86% efficiency)

Propane (@ 95% efficiency including tank rental cost)

Ground Source Heat Pump (@ SCOP = 2.5)

Variable Capacity Cold Climate Air Source Heat Pump (@SCOP=1.5)

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Key points if you are thinking of changing heating systems

3

Is it economically feasible?

Note that the costs of switching to another system to heat your home may be economically feasible only if your current system is at or near the end of its useful life, or if you are building a new home. Be sure to obtain quotations from at least three reputable heating contractors before you make your decision.

Size of existing electrical service

Your electrical system may need to be upgraded if you want it to carry a space heating load.

Depending on the capacity of the electrical appliances and equipment currently installed, and the size of your home, the Manitoba Electrical Code will allow a maximum of 8 to 10 kilowatts of electric heating on a standard 100-amp service. Most homes will need more than this.

Increasing the size of an electrical service usually involves changing your electrical panel or installing an additional one. An electrician should perform an electrical code load calculation to advise whether your existing service is adequate to serve the heating equipment required to heat your home.

Other gas appliances

If you have other gas appliances in your home like a range, clothes dryer, fireplace, or swimming pool heater, switching to an all-electric system may be quite costly.

Flue gas venting

When gas is burned, flue gases are produced which primarily contain carbon dioxide and water vapour which are not harmful to people. However, flue gases can also contain trace amounts of carbon monoxide and other gases that can present a health hazard. High-efficiency gas furnaces will not use the existing chimney to vent (remove) flue gases from the home. Instead they will be vented via approved plastic piping through the home's side wall or roof.

Chimney ventilation

With a conventional gas furnace, warm moist air continuously exits the house through the chimney. This draws cold and dry replacement air into the house through cracks in walls and around windows and doors. This uncontrolled ventilation actually dehumidifies your home in winter, but consumes heating energy.

Reducing or eliminating this chimney ventilation can save energy but may also increase unwanted humidity levels and change the way that air leaks into and out of your home. Homes usually become slightly more positively pressurized.

Converting to a high efficiency gas furnace or to electric heat will reduce the uncontrolled ventilation through the chimney. Along with upgrading to a high efficiency gas furnace, if you remove your existing conventional gas water heater at the same time and install a power-vent gas or electric water heater you will completely eliminate the uncontrolled chimney ventilation.

When upgrading your space heating system to a high efficiency gas furnace you don't have to change your water heater. However, in most cases you will need to install a chimney liner inside your existing chimney to comply with the natural gas installation code. If the cost of a liner is too high or if you are unable to install a chimney liner or your tank is very old (could fail soon), then a power-vent gas water or an electric heater may be better options to consider. Consult with a licensed and reputable heating contractor about water heating options for your home.

Increases in humidity and changes in air leakage patterns may cause increased condensation/icing: on interior surfaces of well-sealed windows, and anywhere warm moist air leaks out of the home such as electrical outlets, between the panes of poorly sealed windows, on door seals, in door lock mechanisms and around chimney and plumbing stacks. A very small percentage of homeowners have reported experiencing some of these issues.

There is not one solution that works in every home and for every issue. Here are some of the measures that individually or in combination can minimize or eliminate the effects of reduced chimney ventilation:

- improved weatherstripping and caulking on doors and windows and other areas of air leakage (but not on storm doors)
- seasonal window insulator kits (clear heat shrink poly over inside windows and frames)
- improved windows (preferably triple pane)
- a ventilation system which may consist of:
  - exhaust fan(s)
  - exhaust fan(s) combined with a fresh air intake
  - heat recovery ventilator (HRV)

Carbon monoxide safety

If you are burning heating oil, diesel, propane, kerosene, natural gas, wood, or coal in your home, or if you have an attached garage, we recommend that you install at least one carbon monoxide detector in your home.

The building code now requires permanently mounted carbon monoxide detectors in all new homes with fuel burning appliances or attached garages.

For further details, contact us for a copy of our brochure on "Carbon monoxide safety – Because your family comes first!".

Calculate your payback

Determining how many years it will take for a new heating system to pay for itself may help you reach a decision. (Continues on next page) ▶

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Determine the potential savings

Subtract the annual cost of the new heating system you are considering from the annual cost of your current heating system (check the charts).

The difference is approximately what you can expect to save each year, at current energy rates.

Determine costs of the new system

Determine how much it will cost to buy and install the new system, along with any other adjustments required. Get quotations from three reputable contractors.

Factor in the cost of financing, if necessary.

Determine the payback

4

Divide the estimated cost of switching your system, by the estimated savings.

The result is the number of years it will take for the new heating system to pay for itself.

Explanation of technical information in the charts

ENERGY RATES — in effect February 1, 2025

	Effective rate	Heating value	Carbon charge
Natural gas	$0.19750/cubic metre	36,600 Btu/cubic metre	$0.1525/cubic metre
Electricity	$0.09587/kilowatt-hour	3,413 Btu/kilowatt-hour	
Fuel oil	$1.290/litre	36,500 Btu/litre	Fuel oil $0.2139/litre
Propane	$0.860/litre	24,200 Btu/litre	Propane $0.1238/litre

- The cost of heating with propane includes a propane tank rental or lease charge of $151 per year for a typical 500 US gallon tank. This charge may not apply to all customers and may vary by propane supplier.
- The federal carbon charge was introduced April 1, 2019 and is applied to natural gas, fuel oil and propane consumption since these commodities produce greenhouse gases. The carbon charge is shown as a separate cost at the top of each fossil fuel bar in the chart. This charge currently puts a price of $80 on each tonne of greenhouse gas created by burning fossil fuels. The federal government plans to increase the carbon charge by $15 per tonne each year until it reaches $170 per tonne in 2030.

  Heating with natural gas is expected to remain a lower cost option than heating with electricity, even after the federal carbon charge reaches $170 per tonne in 2030.
- The cost of space heating with natural gas includes a basic monthly charge of $14.75 ($177 per year).
- SE (seasonal efficiency) is defined as the total heat output delivered by the furnace during one heating season as a percentage of the total energy input to the system. SE takes into consideration not only normal operating losses but also the fact that most furnaces rarely run long enough to reach their steady state efficiency temperature, particularly during milder weather at the beginning and end of the heating season.
- SCOP (Seasonal Coefficient of Performance) = 2.5, = 1.5 or = 1.2 appears in the home heating chart for ground or air source heat pumps. It refers to the Seasonal Coefficient of Performance of the heat pump over an entire heating season.

  SCOP is defined as the total heat output of the system over the entire heating season, divided by the total energy input to the system over the same period.

  The SCOP of a ground source (geothermal) heat pump system typically ranges from 2.0 to 3.0. For reference, the SCOP of an electric baseboard heater is 1.0. The SCOP rating accounts for cycling losses, circulating fan and pump energy and auxiliary electric heating loads which are not included in the manufacturer's COP rating of the heat pump "unit". The overall system SCOP of a heat pump will therefore always be significantly lower than the unit COP.

  Two types of air source heat pumps (ASHP) are represented in the home heating chart; conventional and variable capacity cold climate. Conventional ASHP's shut off once the outside air temperature drops below -10 C and typically have single or two speed compressors. Variable capacity cold climate heat pumps use variable speed (inverter driven) compressors and can operate down to temperatures as low as -30 C. The heat output and COP of all ASHP's significantly reduce as the outside air temperature drops. Therefore, both types of ASHP's will require a fully redundant electric resistance heater to heat your home when the ASHP can't keep up or when it shuts off at temperatures below their rated minimum operating temperature. When temperatures drop below freezing, all ASHP's will periodically need to use energy to defrost their outdoor coils which also reduces their SCOP.

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