



Day 2 in Sacramento at the ASPO-USA meeting and The Hunt for Black Gold Open Thread

Posted by [Heading Out](#) on September 25, 2008 - 10:15am

Topic: [Supply/Production](#)

Tags: [aspo-usa](#), [matthew simmons](#), [original](#), [the hunt for black gold](#) [[list all tags](#)]

Ed's Note: The intent of this thread is to combine two different discussion items:

1. A one-hour special on the oil situation, [The Hunt for Black Gold](#). It features a discussion of peak oil, an interview with Sarah Palin, Matt Simmons, Randy Udall, and a closer look at oil company profits, and a discussion of alternatives. It was shown on CNBC yesterday, and will be shown again today, Thursday, Sept. 25 at 1 a.m. ET and on Sunday, Sept. 28 at 10 p.m. ET.
2. Heading Out's discussion of Day 2 of the ASPO-USA conference, which can be found below the fold.

Note: Notes on Sunday's proceedings can be found here:
<http://www.theoil Drum.com/node/4556>

Monday, September 22, was the first day of the formal meeting, following the Breakout sessions on Sunday. The meeting had over 500 attendees, so that all the seats were full as the meeting started, and there were soon folk standing at the back of the hall. [Kjell Aleklett](#), President of ASPO-International, began with a brief review of world conditions before [Sally Odland](#) moderated the first session which was an introduction, or reminder, of the basics of oil generation and exploration. This was provided by [Ken Verosub](#), a professor of geology at UC Davis. Starting with the basics of oil formation, he pointed out the combination of different geological events, and the resulting layers of rock that have to be formed in place in order to create, capture and then trap the rock, and the need for geological movement to then concentrate the supply so that it can be recovered.

He pointed out that the oil has to be “cooked” just the right amount to convert it to oil, which requires a certain depth of burial, at one stage in its history. He illustrated the events through the creation of oil traps around a salt dome. To find the traps, the methodology has had to get more refined. Originally, two-dimensional models of the subsurface were achieved by using exploding sound sources and a small array of geophones to pick up reflected sound waves and thus map the layers of rock beneath the surface. The systems today can use computer analysis to generate three-dimensional images which can be projected into rooms that allow the geologists a degree of exploration not available in earlier years.

He went on to explain how a “Hubbert” curve of depletion is formed for a given oil field, from the accumulation of production rise and decline of the individual wells in a field. He mentioned that the results of the combination of geological rocks that have to come together to provide a viable

field restrict potential discoveries to relatively known places. (These do not include many of the places where the “Drill here, Drill now” message is enunciated). Finding where there is enough oil to justify a well is neither easy nor cheap. He then used some simplified math to show that the amount of oil that is left is already diminished to the point that, in the best circumstance, oil production will peak in the 2010 to 2015 time frame. This assumes a world max production of around 100 mbd (we’re at about 86 now).

Sally Odland works at the [Lamont-Doherty Laboratory](#) where just recently they have acquired an ex-industrial seismic survey ship. Because of the recent cost increases in ship repair, and the fact that the industry kept hiring away the team members, restoring the boat took much longer and more funds than anticipated. The costs of fuel now mandate that the ship be rented out to industry for 5 months of the year, so that the School can afford to use it for the other 7 months.

Sadly [Gil Mull](#) one of those who helped drive the first exploration well in the North Slope of Alaska could not make the conference, but Sally went through the slides of his presentation, and these will be available at the [ASPO website](#) within a couple of days, and are well worth seeing.

[Jeremy Gilbert](#) tried to sound a Wake-up call. He noted that in many reports of the remaining reserves and production the only reliable numbers are often the page numbers. He now sees that the projections of the arrival of peak oil have been optimistic, and that the risks have got worse, as the peak point approaches. He noted that as world gas prices continue to rise, the Kingdom of Saudi Arabia (KSA) has just cut oil and gas prices (which increases domestic demand). He spoke disparagingly of previous IEA projections, but noted that the agency has recently undergone a change in heart and now sees three problem areas:

- (1) the geological constraints on finding large fields of oil;
- (2) the lack of investment able to exploit these increasingly difficult and expensive sites; and
- (3) the much greater production problems that working in these more difficult environments bring.

He bemoaned the renewable energy mantra that “solar, wind or something, UFO’s perhaps, will bring an answer to our crisis.”

The problem is that we are finding only smaller fields each year, and must thus find more of them to make up for depletion. Those who call for more drilling need to learn that this will take time (given that all the rigs available are already busy, and that permitting etc all takes time). And as for new technology, this is usually applied in harder-to-produce rock, where its implementation only brings overall recovery values up to what they were originally estimated to be. He noted that while we have doubled the number of drilling rigs (around 3,500) in recent years, overall production levels have remained the same. And since Russia likely peaked last year, we are now running on borrowed time.

In short, it is past time that we wake up to the crisis at our door. He recommended the [Deutsche Bank Report](#) “From shale to shining shale” which is a critical look at shale gas plays.

[Morey Wolfson](#) of ASPO (and the Colorado Governor’s office) then presented a truly impressive new addition to the ASPO web site, the new [Google Earth Global Energy Infrastructure tour](#). The tour had been put onto a 20-min video that he ran. Having watched it, I really encourage you to check out the site. It shows all aspects of the energy issue, and finds and shows the places that are important to it. (You could count the tankers in the Malacca Straits).

The next speaker was [Matt Simmons](#) whom I have heard on numerous occasions, but who this

time talked into a silence as intense as any I have heard. He scared the audience in a way I have not seen before, perhaps because we were all much more willing to believe this time, given his record from the past.

He noted at the beginning of his talk that there are 150 miles of unit trains leave Wyoming every day. (Ed note – a 1-mile unit train contains 110 rail cars of 100 tons of coal each.) He talked about the elements of risk that we have now forgotten how to apply. He noted that we have forgotten how savage a collapse can be, or how fast it can occur. (Enron unfolded in 7 days. The events of the last week showed how even faster collapse can come now). The delays in bringing oil production on line from the recent hurricanes will only underline this point.

As a result places are running out of gasoline (Ed note the two folk next to me at the table were from Atlanta and Tennessee and neither town had any gas stations left with fuel, as far as they knew). The South is going to have to cope with a growing shortage until more of the infrastructure comes back on line, and that may be weeks into the future. This will get worse if all motorists suddenly start topping up their tanks, since this will sensibly empty the floating reserve that is the volume moving through the system at the moment. This will, in turn, remove confidence in the system, which will make the situation worse. The heating oil situation for the North East is only going to get worse in this scenario. And there is no data on how close to a collapse we currently are. And the collapse could well be a disaster equivalent to that of Gustav/Ike squared.

He noted that contrary to the solutions for the financial world there is no insurance policy that can help with Peak Oil. The paradigm is changing and sadly the world is still Energy Illiterate.

He also commented, having talked with producers of the new gas wells being drilled in the various shale formations around the country, that this is close to, if not already at a point where the energy costs to sink the well are not returned by the gas recovered from it. Further in talking with Baker Hughes folk (the ones that track the wells that are drilled around the world), he found that those who thought depletion in old fields was less than 5% got no takers from his audience, 60% of the audience thought that depletion was between 6 and 8% and the remainder thought that it was in the range above 10%. (As noted earlier the assumed value is often taken as somewhere between 2 & 4% with TOD using around 4.5%). It was by far the most pessimistic that I have heard him give.

We then broke for lunch and I was confronted by the question as to whether the situation would be so bad that we would not be able to come to a meeting, if one is held next year. Then the annual M King Hubbert Awards were presented, and we will talk about them in a separate post.

[Jim Buckee](#) of Talisman gave the luncheon address, talking on the production company viewpoint. He differentiated between the volume available in a field, and the production rates that can be achieved at it. He said that Peak Oil is real, and illustrated this conclusion by discussing the decline in production rate from virtually all the major oilfields of the world. 90% of production comes from 10% of the fields and we know which they are. He then went through the list, which was dominated by the comment “in terminal exponential decline.” The depletion rate he quoted (after the 50% production point) was on average 10%.

In discussing the KSA fields he said that these also will follow these rules, as Abqaiq already is. Talk of increasing post peak production with Enhanced Oil Recovery Techniques does not spell out what these might be, and his opinion was that this was a likely myth. Recent Natural Gas Liquid (NGL) increases have hidden the likely peaking of crude oil, but this will only last a short interval more before it too will start to decline.

He did give a realistic reason why the major oil companies have not admitted to Peak Oil, pointing out that it will lead to reactions very similar to those that hit the financial community last week. Nevertheless with resource nationalism rising this makes further exploration tough; makes it difficult for industry to attract people; has doubled production costs over the last 3 years; and leads to a constant fight against field declines.

He pointed out that there is no opposite to a train wreck. Further nationalism just means that the state takes a larger slice of a pie of fixed size. The change in production from majors to IOCs to NOCs has led to increasingly smaller production levels at higher costs. He felt we would hold production at the current level of around 85 mbd for another decade, but only because we will soon see effective rationing of this supply.

I then took a short break and missed the first after-lunch talks so any input on those would be helpful. I came back as [Hermann Franssen](#) was taking about the role of the IEA, and its recognition that times have changed, and as a result that its predictions of the future supply are changing also. He tried to get the audience to understand the world from the KSA point of view. That they see a constant threat to the price of oil, and their income, and thus act very protectively to ensure that they can continue to make money selling their oil. But they are also conscious that they want to leave some oil for their offspring, and thus are very conservative in their production management. However Aramco is very compartmentalized, and thus only very few people really know the numbers and what is going on. And some of those that do are very pessimistic.

We must change things, and this requires successful “suits” going to Washington with a message. This message should include the need to fix the American transport system (against which are marshaled all those that have an interest in the highway system as it currently stands).

The world’s stock or cars will double in the next 17 years, but the Middle East is close to reaching an upper sustainable production level, and non-OPEC has peaked. Thus, the best we can hope for is in the 90 – 105 mbd range. He was nervous of the foreign policy of Gazprom. And while they are in the Middle East already, it must be remembered that America has zero credibility in this region.

[Andy Weissman](#) in the first of two talks, covered Electricity and Gas, noting that their crisis points are not yet here, though close. We could easily soon see natural gas (NG) prices that equate to \$150/bbl of oil. The supplies of NG that have become so critical to powering the national power grid are going to decline in volume, and thus increase in price. LNG is the marginal production we will come to rely on, and this will impose an additional premium on price. He anticipates global shortages of LNG by 2012/2013, with devastating consequences. He sees 5 essential requirements to meeting our needs:

1. Greater sense of urgency needed
2. Replace the IEA
3. Develop a national strategy to review energy use across the board
4. Maximize all cost effective domestic resources
5. Use the best expertise available to review the options.

[Jim Puplava](#) felt that the worst is yet to come. He relies on the [Chicago Federal National Activity Index](#). When this falls below -0.7, then there will be recession (it’s close). He is recommending a Prius to help in the time when gas rationing arrives. We are at a point where we have maximized the rig count and yet production is not rising. He feels it is ludicrous not to expect a decline in non-OPEC production. We have an immediate crisis and need to take action. We are talking about the

wrong set of solutions and need to change the mind set. The opinion of the experts has been shaken and the lack of good information does not help.

After the break [John Theobald](#) introduced the next session with the opening section of the film [Soylent Green](#) which, for those who have forgotten, is people. (See the movie).

He then introduced [David Fridley](#) who reviewed the recent growth and change in condition in China. It is an economy where coal dominates supply (at around 97% of the resource base) and with a reserve of around 238 billion tons, is likely to continue to do so into the future.

Biomass (rice hulls and similar debris) is used extensively in the hinterland as a fuel source for cooking and heating. Industry otherwise dominates consumption, while transport needs have been small. However, the coal consumption has out-stripped the capabilities of rail to carry it, and thus trucks are increasingly used. These increase the energy cost for delivery by a factor of 16, but China has few other options. China has been busy buying up resources all around the world; it must do so to meet its needs. It is looking at Coal to Liquid and Coal to Chemical plants with the first CTL going in to Shenhua in Inner Mongolia. But it will be a large consumer of water at around 10 tons for every ton of liquid produced, in an area that has little water to spare. Ethanol was not a success, so they now produce methanol and blend this into gasoline.

Diesel is dominant in transportation. There are very few private automobiles, compared to other countries.

[Vince Matthews](#) then talked about Peak everything else, and included China in this analysis which saw China seeking major volumes of many commodities and in the process driving up the price. There were many examples given in the slide show of these increases, over a range of minerals. Steel price for example has risen six-fold. Where prices have not yet risen dramatically it has been because of long-term contracts that control price until they expire.

We forget that much of our NG is imported from Canada, and as their needs rise and production falls their exports to us will decline. Thus even though the rig count has increased, we are still in trouble. 49 coal plants came off line last year, to be replaced by NG, but while the number of wells drilled increased from 9,000 to 30,180 over the past few years, production has not matched this increase. Production from the Rockies region is flattening out.

Many folk talk about our redemption coming through increased use of photovoltaics (PV) and solar energy, not recognizing that solar cells require rare earth elements that are largely falling under the control of China, and whose price continues to rocket upwards. China is searching diligently for mines and prospects to acquire (doesn't really matter what the mineral) and is becoming much more successful than ourselves. (though he noted that Shell is buying up the water rights in Colorado around the oil shale area).

The days activity were summarized by Robert Hirsch, who again emphasized the magnitude of the problem – just matching 1% of global need requires 850,000 bd of oil equivalent. He looked at certain one-liner phrases that had cropped up over the day. “Willful human blindness” was one of the more memorable, as was “Peak roads”.

And then we adjourned to network. As I mentioned in the earlier post there were many of our readers at the meeting, it was a great pleasure for us to meet and chat with many of those, particularly the ones who don't often comment. And to those as other attendees, I do ask that you expand on my brief review, fill in the blanks and add your impressions.



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