

Is It Time to GO BACK to Burn Heating Oil?

Keywords

plummeting oil price, oil price mean for pellet, wood pellet price, biomass pellet energy, wood pellet production, biomass pellet machine manufacturer

Abstract

The heating oil price is currently decreasing. What does this drop in heating oil price mean for the pellet heating markets? Is it time to go back to burn heating oil? The answer is NO. Biomass energy still has great potentials and now it might be the best time to show the world just how strong the wood pellet industry is.

By Azeus Pellet Mill

Website: www.biopelletmachine.com

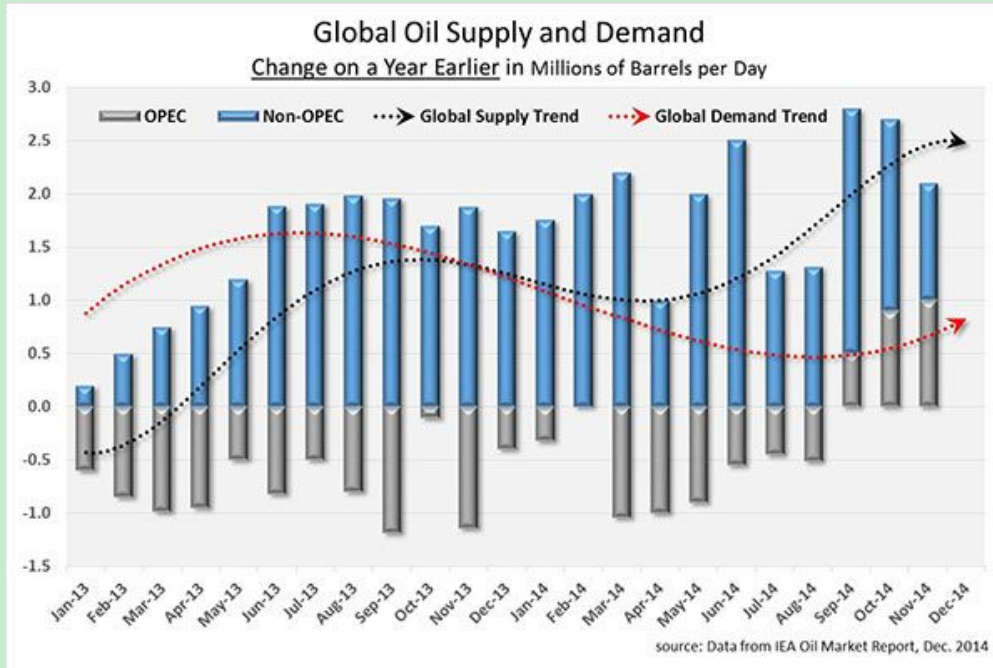
Email: info@biopelletmachine.com

Oil price has been plummeting sharply over the past several months, which marks a big shift in global oil politics and also has great influence on the international energy. What does the falling oil price mean for biomass energy? Is it bad for biomass energy? The answer is NO. Many reasons result in oil price decreasing and falling oil prices have limited impact on biomass pellet energy. Moreover, with its exclusive advantages biomass energy will keep its market share with the steady growth compared to unstable petroleum sources. Now here is the comprehensive and detailed analysis for falling oil price effect and biomass energy prospect.

I. Reasons for Oil Price Falling

1. Demand and Supply

Like the price of any other commodity, the oil price is mostly determined by actual supply and demand in the world. These changes in supply and demand can be clearly seen from the chart-Global Oil Supply and Demand. Demand for oil (the red dotted line) is low because of weak economic activity, increased efficiency and growing switch away from oil to other fuels. But the oil supply (the black dotted line) is keeping increasing. OPEC(the grey bars) was limiting output until September 2014. This action tried to control oil supply increase from non-OPEC producers. The majority of that increase was from US non-conventional shale oil. Since September 2014 OPEC has increased the oil production. The gap between total oil supply and global demand illustrates that excess supply results in prices falling.

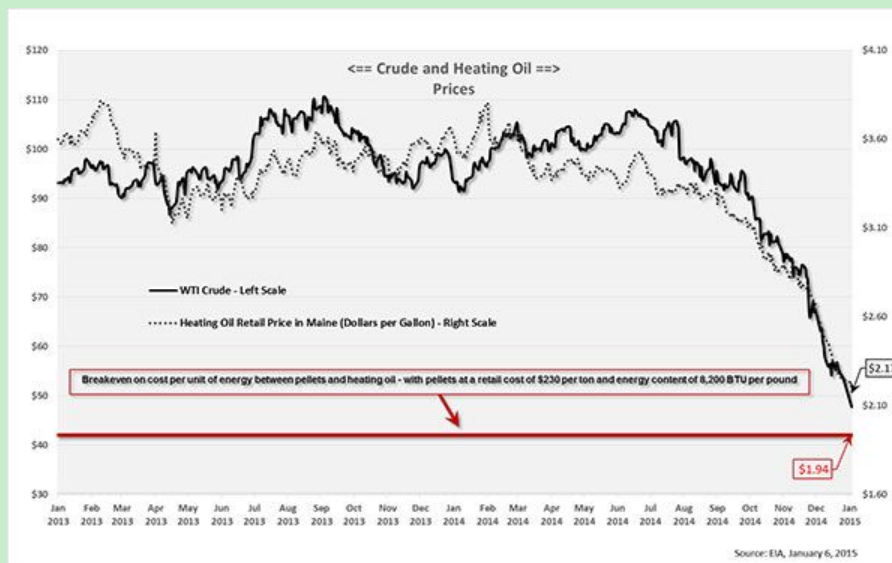


2. International Factors

- Although turmoil in Iraq and Libya—two big oil producers with nearly 4m barrels a day combined, oil output has not been affected.
- America has become the world’s largest oil producer. Though it does not export crude oil, it now imports much less, creating a lot of spare supply.
- The Saudis and their Gulf allies have decided not to sacrifice their own market share to restore the price.

II. Falling Heating Oil Price Mean for Wood Pellet

1. Heating Oil and Wood Pellet Price



Heating oil is made from crude oil therefore the price of heating oil is tied to that of a barrel of crude oil. As crude oil price decreases, then heating oil prices is also decreasing. In this chart, heating oil price through Jan. 2013 to Jan. 2015 fluctuates strongly. From past several months until now, its price keeps falling. The costs for

heating oil are subject to extreme price fluctuations. But wood pellet price almost remains steady as the fuel source doesn't depend on many regional and global economic factors before ending at the price you pay.

The correlation between crude prices and heating oil prices is very high. The data also shows that heating oil prices are very close to the indifference point at which the cost of a unit of energy from heating oil is the same as the cost of a unit of energy from wood pellets. So many pellet manufacturers and consumers extremely concern that if heating oil price drop far enough below the indifference point, what will occur to biomass pellets. Is it time to go back to burn heating oil?

2. Heating Oil Price Mean for Pellet Market

What does the drop in heating oil price mean for pellet market? First let's compare the current price list of Oil and Wood Pellet. Then do the analysis.

Winter 2015 Heating Oil Price			
Heating Oil	Average	High	Low
This Week (02/03/2015)	\$2.81	\$3.97	\$2.21
Last Week (01/27/2015)	\$2.79	\$3.97	\$2.05
Last Year	\$4.18	\$5.00	\$3.65

Winter 2015 Wood Pellet Price		
Type of pellet	Price/Unit	Fall 2014 Price
Bulk	\$269/ton	\$297/ton
Bagged	\$294/ton	\$297/ton
	\$6.75/bag	\$6.69/bag

Here wood pellets can be had for around 260 a ton in Winter and oil is average price is around 2.81 until now. Take one of our customers for example. Last year he used 5.69 tons of pellets. Imagine that this year he will roughly have the same amount use. Let's calculate the cost to choose wood pellets or heating oil as the fuel.

Generally 1 ton pellets = 118.5 gallons oil.

5.69 tons pellets *118.5 = 674.3 gallons oil

674.3 * \$2.81/gallon =1894.783 for oil

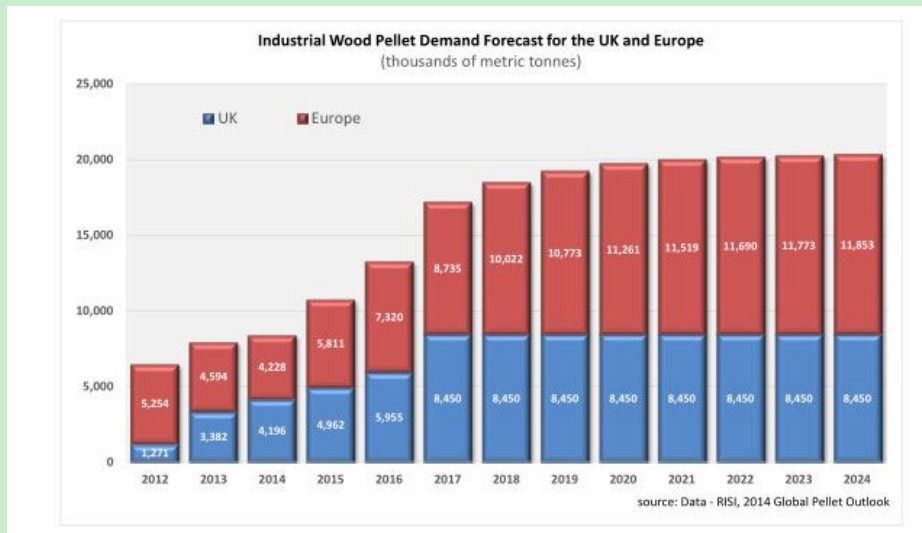
5.69 * \$260/ton =1530.61 for pellets

\$1894.783-\$1530.61 = \$364.173 roughly saved in this situation

Obviously, using wood pellets is still more economic way and falling heating oil price have little effect on biomass pellets.

Just mentioned in No. 1 of Part II that if heating oil price drop far enough below the indifference point, what will occur to biomass pellets. In fact, biomass pellets have not always been cheaper than oil and the last time pellet cost more than oil was in 2008. However this situation was transitory. What's more, low oil price is temporary. The history of oil prices follows a golden rule: What goes down must come up. And American shale oil require \$65-70 per barrel oil to breakeven. Most oil producing states require \$100 or more per barrel oil to balance their fiscal budgets. Eventually, supply will shrink and prices will rise again. So if heating oil price drop far enough below the indifference point, there is limited impact on biomass pellet energy.

III. Demand Forecast of Wood Pellets



The UK and Europe are the engine of the biomass pellet market. From the chart, the European demand for wood pellets keeps increasing year by year without the influence of oil price.

The UK: the major UK buyer of industrial wood pellets is Drax. Drax's consumption of wood pellets exceeded 19,000 metric tonnes per day in December, 2014. That equates to an annualized consumption of 5840000 tonnes per year.

The Netherlands: announced a new policy that will add 3.5 million tons to their annual consumption

The Denmark: the authorities have committed their country to full decarbonisation and are considering biomass as a very important base load technology to be brought to their energy mix to compliment their huge offshore wind developments.

IV. Wood Pellet Superiority Win Stable Market



Biomass pellets are made from compacted sources including sawdust, wood chips and etc. which are byproducts from sawmills, timber industry, woody plants and other industries. The pellets are formed under heat and pressure, which releases natural plant lignin that holds the pellets together without glue or additives. Biomass pellets are normally used as a heating fuel. Pellet fuel is utilized in a varied settings and applications, such as home heating appliances and large scale boilers in commercial operations.

Heating oil is also treated as heating fuel, which is a distillate petroleum product almost the same as diesel fuel, but with higher sulfur content. Heating oil is a non-renewable fossil fuel.

Compared with heating oil, there are numerous benefits achieved by utilizing pellet fuel, including economical and environmental. These superiorities earn the stable market to keep its increasing demand without the influence of

oil price.

1. Environmental Benefit

A growing concern for the environment in the world, including a desire to limit carbon dioxide emissions, has brought new interest to the use of wood for energy. When compared to oil, wood emits carbon dioxide at the rate of 7 kg/million BTUs, while oil emits 79 kg/million BTUs. The study estimated that the carbon debt payoff would be five years for burning wood as an oil replacement for thermal energy.

This high density and uniform shape facilitate pellets being stored in standard silos, transported in rail cars and delivered in tanker trucks, which pose none of the explosion risks or environmental pollution from spills that non-renewable fossil fuels do. With increasing pollution and carbon emissions from fossil-based power generation, there will be increased focus on adapting biomass energy technology for power generation.

2. Economical Benefit

When comparing fuels, an important factor is the efficiency which is measured by how well your heater turns fuel into useful heat. Comparing wood pellets and heating oil required to generate 1million BUTs of available heat:

Item	Heating Oil	Wood Pellets
Unit of sale	Gallon	Ton
Unit heat value (BTU/unit)	145,000	16,500,000
Heating efficiency (%)	80	80
Available heat/unit (BTU)	116,000	13,200,000
Units required for 1 million BTUs available heat	8.62	0.076

From the above comparison, biomass is an ideal substitute for conventional fossil fuels for heating and power generation purposes. Power generation using biomass pellets is seeing an increased use.

What's more, pellets are more easily and predictably handled. Their uniform shape and size allows for a smaller and simpler feed system that reduces costs.

V. Renewable Energy Prospect

1. Renewable energy will not be hurt by falling oil price

The application of oil and renewable energy is completely different. Oil is mainly used to produce transportation fuels while renewable energy is applied to generate electricity. So fluctuations in oil prices will have little influence on renewable energy sources like solar, wind and biomass in advanced economies, ensuring that the economic proposition of those resources remains highly compelling in the long run.

In the long term there is the remarkable price difference between energy derived from technology-based sources like solar, wind and biomass and that derived from commodity-based sources like coal and oil. The cost of energy from the former invariably declines as technology innovation proceeds.

2. Pellets will have great market

Future research in commercial pellet burning systems are employing various technologies which are promising even further increases in efficiency. With the reduced costs, ease of operation and environmental benefits, home heating and industrial sector will increasingly favor pellet fuel which provides financial benefits to them. The next step for biomass pellet producer is increasing quality awareness. Right now it might be the best time to show the world just how strong the wood pellet industry is.

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