

fuel comparison fact card: operating costs of appliances on different fuel sources

energy conversions and cost assumptions

Unit of Energy or Fuel	Equivalent Energy
1 gigajoule (GJ)	947,950 British Thermal Units (BTUs)
1 kilowatt Hour (kWh)	3,412 BTUs
1 cord wood (birch/pine mix)	20 million BTUs
1 litre propane	24,200 BTUs
1 gigajoule (GJ)	278 kilowatt hours (kWh)

Unit of Energy or Fuel	Assumed Cost
1 gigajoule (GJ) natural gas	\$6.00/GJ
1 kilowatt Hour (kWh) electricity	\$0.11/kWh
1 cord wood (birch/pine mix)	\$365.00/cord



operating cost per hour: natural gas appliances

Use the chart below to determine how much your natural gas appliances cost to operate per hour.

typical appliance type	input (BTU/hr.)	natural gas cost per gigajoule (GJ)								
		\$4.00	\$5.00	\$6.00	\$7.00	\$8.00	\$9.00	\$10.00	\$11.00	\$12.00
gas light	3,000	\$0.01	\$0.02	\$0.02	\$0.02	\$0.03	\$0.03	\$0.03	\$0.03	\$0.04
small range burner	9,000	\$0.04	\$0.05	\$0.06	\$0.07	\$0.08	\$0.09	\$0.09	\$0.10	\$0.11
gas range broiler	13,500	\$0.06	\$0.07	\$0.09	\$0.10	\$0.11	\$0.13	\$0.14	\$0.16	\$0.17
large range burner	15,000	\$0.06	\$0.08	\$0.09	\$0.11	\$0.13	\$0.14	\$0.16	\$0.17	\$0.19
gas range oven	18,000	\$0.08	\$0.09	\$0.11	\$0.13	\$0.15	\$0.17	\$0.19	\$0.21	\$0.23
small fireplace	20,000	\$0.08	\$0.11	\$0.13	\$0.15	\$0.17	\$0.19	\$0.21	\$0.23	\$0.25
dryer	22,000	\$0.09	\$0.12	\$0.14	\$0.16	\$0.19	\$0.21	\$0.23	\$0.26	\$0.28
small barbeque	35,000	\$0.15	\$0.18	\$0.22	\$0.26	\$0.30	\$0.33	\$0.37	\$0.41	\$0.44
space heater	35,000	\$0.15	\$0.18	\$0.22	\$0.26	\$0.30	\$0.33	\$0.37	\$0.41	\$0.44
large fireplace	40,000	\$0.17	\$0.21	\$0.25	\$0.30	\$0.34	\$0.38	\$0.42	\$0.46	\$0.51
patio heater	40,000	\$0.17	\$0.21	\$0.25	\$0.30	\$0.34	\$0.38	\$0.42	\$0.46	\$0.51
conventional hot water tank	40,000	\$0.17	\$0.21	\$0.25	\$0.30	\$0.34	\$0.38	\$0.42	\$0.46	\$0.51
medium barbeque	40,000	\$0.17	\$0.21	\$0.25	\$0.30	\$0.34	\$0.38	\$0.42	\$0.46	\$0.51
large barbeque	45,000	\$0.19	\$0.24	\$0.28	\$0.33	\$0.38	\$0.43	\$0.47	\$0.52	\$0.57
garage heater	50,000	\$0.21	\$0.26	\$0.32	\$0.37	\$0.42	\$0.47	\$0.53	\$0.58	\$0.63
small furnace	60,000	\$0.25	\$0.32	\$0.38	\$0.44	\$0.51	\$0.57	\$0.63	\$0.70	\$0.76
patio fire pit	60,000	\$0.25	\$0.32	\$0.38	\$0.44	\$0.51	\$0.57	\$0.63	\$0.70	\$0.76
medium furnace	90,000	\$0.38	\$0.47	\$0.57	\$0.66	\$0.76	\$0.85	\$0.95	\$1.04	\$1.14
large furnace	120,000	\$0.51	\$0.63	\$0.76	\$0.89	\$1.01	\$1.14	\$1.27	\$1.39	\$1.52
on demand water heater	200,000	\$0.84	\$1.05	\$1.27	\$1.48	\$1.69	\$1.90	\$2.11	\$2.32	\$2.53

operating cost comparison

*AFUE = Annual Fuel Utilization Efficiency **EF = Energy Factor

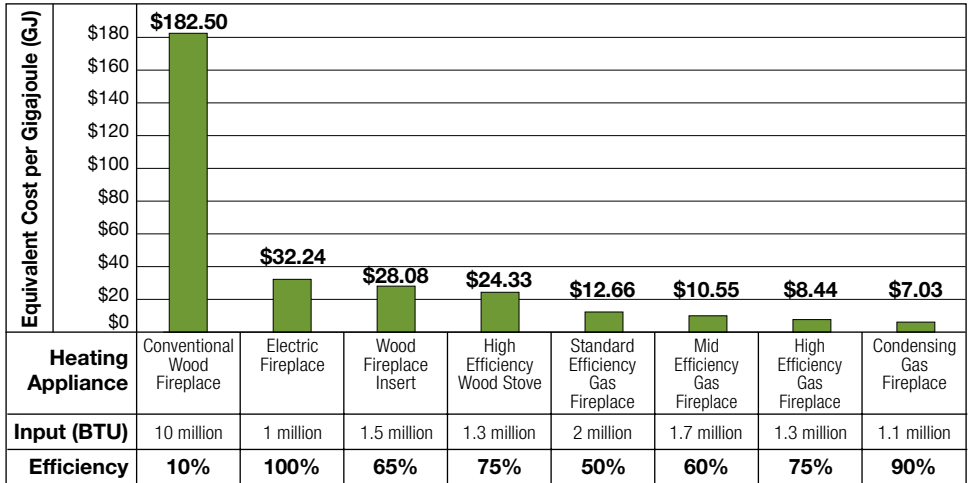
Use this chart to contrast the annual operating cost of appliances on different fuel sources and their associated greenhouse gas emissions.

Appliance	Assumptions	Natural Gas		GHG (kg)	Electricity		GHG (kg)	Propane		GHG (kg)
		\$6/GJ	\$10/GJ		\$0.11/kWh	\$0.14/kWh		\$0.70/L	\$20/20 lb. tank	
Furnace										
65% *AFUE	110 GJ, 4312 L	\$660	\$1,100	5,495	-	-	-	\$3,018	-	6,554
80% *AFUE	89 GJ, 3489 L	\$534	\$890	4,446	-	-	-	\$2,442	-	5,303
95% *AFUE	75 GJ, 2940 L	\$450	\$750	3,746	-	-	-	\$2,058	-	4,469
100% *AFUE	19911 kWh	-	-	-	\$2,190	\$2,788	12,942	-	-	-
Water Heater										
Standard (0.60 **EF)	25 GJ, 980 L	\$150	\$250	1,249	-	-	-	\$686	-	1,490
Power Direct Vent (0.67 **EF)	22 GJ, 878 L	\$134	\$224	1,118	-	-	-	\$614	-	1,333
On Demand (0.82 **EF)	18 GJ, 705 L	\$108	\$180	899	-	-	-	\$494	-	1,072
Condensing On Demand (0.95 **EF)	16 GJ, 627 L	\$96	\$160	799	-	-	-	\$439	-	953
Electric (0.95 **EF)	4448 kWh	-	-	-	\$489	\$623	2,891	-	-	-
Range										
Natural Gas	2 GJ	\$12	\$20	100	-	-	-	-	-	-
Electric	530 kWh	-	-	-	\$58	\$74	345	-	-	-
Propane	78 L	-	-	-	-	-	-	\$55	-	119
Clothes Dryer										
Natural Gas	4 GJ	\$24	\$40	200	-	-	-	-	-	-
Electric	928 kWh	-	-	-	\$102	\$130	603	-	-	-
Propane	157 L	-	-	-	-	-	-	\$110	-	239
Barbeque										
Natural Gas	2 GJ	\$12	\$20	100	-	-	-	-	-	-
Propane	4 x 20 lb. tanks	-	-	-	-	-	-	-	\$80	109
Patio Heater										
Natural Gas	2 GJ	\$12	\$20	100	-	-	-	-	-	-
Propane	4 x 20 lb. tanks	-	-	-	-	-	-	-	\$80	109

fireplace comparison costs

This table compares the operating cost of different types of fireplaces in Alberta. The cost comparison is for the equivalent of 1 million British Thermal Units (BTU's) of heat delivered into your home.

Cost Comparison



looking at the big picture

Considering other heating sources? Keep value and safety in mind. When considering the overall cost of an appliance, looking at its operating cost is just as important as the initial cost to purchase.

And when it comes to safety, remember that all of the elements in your home work together as a system. When you change energy sources, or improve the efficiency of an appliance, you may also affect humidity, air quality and the ability of fuel-burning appliances to operate safely and efficiently. Always make sure appliances are installed and serviced by a qualified professional.

For more energy efficiency tips visit ATCOEnergySense.com

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