High Efficiency Propane, or Wood Pellet Boiler:
Which saves more money?

Homeowners can *save thousands more dollars by investing in a wood pellet boiler* instead of replacing their current boiler with a modern, high-efficiency propane boiler.

There are two reasons why people save more money with a wood pellet boiler. First, wood pellets cost much less than propane (and oil) to begin with. As much as 60% less in some areas. Second, the inflation rate for propane and oil are very high. According to Energy Information Administration data, propane prices have risen an average of 9.7% per year for the last 13 years. Heating oil prices have increased 12.3% annually during that time period. With inflation playing a big role in the cost of heating with oil and propane, savings from a 16% reduction in fuel consumption due to higher efficiency are quickly eaten up by the rising cost of the fuel. Within a couple of years, the homeowner is paying more to heat their home than was the case before the efficiency upgrade. Fuel price inflation is causing more and more income or retirement savings to go "up in smoke".

With a wood pellet boiler, heating costs can be slashed, and comfort restored to many homes where thermostats have been kept very low to save money. Here are some examples of potential savings:

This example uses the average annual inflation rate for propane over the last 13 years (9.7%). The cumulative savings from heating with a wood pellet boiler over 5, 10, & 15 years, shows the pellet boiler to be a far better investment.

Notice that the propane consumption is higher than the oil consumption despite higher efficiency. This is due to the fact that propane has about 1/3 less energy content per gallon.

	Upgrade to a 95% Efficient Propane Boiler	or	Install an EcoBoiler™ Pellet Boiler
Investment cost, Year 0			
Equipment + Installation	$5,000		$12,000
Prior fuel usage	1000	gallons of oil	1000 gallons of oil
Prior annual BTUs	138,000,000		138,000,000
Efficiency before	82%		82%
Efficiency after	95%		82%
Gain in efficiency	16%		0%
BTU consumed after	116,121,951		138,000,000
BTU/unit of new fuel	91,500	/gallon	16,000,000 /ton
Fuel usage after change	1269	gal. of propane	8.6 tons of pellets
Starting cost per unit of fuel	$3.40	/gallon	$230 /ton
Inflation rate for fuel	9.7%		3.50%
Cumulative costs, Yrs 0-5 Equipment + installation + fuel costs	$31,186	9.7%	$22,638
Savings For First 5 Years			$8,548
Cumulative costs, Yrs 0-10	$72,787		$35,272
Savings For First 10 Years			$37,515
Cumulative costs, Yrs 0-15	$138,877		$50,183
Savings for First 15 Years			$88,694

	Upgrade to a 95% Efficient Propane Boiler	or	Install an EcoBoiler™ Pellet Boiler
Investment cost, Year 0			
Equipment + Installation	$5,000		$12,000
Prior fuel usage	1000	gallons of oil	1000 gallons of oil
Prior annual BTUs	138,000,000		138,000,000
Efficiency before	82%		82%
Efficiency after	95%		82%
Gain in efficiency	16%		0%
BTU consumed after	116,121,951		138,000,000
BTU/unit of new fuel	91,500	/gallon	16,000,000 /ton
Fuel usage after change	1269	gal. of propane	8.6 tons of pellets
Starting cost per unit of fuel	$3.40	/gallon	$230 /ton
Inflation rate for fuel	5.0%		3.50%
Cumulative costs, Yrs 0-5 Equipment + installation + fuel costs	$28,843	5.0%	$22,638
Savings For First 5 Years			$6,205
Cumulative costs, Yrs 0-10	$59,273		$35,272
Savings For First 10 Years			$24,000
Cumulative costs, Yrs 0-15	$98,110		$50,183
Savings for First 15 Years			$47,926

This example uses an inflation rate for propane of 5.0%, or about 50% below the average annual inflation rate from the last 13 years.

Even with this conservative inflation rate, people save thousands of dollars with a wood pellet boiler. The money saved is, of course, money not spent on fuel, and so available for retirement savings, travel, home upkeep, charitable giving, dining out, and so on.

Note: The equipment and installation costs used in these examples are for illustrative purposes only, and can be higher or lower.

More detailed examples are presented on the back side of this page. Please contact us if you're interested in the spreadsheet used in these examples. It's set up so you can change any value in the grey boxes, such as installation costs, beginning fuel prices, and inflation rates.

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The example shown on the right is the same as on page one, but with yearly fuel costs revealed for the first 10 years. The assumptions here are most aggressive, showing what would happen if propane costs were to continue to increase at 9.7% per year.

It's easy to see from this chart how high inflation affects costs. This is the inflation rate we've seen on propane for 13 years. The inflation rate for heating oil has been even higher (12.3%).

	Upgrade to a 95% Efficient Propane Boiler	or	Install an EcoBoiler™ Pellet Boiler
Investment cost, Year 0			
Equipment + Installation	$5,000		$12,000
Prior fuel usage	1000	gallons of oil	1000 gallons of oil
Prior annual BTUs	138,000,000		138,000,000
Efficiency before	82%		82%
Efficiency after	95%		82%
Gain in efficiency	16%		0%
BTU consumed after	116,121,951		138,000,000
BTU/unit of new fuel	91,500	/gallon	16,000,000 /ton
Fuel usage after change	1269	gal. of propane	8.625 tons of pellets
Starting cost per unit of fuel	$3.40	/gallon	$230 /ton
Fuel cost, Year 1	$4,315		$1,984
Inflation rate for fuel	9.70%		3.50%
Fuel cost, Year 2	$4,733		$2,053
Fuel cost, Year 3	$5,193		$2,125
Fuel cost, Year 4	$5,696		$2,199
Fuel cost, Year 5	$6,249		$2,276
Cumulative costs, Yrs 0-5 Equipment + installation + fuel costs	$31,186		$22,638
Savings For First 5 Years			$8,548
Fuel cost, Year 6	$6,855		$2,356
Fuel cost, Year 7	$7,520		$2,439
Fuel cost, Year 8	$8,249		$2,524
Fuel cost, Year 9	$9,050		$2,612
Fuel cost, Year 10	$9,927		$2,704
Cumulative costs, Yrs 0-10 Equipment + installation + fuel costs	$72,787		$35,272
Savings For First 10 Years			$37,515
Cumulative costs, Yrs 0-15 Equipment + installation + fuel costs	$138,877		$50,183
Savings for First 15 Years			$88,694

If the price of propane were to continue rising at its current inflation rate, the cost of a gallon of propane would go from $3.40 to $4.49 in just three years.

These are the cumulative cost savings over 5, 10, and 15 year periods.

This example uses a more moderate propane inflation rate (about 50% below the inflation rate from the last 13 years).

The low cost of wood pellets in comparison with propane still helps the savings add up over each period.

	Upgrade to a 95% Efficient Propane Boiler	or	Install an EcoBoiler™ Pellet Boiler
Investment cost, Year 0			
Equipment + Installation	$5,000		$12,000
Prior fuel usage	1000	gallons of oil	1000 gallons of oil
Prior annual BTUs	138,000,000		138,000,000
Efficiency before	82%		82%
Efficiency after	95%		82%
Gain in efficiency	16%		0%
BTU consumed after	116,121,951		138,000,000
BTU/unit of new fuel	91,500	/gallon	16,000,000 /ton
Fuel usage after change	1269	gal. of propane	8.625 tons of pellets
Starting cost per unit of fuel	$3.40	/gallon	$230 /ton
Fuel cost, Year 1	$4,315		$1,984
Inflation rate for fuel	5.00%		3.50%
Fuel cost, Year 2	$4,531		$2,053
Fuel cost, Year 3	$4,757		$2,125
Fuel cost, Year 4	$4,995		$2,199
Fuel cost, Year 5	$5,245		$2,276
Cumulative costs, Yrs 0-5 Equipment + installation + fuel costs	$28,843		$22,638
Savings For First 5 Years			$6,205
Fuel cost, Year 6	$5,507		$2,356
Fuel cost, Year 7	$5,782		$2,439
Fuel cost, Year 8	$6,072		$2,524
Fuel cost, Year 9	$6,375		$2,612
Fuel cost, Year 10	$6,694		$2,704
Cumulative costs, Yrs 0-10 Equipment + installation + fuel costs	$59,273		$35,272
Savings For First 10 Years			$24,000
Cumulative costs, Yrs 0-15 Equipment + installation + fuel costs	$98,110		$50,183
Savings for First 15 Years			$47,926

If propane price inflation were to moderate down to 5%, the price would increase from $3.40/gallon in 2012 to $3.94/gallon in 2015.

These are the cumulative cost savings over 5, 10, and 15 year periods.

This example is the most conservative of the bunch, using the same 5% LP-Gas inflation rate as in the previous example, but with a starting cost for LP-Gas that's 12% lower than is reported at www.eia.gov.

Some LP-Gas dealers give free propane to new customers. To account for that, subtract the value of the free propane from the initial investment cost.

	Upgrade to a 95% Efficient Propane Boiler	or	Install an EcoBoiler™ Pellet Boiler
Investment cost, Year 0			
Equipment + Installation	$5,000		$12,000
Prior fuel usage	1000	gallons of oil	1000 gallons of oil
Prior annual BTUs	138,000,000		138,000,000
Efficiency before	82%		82%
Efficiency after	95%		82%
Gain in efficiency	16%		0%
BTU consumed after	116,121,951		138,000,000
BTU/unit of new fuel	91,500	/gallon	16,000,000 /ton
Fuel usage after change	1269	gal. of propane	8.625 tons of pellets
Starting cost per unit of fuel	$3.00	/gallon	$230 /ton
Fuel cost, Year 1	$3,807		$1,984
Inflation rate for fuel	5.00%		3.50%
Fuel cost, Year 2	$3,998		$2,053
Fuel cost, Year 3	$4,198		$2,125
Fuel cost, Year 4	$4,407		$2,199
Fuel cost, Year 5	$4,628		$2,276
Cumulative costs, Yrs 0-5 Equipment + installation + fuel costs	$26,038		$22,638
Savings For First 5 Years			$3,400
Fuel cost, Year 6	$4,859		$2,356
Fuel cost, Year 7	$5,102		$2,439
Fuel cost, Year 8	$5,357		$2,524
Fuel cost, Year 9	$5,625		$2,612
Fuel cost, Year 10	$5,906		$2,704
Cumulative costs, Yrs 0-10 Equipment + installation + fuel costs	$52,888		$35,272
Savings For First 10 Years			$17,615
Cumulative costs, Yrs 0-15 Equipment + installation + fuel costs	$87,156		$50,183
Savings for First 15 Years			$36,972

"High-efficiency" propane boilers will not achieve high efficiency when tied in with typical baseboard radiators. Cooler supply and return temps are needed.

These are the cumulative cost savings over 5, 10, and 15 year periods.

You can see that over every time period, 5, 10, and 15 years, heating with a wood pellet boiler is a much better investment, leading to thousands of dollars in savings.

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