

Typical Home & Water Heating Costs

Average Single Family Residence at Rates in Effect on February 1, 2008

(Revised February 28, 2008, to reflect the latest figures on annual heating usage by today's average natural gas heated homes.)

Wondering about your energy options for heating...?

1. Consult the charts to identify the costs of your current home heating and water heating systems.
2. Review the costs of other systems to see how your costs compare.
3. Consult the accompanying notes for guidance if you are thinking of switching systems or building a new home.

ENERGY RATES

Natural Gas:
\$0.3989/cubic metre

Electricity:
\$0.0579/kilowatt-hour

Fuel Oil:
\$0.929/litre

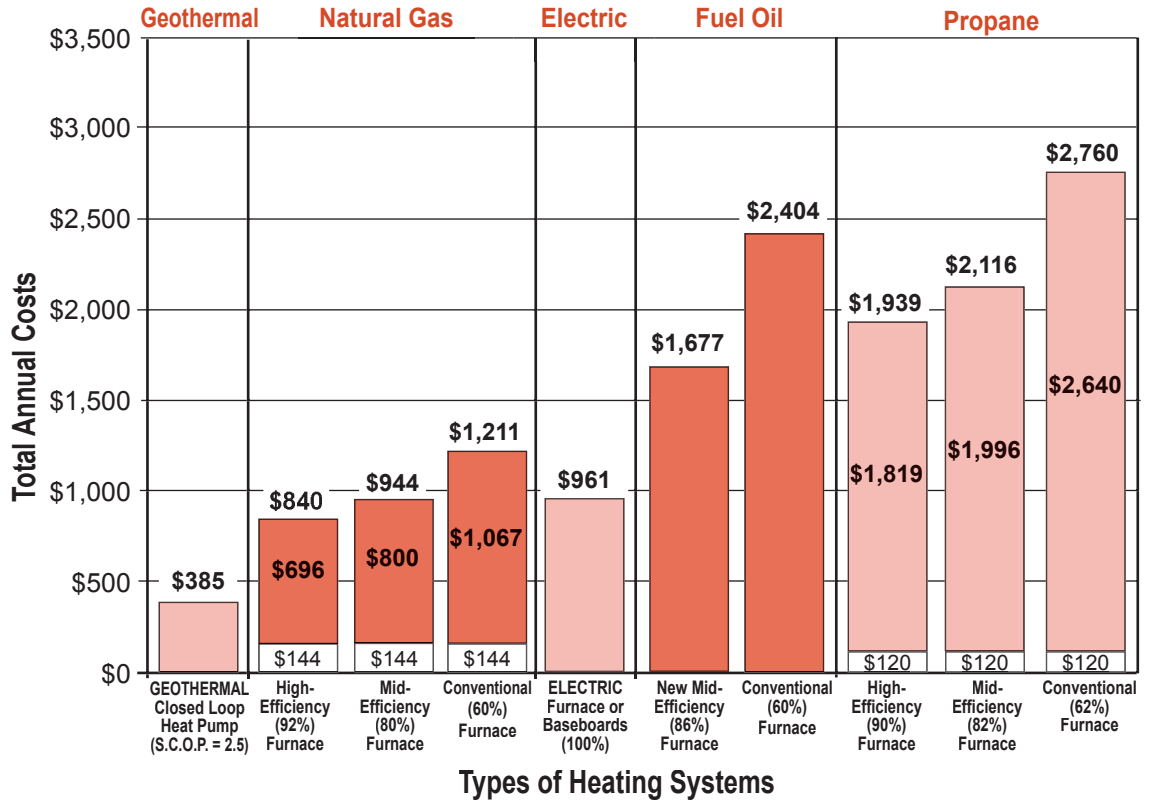
Propane:
\$0.699/litre

Basic or Tank Rental Annual Charge for Natural Gas:
\$144

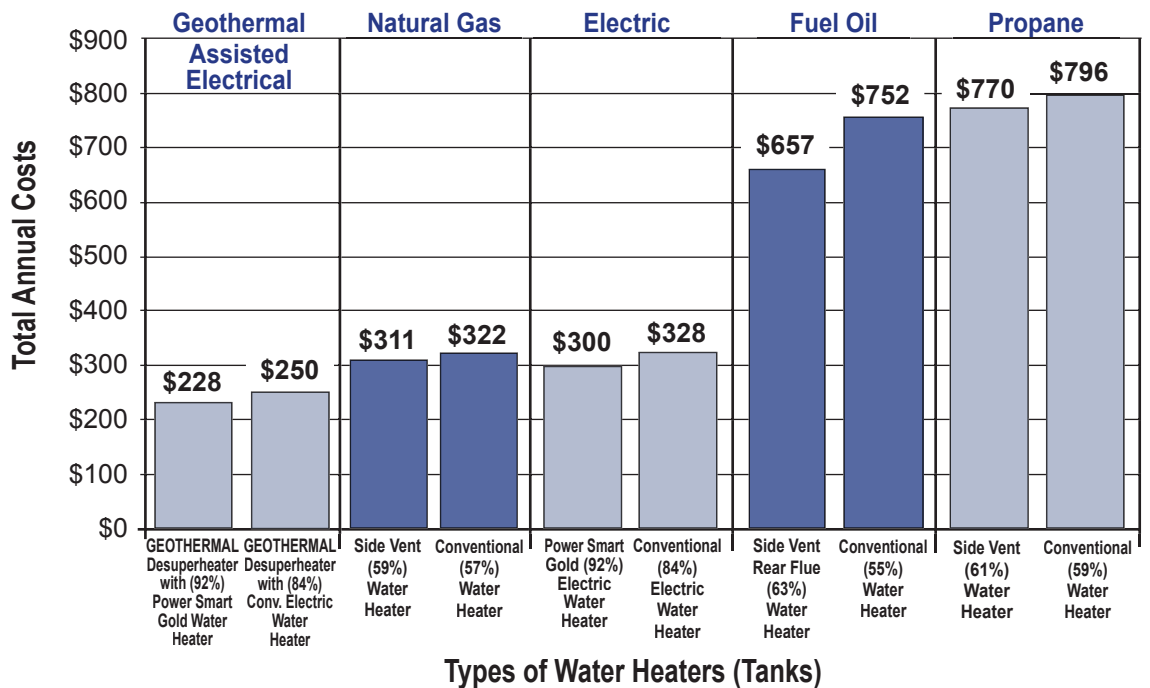


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HOME HEATING



WATER HEATING (family of four)



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Weighing Your Options

The home heating costs shown in the chart are based on the amount of gas used to heat the average natural gas-heated home served by Manitoba Hydro.

This average home is about 1200 square feet and uses a mid-efficiency furnace and conventional gas water heater.

Your heating costs may differ due to a range of factors, such as weather, type of heating equipment, insulation levels, air tightness, and lifestyle.

Water-heating costs are based on a family of four, which is slightly higher than the average of 2.5 for a typical Manitoba home.

Annual Cost Estimates

The charts present annual costs as if all energy rates remained fixed for the coming year at rates in effect on February 1, 2008

Your actual annual costs will vary, since natural gas rates change four times a year, while propane and oil rates can change weekly.

Note that Primary Gas represents the bulk of the gas you burn. If you buy your gas from us, the price we charge you for Primary Gas is the same

price we pay for the gas in the marketplace. There is no markup. Our Primary Gas rate is currently \$0.2785/cubic metre.

If you buy Primary Gas from a broker at a negotiated rate, you will continue to pay Manitoba Hydro for Supplemental Gas as well as transportation and distribution charges.

The figure of \$0.3989/cubic metre of natural gas that we've used in the charts is known as a "re-bundled" effective rate that a residential customer pays to Manitoba Hydro. It includes charges for Primary and Supplemental Gas, as well as for transportation and distribution of the gas.

Key Points to Consider If You are Thinking of Converting

If you decide to convert your system, consider these points

Is It Economically Feasible?

Note that the costs of switching to another system to heat your home and hot water 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.

If you are still serious about switching to another system after reading this, be sure to get quotations from at

least three reputable heating contractors before you make your final decision.

Conventional Furnaces No Longer Manufactured

The home heating chart includes conventional natural gas, fuel oil, and propane furnaces.

Note that since 1992, conventional furnaces were no longer manufactured in Canada, although they are still in operation in many homes.

Size of Electrical Service

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

If your home needs more than this, you may have to increase the size of your electrical service. This may involve changing your electrical panel or installing an additional one. An electrician should perform an electrical code calculation to advise whether your existing service is adequate to serve the size of furnace or baseboards required to heat your house.

Other Gas Appliances

If you have other gas appliances, such as a range, clothes dryer, fireplace, or swimming pool heater, the cost of switching to an all-electric system may be prohibitive.

Venting

If you are thinking of switching to a high-efficiency natural gas furnace, note that such a furnace does not need a chimney because it is side-wall vented.

You may also have a standard natural gas water heater, in which case the heater can be left on the chimney alone if the chimney meets the requirements of the Natural Gas Installation Code. Your heating contractor can confirm this.

Once the water heater is isolated on the old chimney, if flue gases condense in the chimney, or if back-drafting or other venting problems occur, it may be necessary to modify your venting system.

If costly modifications are required, the simplest solution may be to replace your old natural gas water heater with a side-wall vented version or with an electric water heater, either standard or Power Smart Gold.

Reduced Chimney Ventilation

Converting to electric heat, or to a high-efficiency or mid-efficiency furnace,

eliminates or minimizes the uncontrolled ventilation provided by the chimney.

With a conventional furnace, warm moist air continuously exits the house through the chimney. This draws replacement cold dry air into the house through cracks in walls and around windows and doors.

Reducing or eliminating this chimney ventilation will save energy but could also increase humidity levels, reduce air quality, and change the way that air leaks into and out of your home.

Impacts of these changes could include frozen doors and locks, increased condensation/icing on interior surfaces of well-sealed windows, and frost build-up between the panes of poorly sealed windows.

These impacts may be minimized or eliminated by installing:

- improved weatherstripping and caulking on doors and windows
- seasonal window insulator kits (clear poly over inside windows and frames)
- central, washroom, and/or kitchen exhaust fans
- a fresh-air intake into the furnace cold-air return duct
- a heat recovery ventilator (HRV)
- new triple-pane windows.



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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.

For further details, call for a copy of our brochure on "Carbon Monoxide Safety—Because your family comes first!"

What's the Payback?

Determining how many years it will take for a new heating system to pay for itself

may help you reach a decision.

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 roughly what you can

expect to save each year, at current energy rates.

Determine the 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

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 system to pay for itself.

Technical Details

NOTES FOR THE HOME & WATER HEATING COST CHARTS:

- Typical annual home heating requirement (output) of 60 Gigajoules is based on Manitoba Hydro's system average for natural gas heated homes
- Water heating output is calculated based on a Hot 2000 default usage of 49.5 I.G./day (family of four, home 50% of the time) assuming a 90°F temperature rise.
- The portion of domestic hot water needs provided by a ground source heat pump desuperheater is assumed to be 40%. The remainder of domestic hot water needs would be provided either by an 84% efficient conventional C-191 tank or by a 92% efficient Power Smart Gold tank (shown as separate bars in the chart).
- The cost of heating with propane includes a propane tank rental or lease charge of \$10/month (\$120/year) for a typical 500 US gallon tank. See table below. This charge may not apply to all customers and may vary.
- The cost of heating with natural gas includes a basic monthly charge of \$12 (\$144 a year).
- The efficiency of heating systems is given in terms of their "seasonal" efficiency, for maximum accuracy. In the case of furnaces, for example, seasonal efficiency 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.
- S.C.O.P. = 2.5 appears in the home heating chart under geothermal closed loop heat pump. It refers to the Seasonal Coefficient of Performance of the heat pump over an entire heating season. S.C.O.P. is defined as the total heat in Btu's produced by the system during the heating season, divided by the total energy in Btu's consumed by the system. S.C.O.P.s of geothermal heat pumps typically range from 2.0 to 3.0. For reference, the S.C.O.P. of an electric baseboard heater is 1. The higher the S.C.O.P., the more efficient your heat pump and the lower your heating costs. Home-heating costs with a geothermal closed loop heat pump with an S.C.O.P. of 2.0 would be \$481/year; with an S.C.O.P. of 2.5, \$385/year (as in the chart); and with an S.C.O.P. of 3.0, \$320/year.
- Note that the natural gas energy price reflected in the charts is a bundled price that includes Primary and Supplemental Gas, and Transportation and Distribution charges. For reference, one of the major components of the bundled price is the price of Primary Gas, at \$0.2785/cubic metre. Primary gas currently comprises 99% of the gas supplied.
- ALL TAXES HAVE BEEN EXCLUDED FROM COSTS.

ENERGY RATES—In Effect on February 1, 2008

	Commodity Charge	Basic Monthly Charge	Heating Value
Natural Gas	\$0.3989/cubic metre	\$12	35,310 Btu/cubic metre
Electricity	\$0.0579/kilowatt-hour	\$0	3,413 Btu/kilowatt-hour
Fuel Oil	\$0.929/litre	\$0	36,500 Btu/litre
Propane	\$0.699/litre	\$10	24,200 Btu/litre



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