



The Next Five Years: Peak Lite and the Current Oil Picture

Posted by [Robert Rapier](#) on March 26, 2009 - 9:28am

Topic: [Supply/Production](#)

Tags: [oil prices](#), [oil production](#), [peak lite](#), [peak oil](#) [[list all tags](#)]

A few years ago, after spending a lot of time thinking about peak oil, and then watching the price of oil break out of its historical trading range and head higher, the idea of [Peak Lite](#) came to me. Over time the price of oil had bounced between \$10 and \$30 a barrel, but about 5 years ago it broke from that pattern and started the steady climb that culminated in \$147/bbl last summer. I had been having various debates about whether we were or weren't at the global peak in oil production (I was taking the 'not yet but soon' position), but it started to become clear to me that we didn't require a global peak before we started to feel the impact of peak oil.

I proposed the following to explain what I thought was happening. (Don't get too fixated on the dates or prices as they are just there to illustrate the concept). Figure 1 shows the sort of price behavior if spare oil production capacity is constant. Of course spare production fluctuates up and down, as does price, but my thesis is that constant excess capacity should keep the price relatively stable - as long as the excess is large enough that several different producers have the ability to step up and fill shortfalls. This concept is illustrated by Figure 1, with a constant four million barrels per day (bpd) of excess capacity and an oil price of \$25/bbl.

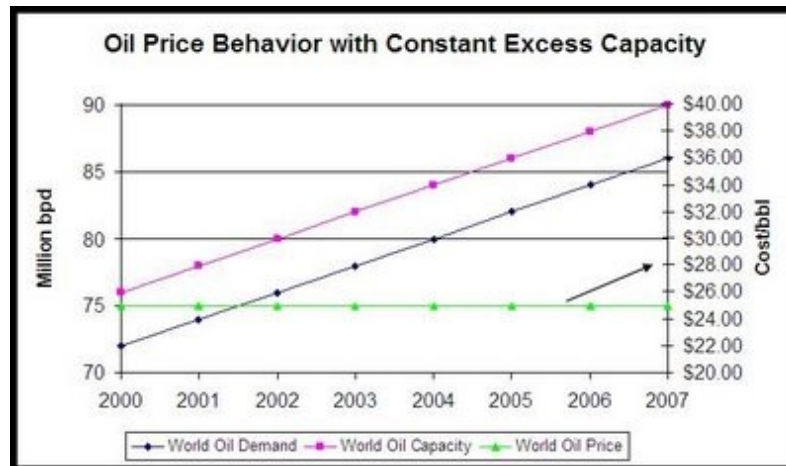


Figure 1. Simulated Oil Price Behavior at Constant Spare Capacity

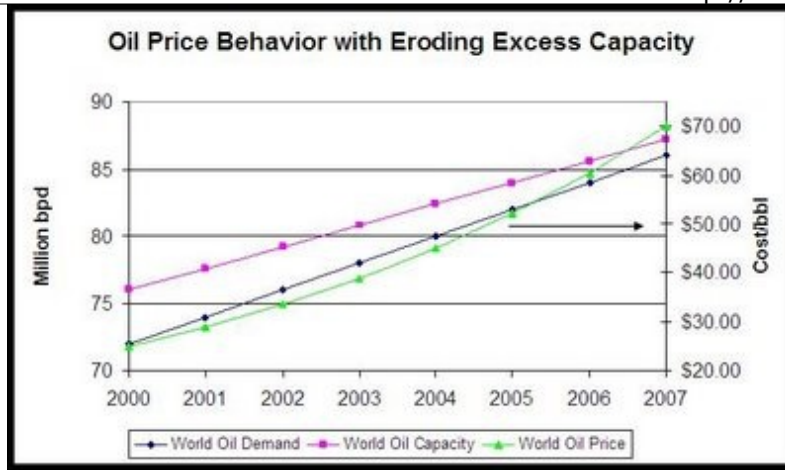


Figure 2. Simulated Oil Price Behavior at Eroding Spare Capacity

Figure 2 illustrates the case in which demand growth is outstripping supply growth, leading to diminishing spare capacity. This is the mode that we have been in for the past few years. Spare capacity was eroded by several million barrels during the first half of this decade, and as a result the price of oil climbed higher, and became increasingly volatile. This was caused by a combination of stronger demand worldwide, and an oil industry that had not anticipated such strong demand growth. As a result, the global oil industry didn't invest aggressively enough to meet demand, and while capacity did grow, it didn't grow quickly enough to keep prices stable.

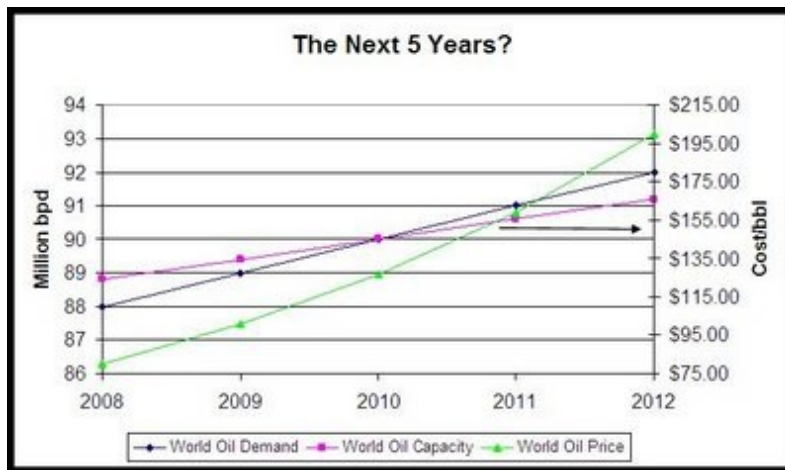


Figure 3. The Next Five Years?

Figure 3 illustrates a future in which world demand has collided with world supply, and then demand growth continues to stay ahead of supply growth. In the world of peak oil, this happens because supply is falling. In the peak lite world, it can occur even if supply is increasing. In the figure, I show an example of supply and demand colliding in 2010, then demand exceeding supply in future years. Of course demand as defined in Economics 101 won't actually exceed supply, demand will just be destroyed by rising prices (as shown on the right axis) to keep it in equilibrium with supply. Figures 2 and 3 illustrate what Peak Lite is all about; that you don't have to have falling supplies to start experiencing the effects of peak oil.

I created the original figures in mid-2007, and as we know by mid-2008 oil prices had risen much higher than the \$95/bbl I illustrated on the figure. But circumstances have changed. As a result of climbing oil prices, [new projects have begun to come online](#). Strong price signals from the previous

five years had resulted in major investments into new oil production (but it takes a few years to bring new projects online); about 5 million bpd of new capacity was expected to come online in 2008 alone.

At the same time, oil prices climbed much too quickly for the economy to even begin to adjust, and this contributed to the overall economic collapse. The combination of high prices and the economic troubles have taken a bite out of demand (at least temporarily). So we essentially find ourselves back in the position of having perhaps three or four million barrels of excess capacity around the world, and oil prices back in the \$40's. Thus I think Figure 4 explains where we are now - and where I think we are headed.

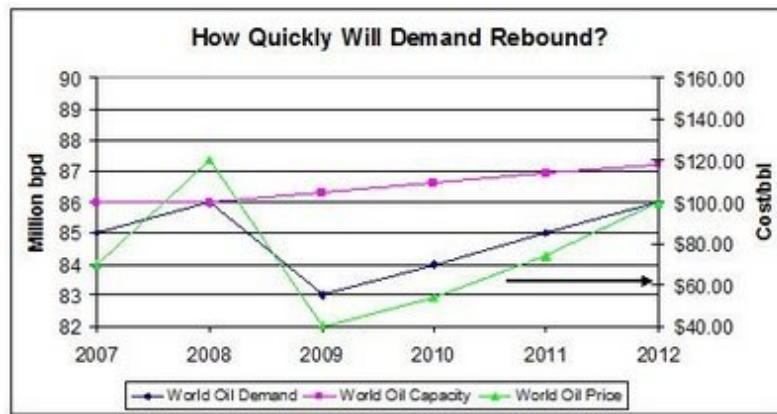


Figure 4. When Do Prices Bounce Back?

In Figure 4, the year 2007 shows a world in which oil is at \$80 and the demand has nearly caught up with supply. 2008 shows an example of no spare capacity, and the oil price sharply higher. Then 2009 shows the situation with reduced demand, some incremental capacity increase over 2008 (new projects scheduled to come online in 2009 will generally be too far along to cancel), and the corresponding price collapse arising from the largest spare capacity situation in several years.

So, where do we go from here? I think it depends on how quickly demand bounces back.

The Next Five Years

What might the next five years look like? Do we revert back to Figure 1, in which we see steady prices for years (except this time in the \$40 region)? Or do we return to the eroding capacity case of Figures 2 and 3? I have reason to believe the latter is the case.

One reason for this is that the oil industry needs higher prices to warrant new projects. Sig Cornelius, the Chief Financial Officer of ConocoPhillips, [recently stated](#) that oil needs to average \$52/bbl in order for the company to break even. The cost of finding and developing oil has gone up, and recently Eni CEO Paolo Scaroni said that oil prices would need to be \$60 to keep up the needed investments. As a result of low oil prices, [drilling rigs are being underutilized](#) and projects are being canceled:

[E&P Capital Expenditure Cutbacks](#)

The International Energy Agency estimates that about \$100 billion of worldwide oil

production capacity expansion projects have been cancelled or postponed over the past half year. According to Barclays Capital, oil companies have cut worldwide exploration and production spending by 18 percent so far this year. Deutsche Bank estimates that U.S. energy exploration-and-production spending will drop \$22.5 billion this year, a 40-percent, year-on-year decline.

Saudi Arabia has cancelled the development of several fields such as the Manifa and Dammam oil field, which would have added about 1 million barrels per day (MMBpd) of capacity. Refinery projects have also been delayed or cancelled while Saudi Aramco reviews cost estimates in the light of the significant weakening of oil prices. Saudi Aramco will consider re-issuing a tender for Manifa's development at a later date, assuming bids from contractors reflect a reduction in raw materials to match lower oil prices.

Such cancellations come at a price, which the article summarizes:

New oil-and-gas projects usually take several years of development before starting commercial production. According to Cambridge Energy Research Associates, **the scaleback in exploration and production could reduce future global oil supplies by up to 7.6 MMBpd in five years**, or 9 percent of current production. **If demand suddenly comes back as it did in 2003-2004, there could be a resulting shortfall of production and much higher energy prices.** The International Energy Agency (IEA) also warns that the credit crisis and project cancellations will lead to no spare crude oil capacity by 2013.

The longer oil prices stay low, the worse the shortfall will be due to the project cancellations and increasing demand. Incidentally, these factors also explain a big part of why the oil industry is historically cyclical; in the good times producers spend money, and then when supply gets ahead of demand and the price falls, they slow down on investing. This eventually leads to tightness again, so the good times return. The steepness of the World Oil Price curve in Figure 4 could be much steeper if demand recovers sooner rather than later.

The prospect of sharply higher taxes on the oil industry is a second factor that threatens to slow the development of new oil projects. A [recent study](#) by the American Petroleum Institute concluded that this number is "at least" \$400 billion over the next 10 years. That seemed quite high to me, so I wrote to the API for a breakdown. Jane van Ryan, Senior Manager of Communications at the API, responded:

The figure is, according to our tax experts, "at least \$400 billion" and could be significantly higher.

Using EIA numbers, our tax analysts have examined the impact on the industry of the administration's cap-and-trade proposal using five scenarios. The results indicate that about 60 percent of the administration's proposal, which would raise \$645.7 billion in "climate revenues," would be funded by the oil and natural gas industry. This means the industry would pay about \$400-450 billion. We have opted to use the lower figure.

The industry's share of business-wide tax provisions as well as new taxes on the industry are estimated at \$80-90 billion over ten years. Again, we have opted to use the lower figure. These tax provisions include the reinstatement of the Superfund Tax, the repeal of the LIFO provision, internal enforcement/reform deferral/related tax reform policies, an excise tax levy on federal offshore leases in the Gulf of Mexico, the repeal of the enhanced oil recovery credit, the repeal of the marginal well tax credit, the repeal of the expensing of intangible drilling costs, the repeal of the deduction for tertiary injectants, the repeal of the passive loss exception for working interests, the repeal of Sec. 199 for oil and natural companies, the increase of the G&G amortization period for independent producers to 7 years, and the repeal of the percentage depletion for oil and natural gas.

While I won't get into all of the pros and cons of new taxes, higher taxes will provide a disincentive for projects which are projected to have a marginal financial return. If this further contributes to underinvestment, it will worsen the overall tightness in the oil markets, which will put more upward pressure on prices. Thus, high oil prices will likely again be a campaign issue in the 2012 presidential elections.

Conclusions

While the oil industry is historically cyclical, I believe we are approaching the point at which the industry will no longer be able to build out enough new projects to stay ahead of demand. This could manifest itself as peak oil, in which case the rate of depletion permanently overtakes the rate at which new production comes online. Or it could first manifest as peak lite, in which case new production still stays somewhat ahead of depletion, but can't keep up with new demand. In either of these situations, I think the historical cyclicity of the oil industry will disappear. In early 2008 I thought we had reached that point, but it appears that we had at least one more cycle ahead.

While it is too early to tell with a high level of confidence just where we are on the depletion curve, the summer of 2008 provided of taste of life in an oil-constrained world. The current level of underinvestment and the prospect of higher taxes are setting up another situation in which spare capacity erodes, leading to higher oil prices and greater volatility. Add to this the prospect of a global oil production peak, and I have trouble seeing a case where oil prices will remain stable in the coming years.

As an investor, I use blue chip oil stocks as a defensive measure against much higher prices. I am not one who subscribes to the idea that oil companies are going to be put out of business by running out of oil, or by ethanol, algal biodiesel, or any other combination of alternative fuel technologies. In fact, I strongly believe that if an alternative technology begins to look attractive enough, oil companies have deep enough pockets to shift their business in that direction. But I think that's unlikely to happen any time soon.

As a consumer, it would probably pay to evaluate just how much higher prices might impact your budget - and then take action. Can you sustain oil prices that return to \$150/bbl or more? Even if you can, do you want that uncertainty hanging over your budget? If not, then it would be prudent to take steps to minimize the personal impact of high oil prices. Steps to consider include utilizing more fuel efficient transportation, public transportation, ride-sharing, and if possible locating closer to your place of employment.

Plan ahead and don't get caught off-guard like so many did last summer. It is only a matter of time before history repeats itself. Here's hoping our political leaders make policy decisions that won't worsen the impact.



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