

Which Biofuels Hold the Most Promise?, Part 2



This is part two of a two-part piece. [Part one can be found here \[1\]](#).

Interview by JAMES STAFFORD, *Oilprice.com*

James Stafford: The drought across the U.S. has led to many pundits predicting a second ethanol crash due to the under supply of feedstock like corn. Some estimates say that the US will likely lose nearly 40% of its corn crop, and possibly more, which means that the price of corn will continue to rise. How do you see the situation developing in the U.S. for ethanol producers?

Jim lane: The global corn crop this year was the 2nd biggest ever, and the US crop the 8th biggest. Whatever disruptions that will occur are already priced in - we'll continue to see lower production levels from US producers, but that will likely bring down ending stocks rather than cut into sales.

James Stafford: Where do you stand on the debate over the RFS?

Jim lane: The industry favors maintaining RFS2 in its current structure. Here in Digestville we see the new 54.5 mpg CAFE standards creating a massive drop in gasoline demand. That's going to put intolerable pressure on RFS2 in our view. We'd rather see either state or federal public utilities for fuel - keeping a free market in supply and demand but having the utility in place to provide long-term supply contracts for renewables. Offtake contracts offer better source of financeable stability for advanced biofuels, in our view.

James Stafford: What is your favourite source of biofuel? There have been numerous articles and reports released about potential super biofuels such as Agave, Jatropha, Sorghum, switchgrass, etc... Which do you think hold the most promise for the future?

Jim lane: It comes down to what is best for that locale - most cost effective and

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sustainable. It will vary. Having said that, marine biofuels looks interesting (e.g. seaweed) and direct conversion of brackish water, sequestered CO₂ and water into biofuels are very exciting to contemplate.

James Stafford: Are there any new technologies/developments taking place that people may not be aware of, which stand a real chance of transforming the biofuels sector?

Jim lane: The aforementioned direct conversion technologies. Plus, electrofuels - which are similar but use electricity as an energy source rather than sunlight.

James Stafford: World rock phosphate production is set to peak by 2030. Since the material provides fertilizer for agriculture, the consequences are likely to be severe, and worsened by the increased production of biofuels. Do you see phosphate shortages as a threat to the biofuel industry?

Jim lane: Phosphorus is a material necessary to make the backbone for DNA, so it's a real concern if not addressed - and even if fertilizers are sourced elsewhere. Recovering and aggregating other sources of phosphorus is a must.

James Stafford: Biofuels are well known for using a great deal of energy in their production - could you talk a little about the energy returns from the different types of biofuels?

Jim lane: I think you are referring to first-gen biofuels. Cellulosic biofuels offer 8-1 and 9-1 net energy returns. Passive algae farming offers even more.

James Stafford: Which biofuel companies should investors keep an eye on in the future?

Jim lane: The cellulosic biofuels companies like INEOS Bio and Mascoma are just now commercially deploying - right after that is a generation of thermochemical technologies like KiOR. After that, post-biomass companies like Joule are going to be heading for scale.

James Stafford: In a recent article we covered sweet sorghum as a biofuel investors should keep an eye on as the Environmental Protection Agency (EPA) prepares for its final approval of the grain for ethanol production. Unlike corn, it does not compete with food crops, while environmentally, its footprint is rather small. What are your thoughts on sweet sorghum?

Jim lane: It's an excellent rotation crop with sugarcane, highly suitable for Brazil for example - it can grow during the off-season for cane.

James Stafford: What is the environment like for biofuel investments? What biofuels are receiving the most investment and which countries are the biggest investors.

Jim lane: All sectors have been doing pretty well of late, though companies that

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make intermediates have market flexibility and have been doing especially well. Ditto for those who can make chemicals as easily as fuel. US by far is the biggest investor, though China is coming along.

James Stafford: An innovative study by Zah et al. which was commissioned by the Swiss government found that most (21 out of 26) biofuels reduce greenhouse-gas emissions by more than 30% relative to gasoline. But nearly half (12 out of 26) of the biofuels—including the economically most important ones, namely U.S. corn ethanol, Brazilian sugarcane ethanol and soy diesel, and Malaysian palm-oil diesel—have greater aggregate environmental costs than fossil fuels. How do you respond to this?

Jim Iane: We need more data and less assumption-based modeling. It all comes down to how you count indirect land-use change. The models are hugely sensitive to untested assumptions. What is needed is a credible data-set of land use, and a model that can predict real outcomes.

For more information, please visit www.Oilprice.com [2].

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