RESIDENTIAL HEATING FUEL COMPARISON

Fairbanks, Alaska
November 2012

Fuel (see notes below)	Avg Price	Per Unit	Gross Heat (BTU)	Heater Efficiency	$/100,000 BTU's of Useful Heat	Useful BTU's per $1.00
Electricity (100% eff.)	$0.2277	/kWh	3,413	100%	$6.672	14,989
District Hot Water Heat	$27.0300	/mmbtu	1,000,000	100%	$2.703	36,996
District Steam Heat	$10.5000	/1,000 lb	1,066,000	100%	$0.985	101,524
Fuel oil #2 (85% eff.)	$3.8670	/gal	135,000	85%	$3.370	29,674
Natural gas (85% eff.)	$23.3500	/mcf	1,010,000	85%	$2.720	36,767
Propane (85% eff.)	$4.1170	/gal	91,333	85%	$5.303	18,857
Wood, pellet (85% eff.)	$282.0000	/ton	16,000,000	85%	$2.074	48,227
Wood, birch (70% eff.)	$325.0000	/cord	20,500,000	70%	$2.265	44,154
Wood, spruce (70% eff.)	$327.0000	/cord	15,000,000	70%	$3.114	32,110
Coal, stoker	$115.0000	/ton	15,200,000	55%	$1.376	72,696
Electricity (distributed): PRICE includes rate, customer charge, RCA charge, cost of fuel adjustment charge.				0.293 watt hours = (1) BTU	$0.228	per kWh
Hot water				per million BTUs	$27.030	hot water
Steam				per 1,000 lbs p/month	$10.500	steam heat
Wood, according to a table on the energy content of Interior Alaska trees prepared by George Sampson, a former Institute of Northern Forestry research forester: Paper birch provides 25.4 million BTU per cord; tamarack provides 24.8 million BTU per cord.				varies: p/ton; p/cord	$325.833	per cord of wood
Fuel oil (common: "60% #2, 40/% #1 blend" or "-15, #2") (delivered by truck)				135,000 BTU/gal	$3.867	per gal
Natural gas (liquefied, trucked to Fairbanks, delivered by pipeline). NOTE: an average home in Fairbanks may use 250 CCF or 25,000 cubic feet (cf) of gas in a typical January, when natural gas is used for heating only. PRICE includes rate, customer charge, RCA.				1,010 BTU/cf	$2.335	per 100 cubic feet (CCF)
Propane (delivered by truck to homes)				91,333 BTU/gal	$4.117	per gal
Coal, delivered to downtown				avg: $115/ton	$115.000	per ton

SOURCE: Golden Valley Electric Association, Inc. (GVEA), LEED Accredited Professional Energy End Use Specialist and SNAP Program Tech, Todd Hoener, *Heating Fuel Comparison, November 2012*, and FNSB Community Research Center, 2012.

NOTE: A British Thermal Unit (BTU) is the amount of heat energy needed to raise the temperature of one pound of water by one degree F. This is the standard measurement used to state the amount of energy that a fuel has as well as the amount of output of any heat generating device.

A common index of the cost of heat is "dollars per 100,000 BTUs of useful heat." In order to calculate useful heat (heat actually delivered to

COMPARISON PRICE PER 100,000 BTUs OF USEFUL HEAT

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