The Oil Drum: Europe
DISCUSSIONS ABOUT ENERGY AND OUR FUTURE

Lies, damned lies and BP statistics

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I almost choked on my whisky when I heard on the UK national television news (13/06/07), a story about peak oil and questions asked about oil reserves figures quoted in the newly published **BP Statistical Review of World Energy**.

The news item was referring to a story in **Thursday's Independent (14/06/07)** (a national UK newspaper) by Daniel Howden titled "Scientists challenge major review of global reserves and warn that supplies will start to run out in four years' time." Howden refers to the work of Chris Skrebowski (**Oil Depletion Analysis Centre** or ODAC) and Colin Campbell (**Association for Peak Oil** or ASPO). Kudos to Chris and to Colin for getting this news onto the front page.

There's more.....

Note that the Indepent's server has been very slow on occasions. A pdf of Howden's article may be downloaded from the TOD server **here**

So what is this all about? If you are unfamiliar with the Middle East OPEC reserves reporting scandal and the culpability of BP and OECD institutions in perpetuating myths about global oil reserves then this is explained below using Saudi Arabia as an example.

In its purestst form, oil reserves accounting follows a simple convention:

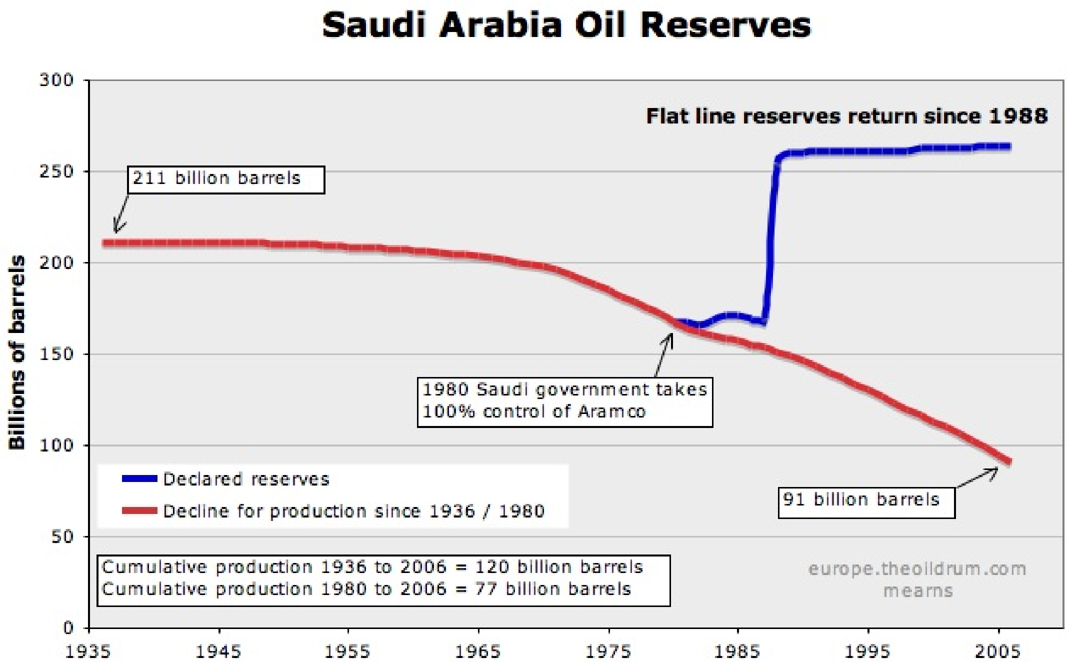
Reserves at start of period
Less production
Plus new discoveries
Plus or minus revisions
Equals reserves at end of period

Oil reserves therefore, are a dynamic variable, relentlessly pulled down by production when the rate of new discoveries declines, as it inevitably does in every oil region.

Revisions are a wild card that allows companies or countries to correct for past mistakes or to take account of new technologies that may boost recovery or changes in oil price that may make recovery more or less economic.

Saudi Arabia is the second largest oil producer in the world (after Russia) and is the largest exporter with 2006 exports of roughly 8.9 million barrels of oil per day. This represents 20% of global oil exports and it is therefore vitally important for the World to know for how much longer Saudi Arabia can continue to produce oil at 10 million barrels per day - that equates to roughly 4 billon barrels of oil per year.

The chart shows two lines that provide very different pictures of Saudi oil reserves. Both lines are anchored on 1980 – the year that the Saudi government took 100% control of Aramco – the state run Saudi oil company.



The blue line shows the official Saudi reserves as reported by BP whilst the red line shows how Saudi reserves would have declined since 1980 as a result of the 77 billion barrels of oil that have been produced since then. The red line is then back calculated to 1936, the year Saudi production began and accounts for the 120 billion barrels produced since that time. The red line does not account for new discoveries and revisions and there is therefore scope for the 91 billion barrels indicated reserves in 2006 to be increased or reduced. It is noteworthy that Saudi Arabia has not made any super giant discoveries since 1980 and that new discoveries since 1980 are unlikely to have a huge impact upon the current reserves figure.

There are two main issues with the blue official line. The first is that reserves were substantially revised upwards from 170 to 260 billion barrels between 1987 and 1989. That's a 53% revision that does not correspond with new discoveries being made. The Saudis must therefore argue that this one off escalation in reserves was due to previous under-reporting or upwards revision based on new technologies such as horizontal drilling and 3D seismic that allows more accurate targeting of oil wells.

The second and more serious issue is that since 1988, there has been no annual adjustment to reserves for production. That flat blue line should at least decline parallel to the red line.

Combined, these two issues suggest that official Saudi reserves are grossly over-estimated. We can say with certainty that the flat line annual return is false accounting, which leaves us in a position of not knowing what the actual Saudi reserves are. I'd suggest that the true figure likely lies closer to 91 billion barrels than the official figure of 264 billion barrels as newly reported by BP.

Those who are unfamiliar with this accounting scandal may be surprised to know that the UAE, Kuwait, Iraq, Iran, Syria and Qatar all follow this same practice.

The reasons for Middle East OPEC countries following this reserves convention are complex but regular readers of The Oil Drum will be aware that ME OPEC may be inclined to report figures for Ultimate Recoverable Reserves (URR) as opposed to remaining reserves. In other words, it seems they report how much oil they will recover throughout the whole history of their oil industry as opposed to how much oil they believe is left to be recovered.

The main reason for writing this short piece is to add my voice to Skrebowski, Campbell, Leggett and others and criticise the BP Statistical Review of World Energy for once again reporting without question the validity of ME OPEC official reserves figures. BP is not alone in perpetuating the ME OPEC reserves myth and the **International Energy Agency** (IEA) and **Energy Information Agency** (EIA) are equally culpable.

This is how BP defines Proved Oil Reserves in their statistical review:

> Proved reserves of oil - Generally taken to be those quantities that geological and engineering information indicates with reasonable certainty can be recovered in the future from known reservoirs under existing economic and operating conditions.

This definition is just wholly incompatible with the reserves reporting standard of Saudi Arabia and other ME OPEC countries. Whilst I am aware that there can be business and grander political motives for BP simply reporting the data as presented by ME OPEC countries, there comes a point where the interests of business and national etiquette are outweighed by the more substantial interest of the OECD securing future supplies of energy.

Peter Davies, Chief Economist with BP was reported by Daniel Howden as saying:

> We don't believe there is an absolute resource constraint. When peak oil comes, it is just as likely to come from consumption peaking, perhaps because of climate change policies as from production Peaking.

If this is an accurate quote it betrays an extraordinary level of denial within BP. I would agree, however, that $200 per barrel might produce a consumption peak. This of course may suit BP but it is not in the interest of OECD economies to permit this to happen.

For so long as BP, the IEA and EIA go on reporting ME OPEC reserves without question then the leaders of the major OECD economies will continue to ignore the energy peril that they are confronted with. Long-term readers of The Oil Drum will be aware that I lean towards the more optimistic end of the energy depletion spectrum. I firmly believe that the energy gap left by depletion in fossil solar fuels (oil, natural gas and coal) may be substantially filled by a mix of renewable solar energy, nuclear power and smart engineering. If the appropriate actions are taken then harm to OECD society and civilistaion, that may be caused by fossil fuel depeltion, may be minimised. OECD governments, however, must take serious action to promote investment in our energy future – and this will only happen when organisations like BP present a refined version of the truth about our depleting supplies of oil and natural gas.

I appreciate that BP may feel compelled to report reserves figures for ME OPEC countries and in the absence of reliable data what should be done? At the very least ME OPEC reserves should not be referred to as Proved Reserves as defined by BP and attention should be drawn to the fact that ME OPEC reserves figures are not declined for annual production. That at least would be a small step in the right direction that would bring greater transparency to OECD planners and pressure to bear on ME OPEC reporting standards.

Footnote: the title of this piece is derived from the saying “Lies damned lies and statistics”. In no respect is it implied that BP are being untruthful. But questions need to be asked if they may be reporting statistics in a self serving way. I might add that in many ways, the BP statistical review is a tremendous source of global energy data. It is just a great pity that it continues to be scarred by the reporting issues dicussed here.