THE ASSOCIATION FOR THE STUDY OF PEAK OIL AND GAS

"ASPO"

NEWSLETTER No. 78 – JUNE 2007

ASPO started as a network of scientists and others, 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. Now, independent national associates are in existence or formation in Australia, Austria, Belgium, Canada, China, Denmark, Egypt, Finland, France, Germany, Ireland, Isle of Man, Israel, Italy, Luxembourg, Japan, Korea, Mexico, Netherlands, New Zealand, Norway, Portugal, Russia, Singapore, South Africa, Spain, Sweden, Switzerland, United Kingdom and the United States.

Missions:

1. To evaluate the world's endowment and definition of oil and gas;

2. To study depletion, taking due account of economics, demand, technology and politics;

3. To raise awareness of the serious consequences of oil and gas decline for Mankind.

Foreign language editions are available as follows:

Spanish: www.crisisenergetica.org

French: www.oleocene.org (press "Newsletter")

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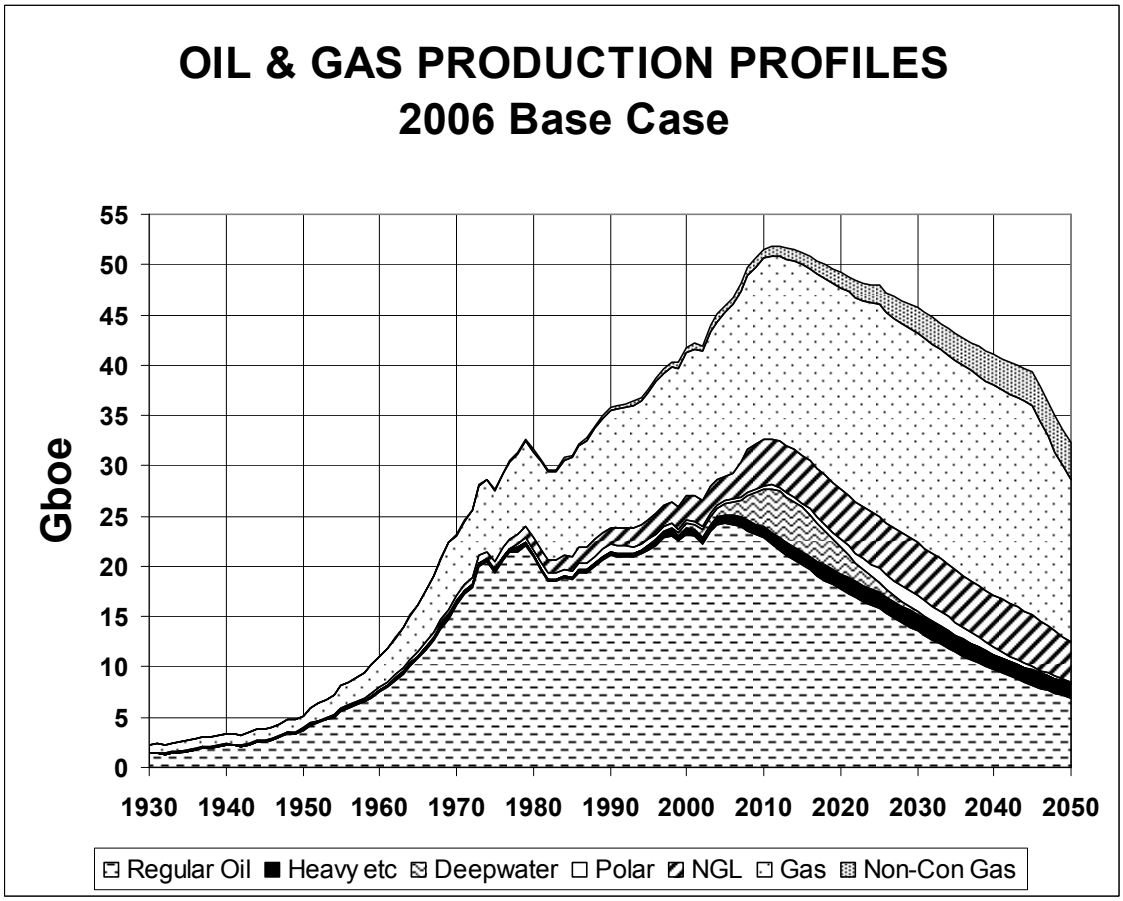
Index of Country & Regional Assessments with Newsletter Reference (*revised)

The General Depletion Picture



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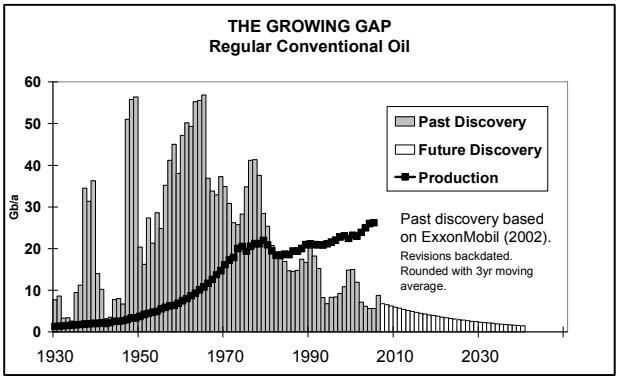
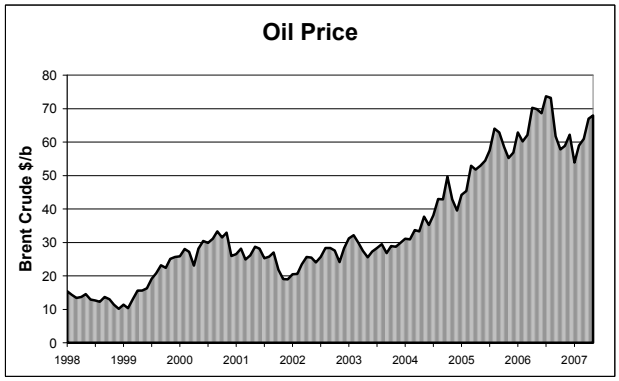
ESTIMATED PRODUCTION TO 2100					End 2006							
Amount			Gb	Annual Rate - Regular Oil						Gb	Peak
Regular Oil				Mb/d	2006	2010	2015	2020	2050	Total	Date
Past	Future		Total	US-48	3.2	2.6	2.1	1.7	0.4	200	1970
Known Fields		New		Europe	4.5	3.6	2.5	1.7	0.2	75	1997
994	775	131	1900	Russia	9.5	9.5	7.7	6.2	1.7	230	1987
	906			ME Gulf	20	20	20	20	11	693	2015
All Liquids				Other	29	27	23	19	6	702	2004
1102	1448		2550	**World**	**66**	**62**	**55**	**49**	**19**	**1900**	2005
2005 Base Scenario				Annual Rate - Other							
M.East producing at capacity				Heavy etc.	2.4	3	4	4	5	152	2030
(anomalous reporting corrected)				Deepwater	2.7	10	12	7	1	69	2012
Regular Oil excludes Heavy Oils				Polar	0.9	1	1	2	4	52	2030
(inc. tarsands, oilshales); Polar &				Gas Liquid	6.9	12	13	14	14	355	2035
Deepwater Oil; & gasplant NGL				Rounding		1	0	-1	-3	23	
Revised 13.2.07				**ALL**	**79**	**90**	**85**	**75**	**40**	**2550**	2011





822. Venezuelan Independence

Caracas is the birthplace of Simon Bolivar, who played a decisive role in bringing independence to the Spanish Empire of Latin America. But he died a disillusioned man in 1830 when he found that the territories he had freed were falling into factional dispute to later become Venezuela, Colombia, Ecuador, Peru and Bolivia.

Now, 177 years later, arises a successor in the form of Ugo Chavez who has liberated his country from the new empires of the International Monetary Fund and the World Bank. While they do not lead cavalry charges of plumed horsemen, they are equally imperial in nature. As has been noted before, banks have been lending more than they had on deposit, confident that *Tomorrow's Expansion* is collateral for *Today's Debt* without recognising that it was the growing flow of cheap oil-based energy that made expansion possible. Foreign debt is commonly seen as positive economic contribution when in fact the recipient country is forced to export its natural resources, product often from the backs of near slave labour, and above all profit. Dollar imperialism has served its home country well, delivering a massive hidden tribute. The cost of the physical import of oil to the United States has been exactly matched by the expansion of domestic credit, meaning that it came essentially for free. Foreign countries, including for example China, have massive dollar holdings expressing an underlying confidence in the supremacy of this currency.

But now, the balance changes as oil-based energy supply declines from depletion, undermining the collateral for world debt. Venezuela comes to hold some of the cards thanks to its rich oil endowment. It has about 27 Gb of *Regular Conventional Oil* left to produce, and perhaps ten times that amount of *Non-Conventional* in the Orinoco tar-belt, of which it has also recently recovered a controlling stake from the foreign companies, including BP, Total, Exxon-Mobil, Statoil and Conoco-Phillips.

If the extraction rate is slowed by lack of investment, it simply means that the resources will last longer to the country's long-term advantage. The value of the oil might also appreciate unless a global economic recession cuts demand. But in the meantime, Chavez' Government faces difficulties and criticism both at home and abroad for practical mismanagement and exuberant spending. It is apparently planning to spend $4-10 billion on arms from Russia to defend the country from possible invasion — the fate of another oil-rich country— and inflation on food prices has reached 36%. In principle, the Bolivar should be one of the world's strongest currencies but it is n't. So there is a risk that Chavez, like Bolivar before him, may find himself a disillusioned man, if the grand long-term strategy fails to overcome short-term obstacles.

823. ASPO-USA Conference

ASPO-USA will hold its 2007 World Oil Conference on October 17-20, at the Hilton Americas in downtown Houston, Texas. There will be an exciting roster of confirmed participants including legendary Texas oilman T. Boone Pickens, Houston Mayor Bill White (former U.S. Deputy Secretary of Energy), Bob Hirsch (co-author of the groundbreaking Hirsch-Bezdek Report to DOE), Peter Tertzakian (author of *A Thousand Barrels a Second*), Mathew Simmons, (author of *Twilight in the Desert*: *The Coming Saudi Oil Shock*), Henry Groppe of Groppe, Long & Littell, Charles Maxwell of Weeden & Co., David Hughes of the Canadian Geological Survey, Chairman Elizabeth Ames Jones of the Texas Railroad Commission, Professor Peter Bishop of the University of Houston, and many others. Other high-profile speakers including former President, Bill Clinton, are being invited.

Honorary Co-chairmen of the Conference are Houstonians Matt Simmons of Simmons & Company International, and Art Smith of John S. Herold, Inc.

ASPO Week in Houston will consist of four days of energy discussion as well as field trips to a drilling site and to Refinery Row on the Houston Ship Channel, the heart of our nation's refining and petrochemical industries.

The Houston Conference agenda will feature technical sessions on Reserves and Production; Substitute Fuels; Peak Oil & Climate Change; Peak Oil Reports from the GAO, National Petroleum Council, and AAPG; a Natural Gas/LNG Update; a Net Energy Update; Mitigation Scenarios; Smart Policy Initiatives (local, state & national); and Smart Money & Investment in the Age of Peak Oil.

Registration will open on or about June 1st. For more information on agenda details, speakers and activities as they become available, as well as a review of past Conferences, see www.aspousa.org.

824. The Risks of Denial

The following article by David Strahan in *The Independent* puts a further slant on the departure of BP's Chief Executive. His successor has the chance to put the record straight on the critical issue of oil depletion, which he himself is known to understand perfectly well. He could for a start report his own company's discovery record, with any reserve revisions being backdated to discovery date.

Article

Is it possible that Lord Browne's humiliation is not yet complete? It may be hard to credit in a week when he was forced to resign with immediate effect - at a personal cost of £15m - after lying in a witness statement about a lover he met through a male escort agency. But however salacious the details, the scandal is about the least interesting aspect of his reign as the *Sun King* of BP. Far more significant was his vociferous rejection of the growing evidence that global oil production will soon go into terminal decline, with potentially devastating consequences. That position now looks equally untenable. Lord Browne may be about to lose not only his throne and his payoff, but also his rose-tinted spectacles.

No oilman likes the idea that his might be the next sunset industry, but more than any other executive, Lord Browne has made it his business to denounce this growing school of thought. In one typical speech in 2004, he proclaimed: *We have to demonstrate that there has been no shortage of oil, and that there is no shortage of oil, and that there never need be a shortage ... there is no reason why there should be any shortfall in the foreseeable future....*

The company's growth came, in large part, through a series of massive takeovers around the turn of the century as it snapped up Amoco, Arco and Burmah Castrol in quick succession. But adding reserves and production capacity by cannibalising other groups does nothing to increase the total oil available to humanity. Once growth by acquisition is stripped out, the world's biggest oil companies were producing no more of the black stuff in 2005 than a decade earlier. And that's despite the world market having grown by 20 per cent, and the spending of billions of dollars on their upstream operations. These figures speak louder than Lord Browne's bullish words.

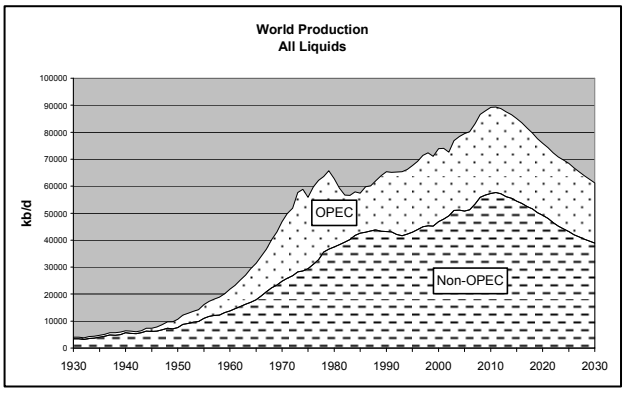
Even more suggestive are Lord Browne's own spectacular gambles in Russia, culminating in 2003 with the formation of TNK-BP - a deal that was all the more surprising given the debacle of his previous foray into the "Wild East" a few years earlier. In 1997 he had spent $500m buying a 10 per cent stake in Siberian oil company Sidanco - a deal signed in Tony Blair's office. He lost much of that investment when the company went bust, and some of its powerful Russian shareholders ruthlessly manipulated the local insolvency courts to their own advantage.

For the time being the gamble appears to be paying off, having boosted BP's oil production by around half a million barrels per day. But closer inspection of the figures shows that had Lord Browne flinched and not done the deal, the company's output would have fallen by almost as much. Given the dearth of opportunities elsewhere, it looks as if he had little choice.

But the true scale of the gamble is now becoming clear, as Russia threatens to take control of one of TNK-BP's prize assets, the important Kovykta gas field. Even some of Lord Browne's biggest fans believe that the huge risks he has taken may call into question his persistent denials that global oil production will peak any time soon. Robin West, a former US Assistant Secretary of the Interior, and founder of PFC Energy, considers Lord Browne one of the industry's brightest talents. But he adds: *I think his actions belie his words*.

Lord Browne's denial matters in particular because of his influence over Tony Blair. With luck, the departure of both men will herald a more realistic attitude to the oil supply outlook and galvanise policymakers into preparing for the inevitable global peak that Total Chairman, Thierry Desmarest, expects by 2020 - and others much sooner. If not, we may find out the hard way the true meaning of BP's slogan, Beyond Petroleum. *(Reference furnished by ODAC)*

825. Federal Reserve Bank



The Federal Reserve Act of 1913 established a consortium of banks to form what is known as the Federal Reserve, and effectively act as a Central Bank, controlling interest rates, money supply and such things, but the identities of such banks was held secret.

It is apparently a very profitable undertaking for the banks concerned.

In most countries, a Central Bank would have national responsibilities as an arm of government, but this was evidently not the environment of New York in 1913.

The dollar conquered the pound sterling in the Second World War to become the world's trading currency, and as a result the *Fed* gained a critical control of the world economy. To say it again, the banks have generally been lending more than they had on deposit and charging interest on it, confident that *Tomorrow's Expansion* was collateral for *To-day's Debt*.

So long as the system worked in an expanding economy, driven largely by cheap oil-based energy, it made sense to let well alone, but now a new situation arises as the driver of expansion heads into decline (see graph) meaning that debt loses its collateral in the ensuing Contraction. People will increasingly want to

know more about who is in control and make them more accountable. A website put out by the American Patriot Friends Network reveals the identities as follows:

Rothschild Banks of London and Berlin
Lazard Brothers Bank of Paris
Israel Moses Sieff Banks of Italy
Warburg Bank of Hamburg and Amsterdam
Lehman Brothers Bank of New York
Kuhn Loeb Bank of New York
Chase Manhattan Bank of New York
Goldman Sachs Bank of New York.

It also provides interesting family trees of the interwoven relationships of the financial powers. Their ancestral loyalties may have influenced foreign policy in certain respects.

(Reference furnished by J.N von Glahn)

It seems that the crash of the property market, already well advanced in the United States, is spreading to Europe and undermining financial stability. The financial reserves of Spain, Greece and Portugal, which have experienced property booms in the past, are dangerously depleted, have fallen by two-thirds since 2002. It may in turn lead to the collapse of the Euro, as the common currency denies member states the ability to manage their own affairs. The European Union itself has become an imperial economic construction, built on out-dated flat-earth economic principles of perpetual growth, being ill prepared to meet the contraction of the Second Half of the Age of Oil.

826 Exxon Confesses

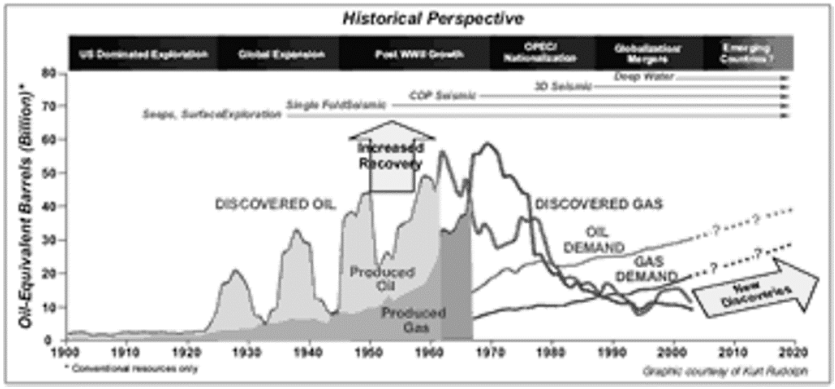
Kurt Rudolph, Chief Geoscientist of Exxon-Mobil, presents the following graph at a meeting of the American Association of Petroleum Geologists, which is by all means an Establishment organisation (See AAPG Explorer, March 2007). It unequivocally demonstrates that the rising trend of consumption has crossed the falling trend of discovery. Rudolph refers to Peak Oil and speaks quite rightly of the mighty challenges ahead in meeting rising energy demand, as illustrated by two arrows : *New Discovery* and *Reserves Growth*.

Considering *New Discovery*, we may note that the industry has had every incentive to find more oil and gas:

- its exploration costs were largely deductible from taxable income meaning that the taxpayer effectively covered most of them;
- it scoured the world, always looking for the biggest and best prospects; and
- it had the benefit of remarkable technological progress and advances in geological knowledge.

The claims that the Middle East, which has largely been closed to foreign exploration, holds a huge potential can also be dismissed because the discovery trend in these countries has also declined markedly: it being a concentrated geological habitat with most of its oil in a few super giant fields found early.

There is accordingly no good reason to expect the 40-year downward trend of world discovery to materially change direction.



Considering *Reserve Growth*, we may note that if the early giant fields turn out to larger than reported, it simply means that the subsequent discovery decline has been that much steeper. The observed growth so far has been primarily an artefact of reporting practice, with genuine enhanced recovery being limited to particularly difficult reservoirs, having a small global impact.

The question marks over rising future demand in Rudolph's illustration do however give a strong hint of global recession which would cut demand and possibly reduce price: itself largely profiteering from shortage by producer governments, especially in the Middle East, as production costs have not changed materially.

Meanwhile, the company is busily buying back its own stock, spending 26 billion dollars, or 26% of its cash flow, doing so in 2006. Its output of oil and gas has little changed over seven years and it has no plans

for expanding its refinery capacity. Staff numbers have also fallen by about ten percent since 2002. In short, it evidently recognises that it is facing contraction in the future as global production peaks and declines, and plans sensibly to make it a profitable contraction. (see Business Week, 28th May 2007). The primary *challenge* now facing the company is for its Public Relations Department to deal with the reality, which has become so evident for all to see.

827. Kuwait Confesses too

As we have noted previously, Kuwait reported reserves of 64 Gb in 1984, having produced 22 Gb to that date, giving a total discovery of 86 Gb, but in the following year it reported an implausible increase to 90 Gb. The new number looks suspiciously close to total discovery, not remaining reserves. Then, two years later, Kuwait announced a small increase to 92 Gb which may have been genuine, but its action prompted Abu Dhabi, Iran and Iraq to announce huge increases to match Kuwait in order to protect their OPEC quotas, which were based in part on *Reported* Reserves.

If the original 64 Gb was a valid number, and Kuwait has since produced 12.31 Gb, that would reduce its reserves to 52 Gb, ignoring any subsequent discovery. But now Kuwait's daily newspaper, Al Qabas, reports that the Oil Minister, Sheik Ali Jarrah Al-Sabah (who, with a name like that, sounds like a relative of the Emir) says that Kuwait's reserves are 48 Gb, which is not far from the 52 Gb deduced from the above reasoning. He tries to soften the news by saying that there are 150 Gb of additional *probable reserves,* but that sounds a very high number for a place as small and well known as Kuwait. In any event, it would take much time, effort and investment to convert them to production.

Cumulative production to date in Kuwait is 34 Gb, and the database used by this newsletter assesses its Total Producible Oil at 80 Gb, which with production at 2.2 Mb a year delivers a depletion rate of 1.7%. This is relatively low level compared for example with 7.2% in Norway or 4.5% in the US-48, suggesting that these estimates may even be generous. But, if correct, it means that Kuwait could hold production at its present level to around 2025 before facing terminal decline, or it could increase production, as the Oil Minister proclaims it will. But that would serve to advance the onset of terminal decline, which would hardly serve the interests of the Sheik or his descendents.

Telling the truth is evidently a risky business, as a political outcry, following the Minister's statement, threatens his future. (*Reference furnished by M.al-Husseini)*

828. The truth from Arabia

The Al-Husseini's have held senior positions in Aramco and clearly have a good understanding of the region's geology. It is most encouraging that they should contribute their knowledge to this newsletter

Petroleum Resources of the Western Desert of Iraq

by

Moujahed Al-Husseini and Sadad Al-Husseini

On April 18, 2007, the USA energy consultancy IHS issued a press release that stated that up to 100 billion barrels of oil resources remain to be discovered in the Western Desert of Iraq (www.ihs.com). The following day this release was quoted on the front-page of London's Financial Times and the following week in many other newspapers and magazines (for example: Dubai's Gulf News, April 23; Time magazine, April 24; Cyprus' MEES, April 30).

This conclusion stands in stark contrast to the 2004 study by the United States Geological Survey (USGS) and GeoDesign (a consultancy that specializes in Iraq's petroleum geology) that estimated the undiscovered oil resources of Iraq's Western Desert to total only half a billion barrels at the 95% level of probability, and 1.6 billion barrels at the 50% level of probability (Verma, Ahlbrandt and Al-Gailani, 2004).

The USGS-Geodesign study used a modern geological-statistical basin model that combined all the then-available data and knowledge regarding the petroleum reservoirs, source rocks, migration routes and structural traps of Iraq. It considered 526 known prospects and fields, of which 370 remained undrilled, to estimate the potential number and sizes of undiscovered fields. The IHS press release stated that its own study had evaluated a comparable number of 516 known structures, of which 435 were undrilled prospects or non-commercial discoveries.

The USGS-Geodesign study concluded that the undiscovered crude oil resources of *all* of Iraq, including the Western Desert, may only total 13.2 billion barrels at the 95% level of probability, and 45.1 billion barrels at the 50% level of probability. They did not consider Iraq's undiscovered resources to exceed 84.1 billion barrels even at the 5% level of probability. These total estimates fall far short of the IHS conclusions for just the Western Desert of Iraq.

This discrepancy is paradoxical because the potential petroleum resources of Iraq's Western Desert are relatively easy to estimate. For example, it is well-established from existing wells and seismic data in this and adjoining regions that the prospective formations in western Iraq are mostly of Paleozoic age and characterized by complex geology (Al-Hadidy, 2007). This is confirmed by the reservoirs in Akkas field, the only commercial oil and gas/condensate field in the Western Desert of Iraq.

The analogue to the Akkas Field is Jordan's Palaeozoic Risha Field located along the Iraqi-Jordanian border. The Risha Field produces 30 million cubic feet of gas per day from more than 30 wells. It extends across a vast area (10 by 50 km) but the reservoir is a thin sheet of complex sandstones in faulted glacio-fluvial channels, ranging in thickness from two to 12 meters. Its proven reserves are 180 billion cubic feet of gas, the equivalent of only 32.4 million barrels of oil.

Besides Jordan and Iraq, this Palaeozoic petroleum system has also been evaluated in eastern Syria and northwest Saudi Arabia by both seismic and wildcat drilling activities. These efforts resulted in unsuccssful exploratory wells in many large structures, and the discovery of one small gas field near Tabuk city in Saudi Arabia.

Based on these results, the indications are clear that this vast region (extending from northwest Saudi Arabia through eastern Jordan and Syria, and western Iraq) is not very prospective for oil. In fact to discover 100 billion barrels of crude oil in the Western Desert of Iraq, as suggested by the IHS report, would require discovering and delineating the equivalent of 3,000 Risha-sized oil fields. Clearly if this was a realistic possibility, many such prospects would have been discovered and drilled decades ago when intensive exploration became widespread across the entire Middle East region.

Perhaps the most important conclusion to be drawn from these profoundly contradictory studies is the need for a higher level of discipline and objectivity in the process of estimating global oil resources. After all, the difference between the two studies, in just one region, of nearly 100 billion barrels of oil resources represents nearly 10% of the proven oil reserves of the world. While identical conclusions from such studies are not realistic, discrepancies that differ by two orders of magnitude must surely indicate a major flaw in the resource estimation process.

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About the Authors

Dr. Moujahed Al-Husseini is the Editor-in-Chief of GeoArabia, the journal of Middle East Petroleum Geosciences, since 1995. He holds degrees in engineering, business and earth sciences from King Fahd University of Petroleum and Minerals, Saudi Arabia, as well as Stanford, Brown and Harvard universities, USA. He was Saudi Aramco's Exploration Manager between 1989–1992 when eight Paleozoic oil and gas fields were discovered in central and northwest Saudi Arabia, and one in the Red Sea.

Dr. Sadad Al-Husseini, formerly Saudi Aramco's Executive Vice-President for Exploration and Producing and a Member of its Board of Directors, retired from the company on March 1, 2004. He graduated from the American University of Beirut with a BSc in Geology, and obtained his MSc and PhD in earth sciences from Brown University. He joined Saudi Aramco in 1972, and his assignments have included various senior executive posts in its oil and gas exploration, production, and development operations.

829. The Curse of Oil in Nigeria

The February issue of the Geographic Magazine, which is not exactly known for extremist views, carries a disturbing article on the impact of oil on Nigeria. The flood of wealth that has flowed into the country has evidently not been widely distributed. The article illustrates shanty towns and interviews distraught and disillusioned people whose lives have been destroyed. It also refers to growing movements who are forced to resort to violent means and sabotage in a desperate effort to protect themselves from what they describe as the curse of oil development in their lands.

Nigeria has now found some 50 Gb of oil, of which it has produced almost half. So, it has a long time to wait until the curse is lifted, although the onset of decline can be expected within about six years. The population has increased by a factor of 8.4 from about 16 million in 1900 to 135 million today, the highest of any country in Africa, being also the most densely populated at 142 per sq. km. Life expectancy is 44 years and 5% of the population suffers from AIDs. The country has become a net importer of food.

It rather sounds as if Malthus got it right when he argued in 1789 that *the power of population is so superior to the power of the earth to produce subsistence for Man that premature death must in some shape or other visit the human race*

It is hard to say that oil is exactly responsible for all this but it is harder to say that the Nigerians have benefited proportionately from the cheap energy they supplied to affluent consumers in distant lands.

830. Iran takes a lead with rationing

Every country will have to adopt a system of rationing in the not too distant future if it wishes to achieve a fair distribution of declining oil supply. The so-called Oil Depletion Protocol recommends that countries cut imports to match world Depletion Rate (currently 2.6% a year); while the Tradable Energy Quotas (TEQ), proposed by David Fleming, suggests a tradable ration, akin to a currency.

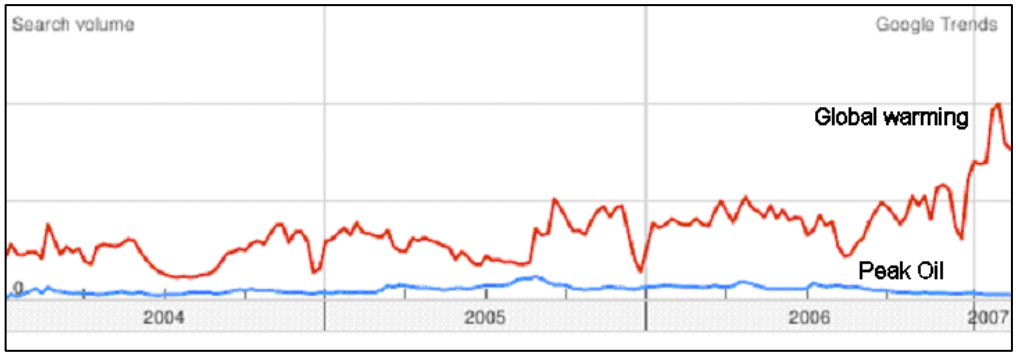
It is remarkable therefore to find that Iran is setting an example by introducing rationing, despite being substantial, albeit declining oil, producer. *(From ODAC Newsletter)*

Iran Gasoline Price Hikes, Rationing System Scheduled In May
(Middle East Economic Survey, Mon 07 May)

Article: Iran is to raise the price of gasoline and start its new rationing system as early as mid-May, MEES learns. Following approval of the scheme by parliament and then the Guardians Council in March (MEES, 26 March), the measures will see prices for rationed gasoline rise by 25% from IR800/liter (9 US cents/liter) to IR1,000/liter (12c/liter). Private car owners will be allocated a ration of 90 liters per month at this price, with any additional gasoline requirement paid for at international prices plus the cost of distribution, which is expected to be IR 5,000/liter ($0.60/liter). Taxis will be allocated 300 liters a month. MEES understands that under the system, rationed gasoline consumption is expected to be around 43mn liters/day (within Iran's domestic refining capacity of 46mn liters/day - MEES, 30 April), with up to 30mn liters/day supplied at the international price. The moves are expected to reduce the smuggling of Iranian gasoline abroad; but officials involved with the scheme expect potential teething problems relating to the smart card technology which has been deployed at service stations.

831. Why is Peak Oil politically incorrect?

By Ugo Bardi – May 2007 Ugo.bardi@unifi.it



Don't you feel at times that the issue of Peak Oil is not only ignored by the media but that it is, actually, politically incorrect? I got this distinct impression, at a recent conference, when a member of the Italian parliament spoke after me and said he didn't believe a word of what I had said because *oil prices have gone down*. It is difficult to quantify political incorrectness, but the graph above does tell us that, of the two major issues that we are facing nowadays, Global Warming beats Peak Oil hands down.

The graph was made using Google Trends, a new service that gives you a measure of the number of times a certain term has been searched over the Internet. The blue line (lower) is for Peak Oil, the red line (higher) is for Global Warming. Google Trends is still an experimental service lacking several features, for instance there is no scale for the number of hits, but it is already a valuable tool. You can get the same results using similar terms, for instance *global change* instead of *climate warming;* or *oil depletion* instead of *peak oil*.

The graph tells us more. Not only is there more interest in Global Warming than in Peak Oil, but Global Warming is gaining in popularity whereas the trend for Peak Oil is the opposite. Global Warming also shows a certain seasonality cycle: in December, with plenty of snowy landscapes and Christmas carols on TV, people seem to lose interest. Peak Oil, by contrast, doesn't show a seasonal cycle of interest, being unaffected by Christmas carols – possibly people interested in Peak Oil watch less TV.

Note, finally, that when interest in Peak Oil rises, that on Global Warming wanes, and the opposite is also true. Apparently, most people can't focus their minds at the same time on two issues that are perceived as different and unrelated.

But climate change and fossil fuels are not in competition with each other: they are two sides of the same coin. Most of the solutions proposed to fight Global Warming, such as higher efficiency, renewable energy, etc. are also solutions for the problem of fossil fuel depletion. But that is not always the case; for instance switching to coal to counteract oil depletion would worsen the problem of global warming. No matter how one sees the situation, the relation of depletion and climate change is complex, and both issues must be considered and understood if we want to do something serious to manage the situation. For, instance, the IPCC may have badly overestimated the amount of fossil fuels available in their scenarios (see the recent paper by Kjell Aleklett http://energybulletin.net/29845.html). So, we should try to avoid a situation where the growing popularity of Global Warming overshadows the question of Peak Oil to the point that the latter disappears from the media and from collective consciousness.

But why is Peak Oil the Cinderella of the debate? After all, there are as many hints of an oncoming oil production peak (high prices, geopolitical tensions, oil wars, etc.) as there are of global warming (melting glaciers, droughts, hurricanes, etc.). Furthermore, it should be much easier for people to understand that *once burned, it is gone* rather than the complex chain of reasoning that connects the burning of fossil fuels with hurricanes and melting glaciers.

As often happens, there is no single explanation for the situation. For one thing, the very fact that depletion is easier to understand makes it more ominous. For most people, it is difficult to visualize the damage that could derive from an increase (1-2 ^{o}C) of temperatures, perceived as small. But everybody can understand long lines at gas stations and the ultimate risk of returning to the poverty of our not so remote ancestors. Clearly, however, crucial advantage of Climate Change is the presence of a compact body of scientists who study the issue. The International Panel for Climate Change (IPCC) was established in 1988 and, at present, a search on the database *sciencedirect* that lists peer reviewed scientific literature gives more than 1800 papers citing the term Global Warming in the title or the abstract and about 5500 with the words Climate Change. There never was any doubt on who had the expertise to study the issue: scientists involved with the physical sciences: geologists, meteorologists, oceanographers, astronomers, and others. That global warming exists and that human activity is an important part of it, has become a mainstream idea. If you don't agree, you are expressing a fringe opinion, if you aren't considered to be an outright nut or a crackpot.

That's not the situation with Peak Oil. The Association for the Study of Peak Oil (ASPO) is the closest equivalent to the IPCC in depletion studies. But ASPO lacks the numbers and the financing of IPCC. It is not even clear who should study depletion. Is it an issue for geologists? for economists? for physicists? or others? A number of talented individuals from various fields of science are producing good, and sometimes excellent studies, on depletion but on the database *sciencedirect,* we find today only 24 papers which carry the term Peak Oil in the title or in the abstract; and even a smaller number that mention the term Oil Depletion. Compare with the more than 1800 papers that mention Global Warming! The Peak Oil issue has simply failed to gain the critical mass of scientists necessary to attract the kind of prestige, attention, and funding that global warming has generated. Peak Oil remains a fringe issue; politically incorrect. If you mention it, you are deemed the nut or the crackpot.

It all comes from far away. Neither resource depletion nor climate change are recent discoveries: in fact, they both go back to 19th Century (at least). It took time to understand that that the burning of fossil fuels was creating an anomalous rise in the concentration of CO_2 in the atmosphere and that the consequence was a major change in climate. Once that was clear, in the late 1970s, Climate Change became a legitimate subject of study and it expanded to the present level.

The path of depletion studies has been different. The first modelling of the effects of depletion on the economy goes back to William Stanley Jevons, with his *The Coal Question* of 1866. His ideas were already perfectly modern and did show that economics was the legitimate field that should have studied the matter. But his work on depletion was nearly forgotten, and economics took a path that led to models that badly underestimated the importance of mineral resources on the economy. In the 1950s, Marion King Hubbert proposed his model of the *bell shaped* production curve. But Hubbert was a geologist and his work was simply ignored by the economists. In the same period, an engineer, Jay Wright Forrester, had developed the first comprehensive models that described the interactions of the economy with the extraction of mineral resources. It was in 1972 that the issue was presented to the public in the book *The Limits to Growth* but it too went straight against the grain. It couldn't be ignored by mainstream economics, but it could be ridiculed. In the late 1980s, the fate of the issue of depletion was sealed by a series of political attacks, in particular by a journalist, Ronald Bailey, which had a huge success and which led to a situation in which the very concept of resource depletion was considered politically incorrect.

Only in the late 1990s, did a group of geologists take a new interest in Hubbert's work. Colin Campbell and Jean Laherrère created the Association for the Study of Peak Oil (ASPO) in 2001. ASPO collected a number of high level scientists in various fields; their work attracted considerable attention but

failed to generate the equivalent of the IPCC : there is no "International Panel for Oil Depletion" (IPOD). The issue was too new and interdisciplinary to generate a solid group of scientists interested in the issue. So, we have arrived to where we stand, with the issue of Global Warming, being considered much more seriously than that of Peak Oil.

In the long run, the issues that are now clouded in harsh debate will appear clear. By then, however, the damage will have been done and we may be left without the resources needed to remedy it. Climate change and fossil fuels depletion must be understood together if something serious is to be done in order to mitigate their effects. If we want to make sure that Peak Oil is not forgotten with the next political crisis, we must try to build a solid scientific base to it with publications in the peer reviewed literature. Some people are doing that; it is growing, but slowly. Let's just hope it is not too late.

831. ASPO-6

A detailed conference programme will be announced in early June with the re-launching of the conference website and opening of the online registration system. Apologies to the many people who have enquired about registration and thanks for your patience.

Recently confirmed speakers include Mike Rodgers of Washington-based PFC Energy; Edward Walshe, LNG expert at Poten; and Professor Ly Feng of China University of Petroleum. The British Labour Party's Michael Meacher, former environment minister, has also confirmed his participation in the final session on day two.

Don't forget to sign up for the Apres Pic in the Lake Hotel Killarney [www.lakehotel.com] after the conference. Please e-mail info@aspo-ireland.com to do so.

Calendar - Forthcoming Conferences and Meetings

ASPO members and associates [shown in parenthesis] will be addressing the subject of Peak Oil at the following conferences and meetings. Information for inclusion in future newsletters is welcomed.

2007	
Sept. 11-12	Geological Society bi-Centennial Conference, **London** [Campbell]
Sept. 17-18	ASPO-6 International Conference, **Cork,** Ireland
Oct. 17-20	ASPO-USA Conference, **Houston**, Texas
Dec. 4-5	VorArlberg Sustainability Conference, Bregenz, Austria [Campbell]
2008	
	ASPO-7 International Conference, Norway