

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



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## energy conversions and cost assumptions

Unit of Energy	Equivalent BTUs
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

  

Unit of Energy	Assumed Cost
1 Gigajoule (GJ) natural gas	\$6.60/GJ
1 Kilowatt Hour (kWh) electricity	\$0.11/kWh
1 cord wood (birch/pine mix)	\$365.00/cord

## 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.

## questions?

Our team of dedicated professionals is ready and waiting to assist you with your energy efficiency questions.

**In Alberta, call us toll-free at 310-SAVE (7283) or visit our website at [atcoenergysense.com](http://atcoenergysense.com)**

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## 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	\$0.03	\$0.04
small range burner	9,000	\$0.04	\$0.05	\$0.06	\$0.07	\$0.08	\$0.09	\$0.09	\$0.10	\$0.10	\$0.11
gas range broiler	13,500	\$0.06	\$0.07	\$0.09	\$0.10	\$0.11	\$0.13	\$0.14	\$0.16	\$0.16	\$0.17
large range burner	15,000	\$0.06	\$0.08	\$0.09	\$0.11	\$0.13	\$0.14	\$0.16	\$0.17	\$0.17	\$0.19
gas range oven	18,000	\$0.08	\$0.09	\$0.11	\$0.13	\$0.15	\$0.17	\$0.19	\$0.21	\$0.21	\$0.23
small fireplace	20,000	\$0.08	\$0.11	\$0.13	\$0.15	\$0.17	\$0.19	\$0.21	\$0.23	\$0.23	\$0.25
dryer	22,000	\$0.09	\$0.12	\$0.14	\$0.16	\$0.19	\$0.21	\$0.23	\$0.26	\$0.26	\$0.28
small barbeque	35,000	\$0.15	\$0.18	\$0.22	\$0.26	\$0.30	\$0.33	\$0.37	\$0.41	\$0.41	\$0.44
space heater	35,000	\$0.15	\$0.18	\$0.22	\$0.26	\$0.30	\$0.33	\$0.37	\$0.41	\$0.41	\$0.44
large fireplace	40,000	\$0.17	\$0.21	\$0.25	\$0.30	\$0.34	\$0.38	\$0.42	\$0.46	\$0.46	\$0.51
patio heater	40,000	\$0.17	\$0.21	\$0.25	\$0.30	\$0.34	\$0.38	\$0.42	\$0.46	\$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	\$0.46	\$0.51
medium barbeque	40,000	\$0.17	\$0.21	\$0.25	\$0.30	\$0.34	\$0.38	\$0.42	\$0.46	\$0.46	\$0.51
large barbeque	45,000	\$0.19	\$0.24	\$0.28	\$0.33	\$0.38	\$0.43	\$0.47	\$0.52	\$0.52	\$0.57
garage heater	50,000	\$0.21	\$0.26	\$0.32	\$0.37	\$0.42	\$0.47	\$0.53	\$0.58	\$0.58	\$0.63
small furnace	60,000	\$0.25	\$0.32	\$0.38	\$0.44	\$0.51	\$0.57	\$0.63	\$0.70	\$0.70	\$0.76
patio fire pit	60,000	\$0.25	\$0.32	\$0.38	\$0.44	\$0.51	\$0.57	\$0.63	\$0.70	\$0.70	\$0.76
medium furnace	90,000	\$0.38	\$0.47	\$0.57	\$0.66	\$0.76	\$0.85	\$0.95	\$1.04	\$1.04	\$1.14
large furnace	120,000	\$0.51	\$0.63	\$0.76	\$0.89	\$1.01	\$1.14	\$1.27	\$1.39	\$1.39	\$1.52
on demand water heater	200,000	\$0.84	\$1.05	\$1.27	\$1.48	\$1.69	\$1.90	\$2.11	\$2.32	\$2.32	\$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)
		\$/GJ	\$/GJ		\$/kWh	\$/kWh		\$/L	\$/20 lb. tank	
<b>Furnace</b>										
65% *AFUE	110 GJ, 4312 L	\$550	\$1,100	5,495	-	-	-	\$2,458	-	6,554
80% *AFUE	89 GJ, 3489 L	\$445	\$890	4,446	-	-	-	\$1,989	-	5,303
95% *AFUE	75 GJ, 2940 L	\$375	\$750	3,746	-	-	-	\$1,676	-	4,469
100% *AFUE	19911 kWh	-	-	-	\$1,593	\$2,190	18,099	-	-	-
<b>Water Heater</b>										
Standard (0.55 **EF)	25 GJ, 980 L	\$125	\$250	1,249	-	-	-	\$559	-	1,490
On Demand (0.82 **EF)	17 GJ, 666 L	\$85	\$170	849	-	-	-	\$380	-	1,012
Condensing On Demand (0.95 **EF)	14 GJ, 549 L	\$70	\$140	699	-	-	-	\$313	-	834
Electric (0.95 **EF)	4021 kWh	-	-	-	\$322	\$442	3,655	-	-	-
<b>Range</b>										
Natural Gas	2 GJ	\$10	\$20	100	-	-	-	-	-	-
Electric	645 kWh	-	-	-	\$52	\$71	586	-	-	-
Propane	91 L	-	-	-	-	-	-	\$52	-	138
<b>Clothes Dryer</b>										
Natural Gas	4 GJ	\$20	\$40	200	-	-	-	-	-	-
Electric	919 kWh	-	-	-	\$74	\$101	835	-	-	-
Propane	157 L	-	-	-	-	-	-	\$89	-	239
<b>Barbeque</b>										
Natural Gas	3 GJ	\$15	\$30	150	-	-	-	-	-	-
Propane	6.5 x 20 lb. tanks	-	-	-	-	-	-	-	\$150	200
<b>Patio Heater</b>										
Natural Gas	3 GJ	\$15	\$30	150	-	-	-	-	-	-
Propane	6.5 x 20 lb. tanks	-	-	-	-	-	-	-	\$150	200

## 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

Heating Appliance	Input (BTU)	Efficiency	Equivalent Cost per Gigajoule (GJ)
Conventional Wood Fireplace	10 million	10%	\$182.50
Electric Fireplace	1 million	100%	\$32.24
Wood Fireplace Insert	1.5 million	65%	\$28.08
High Efficiency Wood Stove	1.3 million	75%	\$24.33
Standard Efficiency Gas Fireplace	2 million	50%	\$13.92
Mid Efficiency Gas Fireplace	1.7 million	60%	\$11.60
High Efficiency Gas Fireplace	1.3 million	75%	\$9.28
Condensing Gas Fireplace	1.1 million	90%	\$7.74