



ASPO Houston: Day 1, part 1

Posted by [Heading Out](#) on October 19, 2007 - 4:19am

Topic: [Miscellaneous](#)

Tags: [decline rate](#), [peak date](#), [peak volume](#) [[list all tags](#)]

As happened at the last ASPO meeting in Boston, the Conference organizers had arranged for a mystery reporter to act at the end of today's papers as a Mystery "Guest Responder," to review and comment on the papers of the day. It turned out to be [James Kunstler](#), and while I had hoped his summary might have made it easier to cover a day where there was a vast quantity of information, and though he gave a concise and effective summary, our views on what was most interesting appear to differ quite a bit. And so, gentle readers, you are stuck once again with my perception. But since there are a lot of TOD readers and contributors here (a pleasure to put a face to the name) please do chip in with your views and comments, particularly if you disagree with what I write.

The atmosphere seemed a little different today, perhaps the influence of more "energy professionals", investment advisors and professionals made it seem more of a business conference, perhaps the nature of the message that came at us as the papers proceeded were a sobering influence. After the ASPO meeting in Cork I had become a little more worried about the approaching problems, and had, as I noted, begun to see 2009 and 90 mbd as the critical numbers. Today I think I added the first twinge of terror to my emotional lexicon. We talk about it with an academic dispassion, we list the numbers and plot the curves but the numbers that we heard today have an immediacy and an impact that indicate the anonymity with which we exist in many media is perhaps going to change sooner than many of us have anticipated. This was the day of revising numbers, of reviewing past data in light of the changes since last year, and so let me, "start at the beginning" with the first paper of the day.

Robert Hirsch began the day with a talk on Risk. In opening he noted that he had begun his career in synthetic fuels, since abandoned, and now of national need. Given the seminal nature of the [Hirsch report](#) that now is seen as a first Government recognition of the problem, and his consequent involvement in other activities, he has an involvement in levels above those from which we usually get information. These [other activities](#) include the Oil Shockwave experiment, which showed that only a very small difference between available supply and demand would lead us into problems. He raised the issue as to how big the shortages will be between available supply and demand, what impacts this might have, and when this might occur.

Based on the study, which showed that it will take 20-years to evolve the technology and methods that will get us into the next Energy Era, he reminded us that what we initially face is a liquid fuels problem. Apropos later talks, his team's work had assumed a 2% decline in supply. But even with that assumption the scale of the problem becomes huge, and at 3% we can anticipate a global recession. Remember that a 1% drop in world production is 840,000 bd. Their

work indicated that just to overcome this drop, by improving vehicle fuel efficiency, would take 10 years, while to replace it with the liquids from coal program (CTL) would take an investment of \$100 billion and take 10 years. He noted that there is, within the order of magnitude correlation, a tie between change in GDP and change in oil supply, which held through the '73 and '79 oil crises and thus could be used as a model for our current situation.

Our potential oil future can be one of three scenarios, a sharp peak and subsequent decline; an “undulating” plateau and then decline; or a slow roll-over. After looking at various examples he hesitated to make a hard prediction, due to the increasing role of Resource Nationalization, where the power to make the political decisions that will control the shape have switched from the Giant Major Oil Companies (the Majors) to National Governments. National Government agendas are different from those that he now called “Baby Oil”, the Majors whose role is increasingly diminishing (now down below 23%). What he did anticipate was that the media would continue to ignore the problem until real shortages develop, at which point there will be Panic and we will revisit the situation of the '73 and '79 crisis.

He expects the oil exporting countries to understand the box the rest of the world now lives in, and anticipates that they may further restrict oil supply as a means of driving prices up further. And, with those caveats, he now views the 2005 report as a “best case” with the likely impacts being faster and more severe. Part of the reason for this is that the geological limit and definition of peak oil is likely to define an upper bound above the real situation. He sees that because of the increasing tendency of countries to use what he called the OEWS – Oil Exporting (countries) Withholding Syndrome, that the actual peak will be sooner and lower than the geological value that we have, until now, considered the curve of concern. Peak will be at or below 100 mbd and a post-peak decline rate of 2% is survivable, while 5% is a rate that would drive a serious world GDP problem. It is primarily a liquid fuels problem and he left us with the thought that “the more you think about it, the uglier it gets!”

[Chris Skrebowski](#) brought us up to date on the Megaprojects program. He noted that we must neither guess, assume nor even hope, but have to take the data as it is, to properly understand the message it is telling us. Unfortunately this leaves a story with very little humor, and increasing distress. He firmly believes that the peak will occur earlier than most expect, and that as exporters reduce, and importer numbers grow, so the balance (the teeter totter principle) will swing from one side to the other. In this regard he views the IEA data as over optimistic. His feeling is that the data points to 2011, which is only 1200 days away.

He went on to indicate the premise of the Megaprojects program, which is that it now takes about 6.5 years from identification to the time that a Megaproject will come on stream at nameplate production. Discovery rates are falling, crude peaked into a plateau in 2005, NGLs are in balance, and biofuel production, the latest ingredient in the pie, has barely increased, in the scale of world production. He suggested that the peak CERA envision is here, a mere 25-years early. He was the second to address decline rates (a question he ducked at Cork). In contrast with Dr Hirsch he felt that decline rates are going to be around 5%, which is the number that the Majors are reporting. This is faster than the global average of around 4%. He noted that Russia is talking about capping exports at 10 mbdoe, and that if this works, one can expect that it will spread to the other Oil Exporting Countries (OEC) like a virus. He noted that the current CEO of BP is assuring the world that the Majors still have a role – but why is that important to state?

CERA use a decline rate of 4.5% and while this seems a reasonable number, understand what it means. At 800,000 bd per 1% a 4% rate gives a drop of 3.2 million barrels a day per year decline. Before world production can increase it must first match this number. (and while the world

assumes decline rates are stable, it appears they are declining at about 0.1 to 0.15% a year additional). This is the elephant in the room, and dominates the changes due to demand increment.

His Megaprojects study now includes fields down to 40,000 bd, and includes 175 projects. He has a concern that with a 6.5 year lead-time there is not a lot of project numbers that are appearing after 2013. Taking the data available on these, adjusting a little for delays and actual production values, and integrating with current numbers he expects that the peak will be at 93 mbd in 2011. He did a sensitivity analysis on this and within a relatively narrow band the numbers did not change much. In his mind 2008 and 2009 are going to be “the last good years.” (And that assumes Khurais comes in on time and volume).

Now this is for supply, demand is rising at a different rate, and because of the imminent discrepancy between the two numbers he anticipates a continuing rise in gas prices, and that we desperately need a solution to the vehicle fuel problem. The only thing available appears to be a move toward electric powered cars, to move away from the liquid.

In the Q and A It was first recognized that the poor will get the hit first. That without a visible enemy it is harder to focus a program for resolution of the problem, and that soon driving two hours to work will become unviable. There is no military option to help solve this issue. The assumption that rate changes will have an impact do not hold when the imposition is due to a shock in the system. (People out of work don't drive to work is, while true, not the way we need to look at this). He is pessimistic on the role of leading indicators.

His last response to a question was in the context that, for the past 30 months supply and demand have been in relative equilibrium. He pointed out that for the first part of this period the supply was feeding not only demand, but also a stock build; in about the middle of the period supply and demand were in parity; and in the last part of the period we have seen supply only being able to meet demand by drawing down the stock reserve. At some near-term point this situation will become untenable and oil prices will start their inexorable rise into the future.

After the break [Jeremy Gilbert](#) talked about the “devil that lives in the details.” He noted that the crisis is now recognized as happening in less than 15 years, so the transition will not be smooth. And in this case we need to concentrate on the areas of the plot that occur “after the peak.” Yet the problem precedes this – in focusing on supply we neglect that demand needs must also be met, and that where this does not happen, and a gap develops then the crisis has begun.

The gist of his paper was a detailed explanation of the deficits of the USGS data base that provides the underpinning to the wildly overoptimistic values for OOIP (original oil in place) that countries use to justify their reserve predictions. With 10 years of data we can look at what has been found relative to predictions, and the ratio of actually discovered to predicted is showing up at around 30%.

His major focus, however, was in regard to reserve growth, a field in which he is, as a reservoir engineer, a recognized expert. And in this role he later confessed to having a feeling of failure in his ability to convey this information effectively. Basically it amounts to this: when a field is first booked the geologists make an estimate of overall production; then more wells are drilled and a better definition of the field can be made. Subsequently as production develops a better feel for how much oil can be produced emerges. Using company data (of deliberately vague origin) he noted that in a given number of wells the reserve growth can be about evenly distributed between positive and negative values – in other words about half the time as the field is developed it turns out that more oil can be recovered than originally thought, about half the time

there is less.

His feeling about new technology was first to describe some new ideas, and then to note that enhancement technology can yield enhanced recovery, just not in the short time scale of the current problem. Most company R&D goes to fixing existing problems, rather than looking far into the future. And yet he closed by noting “Earth first, we’ll drill the other planets later.”

The next morning speaker was [Richard Nehring](#) whose opinions diverged significantly from those of Dr Gilbert, and I take my hat off to the ASPO organizers in putting two authors of strongly diverging opinions together. Richard has done a “bottom up” survey and maintains a competing set of information to that of Chris Skrebowski, inter alia. He wanted to know what sort of Peakist we were – since ASPO stands for the Study of peak oil, rather than the ideology of peak oil, not the propagandizing of peak oil, nor the Society for the Propagation of the Doctrine of Peak Oil – it is just the Study!!!

He too had looked at Reservoirs and Reserve Growth, but felt that current estimates (such as those by Jeremy Gilbert) were too low. He inflated them by considering more enhanced EOR, reduced well spacing, more horizontals and multi-laterals and advanced EOR. Thereby he added about 790 – 1490 billion to the ultimate reserve. This is due to a number of technical developments, and since he had “rehearsed” this paper before an earlier audience that critiqued some of his arguments, his paper included answers to those critics. His last slide noted that his numbers were more reliable than ill-judged betting on the likelihood of the Rockies ever getting into the World Series (whatever that is).

[George Baker](#) gave a run-down on the Mexican situation, with major losses from Cantarell he felt that the reliance on the KMZ and Chicontepec fields was a little overly optimistic as a base for predicting sustained output, and that the likelihood was a sustained decline. Deep water sources in the Gulf have yet to be fully explored and those in the cross-country zones may provide a vehicle to get foreign investment into field exploration and development.

At which point, if gentle readers, you will forgive me, I will pause for a while, and continue the narrative later . . .(to be continued).

(Management note: The posts on the conference will be popping up over the weekend, the Powerpoints will be [here](#) after lunch tomorrow (so they told us), and my Conference review will probably be up on Tuesday.



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