



# Association for the Study of Peak Oil&Gas

## NEWSLETTER No 46 –OCTOBER 2004

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.

The following countries are represented: Austria, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

### *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 for Mankind.*

**Newsletters:** This and past newsletters issues can be seen on the following websites:

<http://www.asponews.org>

<http://www.energiekrise.de> (Press the ASPONews icon at the top of the page)

<http://www.peakoil.net>

A Spanish Language edition is available on [www.crisisenergetica.org](http://www.crisisenergetica.org)

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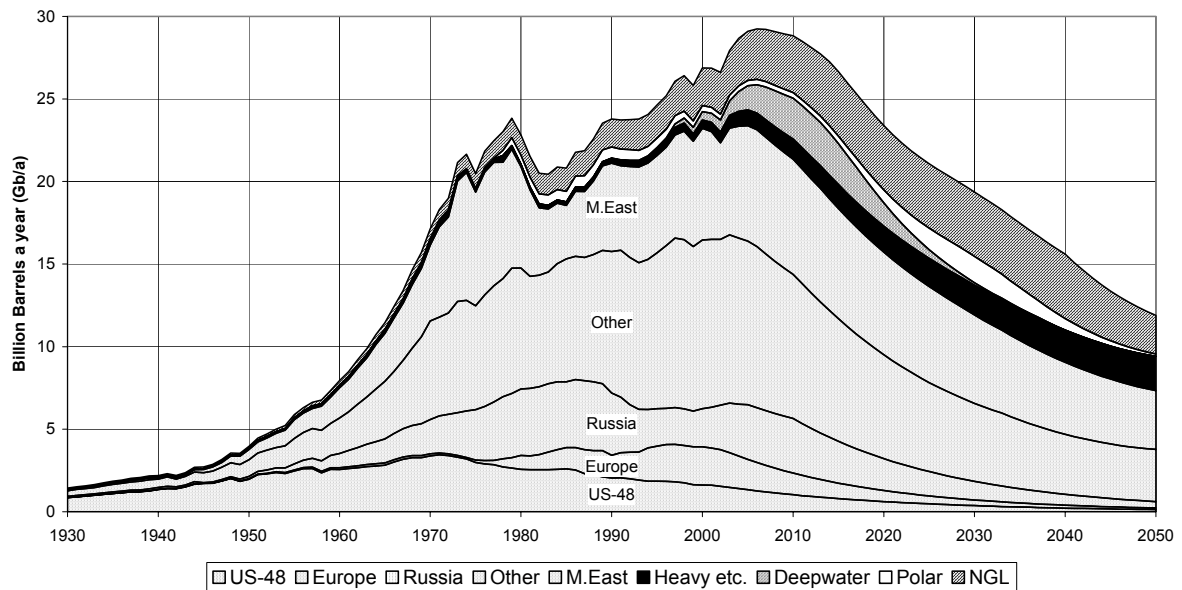
### *Forthcoming Conferences*

Abu Dhabi	42	Brasil	26	Iran	32	Nigeria	27	Syria	17
Algeria	41	China	40	Iraq	24	Norway	25	Trinidad	37
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Argentina	33	Ecuador	29	Kuwait	38	Peru	45	UK	20
Australia	28	Egypt	30	Libya	34	Russia	31	USA	23
Azerbaijan	44	Indonesia	18	Mexico	35	S. Arabia	21	Venezuela	22

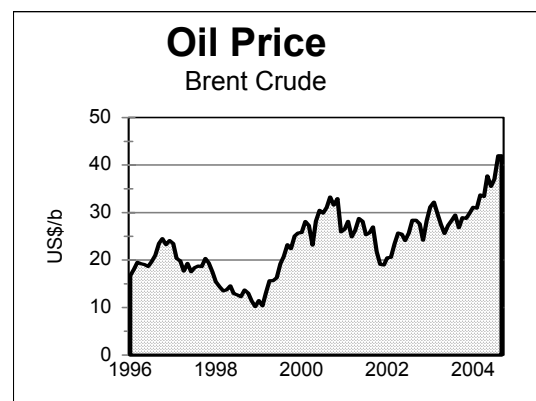
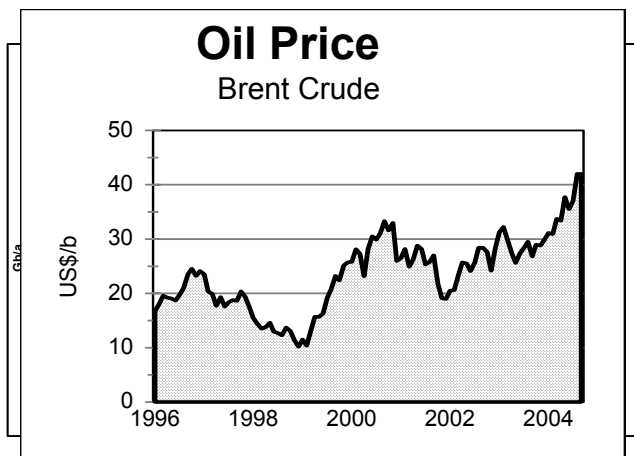
### Index of Country Assessments with Newsletter Reference

## The General Depletion Picture

### OIL AND GAS LIQUIDS 2004 Scenario



ESTIMATED PRODUCTION TO 2100									End 2003	
Amount			Gb	Annual Rate - Regular Oil					Gb	Peak
Regular Oil				Mb/d	2005	2010	2020	2050	Total	Date
Past	Future		Total	US-48	3.6	2.8	1.7	0.4	200	1971
Known Fields		New		Europe	5.0	3.6	1.8	0.3	75	2000
920	780	150	1850	Russia	9.1	10	5.5	0.9	210	1987
	930			ME Gulf	19	19	17	10	675	1974
All Liquids				Other	27	23	17	9	690	1997
990	1510	2500		World	64	58	43	20	1850	2005
2004 Base Scenario				Annual Rate - Other						
M.East producing at capacity (anomalous reporting corrected) <i>Regular Oil</i> excludes oil from coal, shale, bitumen, heavy, deepwater, polar & gasfield NGL			Heavy etc.	2.6	3	4	5	195	~	
			Deepwater	4.7	7	5	0	55	2014	
			Polar	0.9	1	2	0	50	2030	
			Gas Liquid	8.2	9	11	6	270	2027	
			Rounding			1		-2	80	
Revised	06-08-04			ALL	81	80	65	30	2500	2006



#### 422. Mexican Hopes

Pemex has announced its hopes of finding substantial deepwater reserves, claimed to contain as much as 54 Gboe, which it is said would lift the Country's total reserves to 102 Gboe, but at the same time admits that its largest field, Canterel, is set to decline from 2006 at as much as 14% a year.

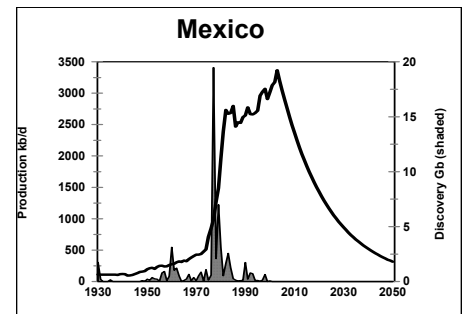
Mexico's reserve reporting has been questionable in the past, rising greatly in 1980 to a period of suspect stability before crashing in 1997, following an external audit. The reporting was partly related to the sub-commercial field, Chicantopek, whose reserves were used as collateral for foreign loans following a raid on the peso. The Government is under pressure to privatise Pemex, partly under the provisions of NAFTA, which may explain some of the political pressures on its reserve reporting. Its gas reserves are down to 15 Tcf, making it a net importer, so not much of the claimed 48 Gboe (102-54 Gb) is gas.

1950	1.4 Gb	1992	51
1955	1.8	1993	51
1960	2.5	1994	50
1965	2.8	1995	49
1970	6.0	1996	49
1974	3.6	1997	28
1975	14	1998	28
1977	7.0	1999	28
1980	44	2000	24
1985	56	2001	25
1990	51	2002	17
1991	51	2003	16
Proved acc. Oil & Gas			

The ASPO model estimates future production from known fields at 22 Gb, which seems reasonable in relation to the audited *Proved Reserves* of 16 Gb, and tentatively assumes that the deepwater will give another 5 Gb, with production peaking in 2015. This compares with 12 Gb for the US sector of the Deepwater Gulf of Mexico.

If these estimates are roughly correct, Mexico's non-deepwater production is set to decline at about 5% a year from the current 3.3 Mb/d to 2.3 Mb/d by 2010, and 1.4 Mb/d by 2020.

Little credence can be attached to the new estimates released by Pemex, although the motives for exaggeration are obscure. Perhaps it is offering bait to the Government for more funding, without realising that countries with high reserves expose themselves to greater risks of foreign pressure, even invasion. Porfirio Diaz, who presided over the country for 26 years from 1884 already understood when he lamented his country's predicament with his famous words "*Poor Mexico - so far from God, yet so close to the United States*". (Reference furnished by Werner Zittel)



#### 423 US Foreign Policy Revealed

[http://www.pinr.com/report.php?ac=view\\_report&report\\_id=203&language\\_id=1](http://www.pinr.com/report.php?ac=view_report&report_id=203&language_id=1)

1 September, 2004 **U.S. Troop Redeployment: Rational Adjustment to an Altered Threat Environment**". U.S. President George W. Bush announced an ambitious ten-year plan for the redeployment of U.S. military forces around the world. . . . The redeployment plan is based on a realistic assessment of where emerging threats to U.S. interests are likely to arise in the future.

##### Oil and Islamism

Troops that remain abroad after the withdrawal from Germany and other parts of Western Europe will be positioned protectively around and within the centers of oil production and distribution in the Middle East, Caspian Sea and Africa. As demand for oil rapidly grows in China, India and other emerging industrialized states, the United States is constrained to gain control over energy supplies so that its domestic and security interests are satisfied. The aim of the United States is to be the protector and, therefore, beneficiary of the world's largest oil supplies. Whether or not it will be successful in surrounding oil production with a military net is uncertain, but the decision has been made that attempting to do so is a top priority.

In addition, U.S. presence in regions that are predominantly Islamic supports local regimes that suppress Islamists and Islamic revolutionaries. It is reasonable for U.S. security elites to reposition power resources where threats are emerging and withdraw from regions where there is no threat and, indeed, there is a consensus on the desirability of a stable global capitalist order.

Report Drafted By Dr. Michael A. Weinstein

(Reference furnished by William Tamblyn)

#### 424 Correction to Item 412

The report by K Rehaag was wrongly attributed to the IEA Oil Market Report of 12 July, when apparently the slides come from a presentation at the FVG & IBP Workshop in Rio de Janeiro on that date

[http://www.iea.org/dbtw-wpd/Textbase/speech/2004/kr\\_rio.pdf](http://www.iea.org/dbtw-wpd/Textbase/speech/2004/kr_rio.pdf) (Correction furnished by Matt Mushalik)

## 425 Oil statistics as an invisible political weapon

### The US Military Oil Consumption Overseas Disappears in World Oil Demand

Sohbet Karbuz

According to the US Defense Department's annual 'Base Structure Report' for fiscal year 2003, the Pentagon currently owns or rents 702 overseas bases in about 130 countries. Since it is known that some of those countries (e.g. Japan) report oil sold to the US bases as export to the US, the question arises as to whether the US reports the figures as import and consequently as US oil consumption. A closer investigation of this issue resulted in the conclusion that most (if not all) US military consumption overseas simply disappears in international oil statistics. Fuels consumed by the aircraft, the destroyers and the bases are most probably not included in the supply surveys [1] of the EIA.

The end-use surveys collect data directly from US energy consumers (and their energy suppliers). Statistics from the end-use surveys appear in comprehensive reports that cover the residential, commercial buildings, manufacturing, and residential transportation sectors and are summarized in the AER. In general, consumption data for US military units and facilities in both the US and foreign countries are not included in the end-use consumption survey statistics.[2]

However, energy use in the following kinds of military facilities in the US is included but are not separately enumerated: (1) small facilities that are open to the public and are not considered restricted, (2) non-restricted facilities that are considered academic in nature, such as the military academies, and (3) facilities where the primary function is comparable to a civilian activity, such as hospitals, administrative centres, personnel centres, and residential housing on military bases.

They are not reported as imports even in US Bureau of the Census statistics. The basic reason why they are not reported as imports is because they do not cross a US border for consumption in the US, its territories or possessions. However, bunker and deployment fuels purchased in the US are known but if they are purchased in foreign countries they are not shown. The only place where they show up is Federal Energy Management Program (FEMP). However it is important to note that none of those data sets is incorporated into or otherwise reconciled with each other. That is, the supply survey data are not incorporated into the consumption survey data and, with minor exceptions, the consumption survey data are not incorporated into the supply survey data. The FEMP data also stand alone and are not incorporated into either the supply survey or consumption survey data. To make the story short, the US military consumption overseas is incorporated neither in EIA's nor IEA's world oil demand.

How big or small is it?

The most valuable source on the magnitude of US military consumption overseas was the Emission of Greenhouse Gases in the United States published by the EIA. As is stated in several issues of that publication, estimating, even roughly, the quantity of oil consumed for overseas military operations is an uncertain procedure because the Defense Department does not keep its books for the purpose of clarifying ambiguities in international statistics.

The 1999 issue of above mentioned report states that The Defense Energy Support Center reports that petroleum "sales" (i.e., transfers to military sources and operating units) for fiscal year 1998 totalled approximately 102 Gb. Of this, approximately 79% was acquired domestically and is assumed to be included in US statistics. A reasonable estimate of military oil consumption not reported elsewhere would, therefore 21% of total military consumption of jet fuel, middle distillates and residual oil. This rough calculation gives us about 60 kbd which could be considered as overseas military consumption in 1998. After 2000, mention of this issue disappears in the same publication. However, in the original data source, Defense Energy Supply Center's Fact Book, this amount increased to 45% in fiscal year 2003. On this basis about 170 kbd was used for military purposes, which is not so insignificant as to be ignored. In 2004, it must be even higher considering the amount of fuels used in Iraq by the US military.

[1] Monthly and Annual Energy Reviews (AER) and State Energy Data Report.

[2] In RECS, CBECS, MECS, and RTECS, domestic consumption at bases, installations, and other facilities is not included except for non-restricted academic, medical, administrative, and other facilities that are comparable in function to civilian activities (in CBECS), including on-base residential housing (in RECS).

It is somewhat shocking to learn that the US runs 702 military bases in 130 foreign countries. This may exceed Britain's engagement at the height of Empire in the 19<sup>th</sup> Century, and it certainly speaks of "empire" as by their nature the bases can hardly be described as defensive. The article confirms that the military uses a great deal of oil in what it cynically describes as *Freedom* missions. It is a harbinger of what is to come when the police, military and other services will have prior claim on available supplies. They may need it in the face of cannibalism. <http://newswire.indymedia.org/pt/newswire/2004/07/806597.shtml>

(Reference furnished by Jean Laherrère)

## 426 Wall Street Journal- Dire Prophecy

The Wall Street Journal of September 21 carries an article entitled Dire Prophecy, giving credibility to Peak Oil in the face of misleading information from oil companies and the flat earth community.

#### **427. New books on Oil and Gas Depletion and its Impact**

Several interesting new books on depletion have appeared:

**High Noon for Natural Gas** by Julian Darley (published by Chelsea Green ISBN 1-931498-53-9 and available from <http://store.postcarbon.org/#highnoon>) looks at the looming gas supply crisis, and comes forward with possible responses and actions that could be taken to face the serious consequences.

**The Oil Factor** by Stephen & Donna Leeb, (published by Warner Business Books ISBN 0-446-53317-3) considers the economic consequences of peak oil, proposing investment strategies by which to benefit from the alternating periods of deflation and inflation that are anticipated in a declining stockmarket.

**The End of the Oil Age** by Dale Allen Pfeiffer (PO Box 892 Clarkston, MI 48347) is a readable succinct anthology of chapters covering not only the evidence for peak oil but the wider implications and impacts in social, political, geopolitical and economic terms.

**Blood and Oil** by Michael T. Klare (published by Metropolitan/Henry Holt) follows his penetrating earlier work **Resource Wars** to comment and criticise US Foreign policy aimed to secure oil by military means.

**Oil: Anatomy of an Industry** by Matthew Yeomans (published by the New Press) also addresses the threat of depletion on the US economy and political structure.

**The Truth about Oil and the Looming World Energy Crisis** by C.J.Campbell (available from [info@eaglepress.net](mailto:info@eaglepress.net)) is a modest booklet by comparison but provides a CD with ten lectures, complete with Notes that could form the basis for presentations by wide range of interest groups. It proposes a Depletion Protocol by which countries could reduce tensions by matching imports against world depletion rate. A Croatian Edition is to be produced under a local initiative.

**Crossing the Rubicon: the Decline of the American Empire at the End of the Age of Oil** by Michael C. Ruppert (published by New Society) unmasks the authors of the events of 9/11 that heralded the War on Terror as a cloak beneath which to secure access to foreign oil by military intervention. It also carries a chapter on the related subject of peak oil, with references to ASPO and its conferences.

#### **428. The IEA: to Know or Not to Know**

The International Energy Agency has prime international responsibility for advising governments about oil supply, but, apart from elements within the organisation who have at times succeeded in delivering coded messages (see Energy Outlook 1998), it has singularly failed to provide proper information. It is of course possible that it has simply failed to grasp the essence of the subject for which it is responsible, being staffed by economists lacking knowledge of the nature of petroleum and its discovery. In particular, it has failed to see the need to backdate reserve revisions to obtain a valid discovery trend. That is possible, but it is kinder to assume that the organisation understands the situation perfectly well yet is under pressure to conceal and confuse, for fear of the panic that might ensue if the truth be told.

High oil prices may be making it harder to hold the deception. First, we have the curiously forthright presentation referred to in Items 412 and 424, and then we have the following report that the IEA now wants to use field by field data, as needed to properly backdate revisions. This information has been available for many years from industry databases which the IEA could have acquired. So again we have to ask if it is dumb or devious in asking OPEC for the information, confident that it will not oblige, because it fears the embarrassment of the results that a proper internal study would deliver.

An experienced politician is skilled at sensing what to know and what not to know. Even the simplest evaluation of the oil discovery trend (as reproduced as The Growing Gap on Page 1, itself based on information published by ExxonMobil) would demonstrate the imminent consequential peak in production.

By John M. Biers\* of DOW JONES NEWSWIRES

HOUSTON (Dow Jones)--The International Energy Agency this fall will push for more detailed disclosure of world oil reserves, in its latest effort to coax Middle Eastern governments and other leading oil producers to boost investment.

The IEA, the energy watchdog for the Organization of Economic Cooperation and Development, wants leading producers to report oil output and reserves data on a field-by-field basis, a shift that would vastly increase disclosure from current levels. The IEA will promote the policy when it releases its annual world energy outlook in October, said Fatih Birol, head of IEA's economic analysis division.

The proposal, which is likely to face resistance from the Organization of Petroleum Exporting Countries and others, comes amid growing concerns about the adequacy of future oil supplies.

While some experts worry that the world is running out of oil, Birol instead sees the chief problem as lack of investment in areas where oil reserves are most significant. Better data would highlight where investment needs to take place and improve confidence in claims about how much oil is left.

"The biggest challenge is that about two-thirds of the oil reserves are closed to investment," Birol said. "You have the oil under the ground, and you have the money in the industrialized countries, but the oil and the money can not meet."

Saudi Arabia, Kuwait and other Middle Eastern countries have the majority of the world's proven reserves, according to conventional statistics, but some question whether such figures are reliable or significant.

"Since oil is for the well-being of almost everyone in the world, it is the right of citizens to know how much oil reserves there are and where they are," Birol said in an interview.

Under current policy, no OPEC nation permits third-party verification of production or export flows, nor have countries allowed independent on-the-ground assessments of their reserves. OPEC officials in Vienna couldn't be reached for comment Thursday.

Reserve tallies are a sensitive matter to OPEC countries, in part because they figure into production quotas. Likewise, major oil companies are loath to share operating information with competitors. And regulatory bodies like the Securities and Exchange Commission are accustomed to enforcing their own rules.

The IEA and OPEC are already participating with other multilateral institutions in the so-called Joint Oil Data Initiative to improve the quality of market data. While the initiative has opened an office in Saudi Arabia and touted the merits of transparency in the abstract, there has been little tangible progress otherwise.

The United Nations Economic Commission for Europe has been working with OPEC and leading producers to create an international standard for reporting reserves. But the initiative, which will be discussed next at a meeting in November, hasn't pushed producers for the level of detail envisioned by Birol, said Slav Slavov, a special adviser to UNECE. Birol said the IEA would try to enlist other multilateral organizations in its stepped-up campaign for more information. For example, the United Nations could highlight the importance of disclosure, much as the World Health Organization required reporting of SARS.

The World Bank often imposes requirements before funding major pipelines or other projects; the bank could require additional data as a condition for that support, Birol said. *(Reference furnished by Jim Meyer)*

#### **429. Evidence for Peak Oil mounts – by John Attarian**

Readily accessible evidence is piling up that a global oil peak cannot be far off. Analysis of the June 2004 BP Statistical Review of World Energy and historical oil production data reveals that:

(1) All regions except Africa have already passed through their peaks: North America (1985), Europe and Eurasia (1987), the Middle East (2000), Asia Pacific (2000), and South and Central America (2002).

(2) Of the 48 largest oil-producing countries which BP lists, which account for at least 98 percent of world oil extraction, only 17 were past their peaks as of 1993, but 31 were past peak as of 2002, not counting Denmark and Angola, which may have peaked that year.

(3) Decline has set in among many major producers. In each year 1993-1997, at least 30 major producing countries showed output increases. The tables have turned. Output declined in 29 major countries in 2001, in 27 in 2002, and in 22 in 2003. Yet oil prices in this period were much higher than in 1993-1997, and rising. So was consumption. This, surely, is a strong sign that economic forces alone do not govern how much oil is extracted - and that geological reality, i.e., resource finitude and depletion, is starting to take over.

(4) Depletion is also very substantial. The total output decline among major producers was -2,584 thousand barrels per day (kb/d) in 1999, -551 kb/d in 2000, -1,461 kb/d in 2001, -2,187 kb/d in 2002, and (not counting war-disrupted Iraq, clearly a special case) -1,168 kb/d in 2003. Again, this is in the face of high and rising prices. These declines were, of course, offset by increases by other major producers: +1,297 kb/d in 1999, +3,176 kb/d in 2000, +1,269 kb/d in 2001, +1,726 kb/d in 2002, and +4,502 kb/d in 2003. This yields net aggregate output changes of -1,297 kb/d in 1999, +2,625 kb/d in 2000, -192 kb/d in 2001, -461 kb/d in 2002, and +3,334 kb/d in 2003. By contrast, in 1993-1998 the average annual net aggregate output change among the 48 largest producers was positive every year, exceeding 1,000 kb/d in five years out of six, and averaging 1,289 kb/d. All this indicates that world oil output has reached a bumpy plateau.

(5) 2003's 3,334 kb/d net increase among the major countries is less impressive than it looks. Almost all of it (+3,158 kb/d) was in just five countries: Saudi Arabia (+1,153 kb/d), Russia (+845 kb/d), Iran (+432 kb/d), the United Arab Emirates (+361 kb/d), and Kuwait (+367 kb/d). Over half of it was in Saudi Arabia and Russia. All five of these countries are well past their peaks. Saudi Arabia's Ghawar field has a water-cut of at least 30 percent and perhaps much more. As Matthew Simmons has shown, a few aging giant fields accounted for about 51 percent of Iran's 2000 output, 95 percent of the U.A.E.'s, and 89 percent of Kuwait's. In other words, the world is heavily dependent for increases in oil output on a few large, post-peak producers whose ability to sustain production increases is highly questionable. Seen in this light, the 2003 output surge is very fragile.

In short, the BP data point strongly to an imminent global peak. Statements in August by OPEC President Purnomo Yusgiantoro and Venezuelan Energy Minister Rafael Ramirez that OPEC had reached the limit of its production capacity support this interpretation. We might even be passing through the peak this year.

Oil peak and subsequent decline necessarily mean economic contraction and exploding energy costs. This will make supporting the aging populations of America and Europe, supplying health care (which is energy-intensive) and shifting to alternative energies increasingly problematic. Beyond even these daunting challenges looms the hideous problem of a growing world population using a dwindling oil supply. The U.S. Census Bureau projects

world population of 6.81 billion in 2010, 7.51 billion in 2020, 8.11 billion in 2030, 8.62 billion in 2040, and 9.05 billion in 2050. The 2004 revision of ASPO's depletion model projects oil output (all liquids) for these years of 28.74, 23.49, 19.30, 15.36, and 11.54 Gb respectively. This works out to 4.22 barrels per capita in 2010, 3.13 in 2020, 2.38 in 2030, 1.78 in 2040, and just 1.28 in 2050!

Small wonder politicians and mainstream opinion are in denial about depletion. But eventually the truth will have to break through.

#### **430. A Remarkable Presentation in Washington**

A remarkably forthright presentation, confirming Peak Oil, has been made by the consultants PFC to the CSIS organisation in Washington, which earlier hosted the confrontation with the Saudis regarding the validity of their reported reserves. Perhaps the motive is to justify the policy outlined in Item 423.

[http://www.csis.org/energy/040908\\_presentation.pdf](http://www.csis.org/energy/040908_presentation.pdf)

(Reference furnished by Aubrey Meyer)

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1	2	3	4	5	6	7	8	9
OPEC	Cum Prod End 2003	% Depleted	Indicated Total	PFC	Remaining Reserves Gb ASPO	Salameh	BP	BP Estimates Interpreted
Iraq	28	22%	127	99	62	62	115	Total Discovered
UAE	19	31%	61	42	49	37	98	Total Discovered
Kuwait	32	35%	91	59	60	71	97	Total Discovered
Libya	23	39%	59	36	29	26	36	
Saudi	97	42%	231	134	144	182	263	Total Discovered
Algeria	13	50%	26	13	14	11	11	
Nigeria	23	50%	46	23	25	20	34	? High Estimate
Iran	56	51%	110	54	60	64	131	Total Discovered
Venezuela	47	58%	81	34	35	31	78	Total Discovered
Qatar	6.8	62%	11	4.2	4.1	4.6	15	Total Discovered
Indonesia	20	75%	27	6.7	9.4	12	4.4	
<b>TOTAL</b>	<b>365</b>		<b>870</b>	<b>506</b>	<b>461</b>	<b>520</b>	<b>882</b>	
<b>NON-OPEC</b>								
China	30	61%	49	19	24		24	
Mexico	31	48%	65	22	22	+	16	
Brunei	3.1	58%	5.3	1.2	1.2		1.1	
Malaysia	5.6	61%	9.2	4.0	4.0		4.0	
Denmark	1.5	61%	2.5	1.0	1.0		1.3	
India	5.8	66%	8.8	4.9	4.9		5.6	

Chris Skrebowski writes:

PFC Energy's Presentation is truly stunning. I very much like the danger zone approach to depletion. The 54% danger point is in effect midpoint depletion if you just work on known reserves and don't add in an estimate of future discovery. For most locations, this seems reasonable. PFC have perhaps given away a little more than they planned as you can work out their reserve assumptions by taking ASPO's latest estimate of produced to date (Col.2), eyeballing the depletion percentage (Col. 3) and then calculating PFC's reserve assumption (Col.4), prior to taking off the produced so far to give remaining reserves (Col. 5). The above table shows this together with the estimates of ASPO ; Dr Salameh – (*Petroleum Review*) and BP (*Statistical Review*) See respectively Columns 6,7 and 8. The immediate conclusions are that OPEC with the exception of Indonesia, Algeria, Libya and just possibly Nigeria are supplying BP with their total discovered rather than their remaining reserves.

A second conclusion is that OPEC's reserves are around the 500 billion barrel mark, or in other words some 300-400 billion barrels short of what is widely assumed.

The third conclusion is that in addition to the eighteen countries already in decline (See *Petroleum Review* August 2004) there are a number of additional countries lined up to take the plunge. They are Indonesia (already one of the 18), Qatar, Venezuela (another of the 18), Iran, Nigeria, Algeria with Saudi sickening rapidly (See Matt Simmons's latest presentation *'Twilight in the Desert: the fading of Saudi Arabia's oil'*, which is stunning in a doom-laden sort of way.

Other Non-OPEC countries for the sick bay are India, Denmark, China, Malaysia, Brunei and Mexico.

Now, the eighteen countries in decline accounted for 22.131 Mb/d of 2003 production. If we then add in the 28.063 Mb/d coming from those in the sick bay, we can see we are approaching the tipping point very rapidly indeed. This is because once 50mn b/d of capacity is in decline, it is effectively impossible for the rest to offset the production loss, never mind meet any incremental demand.



On these figures, I'll be surprised if we make it to 2008 before the inexorable production decline begins. However, the real question is, once this becomes more widely known, will the producers conspire in their own extinction or will they save their oil for their own people?

### 431. Country Assessment – Turkey

That the destiny of nations hangs on slender threads is well illustrated by Turkey. But for a single historical bad decision, it could have emerged as the World's premier oil power, with all that that implies.

Turkey covers an area of 780 000 km<sup>2</sup> between the eastern Mediterranean and Black Sea. The semi-arid Anatolian Plateau at altitude around 1200m is flanked by the Pontic Mountains to the North and the Taurus Mountains to the South. The highest elevation is Mount Ararat in the East, rising to over 5000m, which is where Noah's Ark landed. The Black Sea drains through the Straits of the Bosphorus into the Sea of Marmara, which in turn flows into the Mediterranean through the Dardanelles. This waterway separates "European" from "Asian" Turkey.

The population has risen from about 12 million in 1900 to 71 million to-day, with a general movement from rural areas to the towns, especially Ankara, the capital, and Istanbul. There has also been massive emigration, such that about two million Turks live in Europe, especially Germany. Most of the inhabitants are Sunni Muslims, but there is an important Kurdish minority in the southeast.

The country has had a long turbulent history spanning some ten millennia, having been at various times part of Roman, Greek and Persian Empires. Its modern history opened in the 12<sup>th</sup> Century with the invasion of nomadic Turkic people from the east who founded what became the Ottoman Empire. They were Islamic fighters who gradually expanded their dominion, which at its height in the 16<sup>th</sup> Century controlled much of the Balkans, the Middle East and North Africa. The next five centuries were marked by decline. Austria and Russia were pressing the northern frontiers while there was much dissent between various internal factions. During the 19<sup>th</sup> Century, tax collection and mounting foreign debt increased the tensions, and over-reactions.

Modernisation, including the construction of railways and telegraph with foreign capital, also contributed to religious conflicts with those who saw the development as an assault on Islam. These pressures erupted in the brutal repression of the Christian Armenian minority in 1894-6.

Growing dissatisfaction with an archaic government led to various revolts culminating an uprising of dissatisfied army officers, known as the Young Turks, who ousted the Sultan, Abdul Hamid, and assumed control although giving nominal power to Parliament. Foreign powers took the opportunity to move against the Empire. Austria took Bosnia in 1908, while Italy took Libya and islands in the Aegean. The Balkan Wars of 1912-13 completed the break-up. Attempts were also made to modernise the Army with the help of a German military mission under General von Sanders, cementing an unfortunate link with that country. The First World War, which broke out in August 1914, sealed the fate of the Ottomans. The country could easily have remained neutral, but it took the opportunity to bombard the Black Sea ports of its old enemy, Russia, which prompted the Allied Powers to declare war, itself probably a mistake.

The Turks fought bravely on several fronts, partly under the Generalship of Mustafa Kemal, known as "Ataturk" but were eventually defeated by British forces marching north through Syria. Fighting ended on October 30<sup>th</sup> 1919 with the Armistice of Mudros. Confident of eventual victory, the British and French Governments had already reached agreement under the Sykes-Picot Accord of 1916 on the post-war division of the Ottoman Empire into their respective spheres of influence, leading to the creation of the Middle East countries with the exception of Iran (See country assessments in earlier Newsletters).

The fate of Turkey itself was defined by the Treaty of Sevres of 1920, providing for the secession of Christian Armenia and offered Greece advantage, and was opposed by Ataturk. The Greeks then mounted a military offensive, but were eventually defeated in 1923 when the definitive borders of Turkey were defined by the Treaty of Lausanne. Ataturk emerged as a powerful leader, set on modernising the country on secular European lines. The Caliphate was abolished in 1923, and Islamic Law three years later. Arabic script was

TURKEY		Regular Oil
<b>Population M</b>		71
<b>Rates Mb/d</b>		
Consumption	2003	0.64
per person b/a		3.6
Production	2003	0.043
	Forecast 2010	0.033
	Forecast 2020	0.021
Discovery 5-yr average Gb		0.001
<b>Amounts Gb</b>		
Past Production		0.84
Reported <i>Proved Reserves</i> *		0.30
Future Production - total		0.36
From Known Fields		0.20
From New Fields		0.16
Past and Future Production		1.2
Current Depletion Rate		4.4%
Depletion Midpoint Date		1992
Peak Discovery Date		1969
Peak Production Date		1991

\*Oil & Gas Journal



replaced by the Latin alphabet in 1928. The westernisation of the country did not however proceed without opposition, and in 1925 the Kurds rose in revolt in SE. Turkey in the name of Islam. In general, Ataturk moved towards the State-control of industry and finance to save the country from foreign exploitation, which proved a successful policy until his death in 1938.

Turkey managed to remain neutral during most of the Second World War, but joined the Allied cause in its last days, fearing Soviet expansion both sought to control the Straits in order to give it an outlet to World trade, and incorporate parts of eastern Anatolia into the Soviet Republic of South Georgia, Turkey then turned to the United States which sent military aid in 1947, paving the way for it to join NATO in 1952.

However, historical threads run deep, and ancient conflicts re-emerge, built partly on the Islamic tradition. The Kurds continue to seek independence, while the Government tries to cement ties with Europe, even to the extent of membership to the European Union. Its relations with neighbouring Iraq have been ambivalent. It supported Saddam in his suppression of the Kurds, yet allowed the U.S. to use Turkish airbases in the Gulf War of 1990-91. A major Iraqi oil export pipeline passes through Turkey and profitable truckloads of oil were shipped through Turkey in contravention of the Iraq trade embargo. The Invasion of Iraq and the new "War on Terror", initiated by President Bush, has no doubt inflamed passions leading to a resurgence of anti-Western feeling. It did in fact literally explode with the detonation of explosives in 2003 causing loss of life including that of the British Consul, and damage to a British bank. Significantly, Turkey did not allow the invaders of Iraq to use its air space. Turkey may well resurrect its long standing claims to northern Iraq, and its oilfields, in the likely break-up of Iraq in the aftermath of the Anglo-American invasion. Still another element is the construction of the new Caspian pipeline to Ceyhan in Turkey, giving the country considerable new leverage.

In short, as the Middle East situation deteriorates further in the years ahead, we may see the resurgence of a successor to the Ottoman Empire. The European Union has recently announced steps towards the admission of Turkey in a highly significant move that would transform Europe by the entry of 70 million people, but also perhaps give Europe better access to the oil resources of the Caspian and Middle East.

In geological terms, SE Turkey lies at the northern end of the Middle East oil province, but the structures are deeply breached so that much of the oil they may have once contained has escaped. The country has attracted desultory exploration since before the Second World War with the drilling of over 1000 wildcats. Peak drilling was in 1975 when 43 wildcats were drilled, but has now sunk to less than half that number, and is expected to decline further in the years ahead. Some fifty oilfields have been found but few exceed 100 Mb in size. Some interest is now being expressed in the southern Black Sea, but at best that is likely to provide modest gas reserves. The industry is dominated by the State Company, TPAO, which is also active overseas. Turkey consumes 676 kb/d meaning that net imports stand at 631 kb/d being set to rise further in the future. But Turkey's key position on the pipelines from Iraq and Azerbaijan should mean that that its needs will be met. Turkey is accordingly well placed to weather the coming storm.

History repeats itself. Turkey has never quite known on which side its interests lie. Perhaps a "Son of Ataturk" will appear on the scene to find the country's own destiny, possibly to yet again play a key part in Middle East affairs. With the prospect of entry to the European Union, Turkey may find itself a flashpoint as Europe and America compete for access to the oil they so desperately need.

#### **432. New Instructive Website**

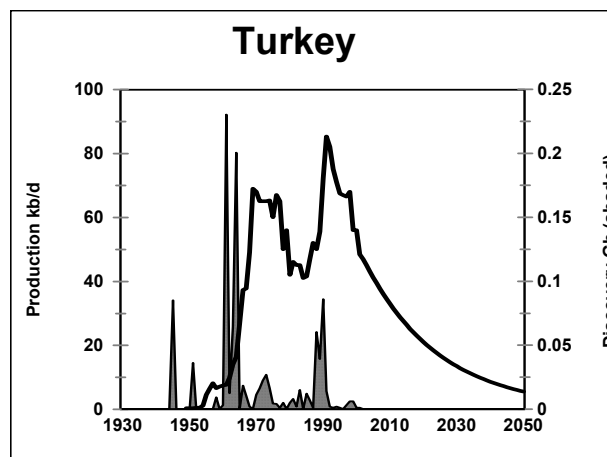
Mr Bakhtiari, an adviser to the National Iranian Oil Company in Tehran, and key participant in ASPO conferences, has opened a new feature termed *Insights* to his website.

[www.samsambakhtiari.com](http://www.samsambakhtiari.com)

We can be sure that it will provide penetrating and well informed analysis of World events.

#### **433. Britain goes back to Nuclear**

According to the Times of September 14<sup>th</sup>, Britain now contemplates reversing its nuclear policy, identifying the need for 45 new nuclear power stations. The ever-suave Mr Blair depicts this as "saving the planet", while another article in the same issue reveals a more pressing motive closer to home. In it, the



Chief Executive of one of the main gas terminals warns that the country faces electricity black-outs due to falling North Sea gas supply and inadequate storage. The absence of adequate storage and the rapid depletion of the resource reflects the efficiency of Britain's privatised industry in following the classic economic principles of discounted cash flow and "just in time" management, in which a security of supply or concern for the future play no part. Meanwhile, Ireland that depends on imports of British gas for much of its electricity generation has increased electricity charges by 8% with another 4% to follow. The writing is definitely on the wall.

### **434 Raising Awareness of Depletion in Australia**

#### **Peak oil topical in Australia – by Bruce Robinson**

Dr Ali Samsam Bakhtiari of the National Iranian Oil Company made a very successful visit to Australia in August. He was keynote speaker at the Sustainable Transport Coalition's "Oil: Living with Less" Conference in Perth, ([www.STCwa.org.au/BO2](http://www.STCwa.org.au/BO2)), giving a paper describing his WOCAP model which forecasts peak oil in circa 2006-2007.

He was also invited by the Western Australian Premier to brief the State Cabinet, a rare honour. He is one of the few outsiders in recent years to discuss issues directly with Cabinet Ministers, according to the national newspaper. He also gave a large number of media interviews, visiting Canberra, Melbourne and Adelaide, and giving seminars mainly to senior departmental staff. The size of Australia and the tight schedule made it a very tiring trip, but Ali managed with his usual aplomb and style. His seminars were very well received everywhere and have had a very substantial effect indeed. Western Australia now has one of the best-informed Cabinets on the subject of peak oil. The State Minister responsible for transport and planning, Alannah MacTiernan, has now heard about peak oil first hand over the years from Brian Fleay, Les Magoon (USGS) and Dr Samsam Bakhtiari. In opening the Perth conference she said

*"While there is disagreement on the precise timing of the peak in oil production, whether it is 2010 or 2030, it is certain that cheap and available oil will become more and more scarce as the demand for it grows. It is also certain that the cost of preparing too early is nowhere near the cost of not being ready on time."*

Minister MacTiernan also opened the Hydrogen and Fuel Cell Futures Conference more recently, saying

*"Already growth in demand for oil is probably outstripping growth in supply, but production itself is likely to peak, maybe as early as 2006. But more conventionally 2010 – 2015".*

IEA Executive Director, Claude Mandil, was the keynote speaker at the Hydrogen Conference, immediately following Minister MacTiernan. He showed the standard IEA forecast of linearly increasing global oil usage to at least 2030, saying he was considerably more optimistic than our Minister. It is interesting that the transport minister in Western Australia is very probably more accurate and certainly more open about peak oil than the IEA.

Tales of the Arabian nights II

### **435 The Nemesis Report**

Our anonymous contributor from the heart of the oil industry returns with devastating insight

ASPO has undoubtedly done great work in showing the way that the so-called quota wars have led to vast exaggeration of Middle East OPEC reserves. I calculate that for Saudi Arabia, we have now reached the point where its production peak can be predicted with some confidence. It is by the end of 2004. Clearly I need to justify such a devastating prediction.

On both the Aramco website and in the August issue of the IEA Monthly Report is the suggestion that Saudi Arabia needs 600-800 kb/d of additional capacity to maintain its production. Note that the word *Depletion* can never be used. Prior to the start-up of the Qatif and Abu Sa'fah fields in July, Saudi production had been running flat out at 9.2 million b/d. (You can believe in the legendary Saudi 1.0 - 1.5 Mb/d of spare or reserve capacity if you wish. It really doesn't alter the argument).

Saudi production is already declining by at least 600 kb/d each year, or around 50 kb/d each month. The newly started up Qatif and Abu Sa'fah fields are claimed to be adding 650 kb/d of capacity (800 kb/d in total minus the 150 kb/d that Abu Sa'fah had been producing). ] It is claimed that these two fields will reach full capacity by October.

Let's be more generous and look at end-December 2004. July's 9.2 Mb/d capacity will have been eroded by six months of decline, roughly 300 kb/d, but augmented by the new capacity of some 650 kb/d. So in the last quarter of 2004 Saudi capacity will peak at 9.5-9.6 Mb/d.

A year later with no new capacity added it will be down to 9 Mb/d. The next capacity increment comes in July 2006 but capacity will have already fallen to 8.7 Mb/d. The 300 kb/d of new production from Haradh Increment III will then restore capacity to 9 Mb/d. But even if decline is held at current rates, Saudi capacity will be back to 8.7 Mb/d by the end of 2006 falling to just over 8 Mb/d by the end of 2007.

How can I claim that Saudi is about to go into irreversible decline when even on the ASPO reduced recoverable reserves the 50% depletion point will not have been reached? The answer is that Saudi has at various times put nineteen fields into production. Of these eight are "Stars", being highly productive fields that produce around 90%

of the country's production. All the others are "Dogs" that have never worked well and probably never will. Recovery rates of up to 50% may be appropriate for the Stars. For the Dogs 10%, 15% or 20% would be more appropriate. Make this adjustment and Saudi has depleted more than 50% of its realistically recoverable reserves. So my conclusion remains -- Saudi's final production peak will be in the last quarter of 2004.

### ***Calendar - Forthcoming Conferences and Meetings***

The subject of Peak Oil will be addressed at the following conferences and meetings, with presentations being made by ASPO members and associates [shown in parenthesis]:

#### **2004**

October 7<sup>th</sup> – Dutch Energy Platform, **Utrecht**, Netherlands [Campbell]  
 October 8<sup>th</sup> - Renewable Energy Valley, **Den Halder**, Netherlands [Campbell]  
 October 15<sup>th</sup> – Visit of Franzi Poldy of CSIRO, Australia to Laherrere  
 October 19–22<sup>nd</sup> – Global Peak Oil Gathering, **Koblenz**, Germany. [Campbell]  
 November 5<sup>th</sup> – Community Action, **Ballyvaunie**, Ireland [Campbell]  
 November 10<sup>th</sup> – Oil Depletion, Institute of Energy, **London** [Bentley, Skrebowski]

#### **2005**

January-February – Post-Fossil Mobility Conference, **Berlin** [Blendinger]  
 February 10<sup>th</sup> – Irish Government Conference on Security of Supply, **Dublin** [Campbell]  
 March/April - Depletion Scotland, **Edinburgh** [Campbell] date to be confirmed  
 May 19-20<sup>th</sup> - **ASPO International Workshop**, Gulbenkian Foundation, **Lisbon** [various]

[The calendar will be a standard feature of future newsletters. Information on future events is welcomed]

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