

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

NEWSLETTER No 49 –JANUARY 2005

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

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

Missions:

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

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

<http://www.asponews.org>

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

<http://www.peakoil.net>

A Spanish Language edition is available on www.crisisenergetica.org

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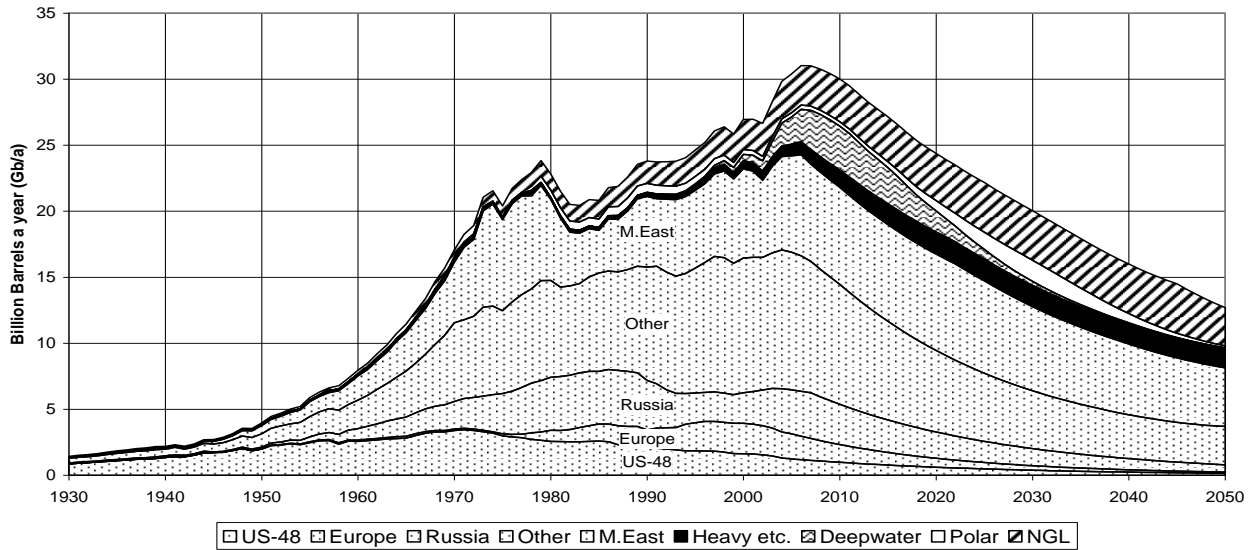
Calendar of Forthcoming Conferences and Meetings

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

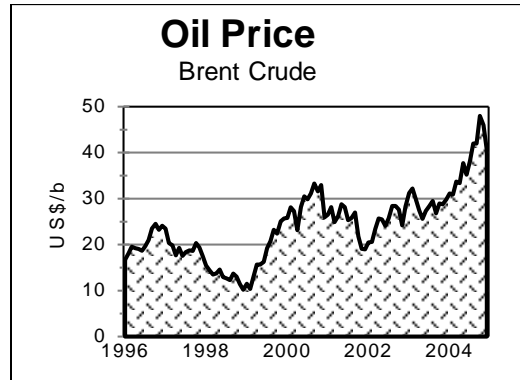
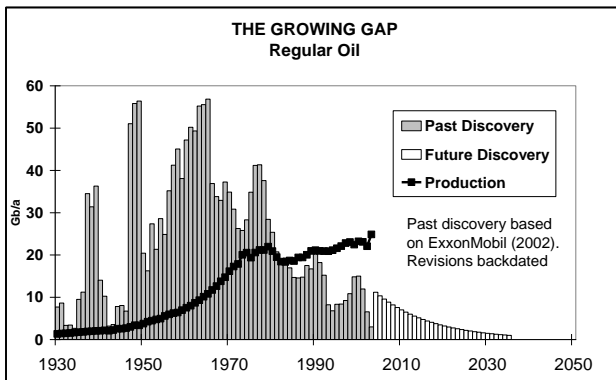
Index of Country Assessments with Newsletter Reference

The General Depletion Picture

OIL AND GAS LIQUIDS 2004 Scenario



ESTIMATED PRODUCTION TO 2100							End 2004		
Amount			Annual Rate - Regular Oil				Gb	Peak	
			Mb/d	2005	2010	2020	2050	Total	Date
Regular Oil									
Past	Future		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	770	135	Russia	9.1	8	5.4	1.5	210	1987
	905		ME Gulf	20	20	20	12	675	1974
All Liquids			Other	29	25	17	8	690	2004
1040	1360		World	66	60	46	22	1850	2006
2004 Base Scenario			Annual Rate - Other						
M. East producing at capacity (anomalous reporting corrected)			Heavy etc.	2.4	4	5	4	160	2021
Regular Oil excludes oil from coal, shale, bitumen, heavy, deepwater, polar & gasfield NGL			Deepwater	5.6	9	4	0	58	2009
			Polar	0.9	1	2	0	52	2030
			Gas Liquid	8.0	9	10	8	275	2027
			Rounding			2	-2	5	
Revised	26/12/2004		ALL	83	85	65	35	2400	2007



463. ASPO Model

The following comment on the ASPO model has been gratefully received.

Comments from Rune Likvern

In a recent contribution to this forum [Energy Resources] someone challenged the decline rates (degree of depletion, the downslide) that ASPO has been applying in their general depletion picture. I think this to be a timely and relevant challenge of ASPO urging them to further detail and argue the decline side of their curve, and I would like to add some points of my own to the list and some considerations.

NGL's

By looking on their projected natural gas consumption/production picture, I find little realism in the growth rate on the upslope they have been promoting. This is based on:

1. My knowledge of the gas industry, the geographical location of world proven gas reserves, declining North American natural gas production, and the billions of money (dollars or euros), technology, needed timeframes and infrastructure developments etc. that has to be involved to realise ASPO's projected growth (I am aware that ASPO somewhere has explained their upslope to be defined by free flow (geological?) constraints only). As NGL's are produced with natural gas, I would expect NGL production to be roughly proportional to natural gas production, meaning I would expect lower rates of NGL's.

2. ASPO has throughout their natural gas production profiles assumed a constant GOR (Gas Oil Ratio). My experiences with gas fields are that the GOR normally increases with time as gas is produced (which means the gas becomes drier and yields less liquids). At a presentation I attended, NPD (Norwegian Petroleum Directorate) presented a slide showing future declining NGL and condensate production while the gas production increased on NCS, which indicates NPD has included this effect in their forecasts. I think NCS should be considered a region in this respect that behaves like other gas regions in the world. I have through correspondence with one of ASPO's members been explained that the GOR remains constant for a region without him willing of giving supportive data to substantiate this claim (well they have to defend their stand I guess).

3. On the richer gas fields having low GOR (relatively high volumes of condensate and NGL's) normally some of the gas is recycled (repressurised) to increase recovery of liquids (reflecting good resource governance), and thus economics. This would further suggest an increase of GOR with time. Normally the field owners prioritise to develop the gas fields (in a region) returning the highest profits (which means yields most liquids if you like), then the leaner gas fields. (Does this sound familiar and very much in line with the law of diminishing return?) Based on the above I think the person challenging ASPO on their NGL profiles have a strong case. I think ASPO's forecast NGL's profiles are too high, meaning I think the down slope of their all liquids curve should be steeper. I think you all can perceive what this would mean post peak oil.

NORTH SEA

Having a good insight into North Sea oil production (which I assume ASPO has included in their production profile for Europe) I would expect a steeper decline for Europe towards 2010 than ASPO. Recent historical NPD data from Norway, the resource base of Norway and recent years volumes added, also by new discoveries, in both Norway and UK, support my expectations.

CANADIAN AND OTHER TAR SANDS

The extraction of oil from tar sands requires large amounts of energy from other energy sources. In Canada this is provided mainly by natural gas that is in decline. I recall to have seen proposals to build nuclear power stations, substituting natural gas with electricity, to offset the expected decline in natural gas. To my knowledge a nuclear plant takes almost ten years to construct. Has this been accounted for in the ASPO profiles for non-regular oil?

OIL AND CONSUMPTION OF OTHER PRIMARY ENERGY

I have since long ago acknowledged that the consumption of oil (probably why some also refer to it as KING of the energy sources) also requires energy consumption from other primary sources. This means that I have through both research and presentations shown how energy use from other sources closely parallels use of oil. Exactly how this relation or ratio works out varies (they are at this stage estimates seeing geographical variations), but it is easy to document and comprehend. Man builds vehicles and other oil consuming devices using mainly electricity generated from other primary energy sources. So my expectations would be that as availability of oil (for which there is, as of now and to my best knowledge, no ready and credible substitute) declines, this will be followed by less demand for energy from other sources (natural gas also?) as general demand for vehicles for transport also would be expected to decline.

Though I believe there would be some substitution into natural gas post peak oil, I think at the end of the day this substitution would limit itself due to the fact that natural gas is not as potent and versatile as oil. Natural gas is of course an excellent and as of now plentiful energy source.

By this I mean no disrespect for ASPO's work, which I hope should be clear. It comes as something of a relief to be accused of optimism for a change.

Here are some replies:

1. Natural Gas Liquids are particularly difficult. The current model defines NGL as the proceeds of gas plants (data on which are published by the DoE), and excludes condensate, so the comments

about rising GOR probably do not apply to any great degree. Therefore, it may be reasonable to assume that every effort will be made to extract the maximum amount of liquids by such things as gas-to-liquids technology, holding the yield roughly constant.

2. The decline of oil is modelled on Depletion Rate (annual production as a percentage of Reserves + Estimated Yet-to-Find). It does indeed deliver a somewhat implausible long tail to production. It is not easy to see how to overcome this, while still respecting the estimated Ultimate. Holding short term production higher for longer seems to offend the actual experience as in the North Sea. Perhaps after all, our estimated Ultimate is still too high.
3. The production forecast of heavy oils (tarsands etc) has been recently altered, being reduced for Canada and increased for Venezuela, following re-evaluation and new data.
4. Indeed, the decline of oil probably heralds a deep economic recession dampening the demands for other fuels in parallel. For example, one can expect exports of gas from, say, Russia to decline as the country recognises the desperate need to conserve its own resources.

464. Country Assessment -Kazakhstan

Kazakhstan was a member of the Soviet Union until 1991. It covers an area of some 2.7 million km², having common frontiers with Russia and China to the north and east. Much of the country comprises low-lying plains, including some extensive deserts, bordering the inland Caspian and Aral Seas, but to the south and east develop high mountain ranges, associated with the Himalayan chain. The highest peak rises to as much as 7000 m. The country suffers from an extreme climate of hot summers and cold winters, with generally low rainfall. The Aral Sea suffered an environmental crisis in 1986 when rivers flowing into it were diverted for irrigation, causing it to be so severely polluted and saline that crops could barely grow in the vicinity. Kazakhstan also played a prominent part in the Soviet nuclear and space programmes.

The population amounts to about 17 million, comprising the remnants of the original Kazakh nomads and the descendants of massive waves of immigration during the early years of the 20th Century which saw the arrival of Russians, Slavs, Jews, Germans and others. The indigenous people were driven from their lands, being, in many cases, made destitute. But the situation was partially reversed following independence, when many Russians left, such that about half the population is now of Kazakh origins. The Kazakhs belong to the Muslim faith, although that was partially suppressed during the Communist era. The non-Kazakh sectors of the population are concentrated in the cities, including Almaty, the capital.

The President, Nursultan Nazarbayev was born in 1940 in humble circumstances before rising to prominence in the Communist regime, being appointed President in 1990 and steering the country to independence a year later. He was re-elected President in 1999. An old time Communist strongman by background, he is generally regarded as a sensible leader, although possibly not above a touch of the vote-rigging, as practiced with greater or lesser subtlety by many of the world's leaders. He was successful in recent elections, granting himself certain powers for life.

In geological terms, the country is dominated by two petroleum systems. The most important is the Pre-Caspian Basin in the northwest, where Silurian source rocks have charged Carboniferous carbonate reservoirs beneath, often thick, deposits of salt, forming an excellent seal. To the south, lies a less prolific Jurassic trend, probably relying mainly in Upper Jurassic source rocks.

The early record of exploration is lost in the pages of history, although it is known that some discoveries had already been made before the Second World War. The discovery of the Tengiz Field in 1979 evidently stimulated new interest, with exploration drilling reaching a peak in 1986 when some 33 wildcats were drilled. Tengiz itself holds some 6 Gb (billion barrels) of oil, but it contains as much as 16% sulphur, which proved too much for Soviet steel. Chevron, took over the project on the fall of the Soviets, and has successfully overcome the technical difficulties.

Ownership of the Caspian proved legally contentious. If it were deemed a lake, its mineral rights under international law should be shared by the continuous countries, whereas if it were a sea, they would be physically divided between the countries. It seems however that a pragmatic agreement has left much of the northern Caspian under Kazakh jurisdiction. This is highly prospective territory that attracted great interest after the fall of the Soviets, with some reports suggesting it might rival Saudi Arabia. A huge prospect, named Kashagan, was identified, attracting the attention of the veteran New York promoter, Jack Grynberg, who persuaded Mr Nazarbayev to grant rights to a consortium of major oil companies, led by BP, in return for an over-riding royalty, which he may possibly have shared. Operating conditions are appalling, with shallow water impeding the entry of drilling equipment and a frightful wind that coats everything in ice during the winter. If that was not enough, the area lies in the breeding grounds of the sturgeon, an important source of caviar for the Russian market. But eventually wildcats were drilled at either end of the prospect at

enormous cost, finding some 9-15 Gb. Although by most standards this would be a fine discovery, BP, Statoil and later British Gas pulled out, turning the operation over to Agip, which left poor Mr Grynberg to sue for his over-riding royalty. Probably, the structure is a huge platform containing discrete reefal reservoirs, separated by rocks lacking sufficient porosity and permeability to be effective. Other structures in the vicinity were later tested successfully, suggesting that overall Kazakhstan has considerable potential.

Insufficient is known about the country to make a very reliable assessment but the indications are that about 37 Gb have been discovered, of which only 6.6 have been produced. Future discovery is here assessed at about 8 Gb, giving a rounded total of 45 Gb. With such substantial reserves, the country has little incentive to explore for more.

If this is approximately correct, it might be reasonable to model production rising to about 1.4 Mb/d by 2010 followed by a plateau to the onset of decline around 2030. Since consumption is no more than about 200 kb/d, the growth of production implies a massive expansion of export capacity, with the construction of new pipelines. The options are to route them through Russia; southwards through

Turkmenistan and Iran to the Persian Gulf ; eastwards to China; or westwards to the Black Sea, and onward by tanker or pipeline across eastern Europe through Kosovo, where a large American military base, known as Bondsteel, has been constructed for possibly not unrelated reasons, as even the name suggests. All carry grave geopolitical constraints (see Item 468 below), suggesting that production will not in fact rise as modelled on the resource base, depicted in the table above. It is easy to understand why BP, Statoil and British Gas have pulled out.

Approximately 150 Tcf of gas have been found, of which only 26 Tcf have been produced, meaning that the country has substantial export potential, with Russia or China being the obvious main customers.

Kazakhstan is in an anomalous position thanks to its remote landlocked location and its history as a former member of the Soviet Union. It evidently has great potential as an exporter of oil and gas, but is likely to face intractable political and geopolitical pressures, which can only grow as alternative world supplies decline in the years ahead.

465. Clarification

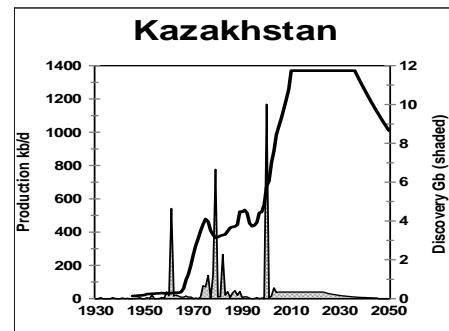
Item 404 in Newsletter 44 opened with a reference to Sir Martin Rees (The Astronomer Royal of the United Kingdom) who discusses human extinction in a recent book entitled *Our Final Century*. It should be made clear that the words that followed the reference were simply commentary on the subject and not extracts from the book itself.

466. The Financial Community wakes up to Depletion

The following comments from the Deutsche Bank confirm that the financial community becomes aware of depletion. In all probability, the Second half of the Age of Oil will spell the end of the current Industrial-Financial System, which not only created economic growth but depended on it. The growth was itself essentially a manifestation of confidence that the mammoth debt created by the system could be re-paid. If it can't be re-paid for lack of energy, logic demands the destruction of "capital" during the Second Half. It was n't really capital in the first place in the sense of representing work or genuine assets but rather an expression of confidence that the past financial regime was sustainable. It would be interesting to know if the financial community can identify any genuine investments that will remain in tact despite the decline and eventual end of cheap oil-based energy that made the world go round. All identified substitutes are less efficient and more expensive.

KAZAKHSTAN		Regular Oil
Population M		16
Rates Mb/d		
Consumption	2004	0.19
per person b/a		4.4
Production	2004	0.98
	Forecast 2010	1.4
	Forecast 2020	1.4
Discovery 5-yr average Gb		2.1
Amounts Gb		
Past Production		6.6
Reported <i>Proved Reserves</i> *		9.0
Future Production - total		38
	From Known Fields	37
	From New Fields	8
Past and Future Production		45
Current Depletion Rate		0.9%
Depletion Midpoint Date		2036
Peak Discovery Date		2000
Peak Production Date		2030

*Oil & Gas Journal



From Deutsche Bank Research, December 2, 2004

http://www.dbresearch.de/PROD/DBR_INTERNET_DE-PROD/PROD000000000181487.PDF

ASPO view

The Association for the Study of Peak Oil&Gas, ASPO (see various articles from K. Aleklett and C.J. Campbell at www.peakoil.net), a group of former petroleum geologists in the service of prominent petroleum corporations (e.g. BP Amoco) argues in favor of taking a different angle. It assumes a steep ascent in the output curve up to a peak, followed by a comparatively flat descent. The result is that the peak in production comes well ahead of the depletion mid-point, meaning that the production curve peaks far earlier than hitherto anticipated. Initially this applies to oil, and then, with time lag, to natural gas. In its mid 2004 updated forecast for oil, the ASPO brought the peak for oil forward from 2010 to 2008.

Dramatic implications of ASPO scenario

Were the ASPO scenario to prove correct, the consequences could be dramatic. Within the space of just a few years oil supply would start to shrink in the face of a growth trend in global demand, driven not least by the increasing hunger for energy in the heavily populated Asian countries. ExxonMobil expects 80% additional global demand for energy up to 2020 to come from the developing countries (see ExxonMobil, A Report on Energy Trends, February 2004, p.3). In the worst-case scenario, the already emerging widening of supply/demand gap could trigger a shortage shock leading to price crisis. This would also impact world economic development.

Also conceivable, though, is a more or less steady climb in the price of oil (and later also natural gas), which would tend to rein in demand for the energy carrier and encourage gradual substitution. What is more, price increases would imply an expansion of the reserve base as non-conventional reserves and current resources become more price-competitive. The peak calculated with reference to "present reserves" could then be delayed for a few more years. The possibility of realigning the energy mix without radical economic disturbance would be all the more likely, the sooner politicians, industry and private consumers respond to the signs of the times on the markets for hydrocarbons.

Venturing to look farther forward on the supply of energy, say to the end of our century, by then the future will already be behind us, at least in terms of petroleum. The end-of-the-fossil-hydrocarbons scenario is not therefore a doom-and gloom picture painted by pessimistic end-of-the world prophets, but a view of scarcity in the coming years and decades that must be taken seriously. **Forward-looking politicians, company chiefs and economists should prepare for this in good time, to effect the necessary transition as smoothly as possible.**

Conclusion: Time to act

(Reference furnished by Kjell Aleklett)

467. ASPO International Workshop

Details of the next ASPO Conference are provided on <http://www.cge.uevora.pt/aspo2005/>

Provisional Programme

IV INTERNATIONAL WORKSHOP ON OIL AND GAS DEPLETION

Lisbon, Portugal : Thursday 19th and Friday 20th May 2005

Rui Vilar (President, Fundação Calouste Gulbenkian): **Calouste Gulbenkian, founder of the Iraq Petroleum Co.**

Kjell Aleklett (President, ASPO and University of Uppsala, Sweden): **ASPO: From Uppsala to Lisbon**

C. J. Campbell (ASPO Chairman and ODAC): **The End of the First Half of the Age of Oil**

Roger W. Bentley (ASPO and The University of Reading, UK): **Global Oil Depletion: Methodologies and Results**

The Depletion Protocol: Panel Discussion on Political Action:

Kjell Aleklett (ASPO, President and the University of Uppsala, Sweden)

Yves Cochet (former Minister of Territory and Environment, France)

Michael Meacher (former Minister of Environment, UK)

Edward Schreyer (former Governor General, Canada)

Rudolph Rechsteiner (MP, Switzerland)

Jean Laherrère (ASPO): **Correlating discovery and production**

Ali Bakhtiari (Iranian analyst of Middle Eastern oil affairs, Iran): **Iran and Iraq.**

Jack Zagar (ex Reservoir Engineer, Aramco, Saudi Arabia): **The Reservoirs of Saudi Arabia**

Ray Leonard (ex Vice-president for Exploration and New Ventures of Yukos, Russia): **The Reality of Russia**

Richard Miller (Senior officer, BP Exploration Operating Company, UK): **The Historical Record Pattern of the**

North Sea Oil and Gas

Kristin Rønning (Senior officer, Statoil, Norway): **How Much Oil and Gas from the Arctic?**

Guilherme Estrella (Director, Exploration and Production, Petrobras, Brazil): **How Much Oil and Gas from**

Deepwater? The Experience of Brazil

Eddy Isaacs, (Managing Director, Alberta Energy Research Institute, Calgary, Canada): **Canadian Oil Sands:**

Development/future Outlook

Matthew Simmons (President, Simmons & Company International, Investment Bankers, USA): **US Energy Policy and**

Foreign Policy

Klare Michael (Director, Peace and World Security Studies, Hampshire College): **US foreign policy during the President's Second Term**

Costa Silva (Chairman of Management, Partex Oil and Gas, Portugal) and F. Barata Alves (Partex Oil and Gas): **Partex Oil and Gas: A Vision of the World Market and the Role of Gas as a Substitute for Oil**

Xionggi Pang (Director, University of Petroleum, Beijing): **Impact of Oil Depletion on China**

Bruce Robinson (Sustainable Transport Coalition, Australia): **Impact of Depletion on Australia**

Patrik Klintbom (Volvo, Göteborg, Sweden): **Peak Oil in the motor industry: threat and response**

Chris Skrebowski (editor of Petroleum Review): **The Emerging Reality of Oil and Gas Depletion**

Richard Heinberg (author, professor and educator): **The Likely Impact of Peak Oil on the United States**

Rui Rosa (ASPO and Geophysics Centre of Évora, Portugal, Chairman of the Organizing Committee): **New Energy Economics**

Chris Sanders (Sanders Research Associates): **Energy Economics in the Second Half of the Age of Oil**

Klaus Illum (ECO Consult: Systems Analysis. Energy, Ecology, Economy): **Strategies for the Future Development of Energy Systems**

Manuel Collares-Pereira (ASPO and INETI, Portugal, Co-Chairman Organizing Committee): **Past Peak Oil: the Alternatives**

468. The New Cold War

The following seems to be a penetrating analysis of world affairs

Oil: The Dividing Line Of The New Cold War December 7, 2004

From www.prudentbear.com/internationalperspective.asp

You remember the "peace dividend"? Those were the savings alleged to accrue to the US government after the collapse of the Soviet Union. For the most part, that dividend has proven to be as real as Enron's purported earnings. The US today spends about as much on its national defence as the next 20 countries combined. In fact, America is now spending as much on defense as it did during the height of the Cold War. Yet, in spite of this fact, many of the country's military leaders tell us they don't have enough money and that the Pentagon needs to buy more modern and expensive weapons to assure the country's national security and, of equal importance, safeguard a steady stream of oil supplies.

A military coming up against the constraints of a "mere" \$500bn budget is occurring against a backdrop of mounting military activity in the Middle East and substantially higher oil prices. Even more alarming from America's perspective, the country's vaunted military strength has little control over the latter. As the world's biggest producers of crude, the Gulf States and, increasingly, Russia, have the final say. In fact, instead of the traditional ideological warfare between capitalism and communism, oil may very well become the foundation for a renewed cold war.

Oil and Russia: two sides of the same coin? America's increasing problems in Iraq are obscuring mounting signs of a renewed chill in the country's relations with Russia. Much of this centres on the so-called "great game", oil. In fact, virtually all of the recent political machinations in the region, including, not only the Iraq war, but also developments in Iran, and the Ukraine's recently disputed Presidential election, can be best understood through the prism of oil pipeline politics. True, the price of crude has recently fallen back from multi-decade highs, but it is undeniable that energy demand is still robust, notably in emerging economic giant China. On the supply side, investment in new refining capacity in industrial countries has been stagnant, and there is growing evidence of refining capacity limitations. Making matters worse for jittery oil traders is the growing suspicion that the major oil fields, particularly those in Saudi Arabia may be peaking (or coming close to it) and are being drawn down prematurely by secondary extraction techniques, like water injection. All of which makes Russia a key supply variable in this market, whilst China remains a huge new source of exogenous demand. These are new elements with which the US did not have to deal a mere decade ago when Russia was struggling in the throes of low oil prices, an imploding economy and outright kleptocracy, whilst China was still a net oil exporter.

The recent news of China's purported interest in acquiring some major oil producing assets in Canada, (along with the attempted takeover of Canadian base metals giant, Noranda) have raised some eyebrows in the world press, some hinting that China's economic foreign policy may be on the verge of a new leap forward. A clue to the fact that such anticipation may have totally understated the case was last month's signing of a mega-gas deal between Beijing and Tehran worth \$100 billion. Billed as the "deal of the century" by various commentators, this agreement is likely to increase by another \$50 to \$100 billion, bringing the total close to \$200 billion, when a similar oil agreement, currently being negotiated, is inked not too far from now.

The gas deal entails the annual export of some 10 million tons of Iranian liquefied natural gas (LNG) for a 25-year period, as well as the participation, by China's state oil company, in such projects as exploration and drilling, petrochemical and gas industries, pipelines, services and the like. The export of LNG requires special cargo ships, however, and Iran is currently investing several billion dollars adding to its small LNG-equipped fleet.

Some Iranian officials are hopeful that the China deal can lead to a fundamental rethinking of the risks of doing business with Iran on the part of European countries, particularly Russia. It is noteworthy that the Putin government has been very close-lipped in regard to the nuclear controversies surrounding Iran.

Even short of a formal new energy alliance, the main outlines of a China-Russia-Iran axis can be discerned in their mutual threat perception. China still has grave suspicions of America's continued military support of Taiwan

and its studiously ambiguous support of the PRC's "one China" policy. Iran is a well known member of President Bush's "Axis of Evil". Russia remains uneasy over post-September 11, 2001 US incursions in its traditional Caucasus-Central Asian "turf".

In regard to the latter, for a decade Washington has backed the Turkish and Azerbaijan governments' efforts to steer the export of Caspian region crude oil away from Russia, whilst steadily increasing its military presence in some of the former nations of the old Soviet Union as a means of safeguarding potential future oil pipeline routes. The Russian government has always understood that this pipeline was part of the broader US strategy to cut all links with Moscow among the former Soviet states in the Caucasus, building a new economic infrastructure that would dissuade the Caucasus group from ever renewing these ties.

Renewed geopolitical tensions in the Ukraine should also be viewed in this context. An American-sponsored Ukrainian pipeline, designed to attract Caspian oil into Odessa port, on the Black Sea, and then pump it northwards to Brody, and thence into Poland and other central European destinations, has lain empty for almost a year. It would surely become a more politically viable proposition were the West's preferred Presidential candidate, Viktor Yushchenko, to triumph ultimately in the country's disputed elections. By contrast, the Russian government, together with Russia's oil exporters, have countered with a proposal for the Ukrainian government to reverse the oil flow in the pipeline, and pipe Russian crude southwards to Odessa, for tankering out of the Black Sea. This course of action would be more readily embraced by the Ukraine were President Putin's preferred candidate, Viktor Yanukovich, to triumph unexpectedly in the proposed replay of last month's election. (As an aside, the controversy surrounding Ukraine election result provides a classic illustration of the resumption of the Cold War by stealth and the corresponding propagandising in the press: although Russia's preferred candidate, Mr Yanukovich did poll over 90% in two regions, Mr Yushchenko polled over 90% in three. But somehow the first set of results has been deemed corrupt by the western media, whilst the second is clean. The papers covering the recent election also fail to mention that the US has pumped hundreds of millions of dollars into the Yushchenko campaign, and that the exit poll organisations and other observers groups were 100% foreign funded - by the NED, i.e. the American state itself. This could explain why the opposition rallies have been able to whistle up hundreds of tents, laser light shows, plasma screens, sound systems, and why so many people have been bussed in so quickly: it takes quite a lot of money to organise a spontaneous revolution, as one can imagine.

In its own version of pipeline politics, Mr Putin's riposte to the Americans has been to ally the Russian and Iranian oil industries, and open up the shortest, cheapest and most lucrative oil route of all, southwards out of the Caspian to Iran. China has become another component of this strategy. Indeed, China's recent deals with both Kazakhstan (pertaining to Caspian energy) and Iran (pertaining to Persian Gulf resources) signify that the pundits have gotten it wrong until now: the purview of the new great game is not limited to the Central Asia-Caspian Sea basin, but rather has a broader, more integrated, purview increasingly enveloping even the Persian Gulf. Increasingly, the image of the Islamic Republic of Iran as a sort of frontline state in a post-Cold War global line-up against US hegemony is becoming prevalent among Chinese and Russian foreign-policy thinkers.

Until Vladimir Putin became president in 2000, Russian oil policy was dictated by an unholy alliance of the Russian oil producers (and its corrupt oligarchs) and the US government. The country's economic position was extremely weak during that period and the reign of King Dollar was in full flower. By then, under the guise of "economic reform", Russia had experienced an economic and social slump far worse than the Great Depression, and things were to get worse for another two years, until after the financial collapse in August 1998. The West vehemently backed Boris Yeltsin, supporting him even as stupendous amounts of money were stolen from an increasingly impoverished population. They cheered him on when he shelled the Russian parliament in 1993 (hundreds died in the subsequent fighting), and visited a campaign of hideous destruction on Chechnya. In the dying days of the Yeltsin regime, the US-controlled IMF poured a further \$4 billion into Russia, most of which, it is now accepted, was simply stolen and put into private bank accounts.

The Putin Presidency has put an end to that. Although his campaign against Yukos has been widely condemned in the western press as "an assault on free enterprise", his actions appear less arbitrary when viewed in the context of what went on during the previous administration. The country's oil barons, including the Yukos chairman, Mikhail Khodorkovsky, and the now exiled Boris Berezovsky, were key figures in the Yeltsin regime, and specifically in its strategy of creating a class of so-called oligarchs who, having stolen massive amounts from the Russian state which they controlled, then supported Yeltsin in return. Under the guise of "reform" actively supported by the Clinton administration and IMF, the most profitable parts of the Russian economy were sold to "kleptocrats" at ridiculously low prices in rigged auctions, those Russian robber barons often even using cheap loans from the Central Bank for the purpose.

Only after this mass larceny was achieved did these same figures make grand noises about the need to establish a proper "rule of law" in Russia, a self-serving strategy designed to safeguard their ill-gotten gains. The west's own complicity in this shameful episode has seldom been commented on, even though it is crucial to understanding President Putin's "inexplicably" harder line against Yukos, the west generally and America more specifically.

As the oil price has strengthened, Russia's balance of payments surplus has exploded as have its foreign exchange reserves. Its growing strength is a mirror image of America's increasing economic weakness. At the same time, President Bush is proving that he cannot lift Iraqi oil, and America has become increasingly bogged down in a 4th Generation type of guerrilla war, which has further exacerbated the country's ongoing economic (and military) weaknesses. Consequently, Mr Putin is beginning to play the oil card more aggressively.

The Russian President was recently quoted in the Moscow Times, suggesting that Russia might switch its trade in oil from its current US dollar denomination to euros (much as Saddam Hussein did prior to the commencement of Gulf War II). This was cast in typically anodyne terms, but the implicit threat was not lost on strategic energy agencies, even if it hardly registered within US financial markets: "We do not rule out that it is possible. That would be interesting for our European partners. But this does not depend solely on us. We do not want to hurt prices on the market." Such a move could have far-reaching repercussions for the global monetary system and its balance of power, particularly in light of the dollar's accelerating descent in the global foreign exchange markets.

The Russians are not unique in contemplating this shift. In spite of protestations of loyalty to Washington, member nations of the Organization of the Petroleum Exporting Countries have cut the proportion of their deposits denominated in dollars by more than 13 percentage points in the past three years, largely in favour of the euro, according to the latest quarterly report of the Bank for International Settlements. The report said dollar-denominated deposits fell to 61.5 per cent of total deposits by members OPEC in the second quarter of 2004, from 75 per cent in the third quarter of 2001. The share of euro-denominated deposits rose to 20 per cent from 12 per cent over the same period.

Mr Putin is therefore appealing to a potentially broad and formidable constituency. This is unsurprising: Russia's economic objectives increasingly dovetail to a large degree with the Euro bloc and those of the other oil producing members of OPEC. The corollary of the dollar's weakness has been the sharp appreciation of the euro, in effect pricing European manufacturers out of vital export markets, without the eurozone receiving any significant countervailing benefit. Similarly, in acceding to dollar pricing, the members of OPEC in effect risk exchanging a prized and rapidly diminishing asset - oil - for a debauched currency, whilst preserving a currency reserve system with questionable benefits to those outside of the US.

Capitulating to dollar hegemony effectively perpetuates a monetary system which clearly serves Washington's interest. But does it serve the interests of Russia, Euroland, OPEC, or the largest foreign holders of US dollar assets in Asia? Were more commerce to be priced in euros, more reserves held in Eurobonds, this would go some ways toward strengthening the euro's long term foundations as a viable reserve currency alternative, whilst undercutting the pre-eminence of the dollar reserve currency system. As a key marginal producer of both oil and natural gas, Russia is now in an enviable position to catalyse this development.

To be sure, Cold War-type alliances are highly unlikely to be replicated completely in the current milieu in which a dollar reserve currency system is breaking up, without any obvious alternative to fill the void. But what is clear is that the changing dynamics of the oil market are creating renewed global fissures not unlike those which existed between Washington and Moscow during the Cold War era. The rise of oil against a backdrop of rising tension in the Middle East simply adds another substantial debit to America's mounting IOUs with the rest of the world, and likely presages accelerating economic and political weakness, which Russia, China and others will increasingly exploit.

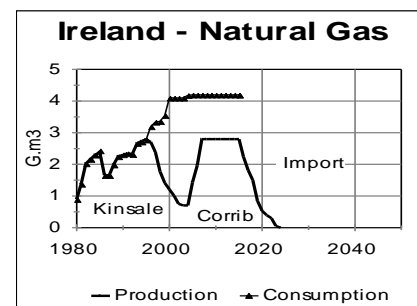
President Chirac of France, amongst others, has longed harped on the desire for a new multipolar world. A long unstated component of this has been the establishment of the euro as a viable reserve currency alternative to the dollar. Oil is also becoming an increasingly important variable in this strategy. But this ongoing dispersion of political and economic power is likely to be an unsettling, even dangerous period, given many countries' undeniable interest in deploying the oil weapon to expedite the end of America's global dominance. In any case, an American reckoning will also have economic consequences for the rest of the world and one shouldn't expect Washington to give up without a fight. The new cold war may therefore have very chilly consequences for the world's financial markets.

(Reference furnished by Virginia Abernethy)

469. Flat Earth Economists vanquished in Ireland

The latest electricity bill sent to customers in Ireland contains a booklet urging them to reduce the amount of electricity they use by installing energy efficient lights and lower wattage bulbs; lowering the thermostat; lagging the hot water boiler; and switching off appliances when not in use. This runs in the face of classical economics which extol market forces aimed to increase not restrict sales. It is a very positive development in parallel with Ireland's ban on smoking in pubs. It promises to decimate profits from cancer drug sales defying the market as the supreme arbiter of sense or folly.

Perhaps it obliquely reflects Ireland's grave gas situation, supplying 40% of the fuel for electricity generation, as illustrated in the graph. The new Corrib Field gives it a second lease of life for a few years, but it seems most unlikely that imports at affordable price will be available to support current demand for more than 5-10 years, as UK production plummets. Now, is the time to impose draconian energy saving, and invest strongly in wave, tide and wind generation. Of special interest are wood pellets for domestic heating fuel as there is apparently a surplus of unusable timber, partly from forest thinnings. Farmers, who are suffering under the EU open market that is killing traditional agriculture, may turn to energy crops.



It may be significant that a Government Committee took official hearings on oil and gas depletion and the impact on the country on November 30th in Dublin.

470. Scientific Paper of Peak Oil

A lengthy paper by J.L.Hallock Jr *et al.*, entitled *Forecasting the limits to the availability and diversity of global conventional oil supply* has appeared in *Energy* v. 29 2004. It reads as a work of abstract even-handed science proposing a wide range of scenarios. No doubt recognising the dubious merits of academic peer group review, it seems to give equal weight to published data and interpretations despite their varied credibility. But it stresses the importance of the subject and draws attention to the likelihood of world supply being curtailed as one country after another becomes a net importer, when it is likely to preserve its oil and gas for internal use.

(see www.sciencedirect.com)

471. Successful Book on the Future

A book entitled, *Comprendre l'avenir – Le Petrole & Gaz Naturel* (Ed. Hirle), by Pierre-Rene Baquis is going to a second edition, and will be translated into English, Russian and Arabic.

472. Depletion Model Revision

Work has started on the revision of the Depletion Model, following the publication of the Oil & Gas Journal data for 2004. It is based on six different databases, showing a wide range of estimates. There is little sign that the quality of the data improves. For example, 76 of the 105 countries listed by the Oil & Gas Journal show implausibly unchanged reserves. Much more work is required to resolve the many anomalies, but the current version is shown at the beginning of the Newsletter as a first step. The two main changes, so far, have been: first, a 15 Gb increase for Russian reserves based on indications from that country; and, second, the assumption that Middle East Gulf production will remain about constant until depletion rates have risen to about 3%, giving a plateau lasting long beyond depletion midpoint, that in other countries normally equates with peak. (The published Middle East reserves are thought to relate to Original, not Remaining, Reserves, but the position remains clouded).

473. Oil Depletion Information Office

Interest in oil depletion now explodes in many quarters, imposing a heavy and increasingly unsustainable workload on this newsletter and the depletion study behind it. Some 20-30 e-mails are received each day, many containing useful information and commentary, and most requiring responses. Barely a week passes without a call from a journalist wanting an interview, and six TV crews have visited in recent months, as the media begin to appreciate the seriousness of the situation. Conferences calling for presentations are being held throughout the world, and governments begin to ask for dedicated presentations.

The workload arising from all of this has expanded greatly calling for the establishment of a small office with appropriate staff. Moves are afoot to try to find sufficient sponsorship to make this possible. Approximately 10 000 euros have been contributed so far by generous readers of the Newsletter, but clearly a higher level funding is needed for a staffed office. The Post Carbon Institute (www.postcarbon.org), an organisation dedicated to finding societal responses to Peak Oil, has recently offered financial support for the new office as well as technical help in developing an appropriate website. Other sponsors are giving serious consideration to the proposal, some with a view to developing parallel consultancies. Premises, and several suitable candidates to work in the office, have been identified.

The response so far has been positive, and the outcome of the endeavours will be reported in due course.

Calendar - Forthcoming Conferences and Meetings

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

2005

January-February – Post-Fossil Mobility Conference, **Berlin** [Blendinger] (date pending)

February 2nd – Ministry of Transport Seminar, **France** [Laherrère]

February 10th – Ireland's Energy Security of Supply, **Dublin** [Campbell]

February 16th - Institute of Petroleum, **London** [Gilbert]

March 22-25 – Romania Oil & Gas Conference, **Bucharest** [Laherrère]

April 14-15 – Swiss Pension Fund Managers, **Interlaken** [Campbell]

April 22nd – Sanders Research, **London** [Campbell]

April 25th – Depletion Scotland, **Edinburgh** [Campbell, Skrebowski, Simmonds]

May 19-20th – 4th ASPO International Workshop, Gulbenkian Foundation, **Lisbon** [various]

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

[Information on future events for inclusion in the Calendar is welcomed]

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