



Steven Chu at the 2009 EIA Energy Conference

Posted by [Gail the Actuary](#) on April 10, 2009 - 9:46am

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As many of you know, I attended the EIA Conference on Tuesday and Wednesday of this week. I haven't yet had time to write up anything on the conference, but there were others at the conference who have started writing up posts on the conference on their personal blogs, including Dave Summers ([Heading Out](#)) and [Robert Rapier](#). Neal Rauhauser, founder of Stranded Wind Initiative, published a [summary at Daily Kos](#).

In this post, I will provide Robert Rapier's and Heading Out's comments on Steven Chu's speech in the plenary session.

First, comments from Robert Rapier:

I was quite looking forward to hearing from Energy Secretary Steven Chu, so I grabbed a seat up front. Chu started off by saying the DOE is the biggest source of science funding within the government, and that science and technology absolutely must solve the energy issue. The major thrust of his speech was that we must rein in carbon emissions to avoid a climate catastrophe, but he primarily focused on electricity. Chu correctly noted that imported oil has become a huge drain on the economy and that recessions typically follow oil price spikes, but there was otherwise scarce mention of liquid fuels. As Professor Summers points out in his summaries, the speech followed pretty closely a speech that Chu gave two years ago. In fact, he used quite a few of the same slides.

The first step that we need to take, according to Chu, is to make a big investment in energy efficiency. He would also like to double alternative energy production in 3 years, but again the talk was centered around electricity. Chu noted that solar PV will play a major - if not the major - role in energy 100 years from now. He also noted that we really need cheap solar cells with polymer backing. Of course most of our polymers are oil-derived, which is just another example of how we take for granted the role that cheap oil plays in enabling some of these renewable technologies.

When he did talk about liquid fuels, he discussed some DOE programs in which bacteria and yeast are feeding on sugars and producing gasoline and diesel. As I have noted before, I think production of fuels that can phase out of water is the right approach. This greatly minimizes the energy requirements for purification. It is technically very challenging, but there are [some companies working on this](#) approach.

Questions/comments were collected from the audience. I submitted a comment and two

questions:

1. It seems ironic to me that the domestic oil and gas industry is being marginalized while at the same time you are pleased with OPEC for not cutting production. (What I was thinking but didn't write: If you really want to see what it might be like to marginalize our own oil and gas industry, encourage OPEC to cut a couple more million barrels/day of production.)
2. Predict the year that cellulosic ethanol achieves true commercial viability. (I was really interested in his thoughts here, and whether he distinguished between gasification and true cellulosic ethanol).
3. What percentage of our transportation fuel will be biofuels in 2030? (Most projections show that it will still be overwhelmingly petroleum-based, and I wanted to see if he thought the same).

These questions were basically designed just to get a feel for whether I think his views are overly optimistic. However, he only took two questions from the audience:

1. What is most important - energy independence or CO₂ reduction? Chu's answer: Of course they are both important, but I think the gist was that he considered the CO₂ issue more pressing.
2. How does nuclear power fit into your plans? Chu's answer: It must play an important role this century.

Following that, he exited out the back. I thought he had left the building, but when I stepped out to grab a cup of coffee I bumped into him. He had about 10 people lined up to shake his hand, so I passed on that opportunity. Maybe next time. But in an upcoming essay, I am going to address a theme that I think about often: **What If I Am Wrong?** It will essentially be about risk assessments (What If?), but I also want to pose the question to someone with Chu's basic views, and ask about the consequences if he turns out to be badly wrong on some of his assumptions.

These are Heading Out's [comments](#) on Steven Chu's speech:

There is no doubt that the Administration has changed, from the presence of “the hockey stick” curve in Dr Chu’s Keynote Address through all three of the Plenary Papers, we, as an audience, were left in no doubt that Climate Change and the problems of carbon, are now a major part of the new agenda. If you want a longer version of Dr. Chu’s remarks, they followed quite closely a [talk](#) he gave on the Helios Project a couple of years ago, although in somewhat abbreviated form. He did, however, include a comment on Econbrowser’s note that [recessions follow oil price peaks](#) and seemed to agree with the basic thesis that James Hamilton presented. He expressed again his concern that with changing climate the water in the Sierra snows is reducing, and that this does not bode well for that State. Usually a two year decline in water is sufficient to lead to water rationing and he is concerned that these will be worse. (Ed. Note – historically [Scott Stine](#) has shown that droughts there in the past have lasted decades).

He pointed to a number of nations that have shown that the standard of living is not

proportional to energy consumption and talked a little on the Human Development Index. But in talking about energy he noted that California had stabilized on energy use per person, at a time where the rest of the country had continued to increase demand, and stressed the benefits that can come from increased energy efficiency in use. We need to call ET back home. (Sorry! His joke about an old science fiction movie) Except that now ET is Energy Technology and if we can bring this green technology back, it is something that can't be outsourced. The likely biggest impact of ET will be on Construction, though to get the maximum gains houses will have to have sensors integrated, in the same way that cars have microprocessors now.

We need four things to make progress, an investment in R&D; some standards of performance; the development of new technology; and the will to go forward. The investment is available through, among other things, the Stimulus Package, with \$8.2 billion, for example, going into weatherization, and \$11 billion for the smart grid (though he did not mention D.C. this time around). He anticipates that the R&D tax credit will become permanent, and that wind cost will go down several fold in the next 20 years, as increasing percentages of the energy generated are extracted.

In terms of standards and efficiency he noted that refrigerators had dropped to a third the price, yet use less than 25% of the energy they demanded in the 1970's.

Again he bragged on the scientists in the National Labs (who it increasingly seems likely will get most of the R&D money) noting that they have 88 Nobel Laureates in their midst and have the potential to be the future Bell Labs of the Nation. And in that regard he detailed a little of the work he was doing at Berkeley in using different chemicals from wood lice etc to turn cellulosic material into ethanol. To indicate that success should be anticipated, he quoted the example of [Norman Borlaug](#), who after being told that the world did not have enough food to provide for 6 billion people created the Green Revolution to ensure that it did.



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