



Peak Oil Review

*Energy Action for a Healthy Economy
and a Clean Environment*

[Tom Whipple](#), Editor

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1. OPEC

Oil prices remained in the \$56 to \$60 trading range last week. An above-expectation increase of 5.1 million barrels in US crude stocks and forecasts of a warm winter in the US pushed prices down, while more trouble in Nigeria and the Middle East tended to push them up. Traders' underlying skepticism that OPEC will ever actually cut production enough to make a difference still dominates trading sentiment.

During the week, various OPEC oil ministers, including those from Kuwait, Iran, the UAE, Nigeria, Qatar, and Venezuela, were quoted as saying that an additional production cut is needed when OPEC meets again on December 14.

On Saturday, Saudi Oil Minister Naimi said flat out that OPEC would cut output again to check rising fuel stocks and restore stability to the global market. As the largest and richest exporter in OPEC, the Saudis are in the best position to enforce an actual production cut even if they have to absorb the bulk of it themselves.

Some analysts remain skeptical that Riyadh can continue to produce oil at rates in excess of 9 million b/d much longer. They believe that the Saudis are using OPEC production cuts as a way to cover declining production.

2. Iraq

It appears as if the Iraqi situation is fast approaching a turning point. With the detonation of a series of car bombs in Sadr City last week killing over 200 Shiites and wounding 250, the level of domestic violence has escalated to new highs. President Bush is scheduled to meet with Iraqi Prime Minister Maliki in Jordan this week, but the radical Shiite members of the Iraqi Parliament and government are threatening to bring down the government if the meeting takes place.

There has been little recent word on the status of the Iraqi oil industry other than a report that Baghdad has given up on repairing the northern pipeline to Turkey and is planning to build another one along a safer route.

Iraq's neighbors, who fear instability spreading beyond its borders, will send their foreign ministers to a meeting at the Arab League in Cairo on December 5.

3. Russian gas supplies

Last week Russia's ability to continue exporting natural gas at current levels was questioned by a new report from the Center for European Policy Studies. The report suggests that Gazprom's production shortfall will be about 4.2 billion cm this winter and could increase to 126 billion cm by

2010. This is approximately the amount Russia currently is exporting to Europe.

While Russia has vast reserves, said to amount to 29-47 trillion cm, Gazprom has failed to make the necessary investments to sustain flat production let alone try to maintain previous production increases. Russia has not opened a major new gas field since the fall of the Soviet Union and those currently in production are rapidly depleting. Russia's pipelines and compressor stations are aging and there is a major program underway in Russia to increase domestic usage. An extremely low domestic price for gas in Russia is also an issue. Domestic prices are about one quarter of international prices and gas is practically given away for household consumption, thereby encouraging wasteful practices.

Foreign oil companies could help with the problem, but in recent months the Russians seem to be undertaking systematic efforts to exclude them and their technical expertise. The short term Russian plan is to buy gas from Central Asia and pipe it into the Gazprom distribution network. Many foreign observers however are skeptical about the ability of the Central Asian countries to increase production to the extent that will be needed.

Moscow and Gazprom deny there is a problem and maintain that there will be sufficient gas for all customers. The European study, however, is backed by a former Russian energy minister who agrees with its conclusions and the CEO of the state electricity monopoly who is calling for higher gas prices to reduce domestic demand.

4. Mexico admits problems

The CEO of Mexico's state oil company, PEMEX, said the company expects production from its giant Cantarell oil field to decline by an average of 14 percent a year between 2007 and 2015. Cantarell is expected to have an average daily production of 1.8 million b/d in 2006 down from a record 2.13 million b/d in 2004. PEMEX is currently producing around 3.29 million b/d down from 3.38 in 2004. About 1.7 million b/d is exported, mostly to the US.

Mexico says it will need to start spending \$18 billion per year on exploration and development of new oil sources in order to offset anticipated declines in oil and natural gas production. Deep-water oil from the Gulf is Mexico's most promising new source but will require foreign assistance to exploit.

The government has become addicted to PEMEX earnings and currently takes 60 percent of PEMEX's revenue which now constitute nearly a third of the national budget. In 2005 PEMEX sustained an operating loss of \$7 billion.

It is unlikely that PEMEX and the Mexican government can find the revenue to finance heavy exploration costs over the next ten years. President-elect Calderon, who takes office on December 1, has stepped carefully around the sensitive subject of energy reform, and while he favors allowing PEMEX to form alliances for deep-water oil and refining, he hasn't called for a constitutional amendment to open up the industry.

Should Calderon be unable to pass some sort of energy reform in the next year, it seems unlikely that Mexico will be able to continue exporting oil to the US at the current rates much longer. While the government is claiming that Cantarell is going to decline at 14 percent a year, there is evidence that the decline could be much faster.

5. Energy Briefs

- Nigerian militants attacked an offshore facility last week taking seven expatriates as hostages. One foreign oil worker was killed later during a rescue attempt by government forces. As a result of the killing, ENI shut down operations at the Okono/Okpoho oilfield and declared a force majeure on 60,000 b/d of production.
- The EIA update of its world oil production figures through August 2006 shows that a new high of 85.10 million b/d for "all liquids" was reached in that month. However, the term "all liquids" includes such sources of liquid fuel as corn-based ethanol and tar sands. The conventional definition of "oil production", crude + natural gas liquids, is still showing an all-time high production of 81.87 million b/d in May 2005.
- China's GDP expanded 10.4 percent year-on-year in the third quarter, down from an increase of 11.3 percent in the second quarter.
- Venezuela's state oil company said the International Energy Agency is publishing erroneous figures for their oil production. Caracas says it produces about 3.3 million barrels a day, but most outside sources - including the IEA, OPEC, and the EIA - put actual production closer to about 2.5 million barrels a day.
- Iran claims it can increase daily crude production capacity to seven million b/d and its natural gas production to 1.565 billion cubic meters by 2014.
- The Bakken formation in the Williston basin of Montana and North Dakota may contain considerably more oil reserves than previously thought. A 2006 US Geological Survey report says there may be on the order of 400 billion barrels of recoverable oil in the formation. The formation is difficult to drill however, and recoverable reserves in the two states are still carried as being on the order of 800 million barrels.
- China's oil demand is expected to reach 450-500 million tons (9-10 million b/d) a year by 2020 with over 60 percent being imported. Last year China imported 136 mln tons of oil, 43 percent of total consumption.
- The IAEA rebuffed a request by Iran for technical help with a heavy-water nuclear reactor that would produce plutonium as a byproduct. Requests for assistance on seven other nuclear energy projects judged not to pose a risk were approved. Tehran said although it would like technical aid from the UN, it would press ahead by itself.
- Turkmenistan has invited China National Petroleum Corp. to participate in the exploration of a newly discovered giant natural gas field
- Venezuelan President Chavez holds a wide margin over his main challenger as he seeks a third term in Dec. 3 elections, according to an AP-Ipsos poll.

Commentary: Hedging Your Peak Oil Risk

By Tom Konrad

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

For those who understand peak oil, the burning questions are not if oil prices will rise over the long term; they must. These questions are: How soon and how quickly will oil and other energy prices rise? What can we do to prepare for price rises and the possible massive economic disruption which might follow?

In economic terms, "How can we hedge our peak oil risks?"

Note that we cannot hedge the risk of financial breakdown due to peak oil with financial assets. Individuals seeking to prepare for that possibility need to look beyond financial assets. Such protection is beyond the scope of this article, just as the breakdown of the insurance system cannot be covered by an insurance policy. Readers should assess their own belief in the likelihood of a breakdown of the financial system, and take appropriate measures based on their assessment of the costs of such measures and their likely effectiveness.

It should go without saying that the first step to reduce our exposure to energy prices (all of which will be affected to some extent by rising oil prices) is to reduce consumption. Unfortunately, there is a limit to such reduction, and we can do little to reduce the economic impact on the economy, which will affect us in turn. For these remaining risks, we turn to the financial markets.

A good financial hedge will produce income as close as possible to the future costs. With peak oil, the costs are 1) ongoing payments for energy, and 2) possible loss or impact to livelihood in a severe economic disruption. A good hedge will also last as long as the risks, which will continue long after oil production has peaked.

Our financial hedge should provide an income stream that rises and falls with the general level of energy prices, should have the potential to pay off massively if energy prices skyrocket, and should last for decades.

Energy futures contracts, physical oil, gas or diesel, and bonds all fail by one or more of these measures. Stock in energy companies, however, is a fairly good fit for these requirements.

But which energy companies, in particular?

Big Oil (Exxon, Shell, et al) companies currently produce record profits and pay decent dividends, but they are already running into problems replacing their reserves. Worse, as the oil price rises, local governments are likely to want an ever-larger share of the profits from their increasingly scarce reserves, a trend we have recently seen in Venezuela's Orinoco belt, Bolivia's gas fields, and Russia's Sakhalin Island.

US-based domestic coal companies and companies extracting oil from Canadian tar sands have large reserves. Many pay dividends that can be expected to increase with increasing energy prices, and have the potential for large gains with large rises in energy prices. Unfortunately, both have regulatory risks due to global warming. Coal is the most carbon-intensive fossil fuel, while the extraction of oil from tar sands is so energy intensive that it

caused Canada's carbon emissions to increase from 2005 to 2006 despite that country's commitment to the Kyoto Protocol. Tar sands operations are also vulnerable to the risks of peak gas, since natural gas supplies most of the energy used to process tar sands. Coal and tar sands investments therefore trade the risks of peak oil for increased exposure to carbon emissions regulation.

In contrast, renewable energy and energy efficiency (also known as alternative energy) companies are part of the solution to both peak oil and global warming. Not only will they not run out of reserves, but they have fewer or no greenhouse gas emissions. In fact, alternative energy is the most likely winner from greenhouse gas regulation, as well as from rising energy prices.

There are currently four or five mutual funds focused on alternative energy, of which my favorite (because of its low fees) is the Powershares Wilderhill Clean Energy Fund, PBW. Investing through a mutual fund has the advantage of reducing your exposure to any one of many tiny, often unprofitable companies, some of which are sure to go bust. For people with a good understanding of alternative energy industries, another option is to select a portfolio of individual stocks.

Unfortunately, alternative energy mutual funds have tiny dividends, which we want to provide a stream of income and offset our ongoing energy purchases. For instance, PBW has a miniscule dividend yield of 0.2%. In order to generate ongoing income, your investment should be split between an investment in alternative energy stocks (or mutual fund) which are likely to produce a big payoff in the event of extreme energy price rises, and income producing investments for ongoing energy costs.

Companies which own the feedstocks for current or future biofuels, such as agriculture, waste management, and forestry companies, often have good dividend yields. Pipeline companies have higher yields as well, and their pipelines and the rights of way are likely also to be useful for the transport of both biofuels and (potentially) hydrogen as our economy transitions away from petroleum. For investors experienced with Canadian securities, the Clean Power Income Trust is also available. This trust, with income from windfarm and biogas investments, has a current before tax 12% yield, but it may not be a good fit for investors uncomfortable with foreign securities or concerned about ongoing changes in Canadian tax law for income trusts.

A combination of pipeline companies, agriculture, waste management, and forestry companies, possibly in combination with the Clean Power Income Trust, can provide dividend income which will tend to rise with energy prices, while investments in alternative energy companies will provide a hedge against job loss due to rapidly rising energy prices. With these in your portfolio, rising energy prices can be something to look forward to, rather than something to be feared.

Tom Konrad, Ph.D. is an independent investment advisor registered in the state of Colorado who helps people reach their investment goals while protecting the environment.

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