



# Peak Oil Review

**The ASPO-USA 2010 Peak Oil Conference**

**Washington, DC, Oct 7-9 2010;**

**Early registration (save \$) ends Aug 31; register online at [www.aspo-usa.org](http://www.aspo-usa.org)**

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**August 30, 2010**

## **1. Oil and the Global Economy**

After touching a high of over \$83 a barrel in early August, oil fell to below \$71 on Wednesday before rallying to close at \$75.17. Despite a stream of negative economic and oil stockpile news, the equity and oil markets rose on remarks by Fed Chairman Bernanke that although he expected the economy to grow slowly in 2010 and more rapidly in 2011, the Federal Reserve was ready to step in if the recovery was in jeopardy.

Despite the knee-jerk reaction to the Chairman's remarks, many analysts remain skeptical, pointing to falling manufacturing, plummeting home sales, increasing unemployment and high petroleum inventories. Some are talking of a rapid price decline to below \$70 a barrel while others are saying that \$60 or even \$50 oil is in the offing. Last week US stockpiles grew by nearly 9 million barrels to 1.1 billion, the highest level in 27 years. Many are saying that there is little the Central Bank can do to stem the deteriorating economic situation.

The great unknown remains China's demand for oil over the next year or so. Despite a drop in Beijing's imports in July, this may be only a temporary phenomenon caused by weather and credit tightening earlier in the year. Estimates coming from the Chinese oil industry still talk of 6 to 9 percent increase in oil consumption during the 3<sup>rd</sup> quarter. The Saudis remain optimistic, saying the price of oil will reach \$82 a barrel by the end of the year due to demand from China and India.

In Iraq a coordinated series of attacks in 13 cities reminds us that there is no end to the political crisis in sight and that all US combat units have now left the country. Baghdad got its 450,000 b/d northern export pipeline to Turkey repaired after it was bombed near Mosul. Last month the pipeline was closed after an attack by Kurdish separatists in Turkey.

## **2. China – the costs of growth**

As the Chinese surge into industrial civilization at a pace unknown before, here and there growth pains arise. Last week's headline was about a 60-mile-long traffic jam that took five or, some reports say, nine days to unsnarl. It seems that in the government's headlong rush to generate increasing amounts of electricity, it opened new coal fields in Mongolia and relied on heavy trucks to bring the coal down a new expressway to Beijing. As the demand for electricity rose, so did traffic on the expressway until it simply filled up. A little maintenance work compounded the problem. In reality, it could take years to lighten the traffic load. In 2000, China had 7,400 miles of expressways. It now has 40,400, rivaling the US Interstate system, and the breakneck pace of construction continues.

Beijing says that global car sales are expected to reach 70 million this year, up from a recession-hit 60 million in 2009. As a large share of this production is going to first-time buyers in the developing world, it is easy to see why the demand for motor fuel will continue to climb.

Chinese government food specialists are beginning to worry about the nation's grain supply. Shortages of farmland and water are bringing into question whether an additional 50 million tons of grain can be produced by 2020 even with good weather. Cultivable land in China has already fallen from 130 to 120 million hectares due to urbanization, dam building, and natural disasters. This

leaves the country with only 0.09 hectares per capita, about 40 percent of the global average, with which to feed itself.

As in the US, the security of its oil supply is becoming an issue in China. With 55 percent of its oil consumption currently imported, Beijing seeks to increase domestic energy production, diversify its sources of oil imports and make major increases in the efficiency with which it uses energy. In recent weeks, Beijing ordered thousands of inefficient, high-polluting, factories to shut down as the country tries to meet its goal of cutting energy consumption per unit of GDP by 20 percent. This is a very ambitious goal, which recent data suggest the country is unlikely to achieve.

### **3. Macondo – the blame game**

Last week, lawyers took over from engineers in the continuing saga of the Deepwater Horizon explosion as all the firms involved in the tragedy attempted to lay the blame on each other in an effort to escape at least some of the liability. Some officials directly involved in the decision chain are taking the 5<sup>th</sup> amendment in anticipation of possible criminal prosecutions. Some of the issues being raised, such as lack of a role for rig captains in overruling drilling decisions that are a threat to the safety of the rig, are fundamental to the way the oil industry conducts its offshore drilling.

In the Gulf, BP is trying to replace the old blowout preventer with a new one prior to permanently cementing the well closed. The debate over where all the oil went and how much damage has been done to the seafood industry continues. A research ship circling over the well is not finding much lingering evidence of oil and more areas are being reopened to fishing. A study was released saying that a newly discovered microbe is gobbling up the remaining oil at a prodigious rate. The government's compensation czar is taking charge of the \$20 billion BP compensation fund and is trying to determine who should get how much.

While the details of just who forewarned of the explosion and who rejected the warnings are intriguing, the real issue that remains is the impact of the explosion on future oil production in the Gulf. The administration continues to take heat over the continuation of the deep water drilling ban with the Presidential Oil Spill Commission questioning whether there is still a need for the moratorium now that new regulations have been issued and drillers are well aware of the consequences of their actions. The Interior Department however is defending its decision to re-issue the drilling moratorium after a court overruled the first ban; Secretary Salazar says more safety reforms are necessary before drilling can be resumed.

The longer term question is the impact of changes that are likely to be required of the oil industry and the cost of producing deep-water oil in the Gulf and elsewhere. Just for starters, the cost of insuring drilling rigs is likely to increase by as much as 50 percent. Increasing liability limits are likely to result in only the largest, best-financed companies being able to undertake offshore drilling.

### **Quote of the Week**

- “OPEC doesn't seem to have raised its supply very much in response to the higher oil prices [2004-2008], except a million barrels a day or so at the end. One might suspect that their statements about high spare capacity overstate the extent that they can really ramp up supplies when oil prices are tight. But they are willing to drop production when oil prices decline, and the portion of their oil supply that is most expensive to produce becomes less profitable.”  
-- Gail Tverberg, *The Oil Drum*

### **Briefs** (clips from recent *Peak Oil News* dailies are indicated by date and item #)

- Speculation that **UK** government ministers are far more concerned about a future supply crunch than they have admitted has been fuelled by the revelation that they are canvassing views from industry and the scientific community about "peak oil." The Department of Energy and Climate Change is also refusing to hand over policy documents about peak oil under the Freedom of Information Act, despite releasing others in which it admits "secrecy around the topic is probably not good." (8/23, #16)

- The global **oil-tanker fleet** will expand 3.7 percent this year, Clarkson, the world's biggest shipbroker, said Thursday, reversing its previous forecast for a 1.3 percent contraction. Clarkson said it changed its forecast because of lower estimates for the rate at which owners will phase out single-hull tankers. The new estimate represents at least the fourth consecutive annual expansion. A global phase-out of single-hull tankers started this year, and a ban by the International Maritime Organization takes full effect in 2015. (8/28, #4)
- **Saudi Arabia's King Abdullah** named David O'Reilly, who built Chevron Corp. into the world's fourth- largest publicly traded oil company, to be a board member at state-run Saudi Aramco. O'Reilly, Chevron's chairman and chief executive officer for a decade, will serve a three-year term on oil producer Aramco's board. (8/23, #7)
- **Insurgents in Iraq** unleashed a wave of coordinated attacks nationwide on Wednesday in a demonstration of their ability to strike at will, offering their counterpoint to American aspirations of bringing the war in Iraq "to a responsible end." (8/26, #7)
- **Venezuela's oil exports** dropped 16 percent in this year's second quarter, largely due to increased use of domestic fuels for electric power, according to the central bank. Their report showed the country's gross domestic product down by 1.9 percent, led by a 2 percent drop in oil sector GDP. (8/26, #10)
- Cairn Energy said it found natural gas off **Greenland's** western coast, bolstering hopes that the area could become one of the world's last significant untapped hydrocarbon provinces. But the find is too small to be commercially viable, disappointing investors who had hoped Cairn was about to announce a major oil discovery. (8/25, #20)
- **In India**, gasoline will become significantly costlier next week as state-owned oil companies get ready to exercise their pricing freedom for the first time after the government decontrolled petrol prices on June 26. (8/28, #10)
- **In Columbia**, Ecopetrol SA incorporated a new special-purpose company to construct and operate a 960-km, 450,000-b/d oil pipeline to move crude oil from expansions in the Llanos basin to the port of Covenas for export. (8/27,#8)
- **China averaged 4.77 million b/d of oil imports** (over 30% more than 2009). The country's oil demand is also experiencing double-digit growth, up nearly 19% over 2009. (8/23, #18)
- Russian oil major **OAO Rosneft** is close to acquiring stakes in four German refineries, marking one of the largest purchases of assets in Western Europe by a state-controlled Russian energy company. (8/27, #18)
- **Royal Dutch Shell** said Thursday it began a commercial demonstration of a new technology to reduce the waste pools created by Canada's oil sands mining industry, and that it will make it freely available to competitors. However, it appears unlikely that the technology will meet a new directive set by the Alberta government to reduce the tailings ponds. (8/27, #16)
- **BP** has been forced to abandon hopes of drilling in the Arctic, currently the center of a new oil rush, owing to its tarnished reputation after the Gulf of Mexico spill. (8/27, #17)
- **US drilling activity** continued increasing for the 12th consecutive week with 1,656 rotary rigs working (973 for natural gas, 672 for oil), 5 more than the previous week and up sharply from 999 during the comparable period in 2009. (8/28, #18)
- **The number of offshore oil and gas drilling rigs** working in the Gulf of Mexico has increased slightly in recent weeks, and the number available has remained steady despite the U.S. drilling moratorium. A total of 36 mobile offshore drilling rigs were working this week, up from 27 as of July 23, but down from 69 before BP's Macondo oil spill began April 20. The week before the spill, 122 rigs, floating and jack-up, were in the Gulf, though 36 were cold-stacked, meaning preparation is needed to get them back on the job. As of Friday, 121 were in the Gulf and 40 were cold-stacked. A total of two mobile rigs have left the Gulf. (8/28, #19)

- The worst of **oil industry job-loss forecasts** in the Gulf area have failed to materialize. Unemployment claims related to the oil industry along the Gulf Coast have been in the hundreds, not the thousands, and while oil production from the gulf is down because of the drilling halt, supplies from the region are expected to rebound in future years. (8/25, #12)
- Enbridge, Canada's No. 2 pipeline company, said on Tuesday it will further expand its **Bakken pipeline program**, which will raise capacity by 145,000 barrels per day, to handle growing production from the oil field. (8/25, #19)
- **A new law requiring oil companies** to disclose all payments made to governments has sparked a sharp debate, with Big Oil saying it will put it at a big competitive disadvantage. The law, attached at the last minute to the financial reform bill last month, applies to extractive industries - basically all U.S.-listed oil, gas and mining companies. (8/27, #12)
- The BP well being drilled by the Deepwater Horizon was about **45% over budget in March--** a month before a blowout, according to an internal BP email. (8/27, #13)
- **Shell** has much at stake in the Arctic as the presidential commission investigates the BP spill. Shell has spent about \$3 billion so far on leases, equipment, training and oil-spill response planning in connection with plans to drill exploratory wells in the Beaufort and Chukchi seas. It had hoped to drill wells this summer. But five weeks after the Deepwater Horizon rig exploded President Obama put the drilling plans on hold. (8/26, #17)
- **China** will surpass Japan as Asia's largest natural gas importer through a combination of LNG and pipeline gas in 5-10 years, according to FACTS Global Energy Group. (8/26, #11)
- **Natural gas futures fell** to their lowest level in 11 months Thursday on a larger-than-expected increase in U.S. gas storage as summer weather comes to an end. Natural gas for September delivery settled down at \$3.817 a million British thermal units on the New York Mercantile Exchange, the lowest settlement price since Sept. 28. (8/27, #5)
- **Natural gas prices have fallen so far** that gas-powered plants are able to capture a bigger share of the market from coal, driving down prices of Central Appalachian coal futures. The front-month contract settled at \$60.05 a ton Wednesday on the New York Mercantile Exchange, down 15% since reaching a 20-month high of \$70.87 a ton Aug. 5. (8/26, #21)
- **With U.S. natural gas operations shifting onshore**, and offshore increasingly "hardened" by hurricanes, the historical tendency for storms to give gas prices an automatic boost may be over, said Adam Sieminski, chief energy economist, Deutsche Bank. (8/26, #4)
- The amount of capital that was sunk into **leasing drilling acreage in the Haynesville**, at \$15,000 to \$30,000/acre, is what has dominated the drilling environment. These producers will continue to drill to hold-by-production (1 well required to be drilled per 640 acres during the first three years) this acreage, even if they are well below break-even costs. (8/27, #21)
- An estimated 1.5 trillion bbl of oil in place lies in Western Colorado's Piceance basin **oil shale**, the US Geological Survey said in the first comprehensive assessment published since 1989. The amount represents a 50% jump from the previous 1 trillion estimate. (8/25, #18)
- **The ethanol industry** this fall will face important policy challenges for which it may not be fully prepared, including expiration of supportive tax credits and tariffs and a government decision whether to expand the amount of biofuel allowed in gasoline. (8/26, #22)
- Chile produces almost 42% of the **worldwide lithium supply** for new electric-car batteries. However, of the nearly 100 projects that have been announced, only two exploration projects are being developed in Chile. This is because lithium is considered in Chile a strategic element, therefore the government regulates its use. This is why lithium is not available for new exploitation. (8/27, #22)

## Commentary: Interview with Michael Smith (Part 2 of 2)

(Note: Commentaries do not necessarily represent the ASPO-USA position.)

*Peak Oil Review: Saudi Arabia is obviously yours and everyone's kingpin producer.*

**Smith:** Saudi Arabia has been the world's main swing producer. Since 2006 when I developed the slides, Saudi Arabia has increased its production capacity; a lot was planned at the time, but they've been quite proactive in investing in their industry. Meanwhile the global recession of the last two years has led them to shut-in output and that will lower and push the Saudi peak forward. My 2006 graph was published on the basis of no output restrictions but my overall model accounted for intermittent restriction.

*POR: Back in June of 2008, didn't the Saudis only have heavy oil that some refineries couldn't use as their only excess supply capacity? Weren't they otherwise tapped out?*

**Smith:** I agree with that. That was what it seemed like but, of course, you can never really be sure about Saudi Arabia because the government is secretive about what they can do. But they did seem to be pretty near to full capacity back then, apart from heavy oil. It seems likely that when prices reached over \$100 per barrel they would have produced as fast as they could. The price peak of \$147 was not in their interest and certainly had an impact on the severity of the recession.

*POR: Your view of supply includes a set of reductions in demand for gasoline, jet fuel, heating, and oil use in plastics and power generation, etc.*

**Smith:** The key point about demand pulling back to meet supply is that we can figure out how we can achieve demand reduction through efficiency methods, without suffering real pain to our standard of living. But we will not reduce demand and suffer a drop in standard of living unless we are forced to. This indeed happened in late 2008 and 2009 with demand declining rapidly through painful conservation that was driven by the global economic recession.

*POR: Your 2006 view of expanded supply shows some production from gas-to-liquids [GTL], on the order of 3+ million barrels a day by 2025. Is that still your view?*

**Smith:** This was the high-case scenario. I haven't done any recent studies on this, but I get the impression that a lot of the projects to bring on alternatives to conventional oil have been delayed due to capital constraints, the lower oil price, to the perception that prices will remain low for a period and to inevitable technological hurdles. Unconventional oil sources have always been dogged by technology problems, where the energy return on investment is so low. People sometimes forget that GTL techniques and conversion of the oil sands in Canada for example are very old technologies which have proven very difficult to establish commercially.

*POR: Back in 2006 you showed a world oil and liquids production plateau at around 100 million barrels a day, with a 3-year plateau starting fairly soon. How would you update that view today?*

**Smith:** I feel the peak/plateau period is much delayed because of the recession. Currently I am looking at around 2020 - perhaps as late as 2025. But of course it is dependent on what happens to the global economy (and the environment) between now and then. When I first started forecasting in the late 1990s, I had a production plateau beginning around 2016. Over time, supplies got tighter and tighter and oil prices started to rise, and the plateau moved nearer to around 2012. Now it has moved out to 2020, showing how uncertain this modeling can be because so many technological, financial, political and social variables are at work. The fluctuation points to volatility of course which is a signal of tight energy supply. If there is a new surge in economic growth and China and India continue to grow and mop up oil supplies, then it will move back to 2016 very quickly.

In the old days, people who used to argue against the reality of peak oil pointed out that the so-called peak is always shifting into the future. And they were right as the subject was not fully understood, especially the impact of political and economic circumstances. That's generally not the case now, with the peak moving both forwards and backwards. The world has hit a volatile period in

history where new energy supplies are all difficult to find and expensive to produce. The hope is for a magical new energy source to replace hydrocarbon liquid fuels.

*POR: That's a fundamental point. The peak oil denial club is always saying that peak oil is always being pushed out into the future. And in fact, a number of the people in the peak oil community, with good data and good intentions, have made calls of peak dates that have been premature.*

**Smith:** One of the reasons I haven't done any major presentations in this form since 2006 is for that very reason - making timing calls is the wrong choice if you want to get across your point. Ironically too, if you successfully persuade people of the need to act on peak oil, and demand is cut in some fashion, then they will be regarded as having been wrong about peak oil because it does not happen. It will be called peak demand.

*POR: In other words, policies might be changed, along with investments etc., to lower demand such that it stretches out supply and pushes back the peak.*

**Smith:** Yes. It parallels our environmental issues of the day. The Oxford English Dictionary has just added a new word to its lexicon - catastrophizing, which I think means "assuming the worst." Nobody likes a pessimist, they get vilified in the press, but we need people to do this if we are ever to change our approach before it is forced upon us.

*POR: Any changes in your conclusions you stated: "that vested interested do not provide the best solutions, that companies and governments must take more energy risks, that demand will want to grow faster than the supply of liquid energy, and that most of the ready alternatives have environmental consequences"?*

**Smith:** They still apply, though they are not particularly prescient.

*POR: What's your summary comment today on the evolving peak oil story?*

**Smith:** I think it has obviously lost its cachet... it has become mainstream, supported by empirical observations, greater understanding of both above- and below-ground factors and more detailed modeling. Defining a date of peak is not regarded as so valuable. However the deniers are becoming more vocal just as they are in the environmental movement. The original people who denied peak oil were focused on supply but the angle today is demand. We won't reach a supply peak but a demand peak. Of course supply and demand are really the same thing with demand, through pricing mechanisms, controlled by supply.

*POR: Do you see in Europe, and particular within the UK, any shifting or broader acceptance of the background concern, even though the vocabulary is changing?*

**Smith:** No, I don't think there's broader acceptance because there is simply less interest in it. There is now focus on the economy and when you're strapped for cash, some parts of the future, especially the longer term, become superfluous. So no, I don't see any shift. If anything it's the other way. Oil is not a big issue whilst it sits at a sustainable price level.

*POR: Any final word?*

**Smith:** When I ran Energyfiles, which was a commercial concern, I was concerned about being linked too closely with the peak oil movement. For years it was not mainstream and, although developed by excellent scientists and promoted by good organizations such as ASPO and the Oil Drum, it had many weird hangers-on, just like in the environmentalist movement. It was not treated seriously by most of my potential clients. Conversely now it is generally accepted - albeit with new names such as 'peak demand' and 'bumpy plateau' - it has become less of an issue because of the recession. However in just a few years I suspect we will go through the argument all over again.

*Michael Smith, trained as a geologist, worked in the oil industry for a number of years before he started Energyfiles back in 2000. Energyfiles was purchased in early 2010 by Datamonitor. Smith is currently helping Datamonitor integrate the Energyfiles database into their products.*