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DEREK HANDOVA

The Secret of Biofuels May Be Hidden in the Grass

By EconomyLead on May 7, 2015



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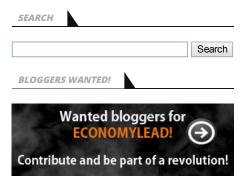
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"The Secret of Biofuels May be Hidden in the Grass" Photo credit: Berkeley Lab / Foter / CC BY-NC-ND

All the media have been full of stories regarding crashing oil prices—down from more than \$100 per barrel to the \$60 range now. Since the start of the oil volatility story back in late 2014, everyone has been trying to call the bottom of the market. But what many people have forgotten is the formerly trendy green energy story of biofuels, specifically, ethanol. Even less thought about is the feedstock for ethanol, biomass. So what is the state of ethanol and biomass industries in the face of the oil crash? How has volatility of the petroleum market affected the outlook for biomass, ethanol and other biofuels? Is it a short term aberration or will fossil fuel prices stay down and damage the long term potential for alternative energy fuels?

Although these are compelling questions, some biomass industry participants do not choose to look at renewable fuels and fossil fuels as an either/or proposition. According to Kelly Tiller, president and CEO of Genera Energy Inc., a biomass supply company, biomass is complementary to the petroleum industry. "The advantage of renewable products is that they are a complement to petroleum product feedstocks," she says. "No



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one expects oil to sustain a permanent price decline." She goes onto say that investors have to take the long term view of biomass as an investment.

In the long run

The long term has long been the view that investors have had to take of the potential for biomass. But things have come a long way in 20 years. "Two decades ago, no one if knew biomass would work," Tiller says. "We know it works now." But still the question then and now has been what can sustainable energy sources do at scale, according to Tiller.

Part of the problem with biofuels such as ethanol has been the competition feedstocks have with food such as corn. That's where cellulosic feedstocks like switchgrass and sorghum come into the picture. Genera focuses on ensuring that there is enough feedstock from switchgrass on the front end to supply bio refinery plants that are coming online in 2015, according to Tiller.

Analysts agree about cheap oil

Industry analysts in the biomass and ethanol industries largely agree that while cheap oil has become a big story, it is not going to eliminate the alternative fuels industry. "Short term cheap oil prices will inhibit the alternative fuel industry," says Andrew Soare, senior analyst, alternative fuels practice, Lux Research, a Boston-based market intelligence company. "But not long term." Although there are few alternatives to oil long term, cellulosic ethanol is ramping, according to Soare, with several ethanol companies set to scale up over the next 12 months.

Another aspect to think about the oil decline in relation to biomass and biofuels is that, overall, all raw materials have endured price decreases. For example, corn prices have been in meltdown mode since 2013, according to Pavel Molchanov, energy analyst, Raymond James. Last year alone, corn was down 20 percent year over year, he says. Still things are not as bad as you would expect. "Impact of fuel prices has been mitigated by the prices of raw materials," Molchanov says.

In addition, cellulosic ethanol is still in the early stages, he says, with its capacity only having reached 150 million gallons per year globally in contrast to corn ethanol capacity which is currently 15 billion gallons per year in the United States alone. However, there is high visibility on feedstocks. Besides switchgrass, cellulosic ethanol is also being made from wood chips, municipal solid waste and other organic feedstocks.

Justice of scalability

"The real challenge will be achieving operational scale by becoming a commercial industry," Molchanov says. "It has had its share of growing pains, with only about 10 cellulosic ethanol plants worldwide." There are some in Brazil and one in Italy, with the others in Canada and the United States, according to Molchanov.

In order to keep these cellulosic ethanol plants properly supplied, energy crops like switchgrass will be necessary. And energy crops will help stabilize prices, as per Molchanov. The fact is scalability has always been an issue for biomass solutions.

"Biomass energy has been used in some form or another for countless years and certainly has potential for being scaled up through future development," says Jeremy Meek, sustainability programs manager, Desert Star Construction. "It is viable in certain contexts, but whether it is 'sustainable' or not largely depends on the higher level sustainability analysis." In other words, energy producers could look over options for their land and determine there are higher-yield sustainability solutions they can pursue superior to the potential of biomass-based biofuels, according to Meek.

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And while oil volatility has at least momentarily brought a shadow of a doubt on the biomass-based ethanol market, other biomass-derived alternative fuels have not felt the pressure. "Switchgrass, corn and other energy crops are closely tied to the fuel markets and more closely affected by the oil decline," says Clint Pemberton, biomass manager, quasar energy group, a producer of biomass compressed natural gas (CNG). "We don't take energy crops. We *get paid* to take waste from wastewater treatment plants and food manufacturing plants."

In quasar's business, CNG is priced at the equivalent of US\$2.50 per gallon. "Obviously, our price is cheaper than gas or diesel at \$4 per gallon," Pemberton says. "If the price of gas stays down, it might change a company's intent to switch to CNG." Of course, fuel users are price sensitive, but money is not everything. Both individual consumers and companies with car fleets need to examine their total motivation for using biofuels. "Do you want to be greener and environmentally friendly?" Pemberton asks. "If the motivation is just money based it doesn't make sense to switch to biofuels."

Derek Handova

Derek Handova is a freelance journalist, blogger and content marketer in the high-tech industry with an emphasis on social media and related channels. He also blogs about nutritional supplements. The opinions expressed in this article are purely his and do not reflect the views of any of his past or present employers

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