ASPO NEWSLETTER No. 55, JULY 2005

ASPO is 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. Independent national affiliates are in formation.

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.

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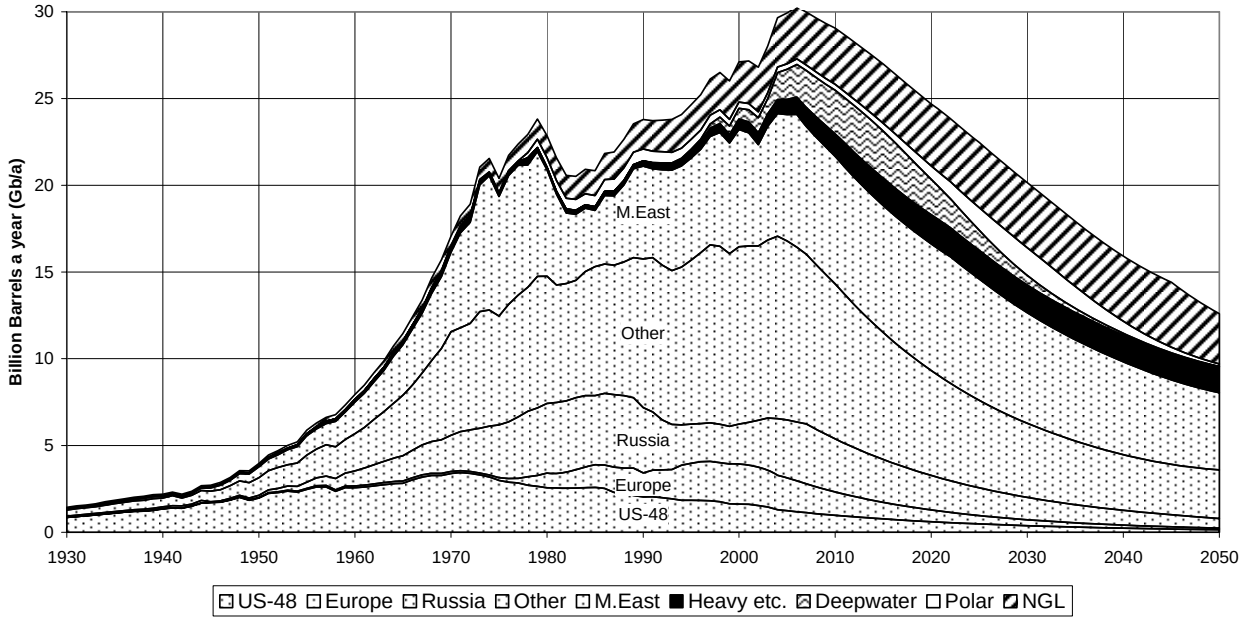
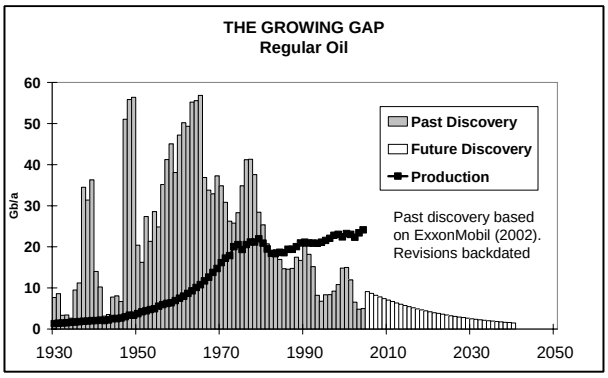
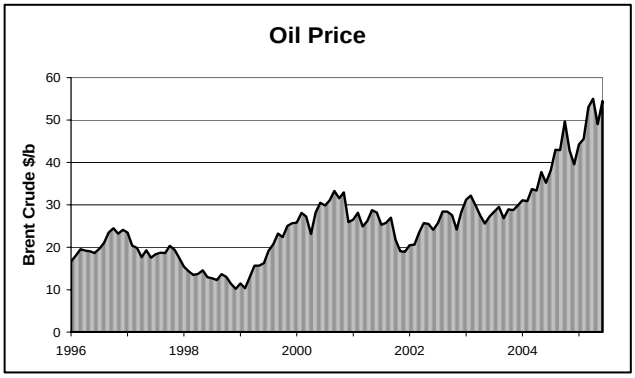
2004 Scenario



The General Depletion Picture

ESTIMATED PRODUCTION TO 2100									End 2004
Amount			**Gb**	**Annual Rate - Regular Oil**					**Gb**	**Peak**
Regular Oil				Mb/d	**2005**	**2010**	**2020**	**2050**	**Total**	**Date**
Past	**Future**		**Total**	US-48	3.4	2.7	1.7	0.4	200	1972
Known Fields		New		Europe	5.2	3.6	1.8	0.3	75	2000
945	760	145	1850	Russia	9.1	8	5.4	1.5	220	1987
	905			ME Gulf	20	20	20	12	680	1974
All Liquids				Other	28	25	17	8	675	2004
1040	1360		2400	**World**	**66**	**59**	**46**	**22**	**1850**	2006
2004 Base Scenario				**Annual Rate - Other**						
M.East producing at capacity				Heavy etc.	2.4	4	5	4	160	2021
(anomalous reporting corrected)				Deepwater	4.8	7	6	0	70	2014
Regular Oil excludes oil from				Polar	0.9	1	2	0	52	2030
coal, shale, bitumen, heavy,				Gas Liquid	8.0	9	10	8	275	2027
deepwater, polar & gasfield NGL				Rounding		0	2		-7	
Revised 26/01/2005				**ALL**	**82**	**80**	**70**	**35**	**2400**	2007





561. CHINA STARTS TO UNLOAD DOLLAR RESERVES

The following report suggests that China is drawing on its dollar reserves to buy oil, as its demand rises and production falls.

China exploring ways to use forex reserves to buy oil - report
05.30.2005, 11:56 PM

BEIJING (AFX) - China is exploring ways to use some of its huge foreign exchange reserves to buy imported oil, the Shanghai Securities News reported, citing an unidentified source.

The newspaper said the plan, which was first proposed as early as 2000, would reach the twin objectives of making better use of the nation's foreign exchange and ensuring vital oil supplies.

The paper quoted Li Yang, a senior economist at the Chinese Academy of Social Sciences and a former member of the monetary policy committee under the central bank, as saying the plan to use foreign exchange reserves to build up strategic oil reserves is reasonable.

But he said the biggest obstacle to the plan is coordinating the actions of various government ministries and departments.

China had foreign exchange reserves of 659 mln usd as of the end of March.

A number of economists have recommended that China diversify its reserves, which are still heavily weighted towards US dollars.

In March, Guo Shuqing, director of the State Administration of Foreign Exchange, suggested China could use some of its foreign exchange reserves to purchase imported oil.

He also said at that time: 'Such a move would not cost us too much of our foreign exchange reserves. Purchasing 100 mln tons of oil would require only some 30 bln usd.'

China is already planning to build a strategic oil reserve though actual stocking of the reserve is said to be moving ahead slowly.

Niu Li, a researcher on global oil issues with the State Information Center, was quoted in the Shanghai Securities News today as saying the government should speed up this plan to shift reserves into oil in order to reduce investment risk.
(Reference furnished by William Tamblyn)

562. EXXONMOBIL ACCEPTS PEAK OIL

ExxonMobil is the most forthright of the major oil companies having had the courage and honesty to publish the declining discovery trend, based on sound industry data with reserve revisions properly backdated (Longwell, 2002 Energy World 5/3). Furthermore, the company is running page-size advertisements in European papers stressing the immense challenges to be faced in meeting future energy demand, hinting that the challenges might not be met despite its considerable expertise.

It is significant that the first quarter production of most of the major oil companies is falling : ExxonMobil -3%; Chevron -6% ; Shell -8% ; Repsol YPF -7%., while Phillips-Conoco maintained its level with BP at least reporting a 2% increase (see *Petroleum Review*, June 2005).

The following article by Alfred J. Cavallo reviews a recent company report.

Without any press conferences, grand announcements, or hyperbolic advertising campaigns, the Exxon Mobil Corporation, one of the world's largest publicly owned petroleum companies, has quietly joined the ranks of those who are predicting an impending plateau in non-OPEC oil production. Their report, The Outlook for Energy: A 2030 View*, forecasts a peak in just five years.*

In the past, many who expressed such concerns were dismissed as eager catastrophists, peddling the latest Malthusian prophecy of the impending collapse of fossil-fueled civilization. Their reliance on private oil-reserve data that is unverifiable by other analysts, and their use of models that ignore political and economic factors, have led to frequent erroneous pronouncements. They were countered by the extreme optimists, who believed that we would never need to think about such problems and that the markets would take care of everything. Up to now, those who worried about limited petroleum supplies have been at best ignored, and at worst openly ridiculed.

Meanwhile, average consumers have taken their cue from the market, where rising prices have always been followed by falling prices, leading to the assumption that this pattern will continue forever. In truth, the market price of crude oil is completely decoupled from and independent of production costs, which average about $6 per barrel for non-OPEC producers and $1.50 per barrel for OPEC producers. This situation has nothing to do with a free market, and everything to do with what OPEC believes will be accepted or tolerated by the United States. The completely affordable market price--what consumers pay at the gasoline pump--provides magisterial profits to the owners of the resource and gives no warning of impending shortages.

All the more reason that the public should heed the silent alarm sounded by the ExxonMobil report, which

is more credible than other predictions for several reasons. First and foremost is that the source is ExxonMobil. No oil company, much less one with so much managerial, scientific, and engineering talent, has ever discussed peak oil production before. Given the profound implications of this forecast, it must have been published only after a thorough review.

Second, the majority of non-OPEC producers such as the United States, Britain, Norway, and Mexico, who satisfy 60 percent of world oil demand, are already in a production plateau or decline. (All of ExxonMobil's crude oil production comes from non-OPEC fields.) Third, the production peak cited by the report is quite close at hand. If it were twenty-five years instead of five years in the future, one might be more skeptical, since new technologies or new discoveries could change the outlook during that longer period. But five years is too short a time frame for any new developments to have an impact on this result.

Also noteworthy is the manner in which the Outlook *addresses so-called frontier resources, such as extra-heavy oil, "oil sands," and "oil shale." The report cites the existence of more than 4 trillion barrels of extra heavy oil and "oil sands"--producing potentially 800 billion barrels of oil, assuming a 20-25 percent extraction efficiency. The* Outlook *also cites an estimate of 3 trillion barrels of "oil shale." These numbers have figured prominently in advertisements that ExxonMobil and other petroleum companies have placed in newspapers and magazines, clearly in an attempt to reassure consumers (and perhaps stockholders) that there is no need to worry about resource constraints for many decades.*

However, as with all advertisements, it's best to read the fine print. ExxonMobil's world oil production forecast shows no contribution from "oil shale" even by 2030. Only about 4 million barrels of oil per day from Canadian "oil sands" are projected by 2030, accounting for a mere 3.3 percent of the predicted total world demand of 120 million barrels per day. What explains this striking disconnection between the magnitude of the frontier resources and the minimal amount of projected oil production from them? Canadian "oil sands" are actually deposits of bitumen (tar), which are the result of conventional oil degradation by water and air. Tar sands are of a completely different character than conventional oil deposits; making tar sands usable is a capital-intensive venture that requires special procedures such as heating to separate the tar from the sand, mixing the tar with a diluting agent for pipeline transport, and constructing specially equipped refineries for processing.

The most serious constraint, though, is natural gas supplies. Production of oil from tar sands requires between 400 and 1,000 cubic feet of natural gas per barrel of oil produced, depending on the extraction method used. Natural gas production, despite a near doubling of drilling activity, is flat or decreasing both in Canada and in the United States--which has prompted prices to triple over the past few years. Given these high gas prices, it almost makes more sense just to sell the natural gas directly rather than use it to produce oil from tar sands.

Extracting oil from the 3 trillion barrels of oil shale cited in the Outlook *presents its own challenges. The term "oil shale" is also quite misleading, since there is no oil in this mineral, but rather an organic material called kerogen, which is a precursor of petroleum. To extract oil, the shale (typically between 5 and 25 percent kerogen) must first be mined, then transported to a plant where it is crushed, then heated to 500 degrees Celsius, which pyrolyzes, or decomposes, the kerogen to form oil. After processing, most of the shale remains on the surface in the form of coarse sand, so large-scale mining operations will produce immense amounts of waste material. An estimated 1-4 barrels of water are required for each barrel of oil produced, both for cooling the products and stabilizing the sand waste. To satisfy these water requirements, petroleum companies once contemplated diverting the Columbia River--a feat that can be excluded today on political and environmental grounds.*

With non-OPEC oil production reaching a plateau and frontier resources not viable, ExxonMobil proposes that increased demand be met in two ways. The first is greater fuel efficiency. (That alone should convey the seriousness of this report: When have you ever heard petroleum company make a plea for vehicles that use less *gas?) New cars in the United States are expected to go 38 miles on a gallon of gas in 2030, instead of the current value of 21 miles per gallon. This goal is actually quite modest, as new cars sold in Europe since 2003 already achieve 35 miles per gallon.*

The other way ExxonMobil believes demand will be satisfied is from vastly and rapidly increased OPEC production: "After 2010, the call on OPEC increases quickly, requiring OPEC to add more than 1 MBD [million barrels per day] of capacity every year," notes the Outlook. *"OPEC's resources are large enough to achieve this rate of expansion, and we expect that investments will be made in a timely manner."*

This assessment is somewhat ominous. OPEC has not expanded production capacity much at all recently. Moreover, such production increases are only possible from Iraq, Saudi Arabia, Kuwait, and the United Arab Emirates. For these countries, and indeed for most OPEC members, petroleum and petroleum products are their only significant export. As such, they have a vested interest in obtaining the best possible price for their non-renewable resources. OPEC nations would be quite unlikely to increase production as rapidly as

needed unless compelled to do so. To put this shortfall in perspective, in 2003 Algeria produced 1.1 million barrels per day; a new Algeria would need to be brought on line in the Persian Gulf each and every year beyond 2010 just to keep up with the projected increase in demand. Consequently, once non-OPEC production reaches a peak, conventional world oil production could peak shortly thereafter, and prices (never explicitly mentioned in the Outlook*) would rise in accordance with the laws of supply and demand.*

What all this means is that the petroleum industry is approaching a turning point. Conventional petroleum production will soon--perhaps in five years, ten at best--no longer be able to satisfy demand. For their part, American consumers would do well to take a cue from their Western European counterparts, who enjoy a comfortable lifestyle despite a per capita use of petroleum that is half of that in the United States. The sooner the United States begins this transition away from oil, the easier it will be. That's a far more attractive option than trying to squeeze oil from stone.

Alfred J. Cavallo is an energy consultant based in Princeton, New Jersey. His article "Oil: Illusion of Plenty," appeared in the January/February 2004 Bulletin of Atomic Scientists

563. BILDERBERGER CONFERENCE

The Bilderberger organisation is semi-secret society of the World's elite who meet periodically to discuss important issues. They evidently wake up to oil depletion

UN to raise tax via oil

A much-discussed subject in 2005 at Rottach-Egern was the concept of imposing a direct UN tax on people worldwide through a direct tax on oil at the wellhead. This, in fact, sets a precedent. If enacted, it will be the first time, when a non-governmental agency, read the United Nations, directly benefits from a tax on citizens of free and enslaved nations.

Bilderberger proposal calls for a tiny UN levy at the outset, which the consumer would hardly notice. Jim Tucker of the court-killed Spotlight magazine years ago wrote "establishing the principle that the UN can directly tax citizens of the world is important to Bilderberg. It is another giant step toward world government. Bilderbergers know that publicly promoting a UN tax on all people on Earth would meet with outrage. But they are patient; it first proposed a direct world tax years ago and celebrates the fact that it is now in the public dialogue with little public attention or concern.

Energy

An American Bilderberger expressed concern over the skyrocketing price of oil. One oil industry insider at the meeting remarked that growth is not possible without energy and that, according to all indicators, the world's energy supply is coming to an end much faster than the world leaders have anticipated. According to sources, Bilderbergers estimate the extractable world's oil supply to be at a maximum of 35 years under current economic development and population. However, one of the representatives of an oil cartel remarked that we must factor into the equation, both the population explosion and economic growth and demand for oil in China and India. Under the revised conditions, there is apparently only enough oil to last for 20 years. No oil spells the end of the world's financial system. So much has already been acknowledged by The Wall Street Journal and the Financial Times, two periodicals who are regularly present at the annual Bilderberg conference.

Conclusion: Expect a severe downturn in the world's economy over the next two years as Bilderbergers try to safeguard the remaining oil supply by taking money out of people's hands. In a recession or, at worst, a depression, the population will be forced to dramatically cut down their spending habits, thus ensuring a longer supply of oil to the world's rich as they try to figure out what to do.

During the afternoon cocktail, European Bilderberger noted that there is no plausible alternative to hydrocarbon energy. One American insider stated that currently the world uses between four and six barrels of oil for every new barrel it finds and that the prospects for a short-term breakthrough are slim, at best.

Someone asked for an estimate of the world's accessible conventional oil supply. The amount was quoted at approximately one trillion barrels. As a side note of interest, the planet consumes a billion barrels of oil every 11.5 days. Another Bilderberger asked about hydrogen alternative to the oil supply. The US government official agreed, gloomily, that hydrogen salvation to the world's imminent energy crisis is a fantasy.

This confirms public statement made in 2003 by IHS, the world's most respected consulting firm cataloguing oil reserves and discoveries, that for the first time since the 1920s there was not a single discovery of an oil field in excess of 500 million barrels.

The oil industry at the 2005 Bilderberg conference was represented by John Browne, BP´s chief executive officer; John Kerr, director Royal Dutch Shell; Peter D. Sutherland, BP chairman and Jeroen van der Veer, chairman of the Committee of Managing Directors of Royal Dutch Shell.

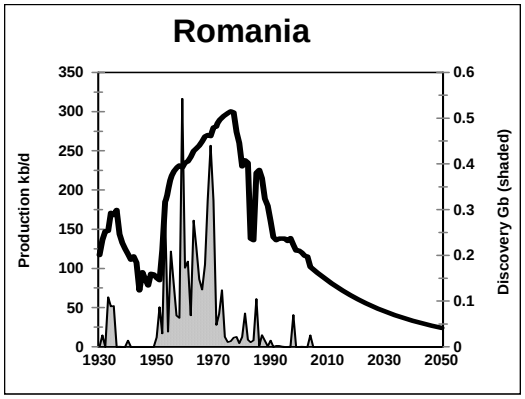
It should be remembered that in late 2003, oil giant Royal Dutch Shell, announced that it had overstated its

reserved by as much as 20 percent. Queen Beatrix of Holland, Royal Dutch Shell's principal shareholder is a full-fledged member of the Bilderbergers. Her father, prince Bernhard was one of the founders of the group back in 1954. The Los Angeles Times reported that "For petroleum firms, reserves amount to nothing less than ´the value of the company.'" In fact, Shell cut its reserve estimates not once, but three times, prompting the resignation of its co-chairman. At Rottach-Egern, in May 2005, industry's top executives tried to figure out how to keep the truth about diminishing oil reserves from reaching the public. Public knowledge of the diminishing reserves directly translates into lower share prices, which could destroy financial markets, leading to a collapse of the world economy."

Indonesia-Malaysia Standoff

A political and military confrontation between these two nations in the petroleum-rich Sulawesi Sea (both claim the oil-rich area of Ambalat as their territorial rights) was the topic of a much-animated discussion amongst several American and European Bilderbergers during an afternoon cocktail hour. An American Bilderberger waving his cigar suggested using the UN to "further a peace policy in the region." In fact, Bilderbergers at the lounge table all agreed that such a conflict might well give them an excuse to garrison the disputed area with UN "Peacekeepers" and thus ensure their ultimate control over the exploitation of this treasure, meaning untapped oil reserves. (Reference furnished by Billy Kennedy)

564. COUNTRY ASSESSMENT – ROMANIA



Romania is a country of 240 000 km^2 bordering the Black Sea in eastern Europe. Its relief is dominated by the Carpathian Mountains, forming an arcuate belt rising to over 2500m. The mountains are flanked by foothills, giving way the valleys of the Danube and the Prut Rivers to the south and east respectively. Bucharest is the capital, while Constanta is an important port on the Black Sea. The population numbers to 22 million.

Romania's recorded history opened some 4000 years ago when it was settled by migratory Indo-Europeans and indigenous Neolithic people. These tribes successfully resisted Roman occupation for a long time but finally succumbed in the first Century AD, becoming the province of Dacia. The Romans, however, subsequently withdrew in the face of continued opposition, making the Danube the eastern frontier of their Empire.

The country was later subject to successive invasions from the east by Visigoths, Huns and Slavs. Gypsies also arrived from northern India. In the 10th to 14th Centuries, the country comprised a number of principalities, some of which were invaded by the Hungarians from the south, becoming Transylvania, home of the legendary Count Dracula. The people largely adopted Orthodox Christianity but later came under pressure from the Muslim Ottoman Empire of Turkey, which prized the wheat supplies from the Danube basin. During the 18th Century, Romania found itself sandwiched between the expanding empires of Russia and Austria.

ROMANIA		*Regular Oil*
Population M		22
Rates Mb/d		
Consumption	2004	0.23
per capita b/a		3.8
Production	2004	0.102
	Forecast 2010	0.085
	Forecast 2020	0.062
Discovery 5-yr average Gb		0.001
Amounts Gb		
Past Production		5.83
Reported *Proved Reserves**		0.96
Future Production - total		1.17
From Known Fields		0.09
From New Fields		0.3
Past and Future Production		7.0
Current Depletion Rate		3.5%
Depletion Midpoint Date		1970
Peak Discovery Date		1857
Peak Production Date		1976

*Oil & Gas Journal

The integration of the various principalities into the Romanian nation was achieved in 1861 with a move into the Western European sphere of influence. King Carol I (1881-1914) became the country's first monarch and a symbol of nationhood. Romania entered the First World War in 1916 on the side of Britain and France, but suffered severe military defeats at the hands of Austrian and German armies. The inter-war years opened with democratic movements, but the Great

Depression led to a dictatorial regime in 1930 under King Carol II. Romania lost territory to the Russians, Hungarians and Bulgarians in the early years of the Second World War, leading to an alliance with Germany, its oil production playing a critical part in Germany's war effort.

Russian troops occupied the country in the closing days of the war, allowing the Communists, who had hitherto been a minor element in the country, to gain control of government. Nicolae Ceausescu came to power in 1965 as a typical Communist strong man, being amply supported by his wife, and progressively transformed the country into a police State. He was deposed in 1989 by a popular uprising, later to be tried and executed.

Economic conditions however remained difficult, reviving debates about national identity and economic models of development.

In geological terms, the country is dominated by the Carpathian fold-belt, which is built of a series of strongly deformed Cretaceous and pre-Cretaceous rocks. In front of it, lies a Tertiary foredeep between the mountains and an undeformed platform. Oil was evidently sourced primarily in a local Lower Oligocene euxinic trough, and migrated upwards to fill Mio-Pliocene reservoirs in complex, thrusted anticlines, partly affected by salt-tectonics. It appears that the distribution of source-rock is the controlling factor, being responsible for a cluster of oilfields in the vicinity of the town of Ploesti.

Romania is in fact the World's oldest oil producing country with production records going back to 1854. The giant Moreni-Gura-Ocnitei field was found in 1857, holding about 750 Mb. The country, with its long history of production, ranks 32nd out of 65 oil producing countries in terms of Ultimate Recovery. A total of some 540 wildcats have been drilled, many before 1930, yielding discoveries totalling about 6.7 Gb, of which 5.8 Gb have already been produced. It is evidently a very mature oil territory with future discovery here estimated at about 300 Mb. In addition, some 55 Tcf of gas have been discovered, of which 43 Tcf have been produced, with production now running at about 475 bcf a year.

Oil production reached a peak of 300 kb/d in 1976, six years after the midpoint of depletion. It has now fallen to 100 kb/d, yielding a Depletion Rate of 3.5% a year. This is a relatively low rate, probably reflecting difficult operating and investment conditions under the Communist regime. New investment could perhaps temporarily lift production but would give a steeper subsequent decline. The country is a net importer of 117 kb/d, having a very modest level of consumption at 3.5 b/a per capita.

How Romania will fare during the Second Half of Oil remains to be seen. It may join the European Union in 2007, as that body's leaders seek to expand its economic hegemony eastward in the search for "slave-labour" under outdated economic principles, although there is growing popular opposition to further expansion. In any event, Romania will likely find itself on the boundary between East and West as it has throughout its history.

565. THREE EXCELLENT NEW BOOKS

The library of books on oil depletion and the looming energy crisis grows by the hour. Recent excellent additions include the following. The first is ***Oil Addiction – The World in Peril*** (ISBN 1-58112-494-5) by Pierre Chomat, an ex-oilman. He introduces the term *Ergamine* (or energy slave) to refer to the energy released by fossil fuels. One gram of oil gives as much energy as a manual labourer can deliver in a day's work. He quotes some nice examples : a plane load of tourists, flying from California to see the Great Pyramid of Egypt, consume as much energy as was used in building it. Running a domestic clothes-washer consumes as much energy as it would take a crane to lift the house 23 feet into the air. He points out how Modern Man is barely conscious of the massive amount of energy he consumes in the daily life during this most exceptional epoch in history. He links this dependence with recent geopolitical events and the posturing of governments incapable of facing the reality of what unfolds.

The second work is ***The Long Emergency – Surviving the Converging Catastrophes of the Twenty First Century*** by James H. Kunstler (ISBN – 0-87113-888-3), who played a prominent part the in the film *The End of Suburbia*, which is attracting audiences everywhere. He spells out the dire consequences of Peak Oil, expecting it to radically change the way of life for many people, especially in North America.

The third book is ***Twilight in the Desert - The Coming Saudi Oil Crisis and the World Economy*** (ISBN 0-471-73876) by Matthew R. Simmons, a prominent investment banker, who documents the depletion of oil in Saudi Arabia, questioning its claims to be able to expand productive capacity, as it faces the challenge of offsetting the natural decline in its ageing giant fields. He draws attention to the monumental consequences of the decline in the premier fuel supply that drives the modern world.

566. FURTHER THOUGHTS ABOUT RECOVERY

The estimates of Ultimate Recovery, used in the ASPO model (see *note below), are based on realistic assumptions about the percentage of oil being

recovered from the reservoir during the greater part of a field's life, as might be determined by competent reservoir engineers. This percentage is primarily influenced by the gravity of the oil, with heavy oils yielding less than light oils, but there are also many other detailed reservoir conditions that have an effect. This recovery factor will influence the level of production over much of the life of the field, including its peak.

Waterflood and gas injection have become more or less standard procedures, commonly being implemented early in the life of the field when they have the greatest impact. The proceeds may therefore be treated with *Regular Conventional Oil*. But in addition, we may assume that every effort will be made to extend the life of a field after it has gone into decline, especially onshore where the project is not constrained by the costs of maintaining costly platforms. Additional infill wells may be drilled, and other more sophisticated methods of stimulation, such as CO_2 injection, may be applied, which will add tail-end production to the Ultimate Recovery.

It might make sense therefore to add a category for *Enhanced Oil Recovery* to the Production Forecast, as given at the front of the Newsletter, to cover these tail end additions, being somewhat similar in behaviour to the projected gradual increase of Heavy Oil production. More study is needed to divine what sort of percentage would be appropriate in the various countries. It is not a critical issue, having a negligible impact on Peak Production, but deserves further consideration.

(*Note: Strictly speaking this is the model maintained by ASPO IRELAND (www.peakoil.ie) as ASPO moves to become a network of national institutions free to develop independent interpretations).

567. EXPORTING THE NATIONAL HERITAGE

The first book mentioned in Item 565 draws attention to the extraordinary amount of energy contained in a drop of oil. It follows that countries exporting oil in practice export the equivalent of armies of slaves. World trade basically supports the same practice, whereby consumers in wealthy countries are happy to use near slave-labour in poor countries to make goods for their enjoyment. The wealthy countries owe their ability to do so to their financial control of the world, largely derived from historical wars, rather than any particularly superior current work performance. From the slave's standpoint, it may well still be better to work in an export factory than wade through the paddy fields, but might he not rather use the oil-slaves of his own country rather than export them for a small fraction of his own miniscule wage?

As oil depletion bites in the years ahead, countries will likely wake up to the idea of preserving their resources for their own future needs rather than virtually giving them away. The Bolivian Government currently faces popular unrest as the people call for the nationalisation of that country's substantial gas reserves. The foreign companies operating the Bolivian fields naturally prefer more profitable exports, as provided under their concession terms.

It is curious that Britain, which faces the exhaustion of its own oil within 20 years, is still willing to permit the export of what it has left at a small fraction of the cost of its growing imports. Its people may in due time follow the Bolivian lead as they appreciate the situation better.

The European Union has recently endeavoured to win support for a common constitution, but countries holding referenda found that the people themselves were far from convinced that they wanted to surrender more sovereignty. The national governments are evidently still victims of outdated economic principles, whereas the people at large have a better intuitive grasp of their own long term best interests. It is certainly an odd situation, but perhaps it is the vision of what follows Peak Oil that begins to bring these uncomfortable new mindsets to the fore. *"Put your Trust in the People"* said Winston Churchill.

568. A FLAT-EARTH CATHEDRAL MAKES AN AWARD

A principal Flat-Earth Cathedral has made an award to one of its members for an outstanding contribution to energy economics. We may imagine the ceremony. A litany is intoned at the grail of the Liberalised Market where a statue to the God of Supply matches that to the God of Demand. A rousing hymn entitled *The Stone Age did not end for want of Stones* is sung by a choir of MBAs. Black suited bankers fill the cloisters murmuring responses while political leaders genuflect in the front row. The climax of the ceremony comes when the acclaimed acolyte climbs to the top of the spire where thick clouds of industrial smog obscure all but the upturned faces of the admiring congregation. He descends to read the sermon expressing hopes that the World's poor counties may soon be industrialised too. The bankers smile at the prospect of earning halos by forgiving bad debt.

Meanwhile another service is in progress at another Cathedral on a hill across the town, where the sun shines giving a clear view of the horizon, confirming the curvature of the Earth. A Priest reads rival scriptures proclaiming that *The Meek shall inherit the Earth.* His sermon warns that this will soon come to

pass as the Earth's once prolific resources of oil and gas deplete.

569. BP STATISTICAL REVIEW

BP has published the 2005 Edition of its Statistical Review of World Energy. It reports World oil reserves at 1188.6 Gb. A footnote states that the information is compiled from a combination of official sources and does not represent BP's own knowledge. It is noteworthy that the estimates for 36 of the 48 listed countries are unchanged. Production eats into reserves, so it is implausible that new discovery or upward revision should exactly match the 20 Gb produced in these countries last year. The report does note however that the estimate for Canada includes Non-Conventional oil.

BP itself must have an intimate knowledge of the real reserves of Kuwait, Iran, Iraq and Abu Dhabi having been intimately involved in the discovery of most of the major fields in the region. If it were to reveal its knowledge, we might be able decipher the anomalous increases reported by these countries in the 1980s. Kuwait increased its reported reserves from 64 to 90 Gb in 1985 and again to 93 Gb in 1988, although nothing particular had changed in the oilfields. Abu Dhabi and Iran then matched this number (up respectively from 31 and 49 Gb), while Iraq, not to be outdone, claimed a rounded 100 Gb (up from 47 Gb).

In 1984, Kuwait had produced a total of 22 Gb, suggesting that the 90 reported in the following year was close to total discovered and not the remaining reserves, which would also explain why the subsequent reports have barely changed despite production. An alternative interpretation is that the 86 Gb discovered through 1984 (Reserves 64 + Produced 22 Gb) was based on a 30% recovery factor giving an Oil-in-Place value of 287 Gb. If the recovery assumption were increased to 40%, that would justify the higher number reported in 1985. Either way, the reports of Abu Dhabi, Iran and Iraq were evidently made to roughly match Kuwait and did not reflect their own physical situations. Saudi Arabia later responded to these events by increasing its reported reserves from 170 to 258 Gb, which has also barely changed since despite production. It probably followed the practice of Kuwait in making its calculations.

The BP report includes the retroactive adjustment of past production in some countries for the 1980s and 1990s, which does not ring true. Our current estimate of world reserves is 777 Gb for *Regular Conventional Oil*, having made due adjustment for above anomalies, and removing by definition bitumen, heavy oil, deepwater oil, polar oil and NGL from gas plants.

570. PROCEEDINGS OF ASPO CONFERENCE IN LISBON

Most Abstracts, Presentations and Communications offered by authors for the IV INTERNATIONAL WORKSHOP ON OIL AND GAS DEPLETION, held in Lisbon on the 19th and 20th of May, are already available on-line, on the Geophysics Centre of Évora website: http://www.cge.uevora.pt/aspo2005/

Paper copies are also available.

571. OPEC SPEAKS OF DECLINING PRODUCTION

It sounds as if Peak may be getting close as predicted.

Iran Analyst Says Oil Output Won't Meet 4Q Demand - Report

DOW JONES NEWSWIRES -By Hashem Kalantari June 15, 2005 7:06 a.m.

TEHRAN -- Global oil producers will fail to meet rising oil demand in the fourth quarter, sparking oil price rises of up to around $60 a barrel, an Iranian oil analyst said Wednesday.

Mohammad-Ali Khatibi, director of the Tehran-based International Center for Energy Studies' OPEC research office, told the Pars news agency that OPEC and non-OPEC producers wouldn't be able to meet demand in the fourth quarter.

The official, from a center affiliated to the oil ministry, said current production of 85 million b/d would be surpassed by projected demand rises to 87 million b/d in the fourth quarter, leaving producing countries having to pump an extra two million b/d, which they won't be able to do.

Khatibi also said the lack of spare refining capacity in oil-consuming countries sparks more instability in global crude markets than the lack of spare production capacity by OPEC and non-OPEC producing countries.

To bring stability to the market, producers need around up to 4 million b/d in additional production capacity, due to increasing demand, he said.

But the absence of refining capacity to cover any new production will intensify spiralling global oil prices," he said in response to the reasons underlying growing oil prices.

Khatibi said the rise in oil prices of up to $60/bbl is likely by the winter. Whatever the decision by ministers of the Organization of Petroleum Exporting Countries today, there will be no tangible drop in oil prices, he said.

572. END OF EMPIRE FORESEEN

The following item, extracted from an article by Jan Lundberg in Culture Change #100, delivers a perceptive, if chilling, message. It becomes particularly apposite as oil prices surge to new heights. Oil does not cost significantly more to produce, so the high prices represent profiteering from shortage. The huge money flow passing to the Middle East governments can hardly be absorbed there, so it makes its way back to Western financial institutions, creating yet more unsustainable liquidity to be recycled as increasingly bad debt. It seems that the House of Cards is growing in height.

End Time for USA upon Oil Collapse

The fall of the U.S. may be the swiftest empire collapse in world history. It is obvious that the U.S. population and the nation's infrastructure is heavily petroleum dependent. The U.S. peaked in oil production (extraction) in 1971. The world may be peaking now, as some evidence indicates, or in a few short years. As a severe energy shortage is on tap as soon as the gap between supply and demand is felt by the market, and the Earth gives noticeably less oil than just recently, there will be a cascade of impacts on the economy and people's lives.

So it will not matter how much oil is still in the ground, or if other ways of obtaining and using energy are more renewable and greener: A massive shut down of petroleum supply brought about by market panic and economic collapse will terminate corporate globalism and the political landscape as well. [As discussed in this essay and in links at the end, production of other forms of energy cannot substitute for petroleum and will not be maximized for readiness anyway.] Many aspects of modern society are at a breaking point already, whether one looks at the housing market bubble, U.S. debt and deficits, or the prospects of damaging weather from the fast distorting of the planet's climate.

Not only will the sudden oil shortage ahead mean the Final Energy Crisis, the present economy only works on growth, so even a plateau of global petroleum extraction -- what seems to be happening now, although it is being called "insufficient refining capacity for poor quality crude oil" -- would mean the house of economic cards collapses on its own. Recovery from such an event, even if not from oil shortage, would appear impossible because supplies of oil would be among the commodities suddenly scarce, and this would have a terminal effect on much economic activity and people's lives.

(Reference furnished by William Tamblyn)

573. OIL AND PEOPLE

The population of the World expanded six-fold in parallel with oil production during the First Half of the Age of Oil. William Stanton, author of *The Rapid Growth of Human Population 1750-2000*, contributes the following analysis of how population will have to return to pre-Oil Age levels. Let us hope that it does not come to this, but the options explained do have a certain chilling logic.

Reducing Population in step with Oil Depletion

Recent articles in the ASPO Newsletter have agreed that the explosion of world population from about 0.6 billion in 1750 to 6.4 billion today was initiated and sustained by the shift from renewable energy to fossil fuel energy in the Industrial Revolution. There is agreement that the progressive exhaustion of fossil fuel reserves will reverse the process, though there is uncertainty as to what a sustainable global population would be.

In this time of energy abundance, and the complacency it engenders, the vast majority of the general public assumes that what the future holds is "more of the same". They argue, if pushed, that the expertise inherited by post-fossil-fuel scientists and engineers will allow a smooth transition into a new kind of energy-rich world in which renewable generators will produce as much energy as fossil fuels do now. Such a view is untenable because it ignores the fact that almost all materials essential to modern civilization will be orders of magnitude more costly, and scarce, when they have to be produced using renewable energy instead of fossil fuels.

In 2150, for example, a wind turbine constructed of steel, concrete and plastic may not be able to generate, during its lifetime, as much renewable energy as would have been used up in creating it. Imagine mining, refining and smelting the metal ores, quarrying and transporting the rock, growing the biomass; fabricating the component parts, and erecting and maintaining the structure, using only the trickle of electricity produced by another similar turbine. Vast engineering projects such as constructing the first Airbus A380 airliner (Bowie 2005), using only renewable energy from start to finish, would be unthinkable (to say nothing of flying the plane without oil!).

If, in this article, I discuss ways in which a global population reduction of some 6 billion people is likely to take place during the 21st Century, precedent suggests that nearly everyone will ignore me. "He must be mad", media reviewers concluded when they read my first probes into the subject two years ago and effectively blacklisted the book (Stanton 2003). After all, do the world's leading politicians and their scientific advisers, including highly paid demographers

working for the United Nations and other international bodies, ever doubt that economic "business as usual" will continue for the foreseeable future?

But, given that ASPO is successfully challenging conventional wisdom on oil depletion (there were four anxious letters on the subject of peak oil in my local weekly newspaper in May), what are the options?

The first and most likely scenario is rejection. People in high places view an alleged need for population reduction with incredulity, scorn and denial. In consequence, the price of fossil fuels, especially oil, goes on rising without causing serious alarm in the West, except perhaps in the business world.

When, probably before 2010, the price is so high that construction of new airliners, airport terminals, Olympic villages and traffic reduction schemes judders to a halt, uncontrollable inflation and recession will spread round the world. The oil price may stabilise for a while, as manufacturing wilts, along with demand for its products.

In Third World nations, without oil, that can neither buy food nor grow it in adequate quantity without mechanised agriculture, a Darwinian struggle for shrinking resources of all kinds will be in full swing. Tribe against tribe, religion against religion, family against family, the imperative to survive will be driving strong groups to take what they want from weak ones. The concept of human rights will be irrelevant: "How can the weak have rights to food, when there is not enough even for the strong"?

It may well be that, in the West, the same argument will affect the thinking of militarily powerful nations. "If billions must die, and we have the technology to ensure that they are others, not us, why should we hold back"? Instantaneous nuclear elimination of population centres might even be considered merciful, compared to starvation and massacres prolonged over decades. Eventually, probably before 2150, world population will have fallen to a level that renewable energy, mainly biomass, can sustain. It is likely to be similar to the population before the Industrial Revolution.

That is the do-nothing, let Nature take its course, scenario, involving more than a century of immeasurable human suffering. What alternatives are there? They have to be scenarios in which enlightened governments and their peoples, with astonishing foresight and determination, take positive action to reverse population growth by new, Draconian, laws. China has pioneered such an approach, by its one child per family policy.

ASPO's Oil Depletion Protocol (Campbell 2004) is a scenario that aims to persuade national governments to cope with declining oil production equitably and peacefully, on the world scale. An annual depletion rate (the percentage of remaining global oil reserves produced each year, currently about 2.5% per year) is calculated by experts, after which nations agree to reduce their consumption and/or production of oil year after year strictly in accordance with the depletion rate. How population reduction will be achieved in step with growing oil shortage is not spelt out. Some will see the Protocol as too idealistic for a Darwinian world, because it expects every nation to co-operate regardless of whether they are resource rich or poor, have a high or a low birth rate, or are responsibly or chaotically governed.

Probably the greatest obstacle to the scenario with the best chance of success (in my opinion) is the Western world's unintelligent devotion to political correctness, human rights and the sanctity of human life. In the Darwinian world that preceded and will follow the fossil fuel era, these concepts were and will be meaningless. Survival in a Darwinian resource-poor world depends on the ruthless elimination of rivals, not the acquisition of moral kudos by cherishing them when they are weak. In fact, human civilization in the fossil fuel era has been totally anomalous, fuelled by the unthinking exploitation and exhaustion of all the world's resources, not just fossil fuels. Sir Fred Hoyle pointed out, decades ago, that Western civilization was a "one-shot affair", for this reason (Duncan 1997).

So the population reduction scenario with the best chance of success has to be Darwinian in all its aspects, with none of the sentimentality that shrouded the second half of the 20th Century in a dense fog of political correctness (Stanton 2003 page 193). It is best examined at the nation-state scale. The United Kingdom will serve as the model.

To those sentimentalists who cannot understand the need to reduce UK population from 60 million to about 2 million over 150 years, and who are outraged at the proposed replacement of human rights by cold logic, I would say "You have had your day, in which your woolly thinking has messed up not just the Western world but the whole planet, which could, if Homo sapiens had been truly intelligent, have supported a small population enjoying a wonderful quality of life almost for ever. You have thrown away that opportunity."

The Darwinian approach, in this planned population reduction scenario, is to maximise the well-being of the UK as a nation-state. Individual citizens, and aliens, must expect to be seriously inconvenienced by the single-minded drive to reduce population ahead of resource shortage. The consolation is that the alternative, letting Nature take its course, would be so much worse.

The scenario is: Immigration is banned. Unauthorised arrives are treated as criminals. Every woman is entitled to raise one healthy child. No religious or cultural exceptions can be made, but entitlements can

be traded. Abortion or infanticide is compulsory if the fetus or baby proves to be handicapped (Darwinian selection weeds out the unfit). When, through old age, accident or disease, an individual becomes more of a burden than a benefit to society, his or her life is humanely ended. Voluntary euthanasia is legal and made easy. Imprisonment is rare, replaced by corporal punishment for lesser offences and painless capital punishment for greater.

A rough calculation suggests that by following these Draconian but simple rules UK population could be reduced by 5 to 10 million during the first ten years, without excessive pain (compared to the alternatives). If this was thought too fast or too slow, there would be scope for modifying the child entitlements. The punishment regime would improve social cohesiveness by weeding out criminal elements.

UK military forces should be maintained strong and alert, given that other nations working to different scenarios, or to none, would certainly attempt Darwinian piracy on UK trade routes, or mount mass immigration invasions of UK coasts. Collaboration with other nations practising the same population reduction scenario would be of great mutual advantage.

Initially the greatest threats to UK security would come from rogue nations unwilling to curb traditionally high birth rates but lacking the means to feed the ever-growing numbers of new mouths. In the past, these were the poverty-stricken nations that repeatedly received humanitarian aid and famine relief, which did nothing to reduce the birth rate. In a Darwinian world, Nature would take its course. In consequence, their populations would reduce particularly fast and their threat would fade away.

After four or five decades the populations of the UK and other nations following the same scenario would probably be halved. In the rest of the world, where Nature was doing the reduction in an ambience of massacres and destruction, the proportionate fall would be greater and the pain would have been terrible. In the UK, in contrast, where orderly population shrinkage would have outpaced resource shrinkage, a relatively comfortable quality of life would have been enjoyed throughout the period. There would have been no loss of technological expertise, but it would no longer be employed in grandiose energy-wasteful projects. Instead, there would be intensive research into cost-effective methods of renewable energy recovery.

A particular problem could arise from the fact that the world's greatest oil reserves are controlled by the nations surrounding the Gulf. They have dizzyingly high birth rates which, for cultural reasons, they might not want to lower. Their populations exploded following the discovery of oil, and if the explosion continues, even a very high oil price will not provide enough national income to prevent general poverty. Indeed, the demand for Gulf oil might occasionally fall, if for example alternative sources were still available to nations practising orderly population reduction, and there was minimal demand from the chaotic rest of the world. After a decade or two of unrestricted population growth, with limited income from oil and terrible shortages, especially of water, Nature will begin to reverse population growth around the Gulf.

Of course, in a Darwinian world, a militarily powerful nation might try to take oil by force anywhere on the planet. World War Two provided recent examples: oil supply being critical to Germany and Japan.

Another problem is likely to be the residual opposition to population reduction from sentimentalists and/or religious extremists unable to understand that the days of plenty, when criminals and the weak could be cherished at public expense, are over. Acts of violent protest, such as are carried out today by animal rights activists and anti-abortionists, would, in the Darwinian world, attract capital punishment. Population reduction must be single-minded to succeed.

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574. ASPO-USA

Following a new ASPO policy, formulated after the Lisbon Meeting to encourage the development of substantially independent national entities, plans are now afoot to form ASPO-USA to represent that country in the network. It is already organising a major conference in Denver on November 10 and 11th. Similar moves are underway in other countries.

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: -

July 29-Aug 3 Tallberg Forum, **Tallberg,** Sweden [Aleklett]

Sept. 23-25 - Second U.S. Conference on Peak Oil and Community Solutions, Yellow Springs, Ohio

October 10-12th - Peak Oil II, Alexander Oil & Gas, **Koblenz**, Germany [Campbell]

October 28-30th – Pio Manzu Energy Conference, **Rimini, Italy** [Campbell]

November 10-11 – Peak Oil Conference, **Denver USA** (ASPO-USA)

Information on future events for inclusion in the Calendar is welcomed

Country Assessments (by newsletter number)

Abu Dhabi	42	Canada	48	Indonesia	18	Mexico	35	S. Arabia	21
Algeria	41	China	40	Iran	32	Nigeria	27	Trinidad	37
Angola	36	Colombia	19	Iraq	24	Norway	25	Turkey	46
Argentina	33	Denmark	47	Italy	43	Oman	39	UK	20
Australia	28	Ecuador	29	Kazakhstan	49	Peru	45	USA	23
Azerbaijan	44	Egypt	30	Kuwait	38	Romania	55	Venezuela	22
Brasil	26	Gabon	50	Libya	34	Russia	31	Vietnam	53
Brunei	54	India	52	Malaysia	51	Syria	17		

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