

**THE ASSOCIATION  
FOR THE STUDY OF PEAK OIL**  
“ASPO”

**NEWSLETTER No 23 – NOVEMBER 2002**

**ASPO is a network of scientists, affiliated with European institutions and universities, having an interest in determining the date and impact of the peak and decline of the world's production of oil and gas, due to resource constraints.**

**It presently has members in: Austria, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Portugal, Sweden and the United Kingdom**

***Mission:***

- 1. To evaluate the world's endowment of oil and gas;***
- 2. To model depletion, taking due account of economics, technology and politics;***
- 3. To raise awareness of the serious consequences for Mankind.***

***Newsletters on Websites***

This newsletter and past issues can be seen on the LBSystemstechnik website <http://www.energiekrise.de>  
(Press the ASPONews icon at the top of the page) and the ASPO website [www.isv.uu.se/iwood2002](http://www.isv.uu.se/iwood2002)

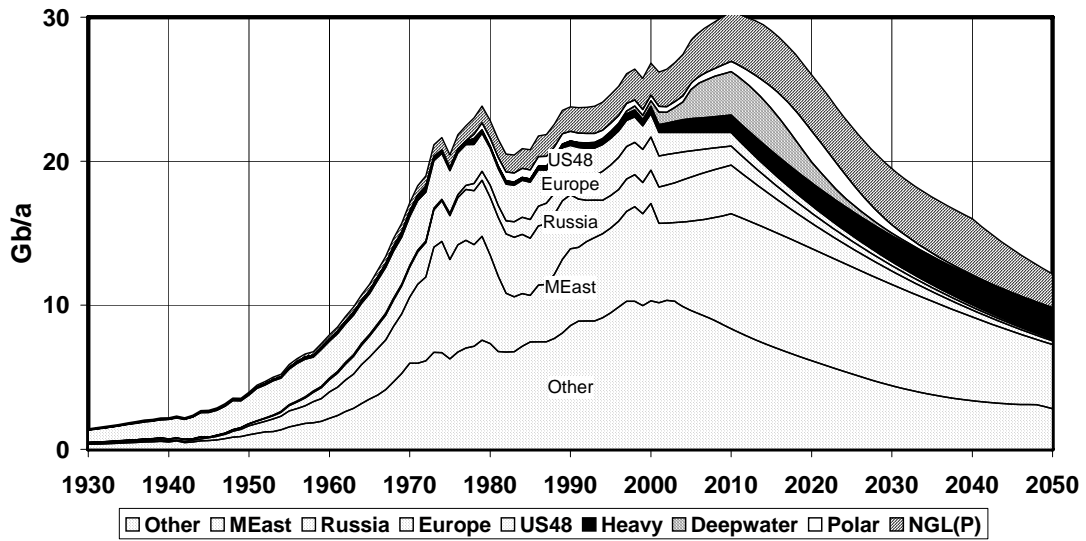
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***The new address is [aspoone@eircom.net](mailto:aspoone@eircom.net)***

*Frontispiece – the general depletion picture*

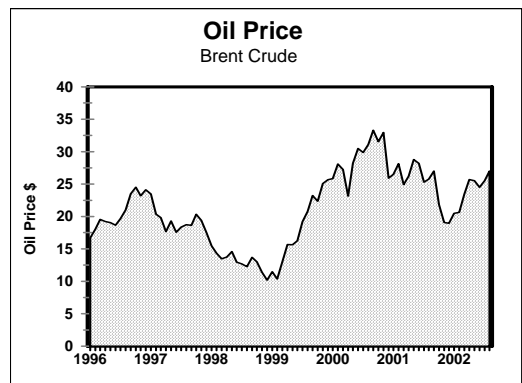
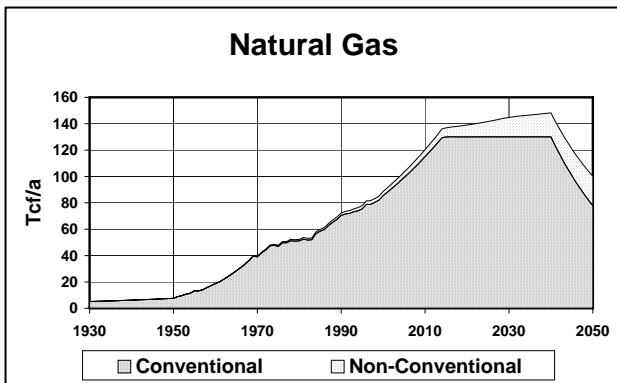
**Oil & Natural Gas Liquids  
2002 Base Case Scenario**



ESTIMATED CONVENTIONAL OIL PRODUCED TO 2075 IN			
Past	Future		Total
Known Fields	New Fields		
873	884	143	1900
ALL LIQUIDS			
958	1742		2700
In billion barrels (Gb) Status end 2001			

	PRODUCTION RATE FORECAST Mb/d				Status: end 2001
	2005	2010	2020	2050	Total to 2075
<i>Conventional Oil</i>	60	60	46	21	1900
US-48	3.5	2.6	1.4	0.2	195
Europe	4.9	3.6	1.9	0.3	75
Russia	8.4	9.2	4.8	0.7	200
M.East Gulf	17	22	21	12	750
Other	26	23	17	8	680
Heavy, bitumen etc	2.8	4	5	6	300
Deepwater (>500m)	5.6	8	4	0	65
Polar	1.2	2	6	0	30
Natural Gas Liquids	8.2	9	11	6	400
<b>Total</b>	<b>78</b>	<b>83</b>	<b>72</b>	<b>33</b>	<b>2700</b>

Base Case Scenario: flat demand for conventional oil due to recession; M.East swing role ending in 2010  
*Conventional Oil includes Condensate*



### **108. Recession.**

In forecasting oil production, it is important to take into account demand as well as supply. Demand was reined in 1979 following the Second Oil Shock, which plunged the world into recession, such that oil production did not rise above its previous level for ten years. The following article by an economist with a major bank suggests that the world is again in deep recession, in part triggered by the high oil prices at the end of the 1990s.

The present Base Case Scenario, as embodied in the above forecast, is that reduced demand will hold the production of *Conventional* oil production about flat until 2010, when supply constraints re-appear. It assumes that production from *Non-Conventional* sources (Deepwater, Polar and Heavy) and NGL will not be constrained. Perhaps it is time to reconsider this assumption.

If all production is constrained by falling demand, then clearly the over-all peak is lower and later, giving a lower rate of subsequent decline. It may help ease the tensions of the transition to the second half of the Age of Oil

#### **The Costs of Bursting Bubbles**

September 22, 2002

By STEPHEN S. ROACH

LONDON - A year after terrorism dealt a seemingly lethal blow to America, talk of resilience and economic recovery is in the air. The nation's inflation-adjusted gross domestic product has risen for four consecutive quarters following a mild downturn in the first nine months of 2001. While the estimated 3.2 percent growth rate over the past year is subdued when compared with the more vigorous rebounds of the past, the hope is that it's a down payment on bigger and better things to come.

But while Sept. 11 was a defining event for America, it was not a defining event for the economy or the financial markets. That role belongs to the stock market bubble of the late 1990's that finally popped in March 2000. There was far more to the excesses of the 1990's, however, than an asset bubble. The bubble expanded high enough, and for long enough, to have infected the behavior of consumers and businesses alike.

The equity bubble helped to create other bubbles – most notably in the housing market and in consumer spending. Their continued existence poses a serious threat to lasting expansion - and yet, puncturing them raises the grave risk of deflation. This suggests the economy will prove as challenging to America's political leadership as any other issue in the year ahead.

There is good reason to believe that both the property and consumer bubbles will burst in the not-so-distant future. If they do, there is a realistic possibility that the United States, like Japan in the 1990's, will suffer a series of recessionary relapses over the next several years. Yet denial remains deep, just as it was when the Nasdaq composite index was lurching toward 5,000. Few want to believe that this economic expansion may be built on such a shaky foundation.

The evidence in support of a housing bubble is compelling. The 27 percent increase in inflation-adjusted American house prices since 1997 represents the sharpest five-year increase since 1945. This surge is about three times the increase in real housing rents over this period. (The divergence of home prices and rents, which usually move in tandem, is one measure of the speculative element of the housing market.) As their property values rise, hard-pressed consumers have been quick to extract purchasing power from their homes, taking advantage of low interest rates to refinance their property and use the savings to buy cars, furniture, appliances and other luxury goods. Thus the ever-expanding property bubble has become central to the culture of excess that is now driving the United States economy.

The consumer-spending bubble will undoubtedly be the last to pop. Short of savings and long on debt, an aging American population must begin to come to grips with the looming realities of retirement. Yet it must now do so in an era of defined contribution pension plans whose performance has been battered by a devastating bear market in equities. We all know that Americans are addicted to shopping. Yet we also know that, if they want to retire with any kind of financial security, they must increase their savings and rein in their spending. What might cause the consumer-spending bubble to burst? It's hard to say, although several realistic possibilities come to mind - a spike in oil prices, a surge of white-collar layoffs

or a collapse of the property bubble. Any one of those developments could send a wake-up call to the American consumer, thereby denying the United States and the broader global economy its main source of support.

But it gets worse. The saga of the post-bubble United States economy doesn't stop with the bursting of the housing and consumer bubbles. Since these events are likely to occur when inflation is already running at a very low rate, they could push the United States into a period of outright deflation - a decline in the nation's overall level of prices for goods and services.

This is a rare and worrisome condition for most economies. The impact of deflation would be most acute for wage earners and debtors. To stay profitable, companies would have to cut jobs or wages, eventually inhibiting consumer purchasing power. And the fixed obligations of indebtedness would have to be paid back in deflated dollars, squeezing overextended borrowers all the more.

America is already on the brink of deflation. Our broadest price gauge, the G.D.P. price index, recorded just a 1 percent annualized increase in the second quarter of 2002. That's the lowest inflation rate in 48 years. Prices of goods and structures - covering nearly half the economy - are already contracting at an annual rate of 0.6 percent. Only in services, where price statistics are notoriously unreliable, are prices still rising.

The hows and whys of America's deflationary perils will long be debated. Two sources seem most likely. First, the bubble-induced boom of business capital spending led to an overhang of new information technologies and other forms of capital equipment in the late 1990's. The result was excess supply, a textbook recipe for lower prices. Also at work are the unmistakable effects of globalization. The modern-day American economy now has a record exposure to global competition. In the second quarter of 2002, America imported a third as many goods as it produced, well in excess of the 20 percent ratio prevailing at the onset of the last recovery in the early 1990's. Significantly, more and more of these goods are coming from highly competitive Asian producers who have much lower cost structures than their American counterparts.

Moreover, with the exception of Korea, every major Asian economy is now in the throes of its own deflation. Consequently, courtesy of ever-expanding trade relations with Asia, America is now buying more and more from countries like China and Japan that are already in deflation. The growing share of these increasingly cheap foreign goods helps drive down prices of products made at home, thereby deepening deflationary pressures.

History tells us that when major asset bubbles burst, deflation is often the result. That was true of the United States in the 1930's and Japan in the 1990's. Most are quick to claim that America is not Japan - that its more flexible, dynamic economy stands in sharp contrast to Japan's economic inertia. But the United States is already a lot closer to the deflationary edge than most concede -and it could go further.

Deflationary risks can never be taken lightly in a post-bubble economy. Yet that's precisely what American investors and policy makers now seem to be doing. If the housing and consumer bubbles pop, then the risk of outright deflation will only increase. It's time to stop pretending this can't happen in the United States.

Stephen S. Roach is chief economist and director of global economics at Morgan Stanley.

<http://www.nytimes.com/2002/09/22/opinion/22ROAC.html?ex=1033759619&ei=1&en=e9b4ac3c0318ce31>

### ***109. Country Assessment – The United States of America***

The New World started drifting away from the Old some 200 million years ago. It was already distant by the time of the arrival of Modern Man, who was able to enter it crossing what is now the Bering Strait some 20 000 years ago, when the sea level was lower in the Ice Age. He found a new continent with a very different animal fauna that had evolved in isolation. Little is known about the early inhabitants who are thought to have numbered some 10 million when European occupation began in the 15<sup>th</sup> Century. The Spaniards established a settlement in Florida in 1565, to be followed by various British settlements along the eastern seaboard. France too took a serious interest, founding Quebec in 1608, and controlling much of the Mississippi valley.

Many of the colonists went to the New World to escape from religious persecution at home. European wars in the 18<sup>th</sup> Century also had their consequences in the New World, with Britain emerging as the dominant power in 1763, when France surrendered its North American territories. The settlers, however, soon moved towards independence, not being enthusiastic for various forms of British tax, and declared full independence in 1776

after a series of conflicts. A centralised system of government did not come easily as the various settlements, which had evolved into independent states, were reluctant to surrender their autonomy. Constraints on the power of the federal government were established under the Bill of Rights, but have been progressively eroded. The conflicts culminated in a Civil War from 1861-65 between the agrarian South and the industrial North, with slavery being one of the issues. Like most civil wars, it was a vicious affair, costing over 600 000 lives.

A great westward migration of people occurred during the 19<sup>th</sup> Century, leading to the virtual extermination of the indigenous tribes; some, it is suspected, being deliberately infected with smallpox as an early example of biological warfare. New waves of immigrants flooded in from over-populated Europe, including particularly Scandinavians, Italians, Jews escaping anti-Semitism, and Irish following a devastating famine in 1845-50.

Texas had been a lightly populated province of Mexico until 1836, when new settlers from the north revolted, declaring it a republic. This prompted a successful war with Mexico, by which the United States acquired Texas, New Mexico and California. Another successful war with Spain followed in 1898, when the United States supported Cuban independence, partly for commercial motives. As a result, it acquired the Philippines, Guam and Puerto Rico, becoming a world power with the imperial aspirations of the day. The sinking of the US warship, *Maine*, in Cuba, which was the pretext for the war, was later found to have been due to an explosion on the ship itself, which some think was orchestrated. The US later engineered the secession of Panama from Colombia in order to build the Panama Canal to facilitate trade between the east and west coasts.

The territorial limits of the country eventually stabilised into 48 contiguous states, bordered by Mexico in the south and Canada to the north. Two additional territories were added in 1959: Alaska, which had been purchased from the Russians in 1867, becoming the 49<sup>th</sup> State; and Hawaii, which had been seized in 1893 over a sugar dispute, becoming the 50<sup>th</sup>

The Industrial Revolution of Europe spread to the United States during the 19<sup>th</sup> Century, as its huge natural resources of iron, coal and, later, oil gave it the essential energy for manufacturing. Floods of new immigrants provided cheap labour. Capitalism took off with a vengeance, throwing up dynasties with extreme wealth, including the houses of Astor, Carnegie, Rockefeller, Morgan, Dupont, to name a few. Wall Street emerged as a premier world financial centre, and the dollar began on its path to world financial domination. These excesses were to some extent countered during the early years of the 20<sup>th</sup> Century when Theodore Roosevelt brought in the so-called Square Deal with various conservation and regulatory measures, breaking up some of the industrial and financial empires.

The 20<sup>th</sup> Century history can be summarised into a few key topics. The United States entered the two world wars on the side of Britain and France, its previous colonial masters, and, being spared the ravages of war, replaced them as the dominant economic power in the world. The early inter-war years were marked by an industrial boom, stimulating a speculative bubble on Wall Street. It burst in 1929 bringing on the Great Depression that in large measure lasted until the Second World War gave rise to another boom. The Depression caused great suffering that left a searing memory, deep in the national psyche, leading to greater government involvement in the economy with certain almost socialist attributes. In the last days of the Second World the United States became the first and only nation to use “weapons of mass destruction”, as the atomic bomb is now termed, when it vaporised two Japanese cities. The British and French empires were extinguished, leaving the United States to be countered only by the Soviet Union. These two super-powers glowered at each other for the ensuing 45 years in the Cold War, with several peripheral and rather inconclusive skirmishes including wars in Korea and Vietnam. The United States moved to the conquest of outer space, largely for military reasons. The collapse of the Soviets in 1991 left the United States as a solitary super-power, primed for world economic and financial hegemony. Its vast industrial-military complex faced declining sales unless new wars, or the threat of them, should stimulate demand for military products. The country’s financial dominance was a mixed blessing, attracting flows of foreign capital that gave rise to possibly unsustainable levels of foreign debt. A critical event was the abandonment of the Gold Standard in 1975, which removed solid foundations for the currency. A post-Cold War speculative bubble burst in 2000 in a situation reminiscent of the crash of 1929.

On September 11<sup>th</sup> 2001, the World Trade Center in New York, a symbol of global domination, was destroyed by fire, having been hit by two hijacked airliners. The incident, which had several curious aspects, was attributed to Muslim activists. The government declared a worldwide war of “terrorism”, toppling the government of Afghanistan after a short but brutal bombing campaign. It then turned on Iraq as a precaution lest it should pose an unspecified threat in the future. It is feared in many quarters that these moves may set in motion a train of events leading to a third world war with devastating consequences. Some have little difficulty in seeing a not very well hidden oil agenda.

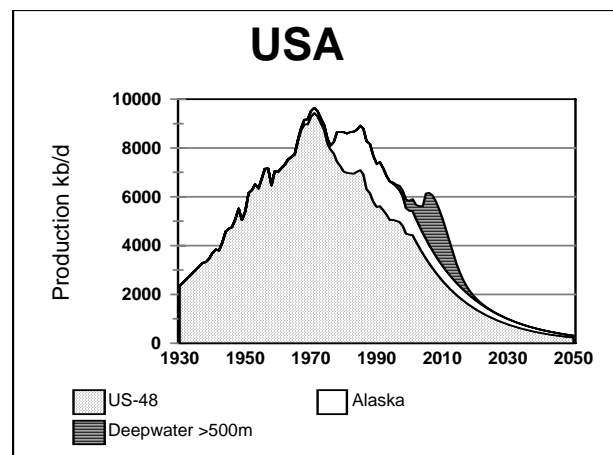
The population of the United States amounts to about 290 million. About 75% of the people live in the main urban agglomerations. The black population, being the descendants of former slaves from Africa, number about

30 million, growing at about 15% a year, while those of Hispanic origin amount to about 25 million, and are also growing rapidly. There is in addition a large and dynamic Asian community. As in other developed countries, the fertility rate of the long-established segments of the society is below replacement level, but that is more than offset by both massive immigration, much illegal, and the children born to the immigrants after arrival. About a third of all births are to unmarried mothers. The country was built of immigrants, who in earlier years soon lost contact with their roots by physical separation, but now easier communication mean that they can retain their close ties. Remittances from Mexican immigrants to their homeland amount to \$10 billion annually, being second only to oil as a source of Mexico's foreign exchange. This gives rise to a degree of split loyalty, particularly in the southern states, which is a cause of possible future instability.

The United States, like Britain, operates what can be called a pseudo-democratic system, dominated by two political parties, which select the candidates for election, and heavily control them once elected by denial of the secret ballot. There is widespread political patronage by vested interests. The Presidency has relatively excessive powers and security of tenure. A bill passed by Congress is sent to the President who may approve or veto it at his discretion, although the veto can be over-ridden by a two-thirds majority. The election itself is governed by both direct vote and an Electoral College, furnished by the individual States, under complex rules that are no doubt open to abuse. The Congress consists of a Senate, which represents the individual states, and a House of Representatives, directly elected. The country likes to depict itself as "The Land of the Free", forgetting that many other countries enjoy equal or greater freedoms, and may well have a more representative electoral system.

Turning to the country's petroleum endowment, the first point to note is that it is a huge territory of some 9 million km<sup>2</sup>, having numerous oil and gas basins. The oil industry had its roots in Pennsylvania, where the self-styled Col. Drake made the first discovery in 1859 in a Devonian sandstone at a depth of 67 feet. It was not in fact a particularly prolific basin, as production had already peaked and begun to decline by 1900. It was however the birthplace of Standard Oil, the mother of Exxon and Chevron, the two surviving US oil giants. Other early oil plays developed in Illinois, Oklahoma and California, while Texas came booming in when a well drilled by a one-armed mechanic at Spindletop, near Beaumont, blew out on New Year's Day, 1901. Mineral rights in the United States mainly belong to the landowner, which in the early days prompted feverish speculative activity. Discovery peaked in 1930 when the giant East Texas Field was brought in. That itself triggered a slump in oil price from over-production, leading the government to intervene by imposing mandatory cuts in production, managed by the Texas Railroad Commission. It helped delay the corresponding peak of production until 1971. It is now an extremely mature area, with future hopes of discovery being confined to small extensions and subsidiary reservoirs in existing producing areas.

<b>USA – Conventional</b>		
<i>Rates Mb/d</i>		
Consumption	2001	19.63
Production	2001	4.4
	Forecast 2010	2.6
	Forecast 2020	1.4
Discovery 5-year average (Gb)		0.1
<i>Amounts Gb</i>		
Past Production		169
Reported <i>Proved Reserves</i>		22
Estimated Future Production to 2075		
	From Known Fields	20
	From New Fields	6.4
	Future Total	26
Past and Future Production		195
Current Depletion Rate		6%
Depletion Midpoint Date		2003
Peak Discovery Date		1930
Peak Production Date		1971



The United States dominated world oil production in earlier years. In 1930, it supplied about 65% of the World's production, but its share has slipped since then to 21% in 1970 and about 7% to-day. With its burgeoning domestic demand for oil, the country had become a net importer by 1950. Imports began to rise rapidly after peak production, such that they have now passed 60%. The irreversible decline of its production means that even if demand were to be held static, the country would be importing 90% of its needs by 2020. It explains why access to foreign oil has long been officially declared a vital national interest, justifying military

intervention. It might be a tolerable dependency in the case of another commodity such as coffee, because people could learn to drink beer or apple juice, but in the case of oil it effects the very lifeblood of the economy.

The United States also has *Non-Conventional* oil and large amounts of gas, deserving mention. There are a number of heavy oil deposits, such as the Midway Sunset field in California, but they are not readily identifiable in the database. They can continue to support low levels of production for a long time. The country also has substantial oil shale deposits, none of which has yet proved to be commercial, but may become so in the future despite giving a negative net energy yield. Alaska offers polar production, being dominated by the giant Prudhoe Bay Field found in 1969, which added approximately 13 Gb of reserves, but is now at a late stage of depletion. Alaska appears to be a concentrated geological habitat, such that new discoveries, including those in areas currently closed for environmental reasons, are likely to be smaller by orders of magnitude. In recent years, exploration has been extended into deepwater areas in the Gulf of Mexico, where some 8 Gb have been found. Production is constrained in this extreme environment but may reach a peak of around 800 000 b/d around 2007 before declining rapidly. It is unlikely that the other deepwater areas have the necessary geology to yield oil, although more exploration is needed to confirm the negative assessment.

The United States has also had a substantial endowment of Natural Gas. It was widely flared in earlier years before a market developed, but is now treated as a prime fuel, especially for electricity generation. Discovery peaked around 1950, giving a corresponding peak in production twenty years later. Gas depletes differently from oil, with production being generally capped below capacity. The resulting plateau of production is now coming to an end, giving rise to higher prices, which prompted a new drilling boom with as many as 16000 wells being completed in 2000, 60% up on the previous average. But the new wells have had to be produced at maximum rate being depleted in a matter of months. Some extra late-stage gas was obtained by tapping the gas caps of oilfields during their dying days. Gas production has increased from 510 G m3 in 1991 to 555 G m3 in 2001, a modest increase. Some 25 000 G m3 have been produced to-date, which is probably about 70% of the total endowment, suggesting that a sharp decline is imminent. The production of natural gas liquids, now running at about 1.9 Mb/d, will fall in parallel with the gas. There are, in addition, large amounts of non-conventional gas in the form of coal-bed methane, and in so-called tight reservoirs, contributing about 10 percent of total supply. Electricity demand is growing, with many gas-fired generators under construction. As a result the United States will have an increasingly desperate need to tap Arctic gas, possibly draining Canada in the process.

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It is difficult to avoid the conclusion that the United States faces a dire energy crisis that will radically affect its entire way of life, as indeed the Energy Secretary confirmed before attention was diverted by the events of September 11<sup>th</sup>. This realisation would at least offer a logical explanation for the massive build-up of military forces in the Middle East, whatever other factors may also be at work. It furthermore adds weight to the expectation of deepening economic recession, expressed by the banker in the preceding article (#108). There is a certain logic in expecting the United States, which led the world into the oil age, to also be the first to experience its decline.

Although the government appears to be resolved for war at any price, it has evidently yet to fully convince the people as is confirmed by massive anti-war demonstrations and commentary which manages to express itself outside the closely controlled mainstream media. Good examples of this counter view are:

Heinberg's "Behold Caesar" – [www.museletter.com](http://www.museletter.com)

Kellia Ramires on [www.rise4news.net](http://www.rise4news.net)

Ruppert's The Unseen Conflict - [www.fromthewilderness.com](http://www.fromthewilderness.com)

Respected Wall Street energy analysts express the same concern in their newsletters - [www.weedenco.com](http://www.weedenco.com)

### ***110. Another analysis of North American oil***

By coincidence, the current Newsletter (#2002/4) of the Hubbert Center at the Colorado School of Mines contains a valuable analysis of the oil situation of North America <http://hubbertmines.edu>

### ***111. New flawed study from the IEA***

The IEA maintains its tradition of publishing flawed information on oil supply in its World Energy Outlook of 2002. This is hardly surprising as it allows itself to be advised by the US Geological Survey and Michael Lynch, and does not, so far as is known, work with the industry database. We may comment on a few highlights.

The IEA defines Conventional Oil to be crude oil, Natural Gas Liquids and natural bitumen. It has supply matching demand, which it estimates will increase at 1.6% a year to 2030. A comparison with ASPO estimates is given in the following table, after adjusting for differing definitions and including processing gains. There is no particular difference to 2010, but thereafter the IEA departs radically to double the ASPO estimate by 2030.

The IEA gives a table of Past Production, Reserves, and Yet-to-Find of respectively 718, 959 and 739 Gb, giving an Ultimate of 2616 Gb. A footnote explains that the Reserves apply to 1996 whereas the Yet-to-Find applies to 2000. Although Past Production is described as “to-date”, it evidently also relates to 1996. We can see here the footprint of the flawed USGS study, which related to the period 1995-2025. This Ultimate estimate of 2600 Gb, which is not too unreasonable for all liquids, gives a simple midpoint of depletion of 1300 Gb. Given that production through 1995 was 718 Gb, the midpoint would be reached when 582 Gb more had been produced, which at 27 Gb a year would be around 2016. Peak is likely to come before midpoint, since the heavy oils will not have much impact. This would not be a wildly inaccurate estimate, only six years from the ASPO estimate, but is inconsistent with the IEA’s claim that production would continue to increase to 2030.

The IEA expects that the increase to be achieved by obtaining higher recovery rate, thanks to economic and technological factors. It is noteworthy that it refers to rate not percentage recovered. It implies that production would have to fall like a stone after 2030 to respect the ultimate, but the IEA does n’t address that issue as it lies beyond its time-frame. At the same time, it does confess that “faster depletion will bring forward the time when production peaks”, mentioning that the North Sea has done so and is in terminal decline. It also points out that the average age of the fourteen largest fields responsible for one-fifth of world output is more than 43 years, and that the discovery of giant fields has been falling both by size and number.

	<b>2000</b>	<b>2010</b>	<b>2020</b>	<b>2030</b>
<b>Conventional</b>				
ASPO Conventional	64	60	46	36
Deepwater	2.3	7.2	5.0	1
Polar	1.1	2.0	5.9	1.6
NGL	6.0	9.3	10.7	10.7
Total	<b>73</b>	<b>79</b>	<b>68</b>	<b>49</b>
IEA	<b>72.2</b>	<b>83.6</b>	<b>95.8</b>	<b>107</b>
<b>Non Conventional</b>				
IEA	1.1	3.0	5.6	9.9
ASPO Heavy	1.4	3.3	4.3	5.0
Processing Gain	1.7	2.2	2.6	3.1
<b>TOTAL – IEA</b>	<b>75.0</b>	<b>88.8</b>	<b>104.0</b>	<b>120.0</b>
<b>TOTAL – ASPO</b>	<b>76</b>	<b>85</b>	<b>75</b>	<b>58</b>

The IEA gives estimates of the above parameters by country. It is noteworthy that Saudi Arabia is given reserves of 221 Gb as of 1996, which is close enough to the current ASPO estimate of 193 Gb, taking into account production of 16 Gb since 1996. It is far less than the 259 Gb claimed by the country. But then, the IEA assigns the country a staggering 136 Gb yet-to-find. Evidently it does not realise that approximately 130 Gb of Saudi Arabia’s oil lies

in just two fields, Ghawar and Safaniya, found long ago, and that discoveries outside this prime belt have been quite modest, greatly reducing the potential for new discovery.

One can imagine that the economists employed to make these forecasts are well-qualified and intelligent, but lack actual oil company experience or data. They probably rely on published reserve data, as contained in the BP Statistical Review, and take the Yet-to-Find from the USGS. They cannot be expected to understand the practices of oil company reserve reporting, nor grasp the true impact of technological progress. Without access to properly backdated reserve data from the industry database, they can be forgiven for failing to determine the real discovery trend and its devastating implications. The report does, however, demonstrate a certain dim awakening to reality, even mentioning the words “depletion” and “peak”, but it continues the long tradition of the organisation in providing grossly misleading and erroneous data and forecasts. It is difficult to exaggerate the damage done to its member countries, which are failing to implement sound energy policies as a consequence. They comprise: Austria, Belgium, Canada, Denmark, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, USA, UK, Japan, Finland, Australia, New Zealand, Mexico, Czech Republic, Hungary, Poland, Korea and Slovakia. Imagine what could be achieved by these countries, if they were to dedicate even a very small fraction of the IEA budget to making a proper study of this critical issue.

### ***112. BP Confesses to Depletion***

The official Norwegian Petroleum Diary (No 3, 2002) carries an article by BP prominently depicting in colour the Depletion Plot as given in the frontispiece of this newsletter. It states that the plot represents the challenge for the company to develop solar energy. This is a marked departure from its normal corporate imagery, which goes out of its way to avoid any mention of the imminent and inevitable peak and decline of oil production.

### ***113 Raising Awareness***

ASPO members participated in two recent conferences covering the importance of oil depletion:

“A Public Hearing on Oil Supply “ held in the Danish Parliament building on October 30<sup>th</sup>.  
 “Ireland’s Transition to Renewable Energy” organised by FEASTA at Thurles in Ireland, November 1-3.

C.J.Campbell, speaking at the latter, was subject to an almost personal attack from Shell Oil, which sought to discredit the ASPO depletion studies with unsubstantiated claims that vast amounts of new oil would be extracted from existing fields by the application of known technology. Since both the fields and the technology are known, it was not explained why the anticipated extra production has not already been included in existing estimates.

It was an instructive conference drawing attention to the real scope for renewable energy in Ireland, including for example that coming from the construction of rotors to capture energy from the impressive tidal flows that run along its coasts.

### ***114. Next ASPO Workshop***

The French ASPO committee reports good progress in organising the next ASPO workshop in Paris, tentatively planned for May 2003. Ideas and contributions for the programme are welcomed.

The Newsletter very much welcomes contributions from ASPO members and other readers, who may wish to draw attention to items of interest or the progress of their own research.