

**THE ASSOCIATION FOR THE STUDY OF PEAK
OIL
&
THE OIL DEPLETION ANALYSIS CENTRE
ASPO-ODAC**

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Recognition for ODAC by UK Government

The UK government maintains an organisation named *The Performance and Innovation Unit (PIU)* which provides the Prime Minister and Government departments with a capacity to analyse major policy issues and design strategic solutions. It has put out a paper on oil supply and demand, referring to ODAC's position. As is normal for government pronouncements, the paper itself expresses a bland spectrum of viewpoint, but nevertheless we may have an opportunity to hammer the wedge further in.

The EIA changes its tune

The Energy Information Administration (an arm of the US government) has put out a new production forecast, termed "Accelerated Depletion", which reduces the forecast for US-48 oil and gas production, admitting to a peak for gas by 2015. US oil production is shown to rise from 4.3 to 4.7 Mb/d by 2020, (down from 5.0 previously), with an alternative scenario of the "slow-technology growth case" showing production declining to 4.0 Mb/d. It generally maintains a flawed "flat-earth" view that production is driven by technology to be extrapolated ever onward, but now as the reality of depletion begins to cast a darker shadow, it begins to contemplate "slow technology growth" which is at least a step in the right direction.

The IEA may also be shifting ground again

As is well-known, the IEA succeeded in explaining the real situation fairly well in its 1998 *World Energy Outlook*, albeit in diplomatic code, which euphemistically described shortage as *Unidentified Unconventional*. This mysterious new source of oil was depicted as increasing from zero in 2010 to 19 Mb/d by 2020, with the *Identified Unconventional* (of which the resource is already huge) making a ceiling of only 2.4 Mb/d by 2010. Last year, another study removed the mythical *Unidentified Unconventional*, showing a grossly implausible corresponding increase for Non-OPEC.

The IEA recently approached us for permission to publish the ODAC data and model in their next report. This in itself means little insofar as the organisation evidently fails to make any proper resource-based studies itself, but it may mean that the political wind has changed direction, as it becomes expedient for governments to give belated recognition to depletion.

Further recognition of our efforts

Someone occupying a central position observing the oil business has offered the following exposition of the situation, but has to remain anonymous for obvious reasons.

A LAND WITHOUT MAPS

Alice in the well-known children's story, Alice in Wonderland, was only required to do two impossible things before breakfast – ASPO members are required to do four:

- Verify beyond reasonable doubt that the world does have a looming and intractable oil crisis;
- Persuade at least some of the richest and most resource extravagant generation ever to walk the planet that the cheap oil party is over;
- Help persuade politicians and decision makers that actions have to be taken now, and;
- Avoid being branded as belonging to a 'Doomsday cult' by suggesting as many steps as possible that could ameliorate the adverse consequences of peak oil.

Now its only weapons are wit, humour and the truth. They are actually much more powerful than they appear to be because the reality is that large numbers of people actually know the size of the problem but have their own reasons for not acknowledging it. In short, ASPO is like the little boy in the story of the Emperor's new clothes. The little boy pointed out that the

Emperor had no clothes. Everyone else knew the Emperor had no clothes but was terrified to say so. ASPO aims to point out the oil crisis. It is unlikely to be popular but the news will be less of a surprise than its members may suppose.

If so many know, why do they say nothing? Top politicians (with many dishonourable exceptions) actually have some idea of the problem. But what are they to do? Their constituents certainly don't want to know that the party is over. And they, equally certainly, don't want to tell the people because there are not many votes in that. They also have an acute sense that the messengers of bad news are rarely treated well.

Similarly, the top oilmen know only too well. But they can't tell because they're all hoping to become rich beneficiaries of all those share options they've awarded themselves. So, the great aim is to make sure that any crisis in sight will come after they retire or quit, which is commonly not far distant. Only the retired have risked telling the truth (as Bernabe and Bowlin, the oil company chief executives, did on leaving office). No wonder top executives surround themselves with economists who declare resources to be infinite. (One is tempted to suggest that vendors of perpetual motion machines would also get a sympathetic hearing).

Any economist harbouring the slightest doubts that resources may not be infinite will drive back such doubts with two observations:

1. The oil companies have always misled the public about oil reserves.
2. They have always made a good living doing so.

Any of them who have somehow recognised that depletion has now reached the point where the myths are no longer sustainable may turn to ASPO as a source of new inspiration.

The other major group that has little interest in the likely outcome are the energy bureaucrats whether employed in national energy departments, the EIA, the IEA or other such organisations. Their problem is that they have families to support and pensions to look forward to. They have seen the career damage inflicted on those who extrapolated the energy crises of the 1970s. They don't want to risk being seen as doomsters crying 'wolf'. The idea that this time the wolf is actually at the door has not necessarily occurred to them, and in any case is a notion they'd be very reluctant to accept. Remember these people are highly political, however ineffectual. If Saudi Arabia says it has lots of reserves – who are they to question a government? If the oil companies say the Gulf of Mexico will revive US production, do they challenge, argue, and question? Yes, but very lightly.

Now the ASPO members may be feeling rather lonely as part of a small group who actually want to know. Don't worry you can be very influential for one very simple reason – someone has to say it.

In the medieval world the greatest challenge was always 'but who will tell the king?' whether it was lost battles, traitorous brothers, dead queens or empty treasuries. In those days, the bearer of bad news seriously reduced his life expectancy, so there was a quite natural reluctance to tell. That problem was solved by the development of the role of the court jester. He was a man of no wealth or power who used wit and humour to win the trust of Kings and Princes – AND SO WAS ABLE TO TELL THEM UNPALATABLE TRUTHS AND SURVIVE.

This is precisely what ASPO can do and already does very well.

To give one simple and straightforward example – the Caspian. A persistent myth, generally attributed to the CIA, is that the Caspian contains 200 billion barrels of reserves – enough to make it a viable counterweight to the Middle East. Variant folk tales offer 50 to 400 billion barrels. The reality is that ten years of exploration and development effort have produced (being as generous as we can) 4-6 billion barrels in Azeri-Chirag-Gunesheli, 6-10 billion barrels in Kashagan, 1-3 billion barrels in the two Lukoil finds off Dagestan and 2-3 trillion cubic feet of gas and condensate in Shah Deniz. The last six wildcat wells have been dry; and several companies are said to be buying their way out of drilling commitments. So, ten years of intensive work on the best prospects has produced well under 20 billion barrels. In the very unlikely event that the area has the mythical 200 billion barrels of reserves, at current discovery rates they will take 100 years to find.

It means that the Caspian will not rival the Middle East. It will not even rival the North Sea. Probably a little bigger than the Gulf of Mexico or Angola, it is by all means nice to have and a lot better than that earlier great white hope – the Falklands.

Now everyone loves a fairy story and none is more popular than the magic porridge pot where no matter how much you eat, the pot is always full. In the minds of many, who should know better, the Middle East is the oil industry's equivalent. If I am allowed to contribute again I will explain why this is dangerous nonsense. But as a parting shot let me ask how many are aware that Opec's installed capacity was 5 million barrels/day larger in 1974 than it is today? Yes 5 million b/d larger.

A Skeptical Environmentalist

The Guardian Newspaper in a series of articles has given prominence to the views of a Danish statistician by the name of Bjorn Lomborg, who joins the ranks of other well known adherents to the flat earth heresy in stating that fears about oil supply are “age-old and unfounded”. Klaus Illum, our representative in Denmark, explains the background

As to Bjørn Lomborg: he is a (young) statistician who a few years ago began to compile environmental statistics from a great many sources. He was spotted by the chief editor of the newspaper POLITIKEN, who is a sort of anti-environmentalist himself. The editor encouraged/invited him to write two or three articles in POLITIKEN. That was in 1997 (?), I believe. The publicity gained from these articles induced Lomborg to write a book: "The True State of the World", published in Danish in 1999. The book was well received by some industrialists and right-wing anti-environmentalists, but was strongly criticised by the environmental organisations and also on scientific grounds. A group of scientists published an anthology of articles, which refuted Lomborg's conclusions. The debate went on for some time but seems to be forgotten by now.

However, this year Lomborg's book was published in English and the Economist invited him to write an article about his findings. It was printed in the Economist on August 4th. (I suspect that the chief editor of POLITIKEN has a stake in this). In the August 18th edition of the Economist, a few readers responded critically in letters to the editor. It's noteworthy that the publisher has chosen the title "The Sceptical Environmentalist" instead of the title of the Danish edition "The True State of the World". Scepticism is a useful scientific motive but does not by itself bring about qualified scientific research. So, the publisher announces that Lomborg is sceptical - not that his research reveals the truth about the state of the world. That is an important moderation.

It is encouraging, however, that the article attracted a robust rebuttal from Professor Gray from no less than the London School of Economics, other members of which have until now been firmly in the “flat earth” camp.

North Sea Peak

United Kingdom production reached an irregular plateau at around 2.7 Mb/d in 1995, which lasted until mid 1999 when decline set in. It is now at 2.3 Mb/d, being 18% down in the 12 months ending in June. Most production still comes from the declining old fields, found long ago. However, there are reports of the discovery of a large stratigraphic trap, which may provide a minor late stage subsidiary peak on the decline curve. The midpoint of depletion, based on an Ultimate of 29 Gb, was passed in 1996, a few months after the actual peak in late 1995. Evidently, the desperate efforts to hold high production by bringing in small satellite fields and tapping subsidiary accumulations in producing fields were successful, giving a plateau after the actual peak, but the natural consequence is that the eventual decline has become steeper.

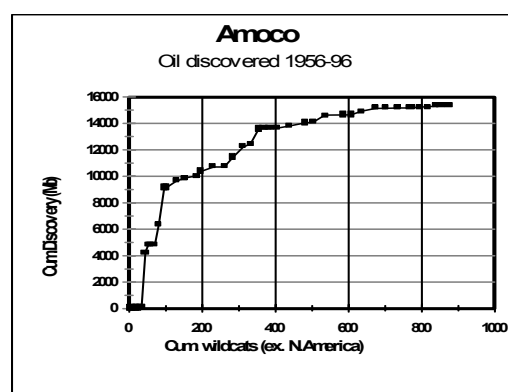
The Norwegian Petroleum Directorate paints the same picture of an imminent peak and steep decline, commenting that some of the recent small developments have come in below expectation. This confirms general experience. The industry has systematically under-reported the size of large fields, being able to do so by the low economic threshold. But it no

longer has that luxury in the case of small fields, being often forced to go with optimistic assumptions to make the project fly at all, which lead to predictable disappointments.

We are too close to see the overall peak of the North Sea clearly, but when we come to look back at it from the other side of the hill, we will probably realise that we passed it around the end of the millennium. We will then be quite sure that the slope we are standing on is steep. Within ten years we will be half way down.

Industry pleads for yet more tax benefits

Dr Wolfgang Schollnberger, Chairman of the upstream oil lobby, OGP, pleads for even better tax terms, which he claims will encourage exploration, leading to sufficient new discoveries to provide for Europe's growing needs for twenty years. This implausible claim ignores the fact that exploration is already normally taken as an expense against high marginal tax rates, meaning that the oil companies are in fact commonly spending 10c dollars, or even less when the benefits of tax treaties and sophisticated accounting are taken into account. It is noteworthy that the drilling boom that accompanied the high oil prices of the early 1980s, which was substantially tax driven, failed to deliver corresponding discoveries. Ironically, the higher the tax burden, the easier it is to explore as there is more to offset the cost against. It is geology, not tax, that determines discovery; and discovery determines production. It is obvious that the sub-commercial deposits that require even more favourable tax treatment do not hold much oil



Schollnberger, who was previously with Amoco, has evidently failed to learn from that company's experience of dwindling discovery.

The Director of the same lobby went so far as to claim that there were "ample reserves for the second half of the 21st Century", which is in blatant contradiction with the past discovery trend that peaked in 1964. It is no surprise that lobbyists should try to influence government to their advantage by making such claims: what is surprising is that responsible entities such as the European Parliament Energy Committee should give them a hearing.

Perceptive presentation to Petroleum Exploration Society of Great Britain

The August-September Newsletter of this society, which represents the British exploration community, contains a first rate and surprisingly forthright article by M.R. Smith, explaining the resource limits and inevitable depletion. More telling perhaps than the article itself is the fact that it was published by this knowledgeable institution.

New Base-Case Scenario

The ODAC depletion model for conventional oil is based on several scenarios. The Base Case assumes that demand increases at 1.5% a year, until Swing Share from the five Middle East major producers exceeds 35% of world supply. That is held to prompt a price shock curbing demand growth, which gives a plateau of production until Swing share passes 50%, when production is assumed to decline at the then depletion rate.

This is no longer seen as the most likely case, and in the forthcoming update more consideration will be given to the Low Case, which holds production flat until Swing Share reaches 50%. Even that may not be too realistic.

Oil price rose 300% during 1999 and 2000. It looked as if prices would continue to grow because there was clearly insufficient spare capacity to maintain the past growth of demand. But in fact they weakened at year-end and have remained down for six months. The explanation seems to be that the high prices prompted (in whole or in part) an economic recession, curbing demand, which is now about flat. This brought supply and demand into better balance reducing pressure on prices. This is perhaps what Lord Brown, the BP Chief Executive, meant when he said that the market was working efficiently.

The logic is that if the economy picks up, oil demand would likely increase, and prices would again rise from capacity constraints that get ever more severe from the iron grip of depletion. Higher prices would in turn be likely to re-impose recession. However since demand is not infinitely elastic, continued recession may not be able to hold down prices indefinitely. The investment community seems to be grasping this new reality, with the CIBC bank of Canada predicting global peak production next year with oil at \$40 a barrel see <http://www.ottawacitizen.com/business/001006/4643011.html>

Reading University

Following the US lead, the United Kingdom appears to be re-evaluating the nuclear option, which suggests that there is at least a growing underlying awareness of the depletion of oil and gas. Reading University in a submittal to the UK National Environmental Research Council has urged that better attention be given to the details of oil and gas depletion as a matter of priority before formulating an energy policy.

Energy Saving

The primary mission of ASPO-ODAC is to determine the date of peak oil and to raise awareness of this fundamental event as the world's primary energy source heads into decline. It is by all means an important message, but its impact will be strengthened if at the same possible solutions were offered. Prime amongst them must be energy saving. A valuable small book has appeared on this subject, emphasising the gross wastage associated with the generation, transmission and usage of electricity, offering many practical simple solutions.

(When the lights go on – Understanding energy by Cari Spring : www.emeraldrs.org)

If every household had an energy audit with energy wastage or efficiency being reflected in rebates or surcharges on the utility bills, it could lead to new life patterns that would make a huge difference with little pain. It calls for government intervention as a profit-driven market can only encourage waste. The market could however play its part in giving people competitive options by which to improve their energy performance.

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