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Tom Whipple, Editor
Steve Andrews, Publisher

1. Prices and production

OPEC's failure to act at its November 29th meeting, coupled with a steady stream of bad economic news, sent oil steadily downwards from an opening price of $55 a barrel last Monday to a Friday close of $40.81. It was the biggest one week drop in oil prices since 1991. Bets that oil for January delivery will fall below $20 a barrel were actively traded in New York on Friday. Merrill-Lynch foresees $25 oil a possibility in coming months.

The IEA once again cut its demand forecast for 2009 by 170,000 b/d to 86.37 million b/d. The best estimate is that so far OPEC has cut about 1 million b/d of the 1.5 million b/d cut that was adopted in October, although more cuts are expected. Kuwait and Qatar will reduce crude shipments in January and Saudi Aramco raised selling prices for shipment to Asia, a sign that further supply reductions are coming.

Oil prices are now so low that many of the "stripper" wells that operate in the US are no longer profitable and face shutdown. These wells account for 18 percent of onshore US production and produce about 1.3 million b/d.

This winter is starting to look like the coldest in years for the northern US. Retail heating oil is now 60 cents a gallon cheaper than at this time last year and stockpiles are below normal, suggesting that shortages could develop in the distillate market this winter

Over the weekend, OPEC's president Khelil warned that oil markets should brace for a surprise decision on output cuts when the cartel meets in Oran on December 17th. Khelil said that "a consensus has formed for a significant reduction of production levels" and that it could be "severe." Most analysts had been predicting a 1 million b/d output cut, but Khelil noted that some were now talking of cuts of as much as 2 million b/d.

The two previous OPEC cuts, while not yet fully implemented, have done nothing to halt the price decline. Khelil suggested that only the announcement of a spectacularly large production cut will be sufficient to shock the markets into a rebound. As usual the issue of whether next week's announcement will turn into actual cuts remains open. It appears likely that Russia will announce some sort of production cut in conjunction with the OPEC meeting.

2. OPEC and Russia are hurting

Only a few months ago OPEC and Russia were on top of world with oil revenues breaking records day after day and their prestige and influence expanding. Now with OPEC oil selling for somewhere in the low $30's and faced with the possibility that it will go still lower, even the richest members of the cartel, those with relatively small populations, are now in trouble. With oil sales their only source of income and populations that have become used to state subsidies for many consumer goods, several OPEC governments may be facing political crises.

Iran's and Venezuela's oil revenues are now only one half to one third that required to maintain government operations, to sustain domestic subsidies, and to bankroll foreign and domestic economic and political programs. Both these countries have announced retrenchments. Some believe they will face political instability as a result.

Even the wealthy Gulf oil states face problems due to a combination of oil low prices, falling real estate prices, and illiquid financial markets. The prospects for ambitious diversification projects are looking poorer all the time.

The key to oil prices and OPEC's future over the next year is whether they can collectively cut oil sales, thereby foregoing substantial short term revenue, to the point that they can force oil prices back up again. Some in OPEC are sensitive to the possibility that oil supplies can be cut so much that in addition to increasing prices, the cartel will trigger even more global economic troubles and cut the demand for oil to unimagined levels.

3. Investment continues to fall

Although not yet widely appreciated, a key underpinning for economic recovery will be the size and effectiveness of investment in oil production projects. Without substantial investment, world oil production is certain to continue falling of its own accord after the current round of OPEC and other production cuts.

Reports of delayed or cancelled projects continue to come in. During the past week there have been reports of refinery projects being placed on hold and additional cancellations of production projects. France's Petroleum Institute, which tracks petroleum exploration and production, is forecasting that investment is likely to stabilize during the first few months of 2009, but after that it is impossible to forecast.

A few large organizations, most notably Brazil's Petrobras—which hopes to become a major oil exporter in the next few years—maintain that the current economic slowdown will have no effect on investment plans. While projects by self-financed companies continue, smaller organizations that depend on banks say funding has dried up.

A recent re-evaluation of the balance between oil coming into production from new projects vs. depletion from currently producing fields continues to suggest that in 2010 depletion will start to get ahead of production. Six months ago, with nearly all oil producers making a maximum effort to produce as much oil as possible, such a finding was at the heart of understanding future oil production. Now with both demand and investment falling rapidly, the situation has become so complicated that it is difficult to determine what will be the limiting factor on future oil production.

4. Detroit in the balance

For a second week, the world's attention was focused on efforts in Washington to sustain the US automobile industry. GM and Chrysler claim they will be out of operating cash in a matter of weeks, leading to millions of layoffs and a serious deterioration of the US economic situation. The industry and its many supporters maintain that a bailout of almost any conceivable size would be cheaper than the economic havoc caused by an industry-wide collapse.

Last week, renewed Congressional hearings released a storm of what the *New York Times* called "pent-up anger" as the various sectors of the political and economic spectrum aired their views on this seminal issue facing the US economy this winter.

Detroit is now calling for "bridge loans" totaling $34 billion and is claiming that all will be well in 24 months so that payback can begin. An independent economist, however, testified that Detroit will need between $75 and $125 billion in loans and many more years to get back on its feet.

At week's end it appeared that Congressional Democrats and the Bush administration had agreed on a $15 billion loan that will keep the industry functioning until the new US administration and Congress are in place. Many Congressional Republicans remain opposed to the whole concept of a federal loan to Detroit and may attempt to block action later this week.

Implicit in nearly all the Congressional testimony was the notion that the current economic problems, while serious, are cyclical and that in two or three years car sales will revive. Some knowledgeable observers say the government will have to carry the industry for six or seven years before any restructuring and new generations of fuel efficient cars can have a significant effect on sales.

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

- Rental rates for **deepwater drilling rigs** continue to surge as a worldwide shortage of vessels used to search for oil outweighs the drop in crude prices. Lack of financing is preventing smaller companies from following through with plans to build new vessels. (12/6, #4)
- The world's biggest shipyards will record the lowest **LNG tanker orders** in a decade as charter rates halve. Banks which lent 90 percent of the cost of a ship are now funding less than half. Most LNG carriers are chartered at $60,000 to $70,000 a day on a term basis for between 15 years and 25 years (12/6, #6)
- Industrial companies are sharply cutting back their **natural gas consumption** as the economic slowdown erodes demand for their products. Between April and September, gas consumption by industrial users dropped 14% to the lowest monthly figure since at least 2001.(12/6, #14)
- **Crude oil may dip below $25** a barrel next year if the recession that's slashing fuel demand around the world spreads to China, Merrill Lynch & Co. said. (12/5, #2)
- Japan's **Nippon Oil Exploration** is in talks with Iraq on the construction of an oil refinery worth $5-10 billion and investment in oil exploration for the same amount, a company official said on Friday. (12/5, #9)
- **China National Petroleum Corp** has signed a framework agreement with Cuba's state-owned Cubapetroleo for expanded cooperation in oil and gas development. (12/5, #11)
- **Prime Minister Putin** warned that Russia will reduce gas supplies to Ukraine if it tries to siphon Russian gas intended for European consumers. The warning, which comes amid difficult talks on a price for Russian gas supplies to Ukraine, will likely stoke fears in European nations. (12/5, #18)
- **I**n the oil and gas industry, there is a broadly used parameter that expresses the "dryness/leanness" or "richness/wetness" of **natural gas**. This parameter is expected to change to dryness/leanness over time, based on an extensive analysis of the world data. The IEA WEO 2008 forecast to 2030 implies the opposite result--namely that the shift will be toward richness/wetness. Doubts about their forecast increase. (12/5, #19)
- **AFS Trinity's** problem is their Extreme Hybrid™ drive system seems just too good to be true. The skeptics are wrong -- AFS Trinity has created a technology that could, if commercialized, make 150 mpg driving an everyday reality." (12/5, #21)
- The US Minerals Management Service reported that 14.9% of Gulf of Mexico crude oil, or 193,910 barrels a day, still remained shut in last week after hurricanes Ike and Gustav. Some 21% of Gulf natural gas output also remained off line. (12/4, #11)
- **Natural-gas** producers must shut down more drilling rigs to stem a decline in prices XTO Energy CEO Keith Hutton said. There were 1,443 rigs drilling for gas as of Nov. 28, a drop of 10 percent from 1,606 on Sept. 12. (12/4, #12)
- The IEA's WEO 2008 report points out that **biofuels** will not scale up to produce more than a small fraction of our fuel demand, and even then with potentially serious consequences. (12/4, #17)
- **Iraqi oil exports** could fall by as much as 13% next year amid maintenance problems and labor shortages. The Iraqi government has already been forced to slash its 2009 budget by 16 percent from an original plan of $80 billion because of the collapse in crude prices since July. (12/3, #4)

- **Mexico's options** for avoiding a dramatic decline in oil output are narrowing to a multibillion dollar gamble on the Chicontepec basin, where producing crude is so difficult it has been largely ignored since its discovery in the 1920s. (12/3, #8)
- **Refiners in Japan**, the world's third-largest oil consumer, are cutting processing in December and probably in January to cope with bigger declines in fuel demand at home and abroad. Nippon Oil plans to cut processing this month by 18 percent from a year ago after slashing the run rate by 25 percent in November. (12/3, #10)
- Royal Dutch Shell has drilled **the deepest production oil well ever**, at its Silvertip field in the Gulf of Mexico. The well has been drilled 9,356 feet below the surface, The Silvertip well will connect to Shell's Perdido platform, which, moored in 8,000 feet of water, is itself the deepest of its kind. Perdido will be capable of processing 130,000 barrels of oil equivalent a day. (12/3, #15)
- Energy companies harvesting oil from the **Canadian tar sands** may wipe out 6 million to 166 million warblers, sparrows and other birds during the next half century as strip mines, waste ponds and air pollution damage nesting grounds. (12/3, #18)
- Most US oil and gas exploration companies expect the economic crisis to affect their ability to **borrow** money in 2009, according to a study by BDO Seidman LLP. (12/2, #3)
- **Gasoline and diesel stockpiles** belonging to China's two oil giants, Sinopec Group and CNPC, hit record highs in October. (12/2, #6)
- Three months ago, **China and India** were said to be immune from the credit crisis gripping developed nations. More recently, their economic booms were supposed to stabilize global growth. Now, both countries are suddenly looking inward and fretting over the destabilizing effects of sluggish growth. (12/3, #9)
- In **China, fast-rising unemployment** has led to an unusual series of strikes and protests. Normally cautious government officials have offered quick concessions and talk openly of their worries about social unrest. Laid-off factory workers in Dongguan overturned patrol cars and clashed with police last Tuesday. (12/2, #5)
- The U.S. Energy Department will resume filling the nation's **Strategic Petroleum Reserve** next month, once Congressional restrictions expire. (12/2, #11)
- The cost of **asphalt** is more than double what it was a year ago and almost four times the price in 2000. When oil prices shot up, refineries installed new equipment to increase fuel output from crude. The consequence for the asphalt industry was that less of the by-product it needs is available. (12/2, #12)
- **China National Petroleum Corp.** has made six major oil and gas discoveries this year as the organization steps up efforts to meet rising domestic demand for energy. The additional oil reserves found may hit a record for a third year. (12/1, #10)
- When energy production is viewed for all companies combined, analysis suggests the **credit crisi**s will cause the production of virtually all fuels to decline, relative to what they otherwise would have been. Production of oil should also decline (in absolute terms, not just relative terms) in the years ahead. (12/1, #16)

Quote of the Week

- "OPEC is going to have to show much better compliance [with announced oil production cuts]. They must feel somewhat dejected that the cut that was thrown at the market has had almost no impact. Although they aren't powerless, they can do very little to support prices until there is a semblance that demand is leveling."

  -- *James Ritterbusch, President Ritterbusch & Associate*

Commentary: Gleanings from Fatih Birol's presentation of the WEO 2008 to the Council on Foreign Relations

By Sally Odland

(Note: Commentaries do not necessarily represent ASPO-USA's positions; they are personal statements and observations by informed commentators)

Last week, Fatih Birol, chief economist to the International Energy Agency, presented the IEA's *World Energy Outlook 2008* to the Council on Foreign Relations in New York City. In an unusual gesture, this CFR session was opened to invited guests, which is how I cleared its thick oak doors.

As the program noted, 'The *World Energy Outlook* series is widely recognized as the most authoritative source for forward-looking energy market analysis."

The one-hour session was held 'on the record'. Fatih had 15 minutes to present the 569-page report, followed by a 15-minute dialog with host Edward Morse (Managing Director, Louis Capital Markets, former publisher of Petroleum Intelligence Weekly, co-founder PFC Energy), followed by 30 minutes Q&A. (The CFR runs their sessions as strictly as the ASPO conference!)

Around 175 participants registered, big investment and financial companies heavily represented, but also including folk from the likes of Exxon, Alcoa, Natural Resources Defense Council, and the Washington Post.

Birol's talk was fairly dry, understated and nuanced. His slides were essentially the PR set you can download from the IEA website. He stated right up front that the Business-as-Usual reference scenario projection for energy consumption to 2030 was unsustainable. But the compelling reason he gave was because BAU would cause a 6-degree global temperature rise, not because oil supply shortfall challenges might make those levels of consumption unfeasible.

Not that he short-changed supply. The IEA recently realized how critical the decline of the existing oil production base is to future oil production rates. That prompted an in-depth field-by-field study of decline rates. Birol warned that the equivalent of 4 new Saudi Arabias must come on line by 2030 just to offset expected decline, 2 more on top of that if we are to 'grow' production to the Reference Scenario. I'm not sure the audience fully appreciated the enormity of those statements.

By now, everyone who follows energy has seen the IEA's Reference Scenario production growth to 2030 (attached below). Imagine my shock when this slide flashed on the screen, *without* the gaping, scary red triangle of yet-to-be-discovered crude oil. Unless I was hallucinating, it had been colored light blue along with the oil that has already been reported as discovered-awaiting-development. This resulted in a nice growth wedge of enhanced oil recovery (EOR), unconventional oil and natural gas liquids built atop a reassuring plateau of conventional oil production through 2030.

A full 1/3 of the talk and questions concerned climate: CO2 emissions and carbon policy, the need for cap-and-trade carbon market, China buy-in, investment in carbon capture/sequestration (CCS), etc. The handouts were a CFR flyer and their Independent Task Force Report on the climate change crisis and strategies for U.S. foreign policy to address it.

For an agency whose original mandate was to assure continuity of oil supply to its 28 OECD member nations, the IEA is banking mighty heavily on an energy fix through climate policy. Birol expressed strong hopes for a proactive outcome to the 2009 Copenhagen climate meeting. He commented that the solutions for the climate problem will also be the solutions to the energy problem.

Tellingly, when asked what actions he thought were most critical he said "1) efficiency, 2) efficiency, and 3) efficiency".

There were surprisingly few questions for Birol, mostly concerning climate policy and oil pricing. I gave my affiliation as Columbia University AND the Association for the Study of Peak Oil and launched in:

Q: This year's WEO report represents a radical departure from 30 years of optimistic, demand-driven consumption projections. In the past, the IEA always relied on the 'Call on OPEC' to make production rise to the level of projected demand. Your new bottoms-up, field-by-field analysis of supply and depletion rates is a major improvement and we commend you for it. Yet this report still relies on the Call on OPEC to fill the production gap. Do you, personally, believe that it will be remotely possible to keep supply flat in the next 5-10 years, given the current economic and geopolitical situation?

A: If you read the report carefully, or run a word search on it, you will see that two words occur more frequently than any others. The first word is "oil". The second word is "if".

This got a rumbling chuckle from the audience. But no one publicly connected the dots that in order for the IEA's supply projections to work out, ALL of the non-trivial *IFs* mentioned in his talk must materialize:

- *IF* the current low oil prices rise back above the $75-$95/bbl marginal cost needed to bring on new non-OPEC supply in time to offset the declining production base
- *IF* oil-producing countries and China stop subsidizing petrol prices to their own populations
- *IF* OPEC gives the International Oil Companies access to explore and develop their national reserves
- *IF* $26 Trillion in exploration and infrastructure capital is invested
- *IF* OPEC decides to invest seriously in capacity increases
- *IF* EOR can really increase the recovery rate to the extent hoped
- *IF* the unaudited reserves reported by OPEC and Russia are really there
- *IF* the optimistic USGS 2000 predictions of Yet-to-Find oil are correct
- *IF* the Saudis are capable of reaching and sustaining 15 mbd, and willing to do so (Ok, he didn't mention these last three)
- *IF, IF, IF*, etc.

AND virtually all of these IFs are outside the control of any policies that might be set by the oil-importing OECD.

Someone asked Birol if he would have changed anything in the report had he known the financial and oil price meltdowns would occur before it went to the printers. He said "No."

No one made the obvious peak oil/climate connection.

I got the impression that, within the halls of policy, climate change mitigation is considered the only politically expedient cover for curtailing fossil energy use.

A year ago, Randy Udall wrote me, "The engine of incessant pursuit is running a quart low." Take out another 2 quarts for the current evaporation of credit and investment capital and the engine of oil-based prosperity is in danger of seizing.

It appeared to me that most people in the room did not register the precariousness and urgency of the supply situation. If they do, they are holding their cards very close.

Low price and underinvestment may have forced us to what I'll call "practical peak oil" right now. With luck, strategic planning and cooperation, we can prolong the plateau, spending our resources intelligently to build the bridge to the new energy economy and a prosperous way down the fossil energy slope. Let's hope Mr. O and his advisors get it right.

Sally Odland, a former exploration geologist, works as an administrator at Lamont Doherty Earth Observatory of Columbia University. She has written an MBA dissertation on managing the transition from peak oil to a reduced petroleum economy and is a Board member of ASPO-USA.