

## HEATING FUEL COMPARISON

White Technology, LLC

Fuel Type	Fuel Unit	Fuel Price Per Unit (dollars)	Fuel Heat Content Per Unit (Btu)	Fuel Price Per Million Btu (dollars)	Heating Appliance Type	Type of Efficiency Rating <sup>4</sup>	Efficiency Rating or Estimate <sup>5</sup>	Approx. Efficiency (%)	Fuel Cost Per Million Btu (dollars)
Fuel Oil (#2)	Gallon	\$2.59	138,690	\$18.66	Furnace or Boiler	AFUE	78.0	78%	\$23.92
Electricity	KiloWatt-hour	\$0.102	3,412	\$29.87	Furnace or Boiler	Estimate	98.0	98%	\$30.47
					Air-Source Heat Pump <sup>6</sup>	HSPF <sup>6</sup>	7.7	226%	\$13.23
					Geothermal Heat Pump	COP	3.3	330%	\$9.05
					Baseboard/Room Heater	Estimate	100.0	100%	\$29.87
Natural Gas <sup>1</sup>	Therm <sup>2</sup>	\$0.96	100,000	\$9.58	Furnace or Boiler	AFUE	78.0	78%	\$12.28
					Room Heater (Vented)	AFUE	65.0	65%	\$14.74
					Room Heater (Unvented)	Estimate	100.0	100%	\$9.58
Propane	Gallon	\$2.65	91,333	\$29.00	Furnace or Boiler	AFUE	78.0	78%	\$37.18
					Room Heater (Vented)	AFUE	65.0	65%	\$44.62
Wood <sup>3</sup>	Cord	\$200.00	22,000,000	\$9.09	Room Heater (Vented)	Estimate	55.0	55%	\$16.53
Pellets	Ton	\$280.00	16,500,000	\$16.97	Room Heater (Vented)	Estimate	68.0	68%	\$24.96
Corn (kernels)	Ton	\$181.27	16,500,000	\$10.99	Room Heater (Vented)	Estimate	68.0	68%	\$16.16
Kerosene	Gallon	\$3.85	135,000	\$28.52	Room Heater (Vented)	Estimate	80.0	80%	\$35.65
Coal (Anthracite)	Ton	\$54.98	25,000,000	\$2.20	Furnace/Boiler/Stove	Estimate	75.0	75%	\$2.93
Arundo Donax Pellets	Dry Ton	\$90.00	16,400,000	\$5.49	Furnace/Boiler/Stove	Estimate	68.0	68%	\$8.07
Miscanthus Pellets	Dry Ton	\$90.00	15,400,000	\$5.84	Furnace/Boiler/Stove	Estimate	68.0	68%	\$8.59
Arundo Donax Chopped	Dry Ton	\$40.00	16,400,000	\$2.44					

**NOTES:**

1 Natural gas is typically sold to residential customers in units of "therms," but may be sold in units of hundreds of cubic feet (ccf).

2 One therm = 100,000 Btu, and is equivalent to about 97.18 cubic feet (or 0.972 ccf), when there are 1,029 Btu/cf.

To convert prices in \$/Mcf (1,000 cubic feet) to \$/therm, divide the \$/Mcf price by 10.29 .

3 The heat content value for a cord of wood varies by tree species and is greatly affected by moisture content; 20 million Btu per cord is a rough approximation.

4 A cord weighs 5600lbs and therefore 1 ton = .393 cords. Thus we are given the price \$78.60/ton for wood.

## Sources

**Fuel Oil #2:** July 2010 U.S. average was 258.8 cents per gallon according to the Energy Information Administration

[http://tonto.eia.doe.gov/dnav/pet/PET\\_SUM\\_MKT\\_A\\_EPD2\\_PRT\\_CPGAL\\_M.htm](http://tonto.eia.doe.gov/dnav/pet/PET_SUM_MKT_A_EPD2_PRT_CPGAL_M.htm)

**Electricity:** June 2010 U.S. average was 10.19 cents per KiloWatt-hour according to the Energy Information Administration

[http://www.eia.doe.gov/cneaf/electricity/epm/table5\\_6\\_a.html](http://www.eia.doe.gov/cneaf/electricity/epm/table5_6_a.html)

**Natural Gas:** 2009 U.S. average for commercial use was \$9.81 per cubic foot or \$0.9582 per therm according to the Energy Information Administration

[http://www.eia.doe.gov/pub/oil\\_gas/natural\\_gas/data\\_publications/natural\\_gas\\_monthly/current/pdf/table\\_03.pdf](http://www.eia.doe.gov/pub/oil_gas/natural_gas/data_publications/natural_gas_monthly/current/pdf/table_03.pdf)

**Propane:** March 2010 U.S. average was 264.9 cents per gallon according to the Energy Information Administration

<http://www.eia.doe.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=mprrus4&f=m>

**Wood:** \$200 per cord of wood is the average cost supplied by the Energy Information Administration

**Pellets:** 2008 U.S. average was \$280 per ton according to [www.wdpellet.com](http://www.wdpellet.com)

[http://www.wdpellet.com/the\\_cost\\_of\\_wood\\_pellets.php](http://www.wdpellet.com/the_cost_of_wood_pellets.php)

**Corn (kernal):** The daily price on 9/21/2010 was 507.75 cents per bushel or \$181.267 per ton according to [quotecorn.com](http://www.quotecorn.com)

<http://www.quotecorn.com/>

**Kerosene:** January 2009 U.S. average was \$3.85 per gallon according to the Home Heating Oil Prices Website

[http://www2.wspa.com/news/2009/jan/12/high\\_kerosene\\_prices\\_leave\\_familie\\_in\\_the\\_cold-ar-14513/](http://www2.wspa.com/news/2009/jan/12/high_kerosene_prices_leave_familie_in_the_cold-ar-14513/)

**Coal:** 2009 average for anthracite coal in the U.S. was \$54.98 per ton according to the Energy Information Administration

<http://www.eia.doe.gov/emeu/aer/txt/ptb0708.html>

\***Arundo:** White Technology's estimated cost through significant research and studies is \$90 per dry ton and 8200 btu per pound

\***Miscanthus:** White Technology's estimated cost through significant research and studies is \$90 per dry ton and 7700 btu per pound

\* Cost per dry ton includes pellet form and an average price for transportation.