Energy Cost Calculator

Comparing Space Heating Costs For Your Operation

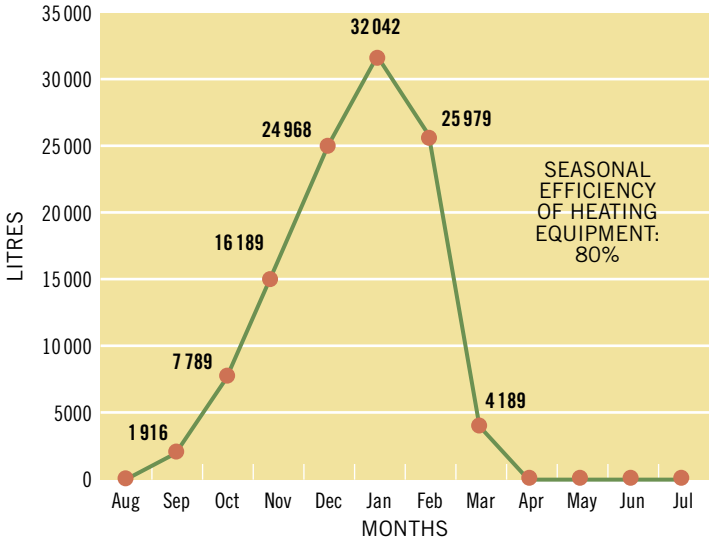
This information sheet is designed to give you some idea of the relative costs of various energy sources for space heating your livestock or poultry operation.

Check out the charts, then consult the sample calculation overleaf as a basis for comparing the costs of space heating with various energy sources.

To find out more about space heating costs for your livestock or poultry operation, please call your Manitoba Hydro district office.

TYPICAL SPACE HEATING ENERGY CURVE

for an 800-Sow Farrow-to-Isowean Operation Using 113 000 litres of Propane



Typical Annual Heating Cost Comparisons

for an 800-Sow Farrow-to-Isowean Operation

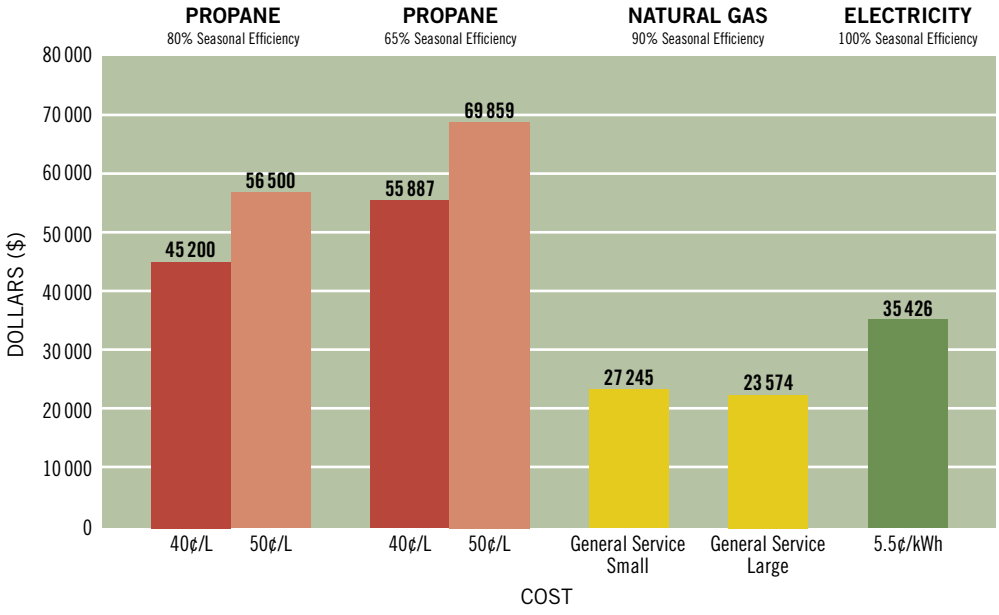
(Based on 113 000 litres of Propane at 80% Seasonal Efficiency)

This chart covers a range of costs for propane and natural gas to give a representative picture. Natural gas rates are those in effect November 1, 2007. Electricity ranges from 4.5 to 5.5¢/kWh, depending on your load factor and rate.

Seasonal efficiency of natural gas was assumed to be 90%, which applies to a new condensing boiler.

Fuel heating values are as follows:

Natural Gas	10.35 kWh/m^3
Propane	7.09 kWh/litre
Fuel Oil	10.69 kWh/litre



HEATING FUEL COSTS IN CENTS PER KILOWATT-HOUR (¢/KWh)

	Cost per Unit ($)	Costs in ¢/kWh at Various Seasonal Efficiencies								
		50%	55%	60%	65%	70%	75%	80%	85%	90%
Fuel Oil (litres)	0.85	15.90	14.45	13.25	12.23	11.35	10.60	9.94	9.35	8.83
	0.80	14.96	13.60	12.47	11.51	10.69	9.97	9.35	8.80	8.31
	0.75	14.03	12.75	11.69	10.79	10.02	9.35	8.77	8.25	7.79
	0.70	13.09	11.90	10.91	10.07	9.35	8.73	8.18	7.70	7.27
	0.65	12.16	11.05	10.13	9.35	8.68	8.10	7.60	7.15	6.75
	0.60	11.22	10.20	9.35	8.63	8.01	7.48	7.01	6.60	6.23
Propane (litres)	0.60	16.92	15.39	14.10	13.02	12.09	11.28	10.58	9.96	9.40
	0.55	15.51	14.10	12.93	11.93	11.08	10.34	9.70	9.13	8.62
	0.50	14.10	12.82	11.75	10.85	10.07	9.40	8.81	8.30	7.84
	0.45	12.69	11.54	10.58	9.76	9.07	8.46	7.93	7.47	7.05
	0.40	11.28	10.26	9.40	8.68	8.06	7.52	7.05	6.64	6.27
Natural Gas (cubic metre)	**Rates Effective November 1, 2007**									
Small General Service (less than 15 200 m^3/year)	0.3936	7.61	6.92	6.34	5.85	5.43	5.07	4.76	4.48	4.23
Large General Service (more than 15 200 m^3/year)	0.3404	6.58	5.98	5.48	5.06	4.70	4.39	4.11	3.87	3.66
Electricity	**4.5 – 5.5¢/kWh** (depending on load factor and rate)									

Comparing Costs in Cents per Kilowatt-Hour

This table makes comparisons easy by showing you the costs of different sources of energy in ¢/kWh. For example, if you were burning propane at 80% seasonal efficiency and a rate of 40¢/litre, the equivalent electrical energy cost would be 7.05¢/kWh. For natural gas at 90% seasonal efficiency, Large General Service, and rates effective November 1, 2007, the equivalent electrical energy cost would be 3.66¢/kWh.

For reference, typical costs of heating with wood and coal are as follows:

Wood: 3.4¢/kWh, based on 23 000 000 BTUs/cord from yellow birch, at a cost/cord of $140.

Coal: 2.0¢/kWh, subject to source, type, transportation costs, and seasonal efficiency.

Sample Calculations

Propane vs Natural Gas

Assume you are burning 100 000 litres of propane a year at 65% seasonal efficiency and 40¢/litre. You want to compare your space heating costs if you used natural gas instead.

What Are Your Propane Costs?

To find out your annual propane costs, multiply 100 000 litres by 40¢/litre *(see table)* = $40 000.

What Would Natural Gas Cost?

Multiply $40 000 (the annual cost of your propane) by 3.66¢/kWh (the equivalent cost of natural gas at a seasonal efficiency of 90% for a Large General Service customer).

Divide the result by 8.68¢/kWh (the equivalent cost of the propane at 65% seasonal efficiency).

The final result is $16 866.

Propane	$40 000/year
Natural Gas	$16 866/year
SAVINGS	**$23 134/year**

Basic Monthly Charges

After you have calculated your costs from the table, you will need to add a monthly charge of $12 ($144/year) if you are a **Small General Service** (SGS) customer, or a monthly charge of $70 ($840/year) if you are a **Large General Service** (LGS) customer.

Similarly, any propane tank rental or delivery charges should be added to the cost of propane service.

SGS customers consume less than 15 200 cubic metres of natural gas a year; LGS customers, more than 15 200 cubic metres.

Assume that if you convert to natural gas, you would install a new condensing natural gas boiler, which would operate at a seasonal efficiency of 90%.

You would become an LGS customer if your existing heating equipment uses more than:

- 27 300 litres/year of propane at 65% seasonal efficiency
- 22 200 litres/year of propane at 80% seasonal efficiency
- 18 100 litres/year of fuel oil at 65% seasonal efficiency

If you use **less** than these quantities, you would become an SGS customer.

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