



## St Louis Renewable Energy Conference - Day 2

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Topic: [Demand/Consumption](#)

Tags: [biodiesel](#), [ethanol](#), [solar power](#), [wind](#) [[list all tags](#)]

(Ed note - forgive the tenses, this was written late last night)

It should be remembered, in considering the nature of this conference, that it marks a significant step forward in the changes in supply that America's fuel will have to see. While there are many questions that can be raised about energy costs, nevertheless there is currently a major growth occurring in the number of plants that will supply ethanol, and thus in the amount that will be available to the general public. To those who ask "where will all the corn come from?" comes the answer from a farmer, that "that sure makes a difference from wondering if you are going to have a market, and at what price." From the presentations I heard yesterday and today, it seems that the energy future can be separated into three phases; the immediate short-term, where ethanol production from corn will grow to the point that 10% blends become the rule; some 7-10 years from now when cellulosic ethanol will start to provide significant competition; and somewhere beyond that the advent of biodiesel as the more attractive long-term fuel. And in making the first and second of these his platform, to this audience, Vinod Khosla's presentation resonated well.

Already ethanol volume has passed that for exports, to become the second largest market for US corn, according to today's talks, which included one from President Bush, who arrived to give the last keynote of the Conference. And, as a result, we all had to get to the Hall an hour earlier, in order to clear the enhanced security procedures.

The first talk was by ex-CIA Director James Woolsey, now with Booze Allen Hamilton, and Co-Chair of the [Committee on the Present Danger](#), who had been asked to present a review of the first day's discussions. He was the most relaxed and funny of all the speakers at the meeting, and yet his talk was at heart, a sobering reality check on how our "Just-in-time" manufacturing ethic is highly vulnerable when applied to our energy supply. He divided the problem into malignant interference (a tree branch falls in Ohio and 50 million people [lose power](#)) and malignant interference, such as when a terrorist attack hits [Abqaiq](#). And yet there is also the risk, on the one hand, that should the current King of KSA die, then rule may pass to the more fundamental Wahhabi faction, with a greater potential risk to American oil supplies. On the other hand, there was the risk that the market could be flooded [with product](#) causing investors to lose money and interest. He was dismissive of the Hydrogen Highway initiative, and pointed out that the success of the American railroad system was that the Government reduced the risk to investors by assuring them of the land, but did not tell them how to design the engine, wheels or caboose.

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[Matt Simmons](#) usual stunning presentation was a little muted, this time. Possibly because, with the added security, the sessions had started late, and the presenters had to make up the time, and so we did not get the usual relaxed Matt. Further this audience was already working toward an energy solution and so it did not have the concern that often impacts a lay audience when hit

with this sort of presentation. Matt pointed out that we may have already passed the peak, that stripper wells in the US now out-produce Alaska, and that the natural gas situation is worse than that of the oil. He referred concerned listeners the EIA [production records](#), to show that the world is down 1 mbd over last year. And he pointed out that the current plans for renewable fuel supplies will not meet the shortfall. He differentiated between a voluntary retreat and (the more likely) forced march back that we will soon encounter.

Pat Wood, the immediate past Chairman of Federal Energy Regulatory Commission addressed, in part, the problems of our aged electric grid, which is unable to handle transmission of the power from Wind in the High Plains to the customers who need it on the East Coast. Turbines in North Dakota could supply 40% of the need, the non-trivial detail how the transmission gets paid for, or installed, is a little more complex, however. Yet the experience that he reported from [Texas](#), with Competitive Renewable Energy Zones (CREZ) was reported as successful.

Fred Webber, President of the [Alliance of Automobile Manufacturers](#), described himself as "the skunk at the picnic." He pointed out that fuels and new car models must be developed together if both are to succeed. With over 100 models that get more than 30 mpg he singled out the BMW 7 series as part of the future. (He had driven in one that could, at the flip of a switch change from running on hydrogen to gasoline and vice versa). There are already some 9 million alternate fueled vehicles on the road. He also noted that [Vinod Khosla](#) has plans to use the discarded orange peel from orange juice factories as a source for ethanol.

After the break we were back to the more political speeches. First the EPA Administrator, [Stephen Johnson](#), noted that airborne pollutants have been dropping and that we can see a clean energy future, thanks to technology. I was not sure he understood the nature of the audience he was talking to, though he did take credit for a [methane landfill outreach program](#) that is providing the equivalent of 890,000 bbl of oil a year in production. He also encouraged the "change a light bulb" program, with the energy savings it could bring.

[Raymond Orbach](#), Undersecretary for Science at DOE (a new post) thought that biofuels would pull us back from the cliff that Matt Simmons projected we were about to fall off. He felt that within 5 years cellulosic ethanol would have proved its commercial viability and thus start the path to significant market penetration. In the long-term such biofuels would provide 30% of the nations transport fuels, and in this light he mentioned the two major proposed new [Centers for BioEnergy Research](#) that will each be funded at \$25 million each for 5 years. He also noted that, to date, we have optimized plants to produce food, now we need to look at optimizing for fuel.

We got a brief economists view from [Keith Collins](#), Chief economist at the USDA (An economist is one that pours cold water on the bad ideas of others - his quote). He pointed out that in the recent past ethanol has filled 31% of the increased demand for fuel that the nation has seen. Currently 19% of the corn crop goes to ethanol and he projects this rising to 25%. We have seen rising production, from 40 to 160 bushels an acre, and each increase reduces the overall acreage required to meet that need. However, once we move from the most fertile land then we must find new plant varieties to keep up production. Cellulosic ethanol poses significantly greater challenges and he provided this table:

	Corn Ethanol	Cellulosic Ethanol	
Capital costs	\$1.25 - \$1.50	\$4.30 - \$5.50	per gallon
Ethanol yield	98	70 - 80	Gallons/ton
Conversion process	Simple	Complex	
Enzyme cost	\$0.03	\$0.30	per gallon
Alcohol content	14 - 20%	4%	
Transportation & Preparation	Low	High	cost

[Andy Karsner](#) the Assistant DOE Secretary for Energy Efficiency and Renewable Energy, brought us close to the end with the note that "everything has been said, but not everybody has said it yet!" He noted that Science, Markets and Policy must all work together if we are to move forward. He spoke more as a businessman looking at the potential for the fuel. He noted that time was not on our side, but expects cellulosic ethanol to have proved itself viable by 2012, so that we can displace 30% of foreign fuels within just over a decade beyond that. However, we must not only do the right things, we must also do them right.

And as a final speech of the regular program, Tom Dorr, Under Secretary at USDA for [Rural Development](#), felt that this challenge provided the greatest opportunity for wealth creation in the history of the nation. We are at the start of a profound change and yet have barely reached the 10th milestone on a long journey that lies ahead of us. He had been responsible for the Conference, and must therefore have been quite pleased to see this effort rewarded by the appearance of a final speaker.

Following about a half-hour wait, and the arrival of the White House Press Corps (I wondered if writing for this blog would have got me credentialed to that group today) President Bush strode out from behind the curtains, and gave a 30-minute talk (with one demonstrator being hauled off about half way through). It was very much along the lines of the Energy Plan that he has proposed, and to that extent there was no new material. His presence however underscored the successful nature of the current view of the program. He mentioned the need for more exploration in the Gulf of Mexico, and recognized that Louisiana should get more money from that. (He used the recent results from [Jack 2](#) to suggest we might have doubled our oil reserves). He felt we should permit more NG exploration offshore, and LNG terminals onshore. He also promoted clean coal technology, wind, solar and nuclear contributions, pointing out that technology means that investing in these will not be a zero sum game. And he liked the idea of the [plug-in hybrid](#), that runs for the first 20 miles on batteries, though not being that ideal for the rural population it would have attraction in the more dense suburbs.

And the Conference was over - yes I learned a fair bit about the prospects for ethanol, corn ethanol will likely double, though production issues will start to have an impact, and cellulosic is further away and a bit more questionable than I had thought before coming. Biodiesel got much less mention than I had thought, and algal production thereof was mentioned on one exhibit poster (if you wanted to interpret the phrasing right). It must be further into the future than cellulosic.

For my errors and omissions please forgive me - there were times I could not write fast enough. The proceedings will be sent out as a CD in about 4 weeks I gather, and will likely be on the Agency web pages.



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