

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

NEWSLETTER No 31 – JULY 2003

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

It presently has members in: Austria, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Portugal, 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 on Websites

This newsletter and past 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)

www.isv.uu.se/iwood2002

www.peakoil.net

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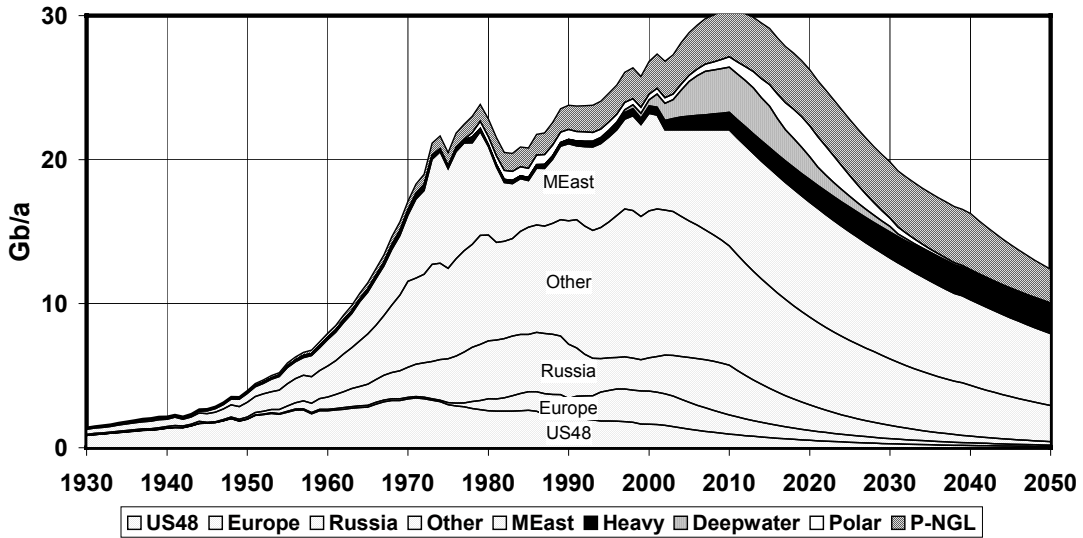
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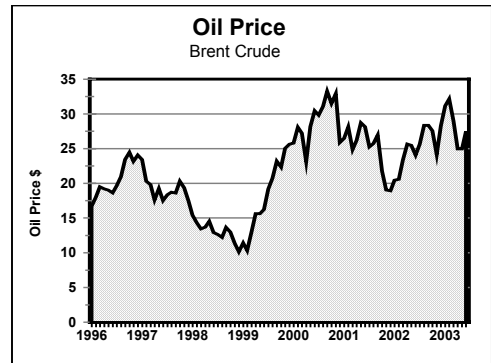
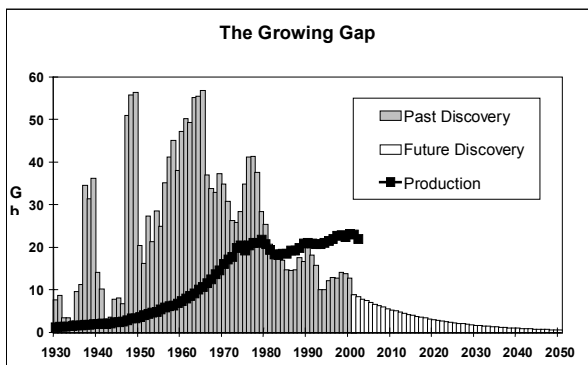
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The General Depletion Picture

Oil & Natural Gas Liquids 2003 Base Case Scenario



PRODUCTION to 2075						
Amount		Gb	Annual Rate - Regular			Mb/d
Regular Oil						Category
Past	Future	Total	2005	2010	2020	2050
Known Fields	New Fields					Total
896	871	133	1900			
All Liquids						Category
986	1714	2700	2005	2010	2020	2050
Status end 2002			60	60	47	22
Base Case Scenario :						Annual Rate - Non-Regular
Flat demand to 2010 for Regular Oil from recession. M.East Swing Role ends in 2010						Heavy etc
Regular Oil includes condensate but excludes liquids from gas p fields						Deepwater
						Polar
						Gas Liquid
						TOTAL
						78
						83
						72
						33
						2700



207 EXXON-MOBIL Annual Report

(Reference furnished by Walter Youngquist)

One can hardly doubt that ExxonMobil complies fully with the Stock Exchange and accounting practices imposed upon it, but its annual report fails to tell its shareholders what they really need to know to appreciate just how valuable their investment is. We may turn in particular to its Upstream Report, which provides a few generalised highlights about its holdings around the world. They sound impressive enough, but when we come to look for real numbers, we are left largely in the dark.

The company says it did sell 2.4 Mb/d of liquids, but does not explain how much was conventional oil, how much was non-conventional, nor how much was Condensate or Natural Gas Liquids from gas fields and plants. It states that 2.4 Gb of new resources were added but quotes them in terms of oil equivalent and not as oil, gas or gas liquids. Furthermore in a small type footnote it explains that the term *Resources* includes “discovered quantities.....that are not yet classified as proved reserves”. It is therefore impossible to distinguish how much was added by new discovery from how much was a book-keeping exercise of re-classifying earlier discovery. Proved Reserve additions are stated at 1.9 Gb of oil equivalent, but again without indicating what came from genuine discovery and what from book-keeping. A reserve replacement of 118%, *excluding asset sales*, is claimed saying nothing about asset acquisitions.

Since oil has to be found before it can be produced, it would be reasonable for the investor to be told how much is being found by new discovery. He can understand that the estimates at discovery are not exact but he could trust his engineers to make reasonable estimates. He could at least study the trend of such estimates, and see for example if they were being consistently revised up, which would tell him that his engineers report cautiously, in effect undervaluing his stake. Given that earnings from the upstream amount to 83% of the total, the shrewd investor might like to know how well that was going.

The accounts are signed by PriceWaterhouseCoopers but do not really describe the essential part of the business. It would be interesting too to know how the merged company, after the absorption of Mobil, compares with the sum of the component parts.

The report does end with a photograph of the directors including the impressive and serious countenance of Harry Longwell, the Executive Vice-President. He has separately revealed that world discovery peaked in 1964, and that less than half of the oil needed to meet expected demand by 2010 can come from current fields. The shareholders can be encouraged that he at least evidently understands what is going on only too well, even if he does not tell them directly.

208. Canadian Tar-sands falter

(Reference furnished by Julian Darley)

An article in the *Globe & Mail* of Canada of May 10th by Patrick Brethour reports that about half the planned \$50-billion expansion of Alberta tar-sand production is likely to be shelved due to excessive capital costs and limited demand due to the fact that refineries are not designed for this type of raw material. Rising labour costs and Kyoto restrictions are further constraints. Even so, the report estimates a 9% annual increase in production for a few years.

This seems to confirm the current ASPO assessment, which has production rising at 8% a year to 2010, followed by a gradual decline in annual increase to 2% in 2020 and beyond. This seems to well reflect the reported financial constraints and also recognise that the deposits are not homogenous, meaning that it becomes progressively more difficult and costly to move beyond the shallower and relatively easy sites being currently worked.

209. The crude truth

The following is a slightly abridged paper by Brian Fleay, a prominent analyst in Australia.

The USA's hydrocarbon resources made it the world's hegemonic power but it is a position it can no longer sustain.

Last month's global anti-war marches, in which many *Hub* readers would have participated, were the greatest expression of opposition to a war in world history. Only a minority support war to end the brutal Saddam Hussein regime – with its disastrous consequences for the Iraqi people exhausted by ten years of UN sanctions – because everyone knows that the politics of oil underlie the aggressive stance of George W. Bush. But exactly how does oil fit into this scene?

The US is an extravagant consumer of oil. It produces less than 10 per cent of world oil but consumes 26 per cent. It imports nearly 60 per cent of its consumption at a cost of around US\$330 million per day – the biggest component of its US\$435 billion trade deficit.

The post-1970s strategy to minimise dependence on Persian Gulf oil is coming to an end. We are passing through the peak of cheap oil production outside the Persian Gulf countries, which currently produce only 30 per cent of world supply, but now control 60 per cent of the world's remaining cheap oil reserves.

World oil *discovery* peaked 40 years ago and has been in decline ever since. We have been picking the 'plums' out of an extensive hydrocarbon resource but most new oil development is expensive, being offshore in deep water or in remote and hostile environments. Annually, production has exceeded discovery since 1980, and is now four times the discovery rate. With little cheap oil left to find, the supply focus is shifting back to the Gulf.

A consensus is being reached that global oil *production* will peak and begin to decline around 2010. The debate is being led mostly by well informed retired petroleum geologists but even the major oil companies and industry associations are now speaking out, though often in guarded terms.

US oil production has been declining for 30 years and the former Soviet Union's production has been falling since 1989 (though with some recovery under Russian President Putin). North Sea production has commenced a steep decline and production in many small countries is falling off.

There are over 30,000 productive oil fields, but 120 ageing giant fields produce nearly half the world's oil. Of these, 14 produce 20 per cent and just four 11 per cent! Discovery of giant fields has collapsed since 1980, and very few are now being found.

Could Australia rely on its own oil? A year ago, Woodside Energy and the Australian Petroleum Producers and Exploration Association (APPEA) publicly stated that Australian oil production during the 1990s had been three times the rate of discovery and that production was about to go into a steep decline. We were just self-sufficient in 2000, but this was likely to decline to 50 per cent by 2010, with most of the decline taking place by 2005. The three giant oil fields in Bass Strait have been declining since 1986 but so far their output has been replaced by small offshore fields that are here today and gone tomorrow.

Imports can only come from the Middle East, and APPEA and Woodside were extremely concerned at dependence on imports from this notoriously unstable region. There were serious implications for the balance of trade and for government revenue from royalties from Australian-produced oil. Transport was most at risk and the Federal Government needed to urgently formulate a National Energy Strategy.

At a recent *Beyond Oil* conference in Perth, Barry Jones from APPEA forecast severe price shocks if Australia did not cut its dependence on oil and said conservation would be more effective in the short term than fuel substitutes. He expressed frustration at inadequate responses to the issue from the Federal Government.

Aside from the threat posed by a war against Iraq, how stable are the Persian Gulf countries from which our supplies must increasingly come? Their population has quadrupled since 1950 to over 100 million. Well over half depend on imported food paid for by oil exports, but as their oilfields age, the Gulf countries must spend billions on their petroleum industry just to maintain existing production levels. For their people it's food versus oil investment.

Saudi Arabia, the biggest Gulf producer, is politically fragile. In an endeavour to mute dissent, the Saudi elite have been financing the fundamentalist Wahabi Islamic establishment. Nearly half its population is under 15 and it's getting beyond the capacity of the Saudi regime to avoid unrest by providing jobs and welfare. To make matters worse, King Fahd is expected to die soon, unleashing a power struggle for the succession among the 6000 princes of the royal family.

If Saudi Arabia is fragile, what of its major client? The United States has major supply problem with natural gas as well as oil. It consumes 25 per cent of world gas and imports 15 per cent from Canada. But since 1994, 74,000 new US gas wells (22,000 in 2001) have only maintained production at the 1994 level! Production declined by six per cent in 2002 compared to 2001, and a similar decline is expected this year. The US is running fast to stand still, and Canada is in a similar position. Proposals for new gas from the north-west Arctic coast of North America will take five to six years to build and will deliver less gas than the likely decline from existing fields over the same period.

Meanwhile, expecting the cheap gas to continue, the electric power industry has been installing gas turbines at a fantastic rate. In the immediate future (possibly later this year) the US can expect a simultaneous natural gas and electric power supply crisis. This will be a big issue because natural gas is the principal fuel used to keep Americans warm in winter.

The USA's hydrocarbon resources made it the world's hegemonic power but it is a position it can no longer sustain.

Compounding its perilous energy situation, the US is bankrupt. Its annual fiscal deficit of around US\$540 billion is financed by an inflow of capital that absorbs 75 per cent of all direct international investment. George Bush's recent budget proposal will lead to a cumulative deficit of US\$1 trillion over three years, a situation that can't possibly continue for much longer. And the high-tech military-industrial complex needed to maintain US global hegemony itself has become a cancer eating the heart out of the economy, poisoning the political system and eroding the social structure. The US can no longer afford the current US\$400 billion cost, let alone the increases projected by Bush. No country could.

Over the near future it must reduce its energy consumption, with all that that implies, but the mindset of George Bush and his oil industry cohorts cannot tolerate the loss of global power their present position portends – hence the 'War on Terror'; hence the desperate attempt to assert their dominance by a war on Iraq.

Which brings us back to the millions who marched against a war on Iraq and the massive opposition arising from every other quarter. The USA is on the threshold of a permanent decline of its military, political and economic hegemony: an historical turning point.

What might the consequences be? There are plenty of groups ready to exploit the situation for nefarious ends. Now more than ever we should be planning our responses to bring about the peaceful and just world we all want. People of good will must seize the opportunity while this window of opportunity is open.

Meanwhile Australians need to reduce their oil consumption - fast

210. Iraq the Bridgehead

(Reference furnished by Alan Hammaker)

According to www.ifpf.org, the United States plans to withdraw 8000 military personnel from Saudi Arabia, as this country appears to slide from friend to foe, possibly paving the way for a new invasion. The closure of several foreign embassies in Saudi Arabia hints of the same outcome. The US also plans to remove 60 000 troops from Germany, ending a presence after 25 years. But at the same time it intends to establish four army and air bases in Iraq, evidently the new bridgehead in the Middle East. It is also reported that battle groups are to be established in West Africa, possibly on the strategic islands of San Tome and Principe, off oil-rich Angola, Equatorial Guinea, Gabon and Nigeria. The Central Asian bases in Uzbekistan and Krygyzistan, adjoining the Caspian, are to be retained - but not expanded presumably in view of the disappointing results of exploration. There does seem to be a common thread to these military engagements: in a word - oil.

Meanwhile the CIA claims that its evidence about the so-called *Weapons of Mass Destruction* in Iraq was fair and valid, but had been exaggerated by politicians for their own ends. The UN has since lifted the embargo placing control of Iraq's oil with the invaders. The Secretary General said the organisation had to move forward making the best of the invidious situation in which it had been placed in the face of what cannot be described as other than naked aggression, given the evidence that the country posed no immediate threat to anyone.

211. Iraq and OPEC

The following article is very revealing. It suggests that the puppet regime to be installed will lead to Iraq's resignation from OPEC. The arguments for doing so are superficially convincing: the country needs as much money as possible to rebuild the destruction caused by the Anglo-American invasion, and therefore needs to increase exports to the maximum, although it can be asked whether it would not be fairer for the invaders to pay for the destruction they caused. No doubt the puppet regime will receive normal royalties and taxes, so that it can be claimed that the exports are for the benefit of the Iraqi people - a principle not evidently recognised when the bombs rained down upon them.

But the real short-term beneficiary will be the United States because it will receive the imports it needs at modest charge, and that the critical role of OPEC in managing swing production around peak will be undermined. The principles of flat-earth economics will be adopted such that the oil resources of the world will go to the highest bidder, namely the United States, and that they will be traded in dollars, whereby America is able to exchange imports of physical oil in exchange for the extension of domestic credit under the mysterious workings of international finance. So the net result may be low prices and higher production, benefiting the short-term world economy, especially that of the US economy, which in a certain sense is already bankrupt from excessive debt. But such a strategy carries its cost. If peak is higher and sooner, the subsequent decline is steeper. The least prepared will be the good old US of A. As a result of the temporary benefit from Iraq oil, it will emerge less prepared for the post-peak world than the under-privileged Third World, which will be able to adapt better to lower energy usage, having been forced to learn how.

U.S. Adviser Says Iraq May Break With OPEC

By Peter S. Goodman

(Reference furnished by Jim Meyer)

BAGHDAD, May 16 -- The U.S. executive selected by the Pentagon to advise Iraq's Ministry of Oil suggested today that the country might best be served by exporting as much oil as it can and disregarding quotas set by the

Organization of Petroleum Exporting Countries. His comments offered the strongest indication to date that the future Iraqi government may break ranks with the international petroleum cartel.

"Historically, Iraq has had, let's say, an irregular participation in OPEC quota systems," said Philip J. Carroll, who formerly headed Royal Dutch Shell in the United States and now chairs a commission advising Iraq's oil ministry. "They have from time to time, because of compelling national interest, elected to opt out of the quota system and pursue their own path. . . . They may elect to do that same thing. To me, it's a very important national question."

In an interview held in an anteroom off a cavernous ballroom at Saddam Hussein's former Republican Palace, Carroll also signaled that oil contracts signed under the old regime are now potentially void or subject to renegotiation.

Hussein's government had an official policy of steering contracts for drilling services, joint production and machinery to companies based in France, Russia and China, whose governments tended to be more supportive of Iraq in the United Nations Security Council. Though Carroll did not single out any potentially imperiled contracts, he asserted that the old system of preferential treatment ended with the demise of Hussein.

"There will have to be an evaluation by the ministry of those contracts and a determination of whether they were made in the best interests of the Iraqi people," Carroll said. "Certainly, where contracts are, shall we say, excessively beneficial to one party, and that party is not the Iraqi people, and there is a legal basis for not going forward, then I would expect that the ministry would want to have another look."

Carroll stressed that his first priority is resuming enough production of oil, gasoline and cooking fuel to relieve painful domestic shortages. Questions about Iraqi exports and the country's participation in OPEC remain moot for now. Sanctions continue to bar sales of the country's oil abroad, except under a U.N.-governed program that allows exports to pay for food. And analysts say it may be more than a year before there is enough oil produced for export to even reach OPEC quotas.

But Carroll also echoed one of the chief goals of the Bush administration -- returning Iraq to its prewar export capacity as soon as possible to fund reconstruction.

Iraq's resumption of oil exports under a new government would expose OPEC to considerable uncertainty. Iraq has the world's second-largest proven oil reserves. Flows of Iraqi oil to the world market unconstrained by OPEC quotas could further erode the cartel's already limited ability to set prices and might even trigger a price war, eating into the profits of its member countries. Such an outcome would surely delight the Bush administration as well as buyers of gasoline in the United States, the world's largest oil consumer. With that in mind, commentators -- particularly in Europe -- have contended that the real purpose of Bush's war in Iraq was to put in place a government that would break OPEC. Such an outcome would dismay the world's largest oil producer, Saudi Arabia, Kuwait and Iran.

Carroll repeatedly rejected suggestions that he is an instrument of any such policy, saying that he is merely an adviser. "In the final analysis, Iraq's role in OPEC or in any other international organization is something that has to be left to an Iraqi government," he said.

Already, officials within the oil ministry -- now supervised by U.S. forces -- are actively considering pulling Iraq out of OPEC and exporting as much crude as possible to maximize revenue once the oil fields have returned to full capacity, according to a senior engineer at the ministry.

Asked about those talks, Carroll said: "That is a very good debate for Iraqis to have, and I think they ought to do what they believe to be in their national self-interest."

Iraq's oil production historically has comprised 90 percent of its economy while bringing in nearly all of its foreign exchange. That flow of oil and money is needed more than ever, Carroll said.

"I do believe the assertion that Iraq is going to need every bit of financial wealth that it can lay its hands on," he said. "The sale of Iraqi crude internationally is crucial to help all the other sectors of the Iraqi economy. Those economic and financial resources are going to be essential if the Iraqi economy is going to get back, if Iraq is going to be able to pay its people and pay its pensions and rebuild."

Carroll's advisory board is today in fledgling state, counting only himself as chairman and his assistant, Fadhil Othman, a longtime official at Iraq's oil export agency. But as Carroll fills the board with others from the industry, financial experts and lawyers, he plans to embark on a series of studies to help the ministry set policy.

Among the questions the ministry will confront is whether to break up the state oil empire and put some of its pieces into private hands. Hussein used the state apparatus -- centrally controlled by the oil ministry -- to skim profits for his family and funnel wealth to companies tied to his security agencies. Carroll said his team planned to assist the ministry with a study of potential structures. All options, from maintenance of the old system to complete privatization, will be on the table, he said.

Carroll was careful to avoid endorsing any particular structure, but he warned of the pitfalls of maintaining a system dominated by the ministry and the state companies. "Highly centralized models are not always as efficient as they should be," he said. "They are prone to corruption. They tend to be more prone to the government seeing them as a cash cow" for funds for other purposes.

Still, Carroll also suggested that an overly aggressive privatization would risk putting the oil companies "in the hands of a few people, so that the nation receives little or no benefit, but all of a sudden you get instant billionaires."

The one near-certainty: The future expansion of Iraq's oil industry will be driven in part by foreign capital, Carroll said.

He confirmed a report in the Los Angeles Times that he continues to own substantial stock in Fluor, which has already announced intentions to bid on contracts to reconstruct Iraq's oil industry. He said he also has large holdings in Shell.

Carroll said he had already disclosed these holdings to the Defense Department and announced his intention to excuse himself from the consideration of any decisions from which they could benefit.

212 Country Assessment – Russia

It is no mean challenge to try to describe the oil and gas situation of Russia, but we should at least try to offer some insight.

Russia

Russia is the world's largest country covering an area of 17 million square kilometres, almost double the size of the United States, and supports about 150 million inhabitants, being rather sparsely populated. It may be divided into two broad physiographic regions: a western area of plains and lowlands; and a more mountainous east. Much of it lies within the Arctic Circle.

Over its long history, the country was occupied by Slavs, Huns and others, migrating from the plains of Mongolia. The western part of the country came under the control of the Varangians, who may have been related to the Vikings, establishing a trade route from the Baltic to the Black Sea. The country adopted the Christianity of Byzantium from around 1000 AD. Later came in turn Mongol and Tartar invaders, but they were generally assimilated by a growing number of principalities and petty kingdoms that were developing in Western Russia, including Muscovy on the site of the present capital. Ivan the Terrible began to expand Muscovite influence in the 16th Century, being largely the pawn of his elite factions, and espoused European influences, including the construction of the Kremlin with the help Italian craftsmen. He in turn gave way to the Romanov dynasty which continued in power to the 20th Century. Peter the Great (1689-1725) consolidated power, settling disputes with Turkey to the south and Sweden and Poland to the west, paving the way for the expansion of the nascent Russian Empire. His greatest achievement was the establishment of a competent administration and an improved educational system. He established St Petersburg on the shores of the Baltic, giving Russia an outlet for world trade. The next luminary was Catherine the Great, the German widow of an ineffectual Czar who came to power in 1763 after a coup d'état, organised by her lover, Count Orlov. Her reign was marked by both amorous and territorial conquests. A general state of tension persisted after her death in 1796 with various wars against Turkey and the European powers, which resulted in the ill-fated invasion by Napoleon who was defeated at the gates of Moscow in 1812. The Czars faced great difficulties in administering their vast territories, which they sought to do by the establishment of a ruling nobility and an under-class of serfs. But the 19th Century also saw the development of industry, mining and railways, with the emergence of prosperous capitalists.

The Crimean War of 1853-56 found Russia in conflict with Britain, France and Turkey, who were opposing the threat of Russian expansion into the Middle East, whose importance then lay not in its oil but in its strategic position facing the British Empire. Defeat led the reigning Czar to move towards the liberation of the serfs, which was naturally resisted by his nobility. Progress was slow, however, sowing the seeds of revolution, in some cases encouraged by sympathetic intellectuals. Russia's large Jewish population was mistrusted by both the officials and the serfs alike, who were no doubt reacting to the hidden pressures of usury. Waves of anti-semitic programs swept the country, forcing many Jews to emigrate.

Russia's eyes turned eastward during the early years of the 20th Century where, in company with Britain, France and Germany, it sought to capture the markets of China and Japan, exploiting also the conflicts between those countries. The trans-Siberian railway was constructed. But a surprise attack by the Japanese in 1904 led to the Russo-Japanese war, in which Russia suffered several defeats, which in turn stimulated more domestic unrest. In 1905, workers in St Petersburg marched to deliver a petition to Czar Nicholas, but they were brutally cut down in what was known as Bloody Sunday (a term also applied in Londonderry). The Bolshevik movement, amongst others, gained strength, pressing for reform.

Meanwhile in Western Europe, a newly united industrial Germany was challenging the mercantile empires of Britain and France, that led to the erection of a complex set of alliances, including a pact of mutual assistance between France and Russia. The catalyst for the outbreak of the ensuing world war in 1914 was a move to secession from the Austrian Empire by Serbia, whose Slav population were

backed by Russia. With the outbreak of hostilities, a Russian army marched into East Prussia, but was repulsed. The privations of war exacerbated the tensions at home, which erupted in February 1917 in a spontaneous popular outburst against the government that was soon exploited by the Bolshevik leaders, Trotsky and Lenin, who proposed a Soviet government. A civil war followed in 1918 between Red and White armies. Czar Nicholas and his family were arrested and later murdered, and an oil workers' leader from Baku, later known as Joseph Stalin, came into prominence, eventually taking control of the government after Lenin's death in 1928.

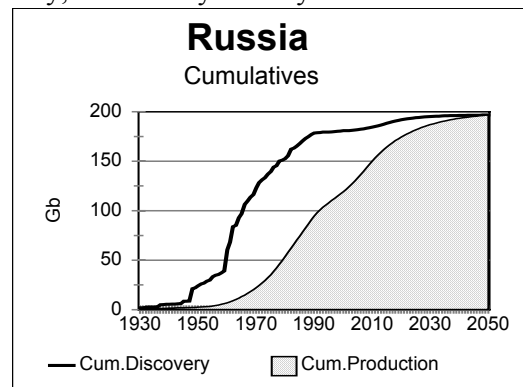
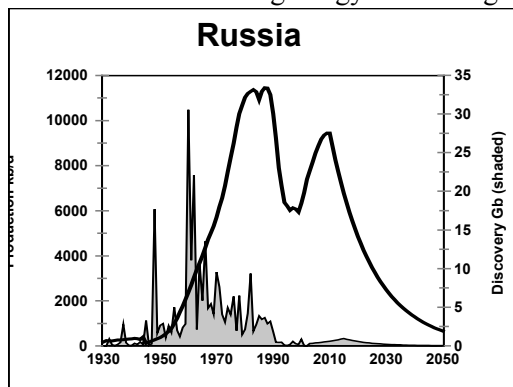
The inter-war years saw Russia, now known as the Union of Soviet Socialist Republics (USSR), develop largely in isolation with all strands of its economy under state ownership and control. Stalin proved to have an iron hand, suppressing any hint of opposition by ruthless means, in which millions died. Even so, the Soviet experiment appealed to many intellectuals in other countries, inspiring the socialist movement, a milder variant.

The Second World War was essentially an extension of the first, and after an initial alliance with Germany under a non-aggression pact, Russia again joined the Allies. After initial successes, the German army was repulsed from the gates of Moscow, and in 1945 Russian troops raised the Hammer and Sickle over the ruins of Berlin. Russia had suffered grievously in the war, and was not about to give up the territories it had conquered in East Europe, where puppet Communist regimes were established. The British and French empires were extinguished by the war leaving the United States and the Soviet Union to glower at each other for the next forty years in what became known as the Cold War. That in turn ended in 1991 when the moderate Communist Gorbachev was ousted by Boris Yeltsin, who in turn gave way to the current President, Vladimir Putin in 1999. A new capitalism, complete with robber barons, has come to Russia, leaving many Russians to look back with a certain nostalgia for the old days when they knew where they stood. The Soviet Empire was dismembered: many of its component parts becoming independent countries with their own internal conflicts.

RUSSIA		Regular Oil
Rates Mb/d		
Consumption	2002	2.46
per person b/a		6.0
Production	2002	7.39
	Forecast 2010	9.34
	Forecast 2020	4.85
Discovery 5-yr average Gb		0.5
Amounts Gb		
Past Production		121
Reported Proved Reserves*		60
Future Production - total		79
From Known Fields		63
From New Fields		15
Past and Future Production		200
Current Depletion Rate		3%
Depletion Midpoint Date		1992
Peak Discovery Date		1960
Peak Production Date		1987

*Oil & Gas Journal

It is difficult to summarise the geology of this huge territory, but we may identify the main



provinces

- The Western basins between the Barents and Caspian Seas with their Silurian source rocks
- The West Siberian basins with the Jurassic source rocks
- The Arctic domain
- The locally productive Tertiary deltaic basin of Sakhalin on the Pacific margin

Exploration commenced in the 1840s in the vicinity of Baku on the Caspian, but lapsed during the early years of Communism, until it was revitalised after the Second World War. In fact, the Soviet explorers proved to be highly efficient being able to apply scientific methods, free of commercial constraints. Boreholes were drilled for geological information, and Russian explorers pioneered the geochemical breakthrough that identified the source rocks and generating belts. Accordingly, discovery at least in sub-Arctic Russia peaked around 1960, the corresponding peak of production following in 1987. Exactly how much was found is hard to know, because the Soviet classification of reserves ignored commercial constraints. Decline curve analysis shows that the reported reserves of most Russian fields have to be reduced by about 30% to obtain realistic estimates. Production crashed on the fall of the Soviets, but is now growing under the new capitalists, in part making good the production that would have already been secured but for the dislocations accompanying the fall of the Soviet regime. Accordingly, we may expect a second peak around 2010.

It is clear that the reserve estimates of around 50 Gb as reported by the *Oil & Gas Journal* were far too low. Exactly how far is difficult to know, but we tentatively favour an figure of about 60 Gb, still giving a fairly low depletion rate of 3%, which is one argument against higher estimates. We add to this 30 Gb of polar oil, together with substantial deposits of heavy oil in Eastern Siberia and NGL from gasfields, which are here excluded from *Regular Oil* by definition. The total therefore approaches the 100-120 Gb reported by Yukos. The jury is still out but we think that this assessment is reasonable in terms of order of magnitude.

Russia also has vast deposits of natural gas, which in turn will yield large amounts of NGL. It is evident therefore that Russia emerges in a new and important geopolitical role. For the present, she seems ready to export her surplus to earn foreign exchange, but as she becomes more aware that she has her hand on Europe's light switch, given that so much electricity is now generated from natural gas, she may come to recognise that starving her industrial competitors of energy will give her domestic manufacturing base a decided advantage. As Europe's principal energy supplier, she may come to embrace the euro as her natural currency, opening a new chapter in the postscript to the Cold War.

213 An excellent new book – Gaian Democracies

Studying the nature and impact of oil depletion has opened the eye to many facets of the modern world that are far from evident. The curious role of usury in money supply giving the necessity of perpetual growth is one; the growth of influential elites, some termed kleptocrats, is another; the control of the media and the promulgation of misleading information by image makers is a third; and the use of apparent democracy under the party system as a cloak for dictatorial behaviour is a fourth. Hints of these factors have begun to merge in the assessment of the impact of oil and gas depletion, but they were veiled in uncertainty and doubts, being far from the technical assessment of oil and gas itself, on which some scientific credentials could be claimed.

But now all is revealed in a lucid, unemotional and clear-sighted description of the current state of civilisation, if that is quite the word, and the risks from depletion in its widest sense. It really is essential reading for anyone concerned about the direction of the world. The chapter entitled *Global Monetocracy* is particularly brilliant.

Gaian Democracies – redefining globalism and people-power by Roy Madron and John Jopling is published for the Schumacher Society as Briefing No 9. by Green Books (ISBN 1 903998 28 X)

214. Realistic views from Canada on Saudi Arabia and N.American Gas Depletion

by Bill Powers, Editor, Canadian Energy Viewpoint
June 29, 2003

One of the most important political and economic events of the first decade of the 21st century is the coming regime change in Saudi Arabia. Predicting the fall of governments is very similar to shorting stocks, one gathers all the fundamental facts about the situation, checks and re-checks all facts and figures, and then takes action. While it is impossible to predict the time and date of the fall of the House of Saud, a preponderance of evidence suggests it is inevitable. Let's examine several of the myths surrounding the current state of affairs in Saudi Arabia and what the country's downfall will mean for investors in the Canadian energy sector.

One of the greatest myths regarding Saudi Arabia is that it is a wealthy country. While it's true that Saudi Arabia has the world's largest oil endowment and a royal family that leads the world in conspicuous consumption, the country's financial health continues to deteriorate. The country's severe economic problems

are a result of an exploding population and a lack of economic growth outside of the oil industry. The country's population has grown from 10 million citizens in 1980 to over 22 million today. The below quote from the US Energy Information Agency's website succinctly describes today's economic challenges in Saudi Arabia. (The quote can be found at the following URL: <http://www.eia.doe.gov/emeu/cabs/saudi.html>)

"Slow economic growth is not good news in a country with a rapidly increasing (and young -- 50% under age 15) population, many of whom cannot find good jobs outside of the public sector (which is overstaffed and a drain on the country's budget). Over the past two decades or so, Saudi real economic growth has fallen far behind population growth, resulting in sharply reduced real per capita incomes and higher unemployment (officially estimated at 15%, with the true level likely much higher). Per capita oil export revenues (in inflation adjusted dollars) remain far below high levels reached during the 1970s and early 1980s (around \$2,563 per person in 2001, versus \$23,820 in 1980, for instance). Saudi Arabia also has a high level of domestic debt (around 100% of GDP) which it hopes to pay down."

Despite many protestations by the royal family that Saudi Arabia has invested its oil money in infrastructure, defense and an economic diversification plan, the country has little to show for all of its spending. Saudi Arabia is burdened with more military equipment than it could possibly use, woefully uncompetitive state supported industries and poor infrastructure. Where did all of the money go? It was frittered away by the thousands of dependents of the royal family and stashed in overseas bank accounts.

With little exploration success since the 1960s and many of its fields showing signs of decline, Saudi Arabia is having an increasingly difficult time keeping production flat. According to energy investment banker, Matt Simmons, head of Simmons and Company International, many of the country's ageing fields are showing increased water cuts. Water cuts, water produced along with crude oil that is later separated, are a sure sign that a field is headed into decline. The country's largest field, Ghawar, now produces over 1 million barrels of water a day along with its nearly 4.5 million barrels of crude. With Ghawar accounting for 60% of the country's 7.5 million barrels per day of crude production, there is little hope Saudi Arabia can keep production flat if Ghawar continues to water out. Since Saudi Arabia cannot invest the billions of dollars needed to maintain current production and develop smaller fields, Ghawar has assured the world high oil prices are here to stay.

Another great myth about Saudi Arabia is that the country has spare production capacity. Many believe that Saudi Arabia's spare production capacity allows them to "turn on the spigots" at times of high oil prices. It is extremely unlikely the country has any spare capacity. There exists little incentive to restrict production at times of high prices and low inventories. Unless human nature has changed substantially in recent months, I doubt that the cash-strapped Saudis are producing much below their production capacity.

The situation in Saudi Arabia has caught the world in somewhat of a Catch-22 in terms of oil prices. If oil prices were to fall anywhere near \$20US and remain there for a significant period of time, the quality of life for the average Saudi citizen would deteriorate to such a degree that an overthrow of the royal family would be almost certain. History tells us that when a country has a sudden regime change, oil production drops precipitously. A few examples would be Iran in 1979 when oil production dropped from 6 million barrels per day to zero almost overnight, the collapse of the Soviet Union devastated oil production in Russia and more recently the regime change in Iraq halted all oil production in that country.

Some of the best insights into the current state of affairs of a country can be gleaned from those who have gained first hand knowledge of the country through travel. World-renowned investor and author Jim Rogers, who recently completed an outstanding book titled "Adventure Capitalist," had the following to say about the country after his visit to Saudi Arabia: (For more information about Jim and his travels please see www.jimrogers.com) "By the 1990's the Saudis were spending much more money than they had, and the nation's debt began to skyrocket. Today, despite its considerable assets, the country is one of the more indebted countries in the world. If the price of oil drops, the government will ultimately go bankrupt. It will no longer be able to support all of its princes much less its mullahs. Only if oil prices remain high will Saudi Arabia be able to whether the storm-perhaps." Jim Rogers, "Adventure Capitalist," p. 225

The coming fall of Saudi Arabia is going to have a huge impact on investors in the Canadian energy sector. The news that the royal family has been finally thrown out will almost certainly send oil prices skyrocketing. The heights to which oil prices would climb is anybody's guess. What is more important is that prices will climb to unheard of levels almost overnight. As I mentioned earlier, predicting regime change in a country is like shorting stocks, do your research, take your position and wait for the wheels to come off. While it might seem like an eternity for your thesis to be proven, its fruition is often well worth the wait. I believe we are already seeing signs that the House of Saud is in trouble. With the recent bombing of an American compound and the State Department's temporary closing of the US embassy in Riyadh, it is clear that we are at the beginning of the end of the House of Saud.

Greenspan on Gas

On June 10, 2003, Federal Reserve Chairman Alan Greenspan took the unusual step of speaking to the House Energy and Commerce Committee on the natural gas crisis in the United States. Greenspan, obviously tired from his long days spent devaluing the US dollar, has not had time to update his spreadsheet as evidenced by his below comment: "In summary, the long-term equilibrium price for natural gas in the United States has

risen persistently during the past six years from approximately \$2 per million Btu to more than \$4.50. The perceived tightening of long-term demand-supply balances is beginning to price some industrial demand out of the market. It is not clear whether these losses are temporary, pending a fall in price, or permanent. " It should be quite clear that the recent losses in demand are permanent since there exists almost no chance of the US returning to the days of cheap natural gas. The severe supply/demand imbalances that exist today ensure high prices are here to stay. While I applaud Chairman Greenspan's efforts to bring attention to the seriousness of the natural gas crisis, I also wonder what took him so long. After having failed to recognize the stock market bubble and raise margin requirements, Greenspan thinks he is getting out front on the natural gas issue. He is not. His speech before Congress was merely stating the obvious.

Canada's (US) Nat. Gas Problems

A sea change is quietly occurring in the North American natural gas market. For the first time in 16 years, Canada is going to experience a significant natural gas production decline in the range of 3-4%. I cannot overstate the impact of Canada's declining production on North America's natural gas market. It is huge. Here is why. Canada has increased its exports to the United States five fold over the last fifteen years thus masking the real supply/demand imbalance in the US. However this trend is coming to an end. With declining natural gas production in the US and Canada and increasing US exports to Mexico, the gap between demand and supply in the US must be made up through either demand destruction or increased imports of liquefied natural gas (LNG). Both of these supply solutions require high natural gas prices for an extended period of time. In early June, the Alberta Energy and Utilities Board (AEUB) handed down an order to shutter 900 natural gas wells in northern Alberta on August 1st to protect the bitumen (the raw material used to produce synthetic crude oil) that is surrounding the gas reservoirs. Needless to say, the decision did not sit well with the companies who operate those wells. Current production from the effected area is 90 billion cubic feet per year (250 million cubic feet per day (mmcf/d)) or 2% of Alberta's total gas production. While it is unclear whether the AEUB decision will get overturned in court, it is certain that the shutdown of 900 wells at time of falling production will further strain the North American supply situation.

215. Our President Reports

The first month as President of ASPO has had a flying start, with most of the activities being naturally in Sweden. Speaking on behalf of ASPO, an interview was granted to prime time morning TV news, discussing our studies, depletion and the war in Iraq, and there have been comparable interviews on radio. One of the major newspapers accepted an article on the natural gas problem in the United States, and two articles commenting on our work appeared in other papers, one with the largest circulation in Sweden. Several other articles also refer to our work.

At the end of the month a seminar on oil depletion was given to a subsection of the Department of Industry, and was well received evidently having an impact.

On the international level, an interview was given to a journalist from the magazine *The New Scientist* who will write an article about ASPO and depletion. An invitation to give a keynote lecture at the 3rd European Congress on Economics and Management of Energy in Industry in Lisbon 06-09 April 2004 has been accepted.

Finally, a letter has been sent to the Swedish EU Commissioner Margot Wallström, explaining the critical energy situation facing the world and Europe.

For further information, contact aleklett@tsl.uu.se. The ASPO website, peakoil.net, is receiving a growing interest from around the world

126 Oil Trade in Euros

Loyola de Palacio, the EU Energy Commissioner, has welcomed Malaysia's decision to trade oil in euros (as reported in earlier Newsletters) and has informed the US Secretary of Energy that she regards this switch from the dollar as a normal trend likely to continue. She did not however comment on the devastating impact that the shift is likely to have on the already debt-ridden US economy, (see Item 211 above for the hidden currency benefits).

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

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