



## The 2009 EIA Energy Conference: Day 1

Posted by [Robert Rapier](#) on April 13, 2009 - 9:53am

Topic: [Supply/Production](#)

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### The Plenary

I covered Energy Secretary Steven Chu's comments [in the previous post](#). Here, I will cover the rest of Day 1. This is not so much a comprehensive summary as it is a collection of observations and things I otherwise found to be interesting. My notes at times are spotty, so if someone was there and feels like this essay contains an error, please let me know.

Following Chu's talk, [Professor William Nordhaus](#) of Yale gave a talk entitled Energy and the Macroeconomy. I got called out during his talk, so I missed most of it. What I do remember him arguing is that oil embargoes are completely worthless, because oil is fungible. If Venezuela decided not to sell their oil to the U.S., they would end up selling it to someone else, which would displace some other seller, which at some point would end up with someone else selling it to the U.S. I missed the next point, but Gail the Actuary was there and said "a corollary of this is that there is no point in protecting the US oil and gas industry. We can just buy what we need elsewhere."

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Next up was [John W. Rowe](#), CEO of Exelon, which has the largest market capitalization in the utility industry. John speaks very slowly, but he speaks with authority. I took quite a few notes during his talk. Rowe supports cap and trade as a way of controlling CO2 emissions. One thing that I am very interested in is the expected value of a ton of CO2 if a cap and trade law is passed (Full disclosure: This potentially impacts [my current company](#) as a price on carbon emissions could benefit us). John put up a slide that indicated (at least to me) that the price could be \$125/metric ton. I saw other presenters who had values ranging from a few dollars up to \$500. That last number was one that the presenter expected would be needed to make several of the more marginal technologies economical.

Rowe was clearly concerned about CO2 emissions, and pointed out that Exelon had far exceeded their targets for emission reductions by closing down inefficient coal plants. But he was also concerned about the impact cap and trade might have on electricity costs. In one example he gave, electricity costs in California could go from \$0.18/kWh to \$0.30/kWh.

### The Future for Transport Demand

Thus ended the plenary, and I next attended The Future for Transport Demand. Speakers were Lew Fulton from the IEA, David Greene from [Oak Ridge National Laboratory](#), and Lee Schipper from [Stanford](#). The moderator was Andy S. Kydes from the EIA. Had the sessions not been concurrent, I would have attended What's Ahead for Natural Gas Markets. But there is [a pretty good summary of this session](#) by Dave Summers.

Fulton said that the expectation of the IEA is that oil production would reach 105 million bpd by 2030. There was quite a bit of consensus that non-OPEC production has pretty well maxed out, and that the new production would come from OPEC. Fulton also mentioned that there is a lot of skepticism out there on biofuels.

David Greene followed, and gave perhaps the most sobering talk of the conference. He referred back to Fulton's comments on OPEC filling the void, and essentially said "With all due respect, that's not going to happen." He also said that cellulosic ethanol "makes no sense" and that the IEA was engaging in wishful thinking. I was quite impressed with Greene as someone who really understands the seriousness of the problem, and that the future is likely to be quite different than the rosy projections.

Lee Schipper was up next. Schipper was quite witty, and sounded to me just like Richard Dreyfuss. (You can see a short video by Schipper [here](#)). I have often commented that we don't seem to understand the scale differences between the energy we use and what biofuels could reasonably be expected to contribute. Schipper had a similar observation: "Our problem is that we can't count." He went on to say that even though China has very low levels of motorized transport, Chinese cities are already becoming frozen by traffic. Finally, in the category of stating the obvious, he said that "Transport is very politicized."

## Meeting the Growing Demand for Liquid Fuels

The next session featured Eduardo González-Pier from [PEMEX](#), David Knapp from the [Energy Intelligence Group](#) and Fareed Mohamedi from [PFC Energy](#). The moderator was Glen Sweetnam from the EIA. Dave Summers attended this session as well, and has [quite a thorough account](#) on his blog.

This panel engaged in a round-table discussion, and covered different areas of the world with respect to potential for increasing production. I will just add a couple of observations to Dave's account. David Knapp was asked about Venezuela, and said he was very pessimistic. Brazil, on the other hand, was viewed as a success story, and Petrobras was singled out by Fareed as having a bright outlook. Of course I feel the same way, which is why [I loaded up on Petrobras](#) stock last November. (As I write this, that investment is up 106% in about 5 months).

Two of the more eyebrow-raising comments came from González-Pier, who predicted: 1) PEMEX can stabilize production at 3 million bpd for many years; 2). Mexico won't become a net oil importer for 2 decades. Consider me a skeptic.

The last interesting bit in this panel was that a slide was put up that projected production costs for various technologies. [Gas-to-liquids](#) (GTL) came in at \$40-\$110/bbl, [coal-to-liquids](#) (CTL) came in at \$60-\$110/bbl, and production from [oil shale](#) came in at \$50-\$110/bbl. Again, consider me a skeptic, particularly over the lower end of these ranges. There are a couple of problems with these projections. First, because all of these technologies are highly dependent on the cost of energy, they will proceed along a sliding scale (the so-called receding horizon problem). Second, there is really very little data on what the economics of commercial facilities might look like over the long haul, because very few facilities actually exist. (In the case of oil shale, no facilities exist to my knowledge). So the projections are subject to the same criticisms I have offered up for cellulosic ethanol economics: They are projections based on precious little scaled-up operating data.

## Renewable Energy in the Transportation and Power Sectors

The speakers for this session were Matt Hartwig from the [Renewable Fuels Association](#) (filling in for Bob Dinneen who had been called away), Bryan Hannegan from [EPRI](#), Denise Bode, an enthusiastic Okie and CEO of the [American Wind Energy Association](#), and David Humbird, a fellow Aggie now with [NREL](#). The moderator was Michael Schaal (who I had lunch with the next day), Director of the EIA's Oil and Gas Division (which also covers biofuels).

While Humbird seemed to have a good understanding of some of the challenges of commercial cellulosic ethanol production (he specifically mentioned the logistical issue that [I predict will be the death knell](#) for conventional cellulosic ethanol), he nevertheless put up a slide that suggested production costs for cellulosic ethanol at \$2.61/gal, and for gasification at \$2.40/gal. While I agree with the relative positions of cellulosic versus gasification (long-term, I think gasification can be commercially viable) I don't think there is any chance that a commercial cellulosic ethanol plant can get close to \$2.61/gal. Maybe he was factoring in a tax credit of up to \$1.01/gal for cellulosic ethanol; in that case his numbers would be in the ballpark of production costs that I have seen of around \$4/gal.

But the thing that isn't usually discussed in these sorts of analyses is "What assumptions are you making?" Are you assuming you are getting biomass from the immediate vicinity, and the process steam comes from \$3 natural gas (or even cheaper coal)? It is quite easy to make overly optimistic assumptions that grossly underestimate production costs. I have seen this happen numerous times, and these sorts of assumptions have doomed many plants (of all sorts) once they start up and have to start operating in the real world.

Humbird also mentioned that it would be better to find microbes and yeasts that can produce gasoline and diesel instead of ethanol. Because hydrocarbons phase out of water, have higher energy density, and are compatible with our current pipeline systems, this sort of solution is potentially more practical. As Humbird mentioned, there is a lot of research project going on, both government and in private industry, in this area. Companies that Humbird mentioned were LS9, Amyris, Virent, and Coskata.

I had to take a call during the presentations, and only caught pieces of the rest. For Denise Bode's, two things stood out. First, she was by far the most enthusiastic speaker I saw; a combination cheerleader and firebrand. Second, she mentioned that the U.S. is now the world's largest producer of electricity from wind, a story that I had somehow missed [when it was announced in February](#). I unfortunately missed all of Bryan Hannegan's talk.

Matt Hartwig's talk was what one would expect from a non-technical person who works for the ethanol lobby. We got the standard talking points, a couple of which bear repeating. When asked if corn ethanol could ever be competitive without the subsidies, he not surprisingly claimed that the ethanol subsidy actually benefits oil companies. This is of course incredibly misleading. While the blender's credit is indeed received by the oil companies (initially as an incentive to buy ethanol that was otherwise uncompetitive), the primary beneficiary is the ethanol industry. If you disagree, ask yourself which industry - oil or ethanol - is constantly lobbying to keep the credit. Hint: It isn't the oil industry. So one would certainly be puzzled by the notion - if Hartwig's claim is true - why the ethanol industry lobbies to keep a credit that benefits the oil industry. If you ever hear an ethanol booster make that claim, tell them "Then let's get rid of the credit."

The other notable thing Hartwig did was fire a preemptive complaint over the upcoming EPA ruling on GHG reduction for ethanol. In 2007, Congress ruled that ethanol must reduce emissions relative to gasoline by 20%. The problem - which I warned about at the time - is that politics are going to play a big role. While the methodology and results have yet to be announced, ethanol interests are jockeying for position which is exactly what would be expected given the way this

was set up.

Imagine that the EPA comes up with the wrong answer - according to the current administration. What happens then? Political pressure to come up with the right answer. In this case, Hartwig was complaining about inclusion of land use issues (explained [in this article](#)) which [some studies have found](#) cause ethanol to come out worse than gasoline with respect to GHG emissions. The industry will of course fight that tooth and nail. However, such a ruling would be a strong incentive for the industry to minimize fossil fuel usage in the production of ethanol.

Thus concluded Day 1. In the next installment, I will cover the panel session that I was on, as well as the session Investing in Oil and Natural Gas.



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